



H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

INTRODUCTION

PEP-1.0

REVISION 6

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *PTJ Linnell*  
Emergency Planning Coordinator

7-1-2  
DATE

Approved By: *W.D. Harkley*  
Plant General Manager

7/2/82  
DATE

## 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 H. B. Robinson Steam Electric Plant (HBR) and provide the HBR 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 (PEP) Manual is organized to facilitate immediate use by both onsite and offsite 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 that appropriate emergency personnel and equipment are prepared for the onset of emergency conditions.

Appendix A lists the emergency personnel and their suggested channels for access in emergency communications.

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.

Extra copies of exhibits expected to be revised during the course of an emergency will be located in easily accessible areas within the TSC and EOF.

A full-sized map of the Plume Exposure Emergency Planning Zone is located at the back of this manual.

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 ORGANIZATION MAKEUP

## 1.2 Emergency Organization

The Emergency 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 immediately 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 Robinson Emergency Organization. This 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 several teams. The Site Emergency Coordinator is the primary interface with the Emergency Response Manager who interfaces with the off-site organizations and individuals, including the Corporate Emergency Operations Center, the Site Public Information Coordinator, the Corporate Spokesman, the Forward Emergency Operations Center 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. Exhibit 1.2-2 shows the schematic diagram of the Robinson Emergency Organization.

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

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

EXHIBIT 1.2-1 (cont.)

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

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

Interim: Site Emergency Coordinator

Note: The Radiological Control Director may choose to appoint an assistant to report directly to the Director to ensure that the Director's responsibilities are fulfilled. This individual is not listed in this Exhibit or Exhibit 1.2-2 due to his "optional" nature.

5.a. Environmental Monitoring Team:

Leader: Environmental and Chemistry Supervisor

Alternate: E&C Specialist - Engineer

Interim: Radiological Control Director

5.b. Plant Monitoring Team:

Leader: Radiation Control Foreman

Alternates: RC Specialist - Engineer

Interim: Radiological Control Director

5.c. Personnel Protection and Decontamination Team:

Leader: Radiation Control Foreman

Alternates: RC Specialist - Engineer

Interim: Radiological Control Director

5.d. Dose Projection Coordinator:

Primary: Specialist - Radiation Control (RC)  
Alternate: Specialist - Environmental & Chemistry (E&C)  
Interim: Radiological Control Director

6. Emergency Communicator: Manager - Technical Support

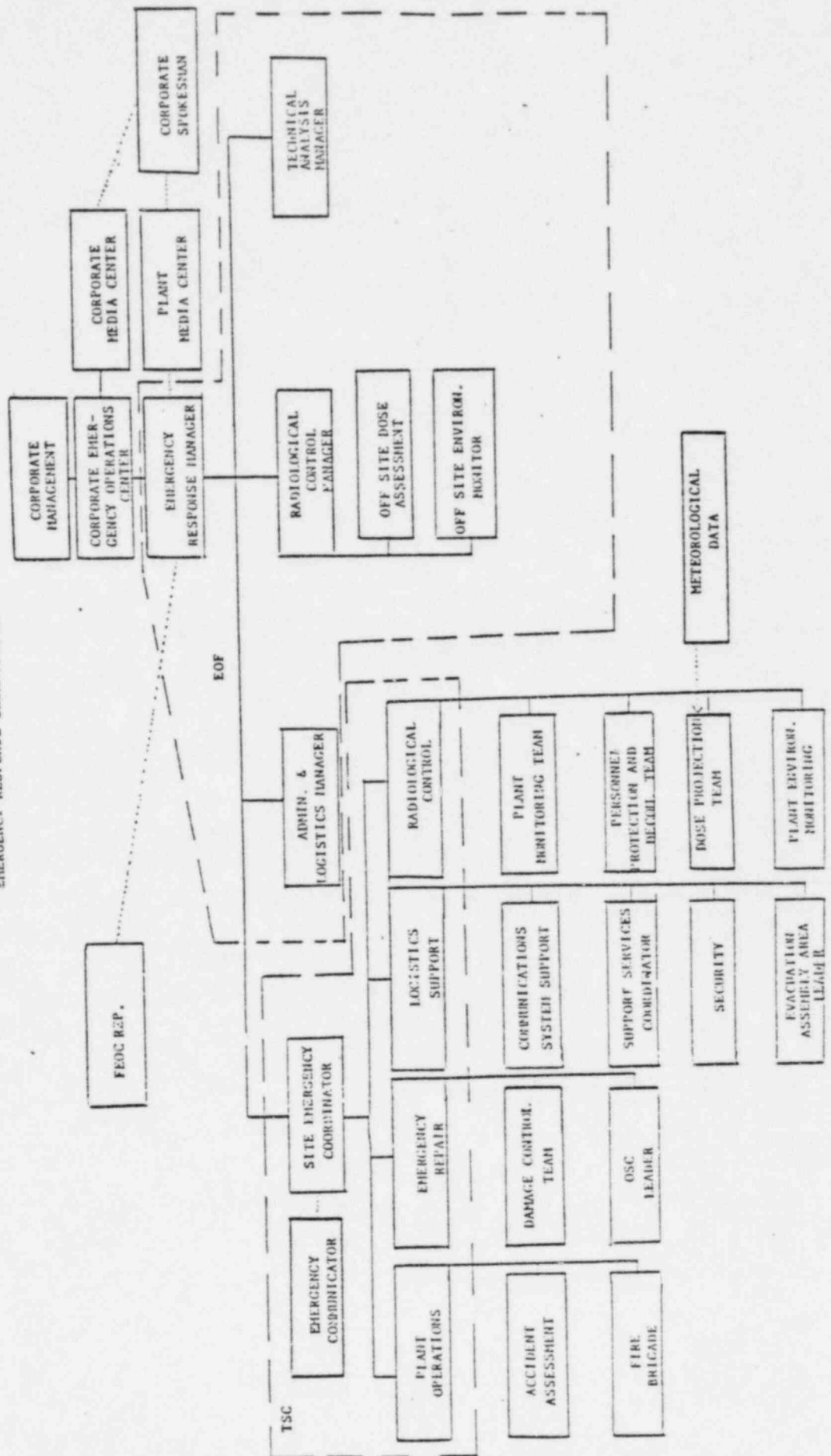
Alternate: Off-shift Control Operator

Interim: Available Plant Operator

EXHIBIT 1.2-1 (cont.)

7. Representative of the Forward Emergency Operations Center:
- Primary: Assistant to Plant General Manager  
Alternate: Project Engineer
8. Site Public Information Coordinator:
- Manager - News Services
- Alternates: Vice President - Corporate Communications  
Director - Media Relations
- Interim: Plant General Manager or his designee
9. Emergency Response Manager: Vice President - Nuclear Operations
- Alternate: Manager - Corporate Quality Assurance
10. Administrative & Logistics Manager: Manager - Construction Procurement Services
- Alternate: Manager - Nuclear Operations Administration
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
- Alternate: 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

Exhibit 1. 2-2  
EMERGENCY RESPONSE ORGANIZATION







H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

INITIAL EMERGENCY ACTIONS

PEP-2.1

REVISION 4

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *J. S. [Signature]*  
EMERGENCY PLANNING COORDINATOR

7-1-82  
DATE

Approved By: *M. [Signature]*  
PLANT GENERAL MANAGER

7/2/82  
DATE

## PEP 2.1 INITIAL EMERGENCY ACTIONS

### 1.0 Responsible Individual and Objectives

The Shift Foreman 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.

Should the Shift Foreman be unavailable or incapacitated, this procedure may be implemented by any on-duty Control Operator. All plant personnel are responsible for reporting to the Control Room any conditions or symptoms, as 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 Foreman or his alternate) upon recognition of an off-normal condition as determined by instrument readings or direct observation. Implementation of this procedure does not constitute the declaration of 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 Foreman 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 (Suggestion - Document Completion of Starred (\*) Items in the Shift Foreman's Log)

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

- 3.1 Ensure appropriate Plant Annunciator Response Procedures, Abnormal Procedures, and Emergency Instructions are being implemented.
- 3.2 Determine need to evacuate localized plant areas.

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

- \*3.2.1 Sound the Local 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 the Auxiliary Building, Evacuate the Auxiliary Building".
- 3.2.2 Implement Section 3.1 of PEP-3.8.1, "Evacuation."
- 3.2.3 Implement Section 3.1 of PEP-3.8.2, "Personnel Accountability" (to account for plant personnel within 30 minutes).
- 3.2.4 Repeat Step 3.2.1.
- 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 (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 Emergency Action Levels and classify the emergency.
  - Note: If no emergency exists (i.e., no Emergency Action Level is exceeded), go to Step 3.6.

-CAUTION-

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

- 3.5.1 If an Emergency Action Level for a General Emergency is exceeded, implement PEP-2.5 "Emergency Control - General Emergency."
  - 3.5.2 If an Emergency Action Level for a Site Emergency is exceeded, implement PEP-2.4, "Emergency Control - Site Emergency."
  - 3.5.3 If an Emergency Action Level for an Alert is exceeded, implement PEP-2.3, "Emergency Control - Alert."
  - 3.5.4 If an Emergency Action Level for an Unusual Event is exceeded, implement PEP-2.2, "Emergency Control - Unusual Event."
- 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 Foreman, terminate use of this procedure.

EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

I. UNUSUAL EVENT

1.0 Effluent Releases

1.1 Liquid Releases

1.1.1 Any batch liquid waste release without:

- a) at least one circulating water pump running AND R-18 in service,
- b) prior analysis of batch.

1.1.2 Release giving  $>1.0 \times 10^{-7}$  uCi/ml in the discharge canal:

a) Liquid waste discharge (correction factor of  $\frac{\text{max discharge (60gpm)}}{\text{actual discharge}}$  may be applied to allow higher R-18 reading due to greater degree of dilution):

- i. R-18  $>27,000$  CPM with 1 circulating water pump running
- ii. R-18  $>42,000$  CPM with 2 circulating water pumps running
- iii. R-18  $>67,000$  CPM with 3 circulating water pumps running

b) Blowdown System discharges (correction factor of  $\frac{\text{max discharge (79.5gpm)}}{\text{actual discharge}}$  may be applied to allow higher R-19 reading due to greater degree of dilution):

- i. R-19  $>6,600$  CPM with 1 circulating water pump running
- ii. R-19  $>10,400$  CPM with 2 circulating water pump running
- iii. R-19  $>16,800$  CPM with 3 circulating water pump running

1.1.3 Any other accidental, unplanned, or uncontrolled off-site liquid release which exceed or which could have exceeded 10 times MPC.

EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

I. UNUSUAL EVENT (Continued)

1.2 Gaseous Release

- 1.2.1 Any Release from the gaseous waste system without:
- a) at least one auxiliary building exhaust fan running AND either R-14 or R-11 and -12 in service monitoring the plant vent,
  - b) prior analysis of gas holdup tank contents.
- 1.2.2 Release giving sustained concentration  $>3 \times 10^{-7}$  uCi/cc at the site boundary (assumes Xe-133 and Kr-85):
- a) Plant Vent Readings:
    - i. R-14  $>500,000$  CPM
    - ii. R-14  $>125,000$  CPM (but less than  $500,000$  CPM) for more than 15 minutes.
  - b) Condenser Vacuum Pump Discharge Radiogas:
    - i. R-15  $>500,000$  CPM
  - c) Lower Fuel Building Exhaust Radiogas:
    - i. R-20  $>500,000$  CPM
    - ii. R-20  $>50,500$  CPM (but less than  $500,000$  CPM) for more than 15 minutes.
  - d) Upper Fuel Building Exhaust Radiogas:
    - i. R-21  $>424,000$  CPM
    - ii. R-21  $>42,400$  CPM (but less than  $424,000$  CPM) for more than 15 minutes.
- 1.2.3 Power operation with R-15 out of service AND condenser vacuum pump discharges not routed to the plant vent AND secondary concentration  $>1.0 \times 10^{-4}$  uCi/ml.
- 1.2.4 Any other accidental unplanned or uncontrolled off-site gaseous release which exceeds or could have exceeded 10 times MPC.

EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

I. UNUSUAL EVENT (Continued)

2.0 Plant Occurrences Having Direct Consequences

2.1 In-Plant Releases

2.1.1 Failed fuel, as indicated by RCS activity:

- a) RCS activity  $>60$  uCi.ml (Dose Equivalent I-131) at full power (see Tech Spec Fig 3.1.4-1 for limit at partial power levels).
- b) RCS activity  $>1$  uCi/ml (Dose Equivalent I-131), but less than limit in (a) above, for more than 48 hours.
- c) RCS activity  $>100/\bar{E}$  uCi/cc for all isotopes.
- d) Failed fuel monitor indicates increase greater than 0.1% equivalent fuel failures within 30 minutes.

2.1.2 In-plant leak or spill as indicated by:

- a) Any Local Evacuation based on confirmed radiological conditions (except precautionary).
- b) Any primary leakage in excess of 10 gpm.
- c) Unidentified primary leakage in excess of 1 gpm for more than 12 hours (unless identified and approved for continued operation).
- d) Primary to Secondary leakage in excess of 0.35 gpm per Steam Generator (or 1 gpm total).
- e) Secondary liquid activity in excess of 0.10  $\mu$ Ci/ml (Dose Equivalent I-131).

2.2 Reactor Trip

- a) Whenever the Reactor Trip breakers open (except in accordance with a PNSC approved test or procedure).

2.3 Activation of any Engineered Safety Feature (except in accordance with a PNSC approved test or procedure):

- a) Manual
- b) Automatic (non-spurious) S-signal
- c) Automatic P-signal (containment Isolation)

EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

I. UNUSUAL EVENT (Continued)

- 2.4 Failure of a Pressurizer or Steam Generator Safety Valve or Power Operated Relief Valve to close (leakage in excess of that allowed in 2.1.2.c above).
- 2.5 Loss of all off-site power.
- 2.6 Loss of on-site AC power capability.
- 2.7 Serious personnel injury or contamination:
  - a) any fatality.
  - b) any injury requiring admission as an in-patient at an off-site treatment facility.
  - c) any personnel contamination requiring special medical treatment.
  - d) exposure of the whole body of any individual to 5 rems or more of radiation; exposure of the skin of the whole body of any individual to 30 rems or more of radiation; or exposure of the feet, ankles, hands or forearms to 75 rems or more of radiation.
- 2.8 Unplanned fire within the Protected Area lasting more than 10 minutes after actuation of the Fire Protection System or 10 minutes after manual fire-fighting efforts have begun.
- 3.0 Occurrences Having Indirect Consequences (e.g., reduction in safety margin).
  - 3.1 Loss (or potential loss) of required containment integrity, as indicated by:
    - a) Containment over pressure >2 psi for >8 hours.
    - b) Containment vacuum >1 psi for >8 hours.
    - c) One or more automatic containment isolation trip valves inoperable (and not isolated or repaired) for >4 hours.
    - d) Opening of equipment hatch or more than one personnel hatch door except during cold shutdown.
    - e) Opening of any non-automatic containment isolation valve normally required to be closed (except in accordance with a PNSC approved procedure).
    - f) Removing of required blind flange (except in accordance with a PNSC approved procedure).



EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

I. UNUSUAL EVENT (Continued)

- 3.2 Violation of Any Limiting Condition for Operation requiring shutdown.  
(See standing order number 12, minimum equipment list for a summary of the limiting conditions for operation.)
- 3.3 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.
  - b) Any tornado crossing the site boundary (by observation or evidence).
  - c) Any hurricane requiring implementation of Standing Order No. 2, "Operation During Periodic Hurricanes and Tornados."
  - 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.
- 3.4 Exceeding of any Tech Spec Safety Limit
- 3.5 Plant Situations
  - a) Security violations pursuant to Security Procedure S-16, "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 Unit 2 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.
- 3.6 Any other instance, in the judgment of the Shift Foreman, that warrant declaration of an Unusual Event including, but not limited to:
  - a) Any event that results in the nuclear power plant not being in a controlled or expected condition while operating or shut down.

EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

I. UNUSUAL EVENT (Continued)

- b) Any personnel error or procedural inadequacy which, during normal operations, anticipated operational occurrences or accident conditions, prevents or could prevent, by itself, the fulfillment of the safety function of those structures, systems, and components important to safety that are needed to (i) shut down the reactor safely and maintain it in a safe shutdown condition, or (ii) remove residual heat following reactor shutdown, or (iii) limit the release of radioactive material to acceptable levels or reduce the potential for such release.
- c) Indications or alarms on process or effluent parameters not functional in the Control Room to an extent requiring plant shutdown or other significant loss of assessment or communication capability (not including loss of plant computer or meteorological instrumentation).
- d) Loss of one or more extensions of the Emergency Notification System (Red Phone).

EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

II. ALERT

1.0 Effluent Releases

- 1.1 Any liquid release giving  $>1.0 \times 10^{-4}$  uCi/ml in the discharge canal:
- Liquid waste discharge where R-18 is off-scale-high (actual limit is  $2.68 \times 10^{-1}$  uCi/ml in the discharge line).
  - Blowdown System discharge where R-19 is off-scale-high (actual limit is  $2.02 \times 10^{-1}$  uCi/ml in the discharge line).
  - Field measurement indicating  $>1.0 \times 10^{-4}$  uCi/ml in the discharge canal.
- 1.2 Any gaseous release giving  $>3 \times 10^{-4}$  uCi/cc at the site boundary.
- Plant Vent discharge where R-35  $>40$  mR/hr.
  - Condenser vacuum pump discharge where R-15  $>500,000$ CPM.
  - Fuel Handling Building Lower Level Exhaust discharge where R-30  $>320$ mR/hr.
  - Fuel Handling Building Upper Level Exhaust discharge where R-21  $>500,000$ CPM.

2.0 Plant Occurrences Having Direct Consequences

2.1 In-Plant Releases

- 2.1.1 Failed fuel, as indicated by:
- RCS activity  $>100$  uCi/ml (Dose Equivalent I-131).
  - Letdown line radiation level (R-9)  $>25$  R/hr. (equivalent to 5% failed fuel).
  - Letdown line radiation rate of change ( $\Delta R-9$  in 30 min  $>5$  R/hr. (equivalent to  $\Delta 1\%$  failed fuel in 30 min.)
- 2.1.2 In-Plant Leak or Spill, as indicated by:
- Substantially higher reading on an Area Monitor (RMS channels 1 through 8).

EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

II. ALERT (Continued)

<u>Channel</u>	<u>Area</u>	<u>Alert EAL (mR/hr.)</u>
1	Control Room	250
*32	Containment (High Range)	10,000 (low range off-scale high)
3	Radio Chem Lab	2,500
4	Charging Pump Room	10,000 (off-scale high)
5	Spent Fuel Bldg.	2,500
6	Sampling Room	10,000 (off-scale high)
7	In-Core Instr. Room	10,000 (off-scale high)
8	Drumming Room	10,000 (off-scale high)

- b) Any Site Evacuation based on confirmed radiological conditions.
- c) Fuel Handling Accident Involving Damage to Spent Fuel, as indicated by:
  - i. Observation/report,
  - ii. Alarm on R-5 and R-21,
  - iii. Alarm on R-2 and R-11/R-12 during refueling,
  - iv. Any time EI-8, "Fuel Handling Accident," paragraph IV is implemented.

2.2 Loss of coolant Accident (primary system leakage >50 gpm) as indicated by:

- a) RCS inventory analysis
- b) Reactor trip, with low or falling Pressurizer pressure, with rising or normal Steam Generator pressure, with either:
  - i) rising CV pressure, or
  - ii) alarm on R-2, R-11, or R-12, or
  - iii) rising CV sump level.

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\*When installed and operative. Interm limit: R-2 off-scale-high.

EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

II. ALERT (Continued)

- c) Low or falling Pressurizer pressure, with approximately constant  $T_{avg}$ , with either:
  - i) rising CV pressure, or
  - ii) alarm on R-2, R-11, or R-12, or
  - iii) High level, temperature and pressure in the Pressurizer Relief Tank, or
  - iv) rising CV sump level.
  
- d) Any time EI-1, "Incident Involving Reactor Coolant System Depressurization," Appendix A is implemented.

2.3 Steam Generator Tube Rupture

2.3.1 Multiple tube ruptures, as indicated by:

- a) Inventory analysis indicating >200 gpm primary to secondary leakage.
- b) Reactor trip, with low or falling Pressurizer pressure and level, with rising or normal Steam Generator pressure, with either:
  - i. alarm on R-15 or R-19, or
  - ii. differential rate of rise of Steam Generator levels.
- c) Low or falling Pressurizer pressure and level, with approximately constant  $T_{avg}$ , with an alarm on R-15 or R-19.
- d) Any time EI-1, "Incident Involving Reactor Coolant System Depressurization," Appendix C is implemented.

2.3.2. Tube rupture with loss of off-site power, as indicated by:

- a) A primary to secondary leak rate >30gpm, as indicated by:
  - i. inventory analysis, or
  - ii. R-15 >10,000 CPM

AND

EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

II. ALERT (Continued)

b) Loss of all off-site power

2.4 Steam Line/Feed Line Having Potential for Off-Site Consequences:

a) Break in Secondary System, as indicated by:

- Reactor trip, with abnormally low Steam Generator pressure, with low or falling pressurizer pressure and level;
- Low or falling pressurizer pressure and level, with decreasing  $T_{avg}$ ; or
- Any time EI-1, "Incident Involving Reactor Coolant System Depressurization," Appendix B is implemented.

AND either

b) Primary to secondary leak rate >10gpm, or

c) MSLIV failure to close.

2.5 Loss of all AC Power

a) Loss of all off-site power

AND

b) failure of both on-site emergency AC power sources, as indicated by:

- i. Diesel generator status lights
- ii. Less than 412 Volts on E1 and E2 busses.

OR

c) anytime EI-17, "Emergency Diesel Failure to Start on Automatic Safety Injection Signal or Station Blackout" is implemented following a Loss of Off-site Power.

2.6 Failure of the Reactor Protection System to initiate and complete a trip which brings the reactor to a subcritical condition as indicated by:

- a) valid trip signal generated (manual or automatic) AND
- b) trip does not take place (i.e. reactor still at power)

2.7 Loss of all D.C. Power (more than momentary)

EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

II. ALERT (Continued)

- 2.8 Loss of flow incident requiring implementation of EI-4, "Loss of Reactor Coolant Flow."
- 2.9 Any fire which could potentially affect vital, safety-related or ESF equipment.
- 3.0 Occurrences Having Indirect Consequences (e.g., a substantial reduction in safety margin).
  - 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-15, "Control Room Inaccessibility"), 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  $>0.1$  g (horizontal) or  $>0.067$  g (vertical) on seismic instrumentation.

Note: There will be a 4-5 hours delay between seismic alarm @ 0.01 g, and results from seismic instruments. During this time, an Alert shall be declared upon recognition of any safety-related abnormality.

- a) Earthquake that causes a loss of function of any safety-related train.
      - b) Any adverse weather condition that causes a loss of function of any safety-related train AND the loss of off-site power.
      - 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 in the Unit #2 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 Shift Foremen/Site Emergency Coordinator, warrants declaration of an Alert.

EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

III. 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 (see PEP-3.4-1, "Initial Dose Projection" for quick assessment).
- b) Dose projections using estimated or assumed data (if actual data is unavailable).
- 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:

- a) RCS activity >1000 uCi/ml (Dose equivalent I-131).
- b) Letdown line radiation level (R-9) >30 R/hr.

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

- a) Containment High Range Area Monitor (R-32) >100 R/hr.\*
- b) Major damage to spent fuel, as indicated by:
  - i. observation that more than one fuel assembly has been damaged.
  - ii. observation that the water level has dropped below the top of the fuel.
  - iii. EI-8, "Fuel Handling Accident," paragraph IV is implemented AND R-5 or R-21 reads off-scale-high.

---

\*When in service.



EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

III. SITE EMERGENCY

2.2 Degraded loss of Coolant Accident (primary system leakage >77 gpm) as indicated by:

- a) RCS inventory analysis
- b) Reactor trip, with low or falling Pressurizer pressure, with rising or normal Steam Generator pressure, with either:
  - i) rising CV pressure, or
  - ii) alarm on R-2, R-11, or R-12, or
  - iii) rising CV sump level.
- c) Low or falling Pressurizer pressure, with approximately constant  $T_{avg}$ , with either:
  - i) rising CV pressure, or
  - ii) alarm on R-2, R-11 or R-12, or
  - iii) high level, temperature and pressure in the Pressurizer Relief Tank, or
  - iv) rising CV sump level.
- d) Any time EI-1, "Incident Involving Reactor Coolant System Depressurization," Appendix A is implemented.

AND one of the following:

- a) RCS activity >100 uCi/ml (Dose Equivalent I-131).
- b) Letdown line radiation level (R-9) >25 R/hr (equivalent to 5% failed fuel).
- c) Letdown line radiation rate of change ( $\Delta R-9$  in 30 min.) >5 R/hr (equivalent to  $\Delta 1\%$  failed fuel in 30 min.).
- d) 5 or more operable in-core thermocouples reading off-scale-high (i.e., >700°F).
- e) RCS saturation monitor indicates loss of sub-cooled condition (i.e., >0°F).

2.3 Major Steam Generator Tube Rupture as indicated by:

- a) Inventory analysis indicating >200 gpm primary to secondary leakage.

EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

III. SITE EMERGENCY (Continued)

- b) Reactor trip, with low or falling Pressurizer pressure and level, with rising or normal Steam Generator pressure, with either:
  - i) alarm on R-15 or R-19, or
  - ii) differential rate of rise of Steam Generator levels.
- c) Low or falling Pressurizer pressure and level, with approximately constant  $T_{avg}$ , with an alarm on R-15 or R-19.
- d) Any time EI-1, "Incident Involving Reactor Coolant System Depressurization," Appendix C is implemented.

AND

RCS activity  $>1.0\mu\text{Ci/ml}$  (Dose Equivalent I-131)

AND

Loss of offsite power.

2.4 Steam Line/Feed Line Break Having Off-Site Consequences:

- a) Break in Secondary System, as indicated by:
  - Reactor trip, with abnormally low Steam Generator pressure, with low or falling pressurizer pressure and level;
  - Low or falling pressurizer pressure and level, with decreasing  $T_{avg}$ ; or
  - Any time EI-1, "Incident Involving Reactor Coolant System Depressurization," Appendix B is implemented.

AND either

- b) Primary to secondary leak rate  $>10\text{gpm}$ , or
- c) MSLIV failure to close.

AND

RCS activity  $>1.0\mu\text{Ci/ml}$  (Dose Equivalent I-131).

2.5 Sustained Loss of All AC Power

- a) loss of all off-site power

EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

III. SITE EMERGENCY (Continued)

AND

- b) failure of both on-site emergency AC power sources, as indicated by:
  - i) Diesel generator status lights, or
  - ii) Less than 328 Volts on E1 and E2 busses.

OR

- c) anytime EI-17, "Emergency Diesels Failure to Start on Automatic Safety Injection Signal or Station Blackout" is implemented following a loss of off-site power.

AND

Condition not corrected within 15 minutes, by either:

- a) restoring off-site AC power;
- b) starting and loading at least one diesel/generator.

2.6. Loss of all DC Power AND condition not corrected within 15 minutes.

2.7 Any fire that:

- a) impairs the operability of any safety-related train or vital equipment.
- b) causes the inability to shut down the plant;
- c) causes the inability to fight the fire.

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 Natural Phenomenon or Man-Made Event which Degrades Plant Safety

- a) Earthquake that causes a loss of function of any safety-related train. Design Level 0.20 g horizontally and 0.133 g vertically.
- b) Any adverse weather condition that causes a loss of function of any safety-related train AND the loss of off-site power.

EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

III. SITE EMERGENCY (Continued)

- c) Any water level (high or low) in excess of design levels, (high 222.0 ft., low 128 ft.) AND causing loss of function of any safety-related train.
- d) A lesser condition of degraded plant safety, as indicated by:
  - i) earthquake registering  $>0.1$  g (horizontal) or  $>0.067$  g (vertical) on seismic instrumentation.
  - ii) any adverse weather condition that causes a loss of function of any safety-related train.
  - iii) any explosion, aircraft crash, or missiles resulting in major damage to structures housing safety-related systems.
  - iv) 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) Any act that threatens the safety of the nuclear power plant or site personnel, or the security of special nuclear material, including instances of sabotage or attempted sabotage.

3.5 Any other instance that in the judgement of the Shift Foreman/Site Emergency Coordinator warrants declaration of a Site Emergency, including, but not limited to:

- a) An Alert situation where plant response is not as expected.
- b) An Alert situation where exceeding of a Site Emergency EAL is imminent or assured.

EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

IV. 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 (see PEP-3.4-1, "Initial Dose Projections" for a quick assessment);
- b) Dose projections using estimated or assumed data (if actual data is unavailable);
- 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:

- a) RCS activity  $>10,000$  uCi/ml (Dose equivalent I-131).
- b) Letdown line radiation level (R-9) off-scale high.
- c) "High core temperature"
- d) "Inadequate subcooling margin"

2.1.2 Severe In-Containment Leak or Spill, as indicated by:

- a) Containment High Range Area Monitor (R-32)\*  $>1000$  R/hr.

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

a) Failed fuel as indicated by:

- i) RCS activity in excess of 100 uCi/ml, or
- ii) R-9  $>5$  R/hr

b) Loss of primary coolant boundary including:

- i. Loss of Coolant Accident (as defined in "Alert," 2.2);
- ii. Major steam Generator Tube Rupture (as defined in "Alert," 2.3.1);

---

\*When in service.

EXHIBIT 2.1-1  
EMERGENCY ACTION LEVELS (EAL)

IV. GENERAL EMERGENCY (Continued)

iii. Major Steam Line Break with significant primary to secondary leakage (as defined in "Site Emergency," 2.4).

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 Small Loss of Coolant Accident (as indicated by normal LOCA symptoms plus RCS pressure remaining above 400 psig) AND inability to control containment pressure (not corrected within 1 hour), as indicated by steadily rising containment vessel temperature and pressure.

3.2 Small Loss of Coolant Accident (as indicated by normal LOCA symptoms plus RCS pressure remaining above 400 psig) AND failure of all high head injection trains (charging and safety injection).

3.3 Loss of Coolant Accident AND failure to establish ECCS recirculation when required (see EI-1, "Incident Involving Reactor Coolant System Depressurization," for determination of when switchover is required).

3.4 Loss of Coolant Accident AND failure of both RHR trains.

3.5 Loss of Offsite Power AND failure of all three Auxiliary Feedwater trains for >1 hour.

3.6 Loss of all AC Power AND failure of the steam driven Auxiliary Feedwater train for >1 hour.

3.7 Failure to trip reactor on demand AND relief valve stuck open AND loss of normal feedwater for >15 minutes.

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

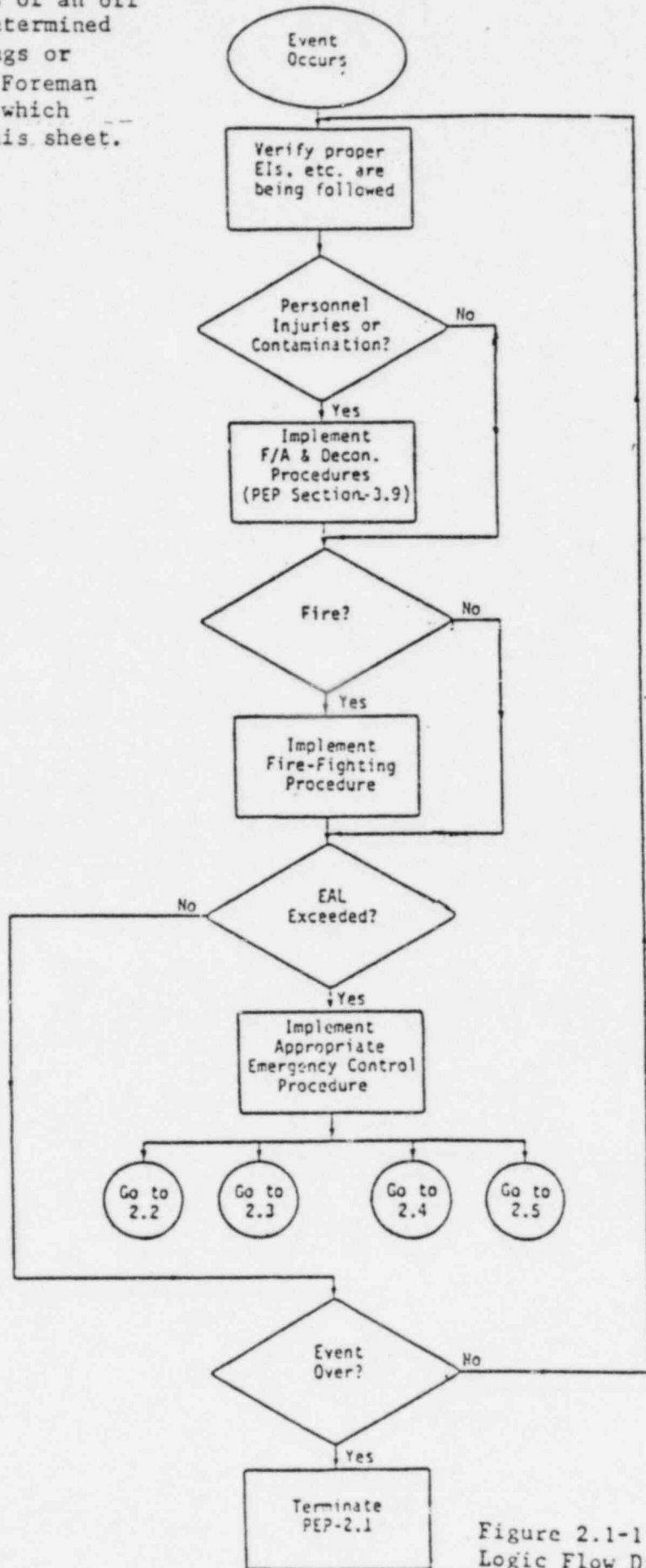


Figure 2.1-1  
Logic Flow Diagram for PEP-2.1



H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES  
VOLUME 13

EMERGENCY CONTROL - UNUSUAL EVENT  
PEP-2.2  
REVISION 4

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *[Signature]*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *[Signature]*  
Plant General Manager

7/2/82  
DATE



PEP-2.2 EMERGENCY CONTROL - UNUSUAL EVENT

1.0 Responsible Individuals and Objectives

1.1 The Site Emergency Coordinator is responsible for:

- 1.1.1 Directing and coordinating the combined activities of plant personnel in the Control Room and elsewhere on the site.
- 1.1.2 Making the initial in-plant and off-site notifications.
- 1.1.3 Activating and issuing instructions to appropriate Emergency Teams and assuring that the appropriate procedures are being followed.
- 1.1.4 Requesting outside emergency response assistance, if required.
- 1.1.5 Augmenting the on-site shift personnel, if required.
- 1.1.6 Assessing the emergency condition for possible reclassification or termination.
- 1.1.7 Assigning an Emergency Communicator.

Note: Figure 2.2-1 (found at the end of this procedure) provides a Logic Flow Diagram of this procedure.

1.2 The Emergency Communicator is responsible to the Site Emergency Coordinator for:

- 1.2.1 Assisting in making the notifications.
- 1.2.2 Contacting needed off-duty personnel and requesting that they report to the site.
- 1.2.3 Contacting outside emergency response agencies for assistance, if required.
- 1.2.4 Documenting calls in accordance with PEP Section 3.1 "Communications Procedures".

2.0 Scope and Applicability

This procedure shall be implemented upon determination that an Emergency Action Level (EAL) under "Unusual Event" has been exceeded (per PEP-2.1). The Shift Foreman's Log, Normal Plant Procedures and Standing Orders are to be used to administer record keeping. The Shift Foreman may also implement this procedure at his discretion based on his evaluation of plant conditions. Once implemented, this procedure shall remain in effect until either 1) the emergency is reclassified and the appropriate

Emergency Control procedure is implemented, or 2) the emergency is terminated. The Site Emergency Coordinator may delegate his supervisory duties to another qualified individual, if he so chooses. However, he may not delegate the responsibility of declaring the emergency terminated.

3.0 Actions (Suggestion - Document Completion of Starred (\*) Items in the Shift Foreman's Log)

\*3.1 Declare an "Unusual Event." Clear the communications channels of all non-emergency use.

Note: If necessary, based on the effects of initiating conditions outside the Control Room, sound the Local Evacuation Alarm for 15 seconds and announce "Unusual Event caused by (state plant conditions and any specific safety instructions)". If the specific safety instructions include the evacuation of personnel from a plant location, recommend evacuation routes from plant area to the assembly area, also;

3.1.1 Implement Section 3.1 of PEP-3.8.1, "Evacuation."

3.1.2 Implement Section 3.1 of PEP-3.8.2, "Personnel Accountability."

3.1.3 Repeat all of Step 3.1.

3.2 Complete and approve for release EXHIBIT 2.2-1, "Immediate Notification Information - Unusual Event."

3.3 Direct Emergency Communicator to transmit the information on EXHIBIT 2.2-1, "Immediate Notification Information - Unusual Event," to those persons and agencies identified in EXHIBIT 2.2-2, "Immediate Notification Checklist for an Unusual Event."

Note: The Emergency Communicator shall perform Steps 3.3.1 through 3.3.5. The NRC notification of Step 3.3 must be completed within 60 minutes from the time recorded in Step 3.1 above. All other notifications may be made during normal business hours.

3.3.1 Utilize EXHIBIT 2.2-2, "Immediate Notification Checklist for an Unusual Event," to determine which organizations and individuals must be contacted. Request information from the Site Emergency Coordinator regarding which of the optional contacts should be made.

3.3.2 Contact the organizations and individuals as indicated in EXHIBIT 2.2-2.

Note: The proper telephone numbers and the specific individuals (including titles and alternates) to be contacted for each organization are contained in PEP-Appendix A, which shall be used in conjunction with this procedure. Unit 2 operating supervisor shall also be contacted.

- 3.3.3 Transmit the information contained in EXHIBIT 2.2-1 to each person contacted.
- 3.3.4 If there is any question regarding the authenticity of the notification, request a verification call-back from the organization or individual contacted (unless contact is via a dedicated telephone line or radiotelephone).
- \*3.3.5 Report to the Site Emergency Coordinator when all Immediate Notifications are made and verified.
- 3.4 Activate that portion of the Emergency Organization necessary to respond to the emergency.
- Note: EXHIBIT 1.2-1 contains the Emergency Organization and team assignments.
- 3.4.1 Fill out EXHIBIT 2.2-3 "Emergency Organization Notification Checklist (Unusual Event)" to indicate the level of response required.
- Note: Mandatory notifications are already checked.
- \*3.4.2 Notify on-shift personnel of the emergency assignments.
- \*3.4.3 If any member of the Technical Support Group is activated, consider also activating the Technical Support Center.
- \*3.4.4 If the Site Public Information Coordinator is activated, also activate the Plant Media Center.
- \*3.5 If the on-shift personnel must be augmented to properly respond to the emergency or, if off-duty personnel need to be notified to standby, give the completed EXHIBIT 2.2-3 to the Emergency Communicator and implement PEP-3.2.1, "Notification of Off-Duty Personnel."
- Note: If off-duty assistance required is large, or if the Unusual Event is during normal working hours, consider activating the Operational Support Center to provide a mustering point for personnel in the Emergency Organization.
- \*3.6 Determine need for outside agency assistance. If assistance is needed, direct Emergency Communicator to notify appropriate agency in accordance with PEP-3.2.2, "Mobilization of Outside Organizations and Personnel".
- 3.7 If deemed necessary, direct the Emergency Communicator to initiate and complete PEP-3.1.1, "Follow-up Notification and Communications," for an Unusual Event.
- Note: Since most notifications of Unusual Events will be made on a more relaxed time schedule, the actual notification message may be worded to reflect a combination of "Immediate" and "Follow-up" information items. If the Immediate and

Follow-up notifications are combined, be sure to inform the recipient of the message that they will be receiving no further messages from the site regarding the Unusual Event.

3.8 Continue to monitor and evaluate the conditions.

3.8.1 Determine whether personnel injuries have occurred.

Note: If no personnel injuries have been reported, go to Step 3.8.2.

\*3.8.1.1 Determine number of persons injured and their location.

\*3.8.1.2 Implement PEP-3.9.2, "First Aid and Medical Care."

\*3.8.1.3 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.

3.8.2 Determine whether off-normal conditions include fire.

Note: If no fire is detected, go to Step 3.8.3.

\*3.8.2.1 Determine location of fire, sound Fire Alarm and announce location using plant PA if not previously announced. Implement appropriate Fire Fighting Procedures.

Note: Fire Fighting Procedures are contained in Vol. XIX; Plant Operating Manual.

\*3.8.2.2 If fire is in potentially contaminated or radiation area, assign a member of the Plant Monitoring Team to monitor for radiation, contamination, and airborne activity at the scene of the fire, and advise the Fire Brigade Leader of any abnormal radiological conditions.

\*3.8.3 Using PEP-2.1, EXHIBIT 2.1-1, "Emergency Action Levels," compare plant conditions (observed or indicated parameters and conditions) with the EALs and confirm that an Unusual Event still applies, or reclassify the emergency.

-CAUTION-

DECLARATION OF THE HIGHEST EMERGENCY CLASS FOR WHICH AN EAL IS EXCEEDED SHOULD BE MADE.

- 3.8.3.1 If an EAL for a General Emergency is exceeded, implement PEP-2.5, "Emergency Control - General Emergency."
  - 3.8.3.2 If an EAL for a Site Emergency is exceeded, implement PEP-2.4, "Emergency Control - Site Emergency."
  - 3.8.3.3 If an EAL for an Alert is exceeded, implement PEP-2.3, "Emergency Control - Alert."
  - 3.8.3.4 If an EAL for an Unusual Event is still exceeded, continue to use this procedure.
  - 3.8.3.5 When plant conditions and parameters return to normal for the operating mode and the plant is in a safe condition, terminate the Unusual Event and restore plant access as appropriate.
- 3.9 Direct the Emergency Communicator to close out communications in accordance with PEP-3.1.1, "Follow-up Notifications and Communications."
- 3.10 General Position Changeover Procedure:
- 3.10.1 When assuming the Site Emergency Coordinator position, request a briefing on the emergency and emergency actions status from the previous position holder.
  - 3.10.2 When relinquishing the Site Emergency Coordinator position, brief your successor on the emergency and emergency actions status.
  - 3.10.3 Notify all appropriate personnel of your name, the position you are assuming, and the name of the person you replace.

EXHIBIT 2.2-1

IMMEDIATE NOTIFICATION INFORMATION - UNUSUAL EVENT

NOTE: Phone Numbers are in Appendix A

1. The following notification is (a) a drill message \_\_\_\_\_.  
(b) NOT a drill message \_\_\_\_\_.
2. An "Unusual Event" was declared at the H. B. Robinson Steam Electric Plant  
at \_\_\_\_\_ hours on \_\_\_\_/\_\_\_\_/\_\_\_\_.  
time date

3. This is \_\_\_\_\_, and my title is \_\_\_\_\_.  
(title)

Note: Item 3 may be omitted for notification by dedicated telephone or radiotelephone.

4. Please call me back at (telephone #) by telephone in order to verify receipt of this message if there is any question regarding the authenticity of this notification.

5. Nature of Incident (if known): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. There are no off-site areas or populations expected to be affected and no protective actions off site are recommended at this time.

7. A release to the environment: Has not occurred \_\_\_\_; Has occurred \_\_\_\_;  
Is occurring \_\_\_\_; May occur \_\_\_\_\_. (Explain: \_\_\_\_\_  
\_\_\_\_\_)

Completed Exhibit Approved for Release by Site Emergency Coordinator:

\_\_\_\_\_/\_\_\_\_\_  
initial time

Note: In the event of an Unusual Event, telecopy this completed message to Vice President of Nuclear Operations in Raleigh, NC.

EXHIBIT 2.2-2

IMMEDIATE NOTIFICATION CHECKLIST FOR AN UNUSUAL EVENT

Contact?	ORGANIZATION/INDIVIDUAL TO BE CONTACTED	TIME CONTACTED	TIME VERIFIED
X	Nuclear Regulatory Commission <sup>(1)</sup>		
X	State Bureau of Radiological Health <sup>(1)</sup>		
#	State Emergency Preparedness Division		
X	Corporate Headquarters		
#	Darlington County		
#	Chesterfield County		
#	Lee County		
#	Rescue Assistance		
#	Medical Assistance		
#	Fire-Fighting Assistance		
#	Westinghouse		
#	Ebasco		

KEY

X - Contact must be made.

# - Contact is optional: Site Emergency Coordinator will circle optional contacts to be made for the specific emergency.

Note: Do not notify state when loss of (1) one or more extensions of the Emergency Notification Systems (red phone) occurs.

Note: (1) Notification of the State Bureau of Radiological Health and NRC shall be made within sixty (60) minutes of the declaration of an Unusual Event.

Supplemental phone numbers are located in Appendix A.

EXHIBIT 2.2-3  
EMERGENCY ORGANIZATION NOTIFICATION CHECKLIST (Unusual Event)

KEY EMERGENCY PERSONNEL	Standby (√)	Activate (√)	Interim Assign- ment (Name)	Person Contacted
Primary Site Emergency Coordinator (Unit 2 Operations Supervisor/ On Call Supervisor)	√			
Primary Emergency Communicator	√			
Plant Operations Director	√			
Emergency Repair Director	√			
Logistics Support Director	√			
Radiological Control Director	√			
Environmental Monitoring Team Leader				
Plant Monitoring Team Leader				
Personnel Protection and Decontamination Team Leader				
Fire Brigade Leader (to be used for fire concurrent with declared emergency)				
Emergency Security Team Leader				
Emergency Response Manager				
Site Public Information Coordinator				
Representative at the Forward Emergency Operations Center				
Switchboard Operator (Plant Office Staff)				
OTHER PERSONNEL				
Name	Emergency Assignment			

Approved for release: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
initials      time      date



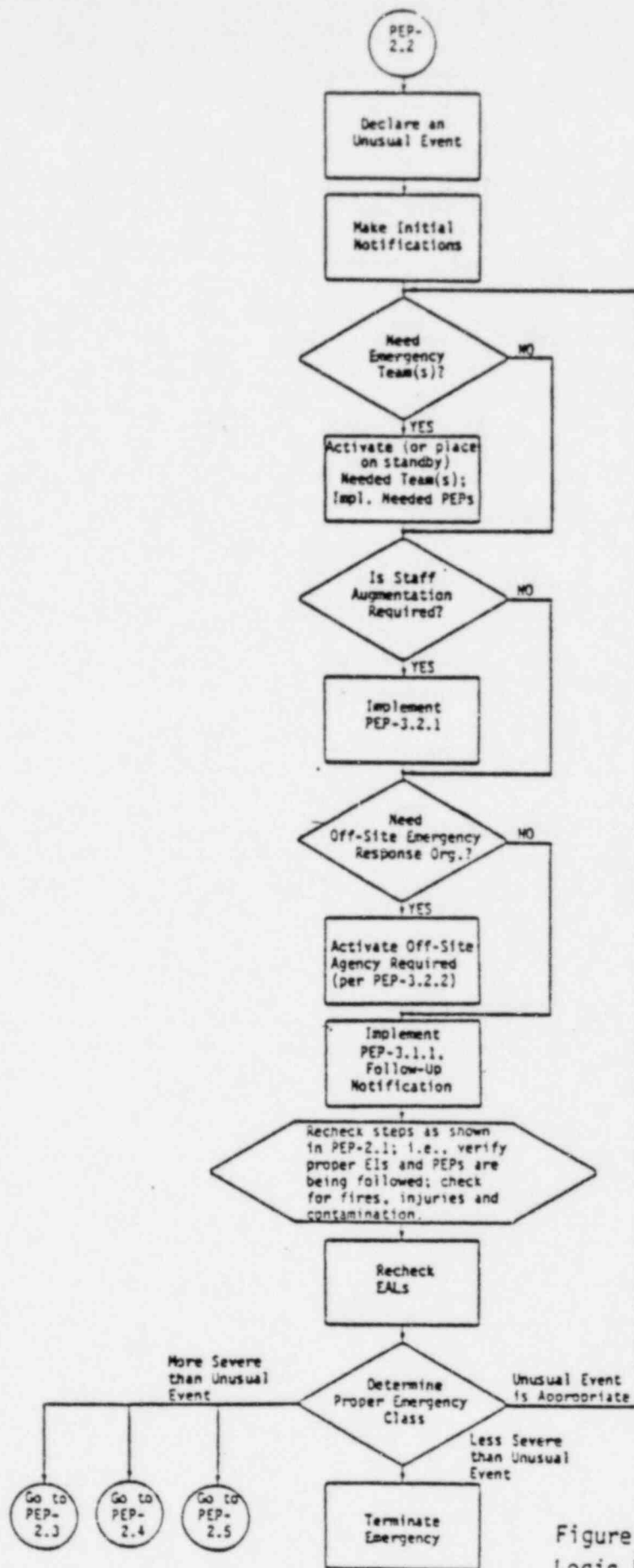


Figure 2.2-1  
Logic Flow Diagram for PEP-2.2



H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

EMERGENCY CONTROL - ALERT

PEP-2.3

REVISION 6

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *R. T. Connors*  
Emergency Planning Coordinator

7/1/82  
DATE

Approved By: *W. S. Stuber Jr*  
Plant General Manager

7/2/82  
DATE

PEP-2.3 EMERGENCY CONTROL - ALERT

1.0 Responsible Individuals and Objectives

1.1 The Site Emergency Coordinator is responsible for:

- 1.1.1 Directing and coordinating the combined activities of plant personnel in the Control Room and elsewhere on the site.
- 1.1.2 Coordinating the activation of the Technical Support Center.
- 1.1.3 Making the initial in-plant and off-site notifications.
- 1.1.4 Activating and issuing instructions to the Radiological Emergency Teams.
- 1.1.5 Activating and issuing instructions to additional Emergency Response Groups, as needed, and assuring that the appropriate procedures are being followed.
- 1.1.6 Requesting outside emergency response assistance, if required.
- 1.1.7 Augmenting the on-site shift personnel, if required.
- 1.1.8 Assessing the emergency condition for possible reclassification or termination.
- 1.1.9 Assigning an Emergency Communicator.

Note: Figure 2.3-1 (found at the end of this procedure) provides a Logic Flow Diagram of this procedure.

1.2 The Emergency Communicator is responsible to the Site Emergency Coordinator for:

- 1.2.1 Assisting in making the initial notifications.
- 1.2.2 Contacting needed off-duty personnel and requesting that they report to the site.
- 1.2.3 Contacting outside emergency response agencies, if required.
- 1.2.4 Documenting calls in accordance with PEP-3.1, "Communications Procedures."

1.3 Upon activation, the Emergency Response Manager is responsible for:

- 1.3.1 Providing liaison between the Site Emergency Coordinator and off-site support personnel (Corporate Headquarters, Corporate Spokesman, Media Team Leaders, state and federal agencies).

- 1.3.2 Coordinating off-site dose assessment.
- 1.3.3 Coordinating off-site environmental monitoring.
- 1.3.4 Coordinating off-site support as required to support the Site Emergency Coordinator.

## 2.0 Scope and Applicability

This procedure shall be implemented upon determination that an Emergency Action Level (EAL) for an "Alert" has been exceeded (per EXHIBIT 2.1-1 of PEP-2.1). The Shift Foreman may implement this procedure at his discretion. Once implemented, the position of Site Emergency Coordinator becomes activated until the emergency is terminated. This procedure shall remain in effect until either 1) the emergency is reclassified and the appropriate Emergency Control procedure is implemented, or 2) the emergency is terminated. The Site Emergency Coordinator has immediate and unilateral authority to carry out this procedure. The Site Emergency Coordinator may not delegate the responsibilities of: 1) making the decision as to what protective actions will be recommended to authorities responsible for off-site emergency measures, and 2) declaring the emergency terminated. However, if he so chooses, he may delegate other responsibilities to his emergency organizational units as necessary to expedite response to the emergency. The Emergency Response Manager and appropriate members of his staff may be activated to the Emergency Operations Facility if necessary.

## 3.0 Actions

Note: The following actions are sequenced and are based upon immediate classification as an "Alert." If actions indicated in this procedure have been initiated through use of other Emergency Control procedures (i.e., PEP-2.2, 2.4, 2.5) evaluate the need for repeating or augmenting the actions in this procedure.

- 3.1 "Alert" declared. Clear the communications channels of all non-emergency use.

\_\_\_\_\_ / \_\_\_\_\_  
initial                      time

Perform one of the three steps below (check box):

- 3.1.1 If on-site protective actions are deemed unnecessary, go to Step 3.2.
- 3.1.2 Sound Local Evacuation Alarm for 15 seconds and announce "Alert condition caused by (state plant conditions and any specific safety instructions)." IF the specific safety instructions include the evacuation of personnel from a plant location, recommend evacuation routes from plant area to the assembly area, also:
  - 3.1.2.1 Implement Section 3.1 of PEP-3.8.1, "Evacuation."
  - 3.1.2.2 Implement Section 3.1 of PEP-3.8.2, "Personnel Accountability."

3.1.2.3 Repeat all of Step 3.1.1.

[ ] 3.1.3 IF conditions warrant an increased degree of personnel accountability, declare an EMERGENCY ASSEMBLY, as follows:

3.1.3.1 Sound the Site Evacuation Alarm.

3.1.3.2 Announce "Emergency Assembly due to an Alert caused by (state plant conditions and any specific safety instructions)." Continue to sound the alarm for 2 minutes.

Note: If the parking lot is not the appropriate assembly area for non-emergency response personnel, announce an alternate location over the plant PA.

3.1.3.3 Implement Section 3.2 of PEP-3.8.1, "Evacuation."

3.1.3.4 Implement Section 3.2 of PEP-3.8.2, "Personnel Accountability."

3.1.3.5 Implement PEP-3.8.4, "Access Control."

3.1.3.6 Repeat the announcement in Step 3.1.2.2 upon silencing the alarm.

3.1.3.7 Activate the Operational Support Center once all personnel are accounted for.

Note: If the Maintenance Shop is not the appropriate location for the Operational Support Center, announce an alternate location over the plant PA.

3.2 Complete and approve for release EXHIBIT 2.3-1, "Immediate Notification Information - Alert."

3.3 Direct Emergency Communicator to transmit the information on EXHIBIT 2.3-1 to those persons and agencies identified in EXHIBIT 2.3-2, "Immediate Notification Checklist for Alert" as follows:

Note: The Emergency Communicator shall perform Steps 3.3.1 through 3.3.5. These notifications shall indicate that mobilization is NOT required except as needed by Steps 3.4 and 3.5 below.

Note: If the EOF has been activated, the Emergency Communicator will transmit the information on EXHIBIT 2.3-1, "Immediate Notification Information - Alert," to the Emergency Response Manager or his designated representative. The Emergency Response Manager, in coordination with the Site Emergency Coordinator, is then responsible to carry out steps 3.3.1 through 3.3.5.

3.3.1 Utilize EXHIBIT 2.3-2, "Immediate Notification Checklist for an Alert," to determine which organizations and individuals must be contacted. Request information from the Site Emergency Coordinator regarding which of the optional contacts should be made.

3.3.2 Contact the organizations and individuals as indicated in EXHIBIT 2.3-2.

Note: The proper telephone numbers and the specific individuals (including titles and alternates) to be contacted for each organization are contained in PEP-Appendix A, which shall be used in conjunction with this procedure.

3.3.3 Transmit the information contained in EXHIBIT 2.3-1 to each person contacted.

Note: The notification of Corporate Headquarters must specifically include a contact by the Primary Site Emergency Coordinator or his designated alternate with the Vice President - Nuclear Operations or his designated alternate.

3.3.4 If there is any question regarding the authenticity of the notification, request a verification call-back from the organization or individual contacted (unless contact is via a dedicated phone line or radiotelephone communication).

3.3.5 Report to the Site Emergency Coordinator when all Immediate Notifications are made and verified. \_\_\_\_\_ / \_\_\_\_\_  
initial time

3.4 Activate that portion of the Emergency Organization necessary to respond to the emergency.

Note: EXHIBIT 1.2-1 contains the Emergency Organization team assignments.

3.4.1 Fill out EXHIBIT 2.3-3, "Emergency Organization Notification Checklist (Alert)" to indicate the level of response required.

Note: Mandatory notifications are already checked.

3.4.2 Notify on-shift personnel of the emergency assignments. Personnel Notified: \_\_\_\_\_ / \_\_\_\_\_  
initials time

3.4.3 Activate Technical Support Center and notify appropriate Technical Support Group personnel.

3.4.4 If the Site Public Information Coordinator is activated, also activate the Plant Media Center.

- 3.4.5 If not already activated, consider activating the Emergency Operations Facility.
- 3.5 If the on-shift personnel must be augmented to properly respond to the emergency, or, if off-duty personnel need to be notified to stand by, give the completed EXHIBIT 2.3-3 to the Emergency Communicator and implement PEP-3.2.1, "Notification of Off-Duty Personnel." Check the appropriate box below:
- EXHIBIT 2.3-3 transferred and PEP-3.2.1 implemented.
- Current shift personnel adequate.
- 3.6 Determine need for outside agency assistance. If assistance is needed, direct Emergency Communicator to notify appropriate agency in accordance with PEP-3.2.2, "Mobilization of Outside Organizations and Personnel." If the Emergency Operations Facility has been activated, the Emergency Response Manager, in coordination with the Emergency Communicator, will ensure that PEP-3.2.2 is completed. Check appropriate box below:
- Assistance Requested: \_\_\_\_\_
- No Assistance Required
- 3.7 Direct the Emergency Communicator to initiate and complete PEP-3.1.1, "Follow-up Notification and Communications," for an Alert. If the Emergency Operations Facility has been activated, the Emergency Response Manager, in coordination with the Emergency Communicator, will ensure that PEP-3.1.1 is completed.
- 3.8 Continue to monitor and evaluate the conditions.
- 3.8.1 Determine whether personnel injuries have occurred.
- Note: If no personnel injuries have been reported, go to Step 3.8.2.
- 3.8.1.1 Determine number of persons injured and their location.
- 3.8.1.2 Implement PEP-3.9.2, "First Aid and Medical Care" or PEP-3.9.6, "Search and Rescue" when appropriate.
- 3.8.1.3 Determine whether injuries involve radioactive contamination.
- Note: If contamination is involved, ensure necessary precautions are taken in accordance with PEP-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.

3.8.2 Determine whether off-normal conditions include fire.

Note: If no fire is detected, go to Step 3.8.3.

3.8.2.1 Determine location of fire, sound Fire Alarm and announce location using plant PA if not previously announced. Implement appropriate Fire-Fighting Procedures.

Note: Fire Fighting Procedures are contained in Vol. XIX; Plant Operating Manual.

3.8.2.2 If fire is in potentially contaminated or radiation area, assign a member of the Plant Monitoring Team to monitor for radiation, contamination, and airborne activity at the scene of the fire. Advise the Fire Brigade Leader of any abnormal radiological conditions.

3.8.3 Using PEP-2.1, EXHIBIT 2.1-1, "Emergency Action Levels," compare plant conditions (observed or indicated parameters and conditions) with the EALs and confirm that an Alert still applies, or reclassify the emergency.

-CAUTION-

DECLARATION OF THE HIGHEST EMERGENCY CLASS FOR WHICH AN EAL IS EXCEEDED SHOULD BE MADE.

3.8.3.1 If an EAL for a General Emergency is exceeded, implement PEP-2.5, "Emergency Control - General Emergency."

3.8.3.2 If an EAL for a Site Emergency is exceeded, implement PEP-2.4, "Emergency Control - Site Emergency."

3.8.3.3 If an EAL for an Alert is still exceeded, continue to use this procedure.

3.8.3.4 If an EAL for an Unusual Event is exceeded, implement PEP-2.2, "Emergency Control - Unusual Event."

3.8.3.5 When plant conditions and parameters return to normal for the operating mode and the plant is in a safe condition, terminate the Alert and restore plant access as appropriate.  $\frac{\quad}{\text{initial}} / \frac{\quad}{\text{time}}$

3.9 If "Alert" condition is terminated, direct the Emergency Communicator to close out communications in accordance with PEP-3.1.1, "Follow-up Notifications and Communications." If the Emergency Operations Facility has been activated, the Emergency Response Manager, in coordination with the Emergency Communicator, will ensure that PEP-3.1.1 is completed.



3.10 General Position Changeover Procedure:

- 3.10.1 When assuming the Site Emergency Coordinator position, request a briefing on the emergency and emergency actions status from the previous position holder.
- 3.10.2 When relinquishing the Site Emergency Coordinator position, brief your successor on the emergency and emergency actions status.
- 3.10.3 Notify all appropriate personnel of your name, the position you are assuming, and the name of the person you replace.
- 3.10.4 After activation of the Emergency Operations Facility, the Site Emergency Coordinator will transfer the responsibility for off-site-related activities to the Emergency Response Manager.

EXHIBIT 2.3-1

IMMEDIATE NOTIFICATION INFORMATION - ALERT

NOTE: Phone Numbers are in Appendix A

1. The following notification is (a) a drill message \_\_\_\_\_.  
(b) NOT a drill message \_\_\_\_\_.
2. An "Alert" was declared at the H. B. Robinson Steam Electric Plant  
at \_\_\_\_\_ hours on \_\_\_\_/\_\_\_\_/\_\_\_\_.  
time date
3. This is \_\_\_\_\_, and my title is "Emergency Communicator."

Note: Item 3 may be omitted for notification by dedicated telephone  
or radiotelephone.

4. Please call me back at (telephone #) by telephone in order to verify  
receipt of this message if there is any question regarding the  
authenticity of this notification.

5. Nature of Incident (if known): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. There are no off-site areas or populations expected to be affected and no  
protective actions off site are recommended at this time.

7. A release to the environment: Has not occurred []; Has  
occurred []; Is occurring []; May occur [].  
(Explain: \_\_\_\_\_  
\_\_\_\_\_)

Completed EXHIBIT Approved for Release by Site Emergency Coordinator (or  
Emergency Response Manager if Emergency Operations Facility is activated).

\_\_\_\_\_/\_\_\_\_\_  
initial time

EXHIBIT 2.3-2

IMMEDIATE NOTIFICATION CHECKLIST FOR AN ALERT

Contact?	ORGANIZATION/INDIVIDUAL TO BE CONTACTED	TIME CONTACTED	TIME VERIFIED
X	Nuclear Regulatory Commission (2)		
X	State Bureau of Radiological Health (1)		
#	State Emergency Preparedness Div.		
X	Corporate Headquarters (2)		
#	Darlington County		
#	Chesterfield County		
#	Lee County		
#	Rescue Assistance		
#	Medical Assistance		
#	Fire-Fighting Assistance		
#	Westinghouse		
#	Ebasco		
X	INPO		

KEY

- X - Contact must be made
- # - Contact is optional: Site Emergency Coordinator (or Emergency Response Manager if Emergency Operations Facility is activated) will circle optional contacts to be made for the specific emergency.
- (1) - Notification of these agencies shall be made within fifteen (15) minutes from the time the declaration of an "Alert."
- (2) - Notification of these agencies should be made immediately after notification to the state but no later than sixty (60) minutes.

EXHIBIT 2.3-3  
EMERGENCY ORGANIZATION NOTIFICATION CHECKLIST (Alert)

KEY EMERGENCY PERSONNEL	STANDBY (√)	ACTIVATE (√)	INTERIM ASSIGN- MENT (NAME)	PERSON CONTACTED
Primary Site Emergency Coordinator (Unit 2 Operations Supervisor/ On Call Supervisor)		√		
Primary Emergency Communicator		√		
Plant Operations Director		√		
Emergency Repair Director		√		
Logistics Support Director		√		
Radiological Control Director		√		
Environmental Monitoring Team Leader		√		
Plant Monitoring Team Leader		√		
Personnel Protection and Decontamination Team Leader		√		
Fire Brigade Leader (to be used for fire concurrent with declared emergency)				
Emergency Security Team Leader		√		
Emergency Response Manager	√			
Site Public Information Coordinator	√			
Representative at the Forward Emergency Operations Center	√			
Switchboard Operator (Plant Office Staff)		√		
<b>OTHER PERSONNEL</b>				
Name	Emergency Assignment			
Senior Specialist - Emergency Planning	Set up TSC			
Engineering Technician - Emergency Planning	Set up TSC			
Principal Engineer - On-Site Nuclear Safety	Set up EOF			
Project Specialist - QA/QC	Set up EOF			

Approved for release: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
initials      time      date

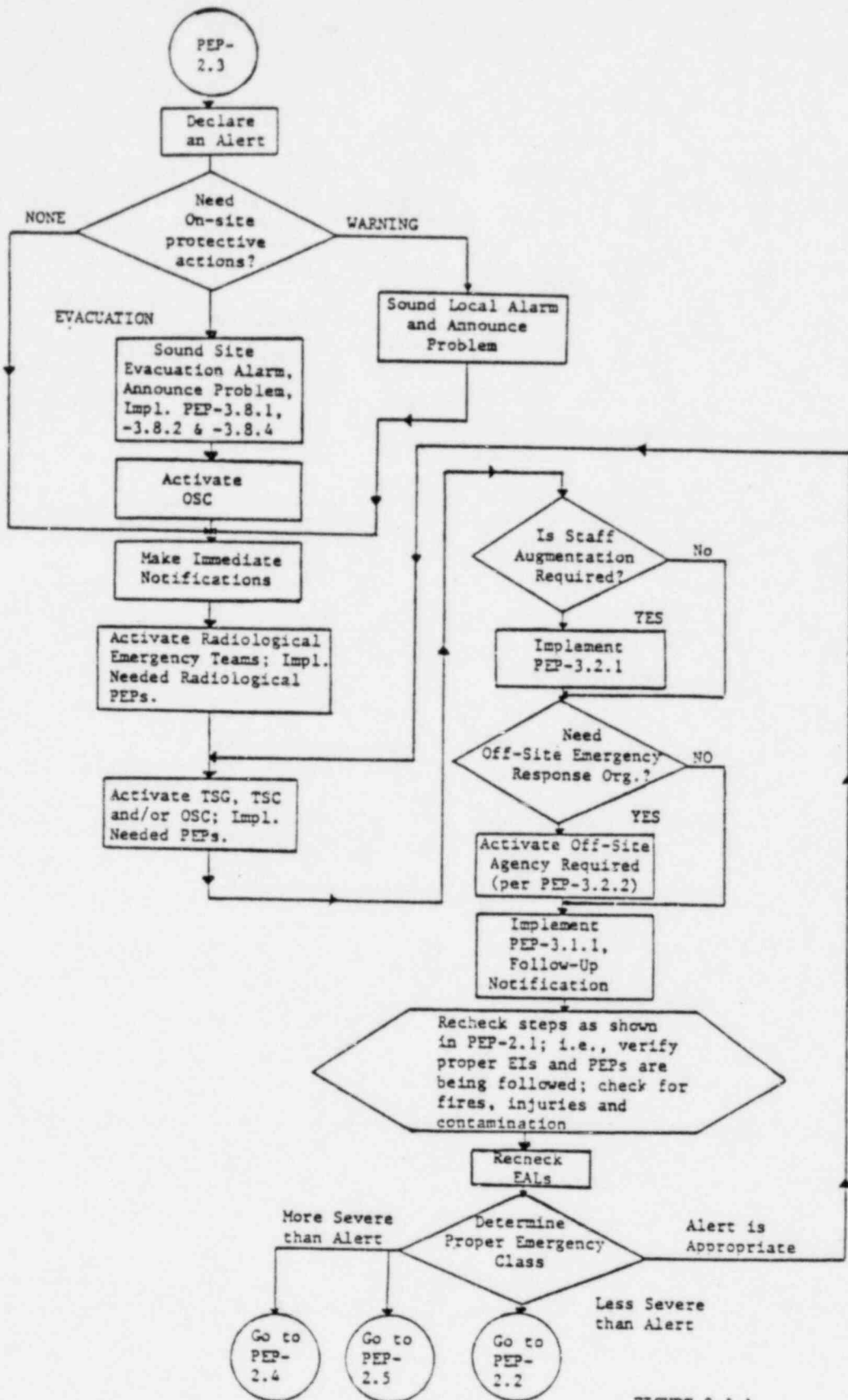


FIGURE 2.3-1  
Logic Flow Diagram for PEP-2.3



H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

EMERGENCY CONTROL - SITE EMERGENCY

PEP-2.4

REVISION 6

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *R. S. Conner*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *W. S. ...*  
Plant General Manager

7/2/82  
DATE

PEP-2.4 EMERGENCY CONTROL - SITE EMERGENCY

1.0 Responsible Individuals and Objectives

1.1 The Site Emergency Coordinator is responsible for:

- 1.1.1 Directing and coordinating the combined activities of plant personnel in the Control Room, the Technical Support Center, the Operational Support Center, the Plant Media Center, and elsewhere on the site.
- 1.1.2 Making the initial in-plant notifications.
- 1.1.3 Activating and issuing instructions to the Radiological Emergency Teams and the Technical Support Group.
- 1.1.4 Activating and issuing instructions to additional Emergency Teams, as needed, and assessing that the appropriate procedures are being followed.
- 1.1.5 Requesting outside emergency response assistance, if required.
- 1.1.6 Augmenting the on-site shift personnel.
- 1.1.7 Assessing the emergency condition for possible reclassification or termination.
- 1.1.8 Making the immediate off-site notifications prior to activation of the Emergency Operations Facility.
- 1.1.9 Assigning an Emergency Communicator

Note: Figure 2.4-1 (found at the end of this procedure) provides a Logic Flow Diagram of this procedure.

1.2 The Emergency Communicator is responsible to the Site Emergency Coordinator for:

- 1.2.1 Assisting in making the initial notifications.
- 1.2.2 Contacting needed off-duty personnel and requesting that they report to the site.
- 1.2.3 Contacting outside emergency response agencies, if required, prior to Emergency Response Facility Activation.
- 1.2.4 Documenting calls in accordance with PEP-3.1 "Communications Procedures."

1.3 Upon activation, the Emergency Response Manager is responsible for:

- 1.3.1 Providing liaison between the Site Emergency Coordinator and off-site support personnel (Corporate Headquarters,

Corporate Spokesman, Media Team Leaders, state and federal agencies).

- 1.3.2 Coordinating off-site dose assessment.
- 1.3.3 Coordinating off-site environmental monitoring.
- 1.3.4 Coordinating off-site support as required to support the Site Emergency Coordinator.

## 2.0 Scope and Applicability

This procedure shall be implemented upon determination that an EAL for a "Site Emergency" has been exceeded per EXHIBIT 2.1-1 of PEP-2.1. The Shift Foreman may also implement this procedure at his discretion. Once implemented, the position of Site Emergency Coordinator becomes activated until the emergency is terminated. This procedure shall remain in effect until either 1) the emergency is reclassified and the appropriate Emergency Control procedure is implemented, or 2) the emergency is terminated. The Site Emergency Coordinator has immediate and unilateral authority to carry out this procedure. The Site Emergency Coordinator may not delegate the responsibilities of: (1) making the decision as to what protective actions are to be recommended to authorities responsible for off-site emergency measures, and (2) declaring the emergency terminated. However, if he so chooses, he may delegate other responsibilities to his emergency organizational units as necessary to expedite response to the emergency. The Emergency Response Manager and appropriate members of his staff will be activated to the Emergency Operations Facility.

## 3.0 Actions

Note: The following actions are sequenced and are based upon immediate classification as a "Site Emergency." If actions indicated in this procedure have been initiated through use of other Emergency Control procedures (i.e., PEP-2.2, 2.3, 2.5) evaluate the need for repeating or augmenting the action in this procedure.

- 3.1 "Site Emergency" declared. Clear the communications channels of all non-emergency use.  $\frac{\quad}{\text{initial}} / \frac{\quad}{\text{time}}$

Perform one of the three steps below (check box):

- 3.1.1 Sound the Local Evacuation Alarm for 15 seconds and Announce "Site Emergency caused by (state plant conditions and any specific safety instructions)." IF the specific safety instructions include the evacuation of personnel from a plant location, recommend evacuation routes from plant area to the assembly area, also:
  - 3.1.1.1 Implement Section 3.1 of PEP 3.8.1, "Evacuation."
  - 3.1.1.2 Implement Section 3.1 of PEP-3.8.2, "Personnel Accountability."



3.1.1.3 Repeat all of Step 3.1.1.

[ ] 3.1.2 IF conditions warrant an increased degree of personnel accountability, declare an EMERGENCY ASSEMBLY, as follows:

3.1.2.1 Sound the Site Evacuation Alarm for 15 seconds.

3.1.2.2 Announce "Emergency Assembly due to Site Emergency caused by (state plant conditions and any specific safety instructions)." Continue to sound the alarm for 2 minutes.

Note: If the parking lot is not the appropriate assembly area for non-emergency response personnel, announce an alternate location over the plant public address system (PA).

3.1.2.3 Implement Section 3.2 of PEP-3.8.1, "Evacuation.

3.1.2.4 Implement Section 3.2 of PEP-3.8.2, "Personnel Accountability."

3.1.2.5 Implement PEP-3.8.4, "Access Control."

3.1.2.6 Repeat the announcement in Step 3.1.2.2 upon silencing the alarm.

3.1.2.7 Activate the Operational Support Center once all personnel are accounted for.

Note: If the Maintenance Shop is not the appropriate location for the Operational Support Center, announce an alternate location over the plant PA.

[ ] 3.1.3 IF conditions warrant an evacuation of the site, declare a Site Evacuation as follows:

3.1.3.1 Sound the Site Evacuation Alarm for 2 minutes.

3.1.3.2 Announce "Site Evacuation."

Note: If the parking lot is not the appropriate assembly area for non-emergency response personnel, announce an alternate location over the plant PA.

3.1.3.3 Implement Section 3.3 of PEP-3.8-1, "Evacuation."

3.1.3.4 Implement Section 3.2 of PEP-3.8-2, "Personnel Accountability."

3.1.3.5 Implement PEP-3.8.4, "Access Control."

3.1.3.6 Activate the Operational Support Center once all personnel are accounted for.

Note: If the Maintenance Shop is not the appropriate location for the Operational Support Center, announce an alternate location over the plant PA.

3.2 Complete items 1, 4, 5, 6, and 7 of EXHIBIT 2.4-1, "Immediate Notification Information - Site Emergency" (if known).

3.3 Direct Emergency Communicator to transmit the information on EXHIBIT 2.4-1 to those persons and agencies identified in EXHIBIT 2.4-2, "Immediate Notification Checklist for a Site Emergency."

Note: The Emergency Communicator shall perform Steps 3.3.1 through 3.3.7. These notifications should indicate that mobilization and activation is required for a Site Emergency. Also, the need to start the public notification process must be determined based on initial dose projections and emergency prognosis.

If the EOF has been activated, the Emergency Communicator will transmit the information on Exhibit 2.4-1 "Immediate Notification Information - Site Emergency," to the Emergency Response Manager. The Emergency Response Manager, in coordination with the Site Emergency Coordinator, is then responsible to carry out Steps 3.3.1 through 3.3.5.

3.3.1 Complete any missing information on EXHIBIT 2.4-1, "Immediate Notification Information - Site Emergency."

3.3.2 Have the Site Emergency Coordinator review and approve EXHIBIT 2.4-1 prior to transmittal.

3.3.3 Utilize EXHIBIT 2.4-2, "Immediate Notification Checklist for a Site Emergency," to determine which organizations and individuals must be contacted. Request information from the Site Emergency Coordinator regarding which of the optional contacts should be made.

3.3.4 Contact the organizations and individuals as indicated in EXHIBIT 2.4-2.

Note: The individuals (including titles and alternates) to be contacted for each organization are contained in PEP-Appendix A, which shall be used in conjunction with this procedure.

3.3.5 Transmit the information contained in EXHIBIT 2.4-1 to each person contacted.

Note: The notification of Corporate Headquarters must specifically include a contact by the Primary Site Emergency Coordinator or his designated alternate with the Vice President - Nuclear Operations or his designated alternate.

3.3.6 If there is any question regarding the authenticity of the notification, request a verification call-back from the organization or individual contacted (unless contact is via a dedicated phone line or radiotelephone).

3.3.7 Report to the Site Emergency Coordinator when all Immediate Notifications are made and verified.

\_\_\_\_\_/\_\_\_\_\_  
initial time

3.4 Activate those portions of the Emergency Organization necessary to respond to the Emergency.

Note: EXHIBIT 1.2-1 contains the Emergency Organization team assignments.

3.4.1 Fill out EXHIBIT 2.4-3, "Emergency Organization Notification Checklist (Site Emergency)" to indicate the level of response required.

Note: Mandatory notifications are already checked.

3.4.2 Notify on-shift personnel of the emergency assignments.  
Personnel Notified: \_\_\_\_\_/\_\_\_\_\_

initials time

3.4.3 Activate the Technical Support Center and the Operations Support Center, if not already done.

3.4.4 Activate the Plant Media Center.

3.4.5 Activate the Emergency Operations Facility.

3.5 If the on-shift personnel must be augmented to properly respond to the emergency or, if off-duty personnel need to be notified to stand by, give the completed EXHIBIT 2.4-3 to the Emergency Communicator and implement PEP-3.2-1, "Notification of Off-Duty Personnel." Check the appropriate box below:

EXHIBIT 2.4-3 transferred and PEP-3.2.1 implemented.

Current shift personnel adequate.

3.6 Determine need for outside agency assistance. If assistance is needed, direct Emergency Communicator to notify appropriate agency in accordance with PEP-3.2.2, "Mobilization of Outside Organizations and Personnel." If the Emergency Operations Facility has been activated, the Emergency Response Manager, in coordination with the

Emergency Communicator, will ensure that PEP-3.1.1 is completed.  
Check appropriate box below:

Assistance Requested: \_\_\_\_\_

No Assistance Required.

- 3.7 Direct the Emergency Communicator to initiate and complete PEP-3.1.1, "Follow-up Notification and Communications," for a Site Emergency. If the EOF has been activated, the Emergency Response Manager will ensure that PEP-3.1.1 is completed.

PEP-3.1.1 Initiated: \_\_\_\_\_ / \_\_\_\_\_  
initial time

- 3.8 Continue to monitor and evaluate the Site Emergency Conditions.

- 3.8.1 Determine whether personnel injuries have occurred.

Note: If no personnel injuries have been reported, go to Step 3.8.2.

- 3.8.1.1 Determine number of persons injured and their location.

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

- 3.8.1.3 Determine whether injuries involve radioactive contamination.

Note: If contamination is involved, ensure appropriate precautions are taken in accordance with PEP-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.

- 3.8.2 Determine whether off-normal conditions include fire.

Note: If no fire is detected, go to Step 3.8.3.

- 3.8.2.1 Determine location of fire, sound Fire Alarm and announce location using plant PA if not previously announced. Implement appropriate Fire-Fighting Procedures.

Note: Fire-Fighting Procedures are contained in Vol. XIX; Plant Operating Manual.

- 3.8.2.2 If fire is in potentially contaminated or radiation area, assign a member of the Plant Monitoring Team to

monitor at the scene of the fire. Advise the Fire Brigade Leader of any abnormal radiological conditions.

- 3.8.3 Using PEP-2.1, EXHIBIT 2.1-1, "Emergency Action Levels", compare plant conditions (observed or indicated parameters and conditions) with the EALs and confirm that a Site Emergency still applies, or reclassify the emergency.

-CAUTION-

DECLARATION OF THE HIGHEST EMERGENCY CLASS FOR WHICH AN EAL IS EXCEEDED SHALL BE MADE.

- 3.8.3.1 If an EAL for a General Emergency is exceeded, implement PEP-2.5, "Emergency Control - General Emergency."
- 3.8.3.2 If an EAL for a Site Emergency is still exceeded, continue to use this procedure.
- 3.8.3.3 If an EAL for an Alert is exceeded, implement PEP-2.3, "Emergency Control - Alert."
- 3.8.3.4 If an EAL for an Unusual Event is exceeded, implement PEP-2.2, "Emergency Control - Unusual Event."
- 3.8.3.5 When plant conditions and parameters return to normal for the operating mode and the plant is in a safe condition, terminate the Site Emergency and restore plant access as appropriate. \_\_\_\_\_/\_\_\_\_\_  
initial time
- 3.9 If "Site Emergency" condition is terminated, direct the Emergency Communicator to close out communications in accordance with PEP-3.1.1, "Follow-up Notifications and Communications." If the Emergency Operations Facility has been activated, the Emergency Response Manager, in coordination with the Emergency Communicator, will ensure that PEP-3.1.1 is completed.

3.10 General Position Changeover Procedure:

- 3.10.1 When assuming the Site Emergency Coordinator position, request a briefing on the emergency and emergency actions status from the previous position holder.
- 3.10.2 When relinquishing the Site Emergency Coordinator position, brief your successor on the emergency and emergency actions status.
- 3.10.3 Notify all appropriate personnel of your name, the position you are assuming, and the name of the person you replace.
- 3.10.4 After activation of the Emergency Operations Facility, the Site Emergency Coordinator will transfer the responsibility for off-site-related activities to the Emergency Response Manager.

EXHIBIT 2.4-1

IMMEDIATE NOTIFICATION INFORMATION - SITE EMERGENCY

NOTE: Phone Numbers are in Appendix A

1. The following notification is (a) a drill message \_\_\_\_\_.  
(b) NOT a drill message \_\_\_\_\_.
2. A "Site Emergency" was declared at the H. B. Robinson Steam Electric Plant  
at \_\_\_\_\_ hours on \_\_\_\_/\_\_\_\_/\_\_\_\_.  
time date

3. My name is \_\_\_\_\_, and my title is "Emergency Communicator."

Note: Item 3 may be omitted for notification by dedicated telephone line or radiotelephone.

4. Please call me back at (telephone #) by telephone in order to verify receipt of this message if there is any question regarding the authenticity of this notification.

5. Nature of Incident (if known): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. A release to the off-site environment: Has not occurred []; Has occurred []; Is occurring []; May occur []. (Explain: \_\_\_\_\_  
\_\_\_\_\_)

7. Projected Dose Rates and Integrated Dose (using PEP-3.4.1, "Initial Off-Site Dose Projections").

Location	Sector/Zone	Dose Rate (rem/hr)	Dose (rem)	
			W. B.	Thyroid Adult
Site Boundary				
2 miles				
5 miles				
10 miles				

EXHIBIT 2.4-1 (continued)

Locations where off-site areas or populations may be affected  
(Sector/Zone/downwind distance): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8. Recommended Protective Actions Off Site:

None recommended at this time

Recommend that initial public notification begin in locations mentioned in 6 above

Other Recommended Actions  
(see EXHIBIT 2.5-4 of PEP-2.5): \_\_\_\_\_

EXHIBIT Completed by Emergency Communicator:

\_\_\_\_\_/\_\_\_\_\_  
initial time

Completed EXHIBIT Approved for Release by  
Site Emergency Coordinator  
(or Emergency Response Manager  
if Emergency Operations Facility  
is activated).

\_\_\_\_\_/\_\_\_\_\_  
initial time

EXHIBIT 2.4-2

IMMEDIATE NOTIFICATION CHECKLIST FOR A SITE EMERGENCY

Contact?	ORGANIZATION/INDIVIDUAL TO BE CONTACTED	TIME CONTACTED	TIME VERIFIED
X	Nuclear Regulatory Commission (2)		
X	State Bureau of Radiological Health (1)		
#	State Emergency Preparedness Div.		
X	Corporate Headquarters (2)		
#	Darlington County		
#	Chesterfield County		
#	Lee County		
#	Rescue Assistance		
#	Medical Assistance		
#	Fire-Fighting Assistance		
#	Westinghouse		
#	Ebasco		
X	INPO		

KEY

- X - Contact must be made
- # - Contact is optional: Site Emergency Coordinator (or Emergency Response Manager if Emergency Operations Facility is activated) will circle optional contacts to be made for the specific emergency.
- (1) - Notification of the State Bureau of Radiological Health shall be made within fifteen (15) minutes from the time of the declaration of a "Site Emergency."
- (2) - Notification of these agencies shall be made immediately after notification of the state but no later than sixty (60) minutes.



EXHIBIT 2.4-3  
EMERGENCY ORGANIZATION NOTIFICATION CHECKLIST (SITE EMERGENCY)

KEY EMERGENCY PERSONNEL	STANDBY ( √ )	ACTIVATE ( √ )	INTERIM ASSIGN- MENT (NAME)	PERSON CONTACTED
Primary Site Emergency Coordinator (Unit 2 Operations Supervisor/ on Call Supervisor)		√		
Primary Emergency Communicator		√		
Plant Operations Director		√		
Emergency Repair Director		√		
Logistics Support Director		√		
Radiological Control Director		√		
Environmental Monitoring Team Leader		√		
Plant Monitoring Team Leader		√		
Personnel Protection and Decontamination Team Leader		√		
Fire Brigade Leader (to be used for fire concurrent with declared emergency)		√		
Emergency Security Team Leader		√		
Emergency Response Manager		√		
Site Public Information Coordinator		√		
Representative at the Forward Emergency Operations Center		√		
Switchboard Operator (Plant Office Staff)		√		
OTHER PERSONNEL				
Name	Emergency Assignment			
Senior Specialist - Emergency Planning	Set up TSC			
Engineering Technician - Emergency Planning	Set up TSC			
Principal Engineer - On-Site Nuclear Safety	Set up EOF			
Project Specialist - QA/QC	Set up EOF			

Approved for release: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
initials      time      date

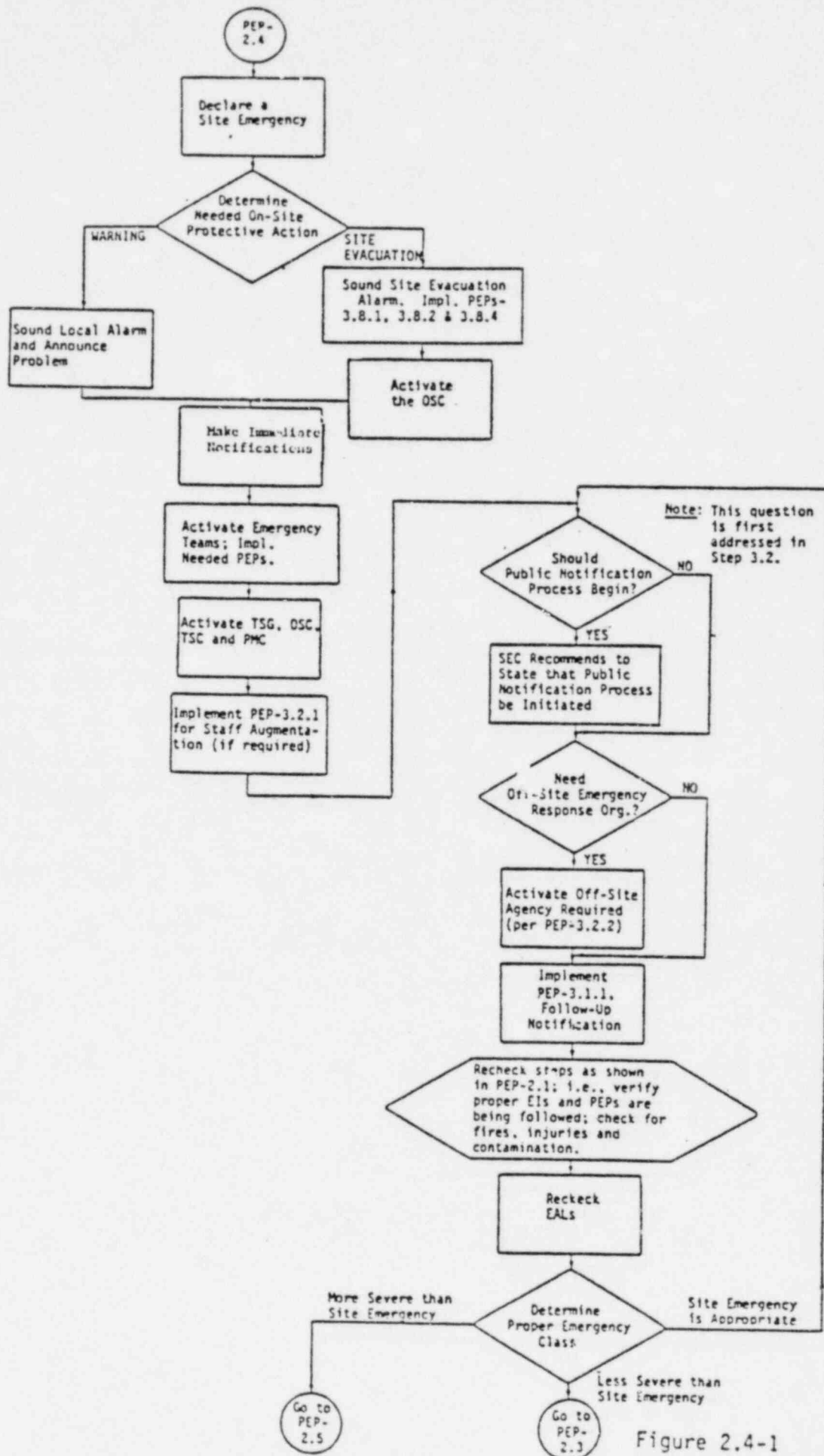


Figure 2.4-1  
Logic Flow Diagram for PEP-2.4



H. B. ROBINSON  
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TITLE

EMERGENCY PLAN AND PROCEDURES

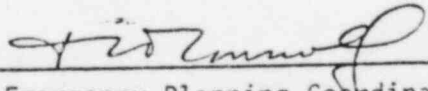
VOLUME 13

EMERGENCY CONTROL - GENERAL EMERGENCY

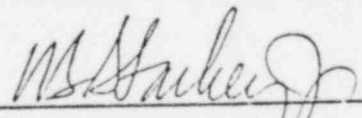
PEP-2.5

REVISION 6

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By:   
Emergency Planning Coordinator

7-1-82  
DATE

Approved By:   
Plant General Manager

7/2/82  
DATE

PEP-2.5 EMERGENCY CONTROL - GENERAL EMERGENCY

1.0 Responsible Individuals and Objectives

1.1 The Site Emergency Coordinator is responsible for:

- 1.1.1 Directing and coordinating the combined activities of plant personnel in the Control Room, the Technical Support Center, the Operational Support Center, the Plant Media Center, and elsewhere on the site.
- 1.1.2 Making the initial in-plant and off-site notifications. Once activated, the Emergency Operations Facility will make all necessary off-site notifications.
- 1.1.3 Activating and issuing instructions to the Radiological Emergency Teams and the Technical Support Group.
- 1.1.4 Activating and issuing instructions to additional Emergency Teams, as needed, and assessing that the appropriate procedures are being followed.
- 1.1.5 Requesting outside emergency response assistance, if required.
- 1.1.6 Augmenting the on-site shift personnel.
- 1.1.7 Assessing the emergency condition for possible reclassification or termination.
- 1.1.8 Assigning an Emergency Communicator.

Note: Figure 2.5-1 provides a Logic Flow Diagram of this procedure.

1.2 The Emergency Communicator is responsible to the Site Emergency Coordinator for:

- 1.2.1 Assisting in making the initial notifications.
- 1.2.2 Contacting needed off-duty personnel and requesting that they report to the site.
- 1.2.3 Contacting outside emergency response agencies, if required, prior to Emergency Operations Facility activation.
- 1.2.4 Documenting calls in accordance with PEP Section 3.1, "Communications Procedures."

1.3 Upon activation, the Emergency Response Manager is responsible for:

- 1.3.1 Providing liaison between the Site Emergency Coordinator and off-site support personnel (Corporate Headquarters,

Corporate Spokesman, Media Team Leaders, state and federal agencies).

- 1.3.2 Coordinating off-site dose assessment.
- 1.3.3 Coordinating off-site environmental monitoring.
- 1.3.4 Coordinating off-site support, as required, to support the Site Emergency Coordinator.

## 2.0 Scope and Applicability

This procedure shall be implemented upon determination that an Emergency Action Level (EAL) for a "General Emergency" has been exceeded per EXHIBIT 2.1-1, "Emergency Action Levels," of PEP-2.1. The Shift Foreman may also implement this procedure at his discretion based on his evaluation of plant conditions. Once implemented, the position of Site Emergency Coordinator becomes activated until the emergency is terminated. This procedure shall remain in effect until either 1) the emergency is reclassified and the appropriate Emergency Control procedure is implemented, or 2) the emergency is terminated. The Site Emergency Coordinator has immediate and unilateral authority to carry out this procedure. The Site Emergency Coordinator shall not delegate the responsibilities of: (1) making the decision as to what protective actions are to be recommended to authorities responsible for off-site emergency measures, and (2) declaring the emergency terminated. However, if he so chooses, he may delegate other responsibilities to his emergency organizational units as necessary to expedite response to the emergency. The Emergency Response Manager and appropriate members of his staff will be activated to the Emergency Operations Facility.

## 3.0 Actions

Note: The following actions are sequenced and are based upon immediate classification as a "General Emergency." If actions indicated in this procedure have been initiated through use of other Emergency Control procedures (i.e., PEP-2.2, 2.3, 2.4) evaluate the need for repeating or augmenting the action in this procedure.

- 3.1 "General Emergency" declared. Clear the communications channels of all non-emergency use.  $\frac{\quad}{\text{initial time}}$

Perform one of the two steps below (check box):

- 3.1.1 Sound the Site Evacuation Alarm for 15 seconds and announce "Emergency Assembly due to a General Emergency caused by (state plant conditions and needed specific safety instructions including recommended evacuation routes from the plant area to the assembly area)." Continue to sound the alarm for 2 minutes and then repeat the announcement.
- 3.1.2 Sound the Site Evacuation Alarm for 2 minutes and then announce "Site Evacuation."

EXHIBIT 2.5-3

EMERGENCY ORGANIZATION NOTIFICATION CHECKLIST (GENERAL EMERGENCY)

KEY EMERGENCY PERSONNEL	STANDBY ( √ )	ACTIVATE ( √ )	INTERIM ASSIGNMENT	PERSON CONTACTED
Primary Site Emergency Coordinator (Unit 2 Operations Supervisor/ On Call Supervisor)		√		
Primary Emergency Communicator		√		
Plant Operations Director		√		
Emergency Repair Director		√		
Logistics Support Director		√		
Radiological Control Director		√		
Environmental Monitoring Team Leader		√		
Plant Monitoring Team Leader		√		
Personnel Protection and Decontamination Team Leader		√		
Fire Brigade Leader (to be used for fire concurrent with declared emergency)				
Emergency Security Team Leader		√		
Emergency Response Manager		√		
Site Public Information Coordinator		√		
Representative at the Forward Emergency Operations Center		√		
Switchboard Operator (Plant Office Staff)		√		
OTHER PERSONNEL				

NAME	EMERGENCY ASSIGNMENT
Senior Specialist - Emergency Planning	Set up TSC
Principal Engineer - On-Site Nuclear Safety	Set up EOF
Project Specialist - QA/QC	Set up EOF

Approved for release: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
initials time date

EXHIBIT 2.5-5

IMMEDIATE NOTIFICATION OF COUNTIES

THIS EXHIBIT IS FOR IMMEDIATE NOTIFICATION OF THE COUNTY WARNING POINTS IN CASES WHERE A GENERAL EMERGENCY IS DECLARED BEFORE THE STATE FORWARD EMERGENCY OPERATIONS CENTER CAN BE ESTABLISHED. (OTHERWISE, THE COUNTIES WOULD BE NOTIFIED BY THE STATE.) THE FORMAT IS ONE THAT WILL BE EXPECTED BY THE COUNTY OFFICIAL AT THE WARNING POINT.

1. This is \_\_\_\_\_ and my title is Emergency Communicator.  
(name)

2a. \_\_\_\_\_ THIS IS A DRILL, or

2b. \_\_\_\_\_ THIS IS NOT A DRILL.

3. I am notifying you of an accident at the H.B. Robinson Nuclear Station, which occurred at: \_\_\_\_\_ / \_\_\_\_\_  
(time) (date)

4. The classification of the Emergency is "General Emergency."

5. The initiating event causing the emergency classification is: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. The Emergency Condition: (Select the appropriate below listed options.)

a. \_\_\_\_\_ Does not involve the release of radioactive materials from the plant nor does it involve the public.

b. \_\_\_\_\_ Involves the POTENTIAL for the release of radioactive materials but NO radioactive materials have been released.

c. \_\_\_\_\_ Does involve the release of some radioactive material from the plant at a level at which the following PROTECTIVE ACTION IS ADVISABLE:

(1) \_\_\_\_\_ People living within Zone(s) \_\_\_\_\_ around the plant remain indoors with doors and windows closed. These zones are in a \_\_\_\_\_ direction from the plant out to a radius of \_\_\_\_\_ Miles.

EXHIBIT 2.5-5 (cont.)

IMMEDIATE NOTIFICATION OF COUNTIES

(2) \_\_\_\_\_ People living in Zone(s) \_\_\_\_\_  
EVACUATE their homes and businesses. These  
Zones are in a \_\_\_\_\_ direction from the  
plant out to a radius of \_\_\_\_\_ Miles. We  
urge people to leave their homes or businesses  
in a safe orderly manner and report to their  
designated RECEPTION CENTER(s).

7. Relay this report to the appropriate Emergency Preparedness Coordinator.





H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

PLANT OPERATIONS DIRECTOR

PEP-2.6.1

REVISION 3

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *T. J. Zinn*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *H. B. Robinson*  
Plant General Manager

7/2/82  
DATE

- 3.6 Provide technical and administrative direction to the Fire Brigade should a fire occur during an emergency, or if a fire has become secondary due to other plant conditions.
- 3.7 Advise the Site Emergency Coordinator on the effects of a fire on Safe Shutdown equipment and/or the success of fire fighting attempts. Recommend additional equipment/personnel as necessary.
- 3.8 Designate individuals to transmit data from the Control Room to the Technical Support Center. (Effective until computer system for data transmitted is incorporated.)
- 3.9 Request support from the Technical Analysis Manager, as necessary, after the Emergency Operations Facility is activated.
- 3.10 Upon termination of an emergency, collect all team logs and pertinent exhibits and deliver to the Emergency Planning Coordinator.



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SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

EMERGENCY REPAIR DIRECTOR

PEP-2.6.2

REVISION 4

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *T. J. Conwell*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *W. B. Robinson*  
Plant General Manager

7/2/82  
DATE

- 3.2.4 Identify and document the tools and equipment required to complete the mission on EXHIBIT 2.6.2-1, especially regarding items that would not normally be found in a mechanic's or electrician's tool box. If the mission requires entry into or through a hazardous area, ensure that any required protective gear and dosimetry is identified and documented.
- 3.2.5 Define preferred and alternate ingress and egress routes. Attach marked up maps or plant drawings showing such routes, if necessary.
- 3.2.6 Review, modify, or write any procedure(s) to be used for the mission in light of current conditions. EXHIBIT 2.6.2-2, "Emergency Damage Control Procedure Checklist" provides a list of essential elements for any procedure used during an emergency.
- 3.2.7 Ensure that the mission itself and any special or modified procedures are reviewed and approved, as indicated on EXHIBIT 2.6.2-1.
- Note: Q/A review may be deferred until after the mission.
- 3.2.8 Brief the Damage Control Team on their mission.
- 3.2.9 Direct the Damage Control Team to carry out a dry run of the mission, if such is deemed necessary as determined through the review and approval process.
- 3.2.10 Direct the Damage Control Team to carry out their mission in accordance with PEP-3.10, "Damage Control Activities" and in accordance with the procedure(s) developed in Step 3.2.6 above.

\*3.3 Special Contamination Control Measures

Whenever the actual repair of damaged equipment is not practical or feasible during the course of a declared emergency, or following a severe plant contamination, the approach in Step 3.2 may be used to develop a "Contamination Control" mission.

Examples of such a mission are:

- 1) Isolation of the offending system, subsystem or component.
- 2) Manually assuring containment isolation.
- 3) Isolation of a severely contaminated room, including HVAC, access and piping.
- 4) Performance of radiological clean-up operations.

- 5) Addition of  $\text{Na}_2\text{SO}_3$  to pools and drains.
- 6) Pumping of spills to proper radwaste system.
- 7) Contingency for dealing with exceeding the capacity of plant radwaste system.

Note: Ensure that all contamination control activities are documented in the Emergency Repair Director's Log.

\*3.4 Installation of Special Structures, Systems and Components

Whenever the installation of special structures, systems and components is required during the course of a declared emergency, the approach in Step 3.2 may be used to develop an "Installation" mission.

Examples of such a mission are:

- 1) Installation of a backup hydrogen recombiner.
- 2) Installation of additional radwaste cleanup systems.
- 3) Construction of temporary shield walls.

Note: Ensure that all installation activities are documented in the Emergency Repair Director's log.

- 3.5 Upon termination of an emergency, collect all team logs and pertinent exhibits and deliver to the Emergency Planning Coordinator.



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TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

LOGISTICS SUPPORT DIRECTOR

PEP-2.6.3

REVISION 4

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: T. T. Connolly  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: [Signature]  
Plant General Manager

7/2/82  
DATE

- 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 proper use of communications equipment (per PEP-3.1.3, "Use of Communications Equipment").
- 3.1.8 Ensure exposure control is in accordance with PEP-3.7.1, "Emergency Work Permits and Exposure Control" (i.e., Special Radiation Work Permits shall be completed when required).
- 3.2 Designate an Evacuation Assembly Area Leader upon notification of an Emergency Assembly or a Site Evacuation.
- 3.3 Upon its activation, render the Technical Support Center operational by:
- 3.3.1 Checking that Technical Support Center computer is operational. (1)
- 3.3.2 Checking that Technical Support Center radiation monitors are operational (check source).
- 3.4 Upon its activation, prepare the Plant Media Center by directing Visitor's Center personnel to install telephones, and to set up conference area with necessary tables, etc.

---

(1) Once installed.

- 3.5 Upon the decision to activate the Emergency Operations Facility, prepare the Emergency Operations Facility by directing appropriate personnel to set up necessary tables, phones, visual aids, supplies, etc, as described in PEP-3.2.3, "Activation of the Technical Support Center (TSC)/Emergency Operations Facility (EOF).
- 3.6 Arrange for an alternate training facility should the permanent training center become inaccessible.
- 3.7 When the provision of PEP-Section 3.2 ("Augmentation and Mobilization Procedures") are not adequate for meeting personnel needs:
  - 3.7.1 Arrange for additional personnel, upon a Technical Support Group member's request. (See EXHIBIT 2.6.3-1, "Personnel Resources").
  - 3.7.2 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.
- 3.8 Arrange for additional equipment, upon a Technical Support Group member's request. (See EXHIBIT 2.6.3-2, "Equipment Resources Requests").
- 3.9 Arrange for additional services, as required. (See EXHIBIT 2.6.3-3, "Additional Services").
- 3.10 Provide new and/or modified contracts for services to be procured.
- 3.11 Ensure Communications Equipment is used to support the emergency and that all non-emergency communications are terminated.
- 3.12 Coordinate with the Administrative and Logistics Manager as required after the Emergency Operations Facility is activated.
- 3.13 Upon termination of an emergency, collect all logs and pertinent exhibits and deliver to the Emergency Planning Coordinator.





H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

REPRESENTATIVE AT THE FORWARD EMERGENCY

OPERATIONS CENTER

PEP-2.6.5

REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *J. J. Ennel*  
Emergency Planning Coordinator

7-1-2  
DATE

Approved By: *W. S. Anderson*  
Plant General Manager

7/2/82  
DATE

- Key decisions
- Data collected
- Checklists

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

- 3.1.6 Ensure proper use of communications equipment (per PEP-3.1.3, "Use of Communications Equipment").
- 3.2 Relay Emergency Response Manager's recommendations for protective actions off site to agency representatives at the Forward Emergency Operations Center.
- 3.3 Confirm that copies of emergency procedures dealing with environmental monitoring and analysis are available for inspection and review in the Forward Emergency Operations Center.
- 3.4 Provide copies of and describe 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 (as, for example, may result from use of different types of TLD's and different methods of reading TLD's).
- 3.5 Where requested, coordinate arrangements for analysis of replicate samples.
- 3.6 Upon termination of an emergency, collect all logs and pertinent exhibits and deliver to the Emergency Planning Coordinator.



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SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

ENVIRONMENTAL MONITORING TEAM LEADER

PEP-2.6.6

REVISION 3

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *T. T. Connolly*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *W. S. [Signature]*  
Plant General Manager

7/2/82  
DATE

during the period when the Environmental Monitoring Team is performing surveys.

- 3.3.4 Provide the results of initial environmental surveys to the Dose Assessment Coordinator.
  - 3.3.5 Advise the Radiological Control Director (the Radiological Control Manager after Emergency Operations Facility activation) of the results of the comparisons of initial survey readings and dose projections.
  - 3.3.6 Silver zeolite cartridges should be used for radiological monitoring and ionization chambers must be used to monitor and track a radioactive plume. GM type instruments (i.e. micro R meter) may be used for initial locations of the plume when needed for sensitivity purposes.
  - 3.3.7 Ensure sufficient sample volumes are corrected to detect  $10^{-7}$   $\mu\text{Ci/cc}$  radiiodine utilizing curves in PEP-3.5.1, "Confirmation of Initial Off-site Dose Projections." A ten-minute air sample will meet that detectability.
- 3.4 Guidelines for Expanded Environmental Monitoring (per PEP-3.5.2)
- 3.4.1 Direct the Environmental Monitoring Team to replace existing TLD's, beginning with the TLD's downwind of the plume.
  - 3.4.2 Direct the placement of additional TLD's approximately every 10 meters along the exclusion area fence in the sector within plus or minus  $22.5^{\circ}$  of the plume centerline (a total sampling area of  $45^{\circ}$ ).
  - 3.4.3 Direct the initiation of the expanded environmental monitoring program based on the release conditions (e.g., water, and benthic organisms, etc. for liquid releases; grass and milk samples where radiiodine has been released).
  - 3.4.4 When increased sampling for lengthy periods is to occur, arrange for transportation of samples to the mobile laboratory or other locations as directed by the Radiological Control Director.
- 3.5 Upon termination of an emergency, collect all team logs and pertinent exhibits and deliver to the Radiological Control Director.



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TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

PLANT MONITORING TEAM LEADER

PEP-2.6.7

REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *[Signature]*  
Emergency Planning Coordinator

7-1-87  
DATE

Approved By: *[Signature]*  
Plant General Manager

7/7/87  
DATE

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

- 3.1.7 Ensure proper use of communications equipment (per PEP-3.1.3, "Use of Communications Equipment").
  - 3.1.8 Ensure exposure control is in accordance with PEP-3.7.1, "Emergency Work Permits and Exposure Control" (i.e, Special Radiation Work Permits shall be completed).
- 3.2 Assign personnel to perform Plant Monitoring procedures as directed by the Radiological Control Director.

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

- 3.2.1 Support of source term calculations needed for initial dose projection when radiation monitor(s) is inoperable.
  - 3.2.2 Inplant surveys to calculate initial source/dose. (PEP-3.3.1, "In-Plant Monitoring and Surveys").
  - 3.2.3 Accompany initial Damage Control Team(s) entering hazardous area (PEP-3.3.1).
  - 3.2.4 Accompany subsequent reentry teams (PEP-3.3.1).
  - 3.2.5 Sample collection in plant (PEP-3.3.1, - 3.3.3, "Collection of Very High Level Radioactive Samples").
  - 3.2.6 Sample Analyses (PEP-3.3.4, "Analysis of Very High Level Radioactive Samples").
  - 3.2.7 Distribution of TLD's and routine surveys (PEP-3.3.1, - 3.3.2, "On-Site Monitoring and Surveys", and - 3.7.1).
  - 3.2.8 Other missions as required (interface with Personnel Protection and Decontamination Team Leader and Environmental Monitoring Team Leader).
- 3.3 Guidelines for Entry Missions for Data Collection and/or Accompanying Other Personnel.

3.3.1 For each monitoring assignment, brief the team members on the following:

- 3.3.1.1 monitoring and sample collection location(s);
- 3.3.1.2 required data;
- 3.3.1.3 anticipated radiological conditions;
- 3.3.1.4 required protective gear and dosimetry;

- 3.3.1.5 primary and alternate ingress/egress routes;
- 3.3.1.6 maximum stay times and radiation field limitations requiring special authorization.
- 3.3.2 Ensure each group of team members on a given mission has the following:
  - 3.3.2.1 proper monitoring and communications equipment;
  - 3.3.2.2 copy of pertinent procedures (especially PEP-3.3 series);
  - 3.3.2.3 maps/drawings marked up to show monitoring/sample collection points and ingress/egress routes;
  - 3.3.2.4 outline of the mission. Consider the following:
    - (1) Designated valves or doors to open and close to retrieve samples.
    - (2) Dilution or purge requirements to obtain specified sample.
    - (3) Collection times and/or sample sizes.
    - (4) Labeling of samples and data to be recorded
    - (5) Location and alternate location for analysis.
    - (6) Filters, charcoal cartridges and fixed air samplers to be collected.
    - (7) Process and effluent liquid samples (e.g., waste processing system) to be taken.
    - (8) Reactor Coolant System and Containment Air Samples to be taken.
    - (9) Gaseous effluent samples to be taken.
  - 3.3.2.5 Any special equipment required to contain and/or transport the sample.
- 3.3.3 Ensure each team member on a given mission has the following:
  - 3.3.3.1 a Special Radiation Work Permit (if one is required);
  - 3.3.3.2 proper dosimetry and protective gear.

CAUTION: ASSESS THE APPLICABILITY OF PEP-3.3.3, "COLLECTION OF VERY HIGH LEVEL RADIOACTIVE SAMPLES" TO EACH SAMPLE COLLECTION ACTIVITY.

### 3.4 Guidelines for Sample Analysis

- 3.4.1 Brief the team members on the emergency situation, stressing the need for them to be on the lookout for off-normal radiological conditions during this analysis activity.
- 3.4.2 Ensure that a portion of each aliquot is saved, marked and set aside for possible independent analysis elsewhere.
- 3.4.3 Ensure that samples are not de-gassed, unless specifically called for by the Radiological Control Director and unless precautions to minimize contamination of the sample room have been taken.
- 3.4.4 Inform team member(s) of any required deviations from routine analysis procedures.

CAUTION: ASSESS THE APPLICABILITY OF PEP-3.3.4, "ANALYSIS OF VERY HIGH LEVEL RADIOACTIVE SAMPLES" TO EACH SAMPLE ANALYSIS ACTIVITY.

- 3.4.5 Outline the required analysis. Consider the following:
  - (1) The specific lab equipment and protective gear requirements and locations.
  - (2) Handling precautions and disposal techniques (PEP-3.3.3, "Collection of Very High Level Radioactive Samples").
  - (3) Specific data to be obtained (form of results).
  - (4) Persons to whom results must be communicated, in addition to the Radiological Control Director.

- 3.5 Upon termination of an emergency, collect all team logs and pertinent exhibits and deliver to the Radiological Control Director.





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SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

PERSONNEL PROTECTION AND DECONTAMINATION TEAM LEADER

PEP-2.6.8

REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *H. B. Robinson*  
Emergency Planning Coordinator

7-1-2  
DATE

Approved By: *W. S. ...*  
Plant General Manager

7/2/82  
DATE

- 3.2.6 Accompanying reentry personnel (PEP-3.8.1, "Evacuation").
- 3.3 Guidelines for entry missions and/or accompanying other personnel into or through hazardous areas.
  - 3.3.1 For each entry assignment, brief the team members on the following:
    - 3.3.1.1 monitoring and sample collection location(s);
    - 3.3.1.2 required data;
    - 3.3.1.3 anticipated radiological conditions;
    - 3.3.1.4 required protective gear and dosimetry;
    - 3.3.1.5 primary and alternate ingress/egress routes;
    - 3.3.1.6 radiation field limitations requiring special authorization.
  - 3.3.2 Ensure each group of team members on a given mission has the following:
    - 3.3.2.1 proper monitoring and communications equipment;
    - 3.3.2.2 copy of pertinent procedures;
    - 3.3.2.3 maps/drawings marked up to show monitoring/sample collection points and ingress/egress routes, if necessary;
    - 3.3.2.4 outline of the mission (e.g., (1) take a sample outside Auxiliary Building, (2) collect sample cartridges from stack monitor, etc.).
  - 3.3.3 Ensure each team member on a given mission has the following:
    - 3.3.3.1 a Special Radiation Work Permit (if one is required);
    - 3.3.3.2 proper dosimetry and protective gear.
- 3.4 Assignments other than entry missions:
  - 3.4.1 Provide guidance and direction to team members for each mission, and ensure that they have, or obtain:
    - 3.4.1.1 A copy of pertinent procedures;
    - 3.4.1.2 Equipment required to properly carry out the mission;
    - 3.4.1.3 Proper communications equipment.

- 3.5.4 Provide guidance and direction for all team members upon request (for situations not specifically addressed in the PEPs).
- 3.6 Upon termination of an emergency, collect all team logs and pertinent exhibits and deliver to the Radiological Control Director.



H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

EMERGENCY SECURITY TEAM LEADER

PEP-2.6.10

REVISION 3

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: TRC Linnell  
Emergency Planning Coordinator

7-1-2  
DATE

Approved By: MS Hickey  
Plant General Manager

7/2/82  
DATE

- 3.3.3 Names and affiliations of individuals requested to come to the site.
- 3.4 Distribute assignments listed in 3.2 above among team members.
- 3.5 Collect "Emergency Accountability" forms (EXHIBIT 3.8.2-1) from Emergency Assembly Area Leader.
- 3.6 Report the names and last known locations of missing persons to the Site Emergency Coordinator in accordance with PEP-3.8.2.
- Note: Accountability of all personnel shall be reported to the Site Emergency Coordinator within 30 minutes of a declared Site or General Emergency.
- 3.7 For a Site Evacuation, designate Emergency Security Team Member(s) to search out the areas outside the controlled area and on Lake Robinson within the 1400 ft. radius exclusion area in accordance with PEP-3.8.2, Step 3.2.5.
- Note: If manpower is limited, the S.C. Marine and Wildlife Resources Department may ensure evacuation of Lake Robinson and the local law enforcement agencies should be called upon to assist as conditions warrant.
- 3.8 Coordinating with the Administrative and Logistics Manager as necessary, ensure that participating Law Enforcement Agencies are instructed to allow access to CP&L employees and other individuals requested to come to the site.
- 3.9 Upon termination of an emergency, collect all team logs and pertinent exhibits and deliver to the Logistics Support Director.



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EMERGENCY PLAN AND PROCEDURES

VOLUME 13

DAMAGE CONTROL TEAM LEADER

PEP-2.6.11

REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *H. B. Robinson*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *MS [Signature]*  
Plant General Manager

7/2/82  
DATE

3.6 Follow the procedures outlined in EXHIBIT 2.6.2-1 (including ingress and egress routes) unless deviations are authorized.

Note: Authorizations for repair, maintenance, installation, and clean-up deviations shall be received from the Emergency Repair Director, or his designee, with the following exceptions:

- 1) Life-saving actions (which should take precedence);
- 2) Immediate personnel health and safety precautions (e.g., fire, steam leak, etc.).

3.7 Upon termination of an emergency, collect all team logs and pertinent exhibits and deliver to the Emergency Repair Director.



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EMERGENCY PLAN AND PROCEDURES

VOLUME 13

OPERATIONAL SUPPORT CENTER LEADER/EVACUATION

ASSEMBLY AREA LEADER

PEP-2.6.12

REVISION 4

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *[Signature]*  
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Plant General Manager

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DATE



PEP-2.6.12 OPERATIONAL SUPPORT CENTER LEADER/EVACUATION ASSEMBLY AREA LEADER

1.0 Responsibilities and Objectives

1.1 The Operational Support Center Leader is responsible to the Emergency Repair Director for:

- 1.1.1 Reporting to the the Site Emergency Coordinator from the Operational Support Center following an Emergency Assembly or a Site Evacuation.
- 1.1.2 Providing liaison with the Emergency Security Team so that personnel accountability can be maintained.
- 1.1.3 Coordinating the activities of the Operational Support Center.

1.2 The Evacuation Assembly Area Leader is responsible to the Logistics Support Director for:

- 1.2.1 Reporting to the Site Emergency Coordinator from the designated assembly area following an Emergency Assembly or a Site Evacuation.
- 1.2.2 Providing liaison with the Emergency Security Team so that personnel accountability can be maintained.
- 1.2.3 Coordinating the activities of the Assembly Area.

2.0 Scope and Applicability

This procedure shall be implemented upon the activation of the Operational Support Center or upon declaration of an Emergency Assembly or Site Evacuation.

3.0 Actions and Limitations

3.1 General Activities:

- 3.1.1 Report your position and readiness to the Emergency Repair Director and Logistics Support Director, respectively.
- 3.1.2 Announce your name and assumed position title to all team members.
- 3.1.3 Report to the Emergency Security Team Leader for accountability (per PEP-3.8.2, "Personnel Accountability").
- 3.1.4 Determine need for additional equipment, supplies and manpower and make request for same.

- 3.1.5 A. When assuming the Operational Support Center Leader/ Emergency Assembly Area Leader position, request a briefing on the emergency and emergency actions status from the previous position holder.
- B. When relinquishing your 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 documentation of the following:

- Communications
- Key decisions
- Data collected
- Checklists

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

3.1.7 Ensure proper use of communications equipment (per PEP-3.1.3, "Use of Communications Equipment").

### 3.2 Actions of the Operational Support Center Leader

3.2.1 Activate the Operational Support Center by verifying communications with the Control Room and the Technical Support Center.

3.2.2 Process new arrivals at the Operational Support Center by accomplishing the following:

3.2.2.1 Log in all individuals, including their names, arrival times, and technical or area of expertise on EXHIBIT 2.5.12-1, "OSC Personnel Log."

3.2.2.2 Brief arrivals on the plant situation.

3.2.2.3 Contact arrivals' respective team leaders to announce their arrival and to relay their assignments.

Note: Prior to releasing emergency teams for their assignments, contact security to allow for unrestricted access into Unit 2.

3.2.2.4 Log arrivals' transfer out of the Operational Support Center to their respective teams on EXHIBIT 2.6.12-1.

3.2.2.5 Upon termination of an emergency, collect all team logs and pertinent exhibits and deliver to the Emergency Repair Director.

### 3.3 Actions of the Emergency Assembly Area Leader

- 3.3.1 Direct all non-essential plant personnel to the Primary Assembly Area (or alternate assembly area, as directed by the Personnel Protection and Decontamination Team Leader or the Site Emergency Coordinator).
- 3.3.2 Distribute "Emergency Accountability" forms (PEP-3.8.2 "Personnel Accountability", EXHIBIT 3.8.2-1) to work group supervisors, team leaders/directors.
- 3.3.3 Instruct work group supervisors at assembly area per directions from Site Emergency Coordinator/Radiological Control Director/Personnel Protection and Decontamination Team or Security as to needed evacuation, evacuation routes, frisking-monitoring, accountability, etc.
- 3.3.4 Collect completed "Emergency Accountability" forms within 15 minutes subsequent to their distribution.
- 3.3.5 Submit completed "Emergency Accountability" forms to Emergency Security Team Leader.
- 3.3.6 Upon termination of an emergency, collect all team logs and pertinent exhibits and deliver to the Logistics Support Director.



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EMERGENCY PLAN AND PROCEDURES

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SITE PUBLIC INFORMATION COORDINATOR

PEP-2.6.13

REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *[Signature]*  
Emergency Planning Coordinator

7-1-2  
DATE

Approved By: *[Signature]*  
Plant General Manager

7/2/82  
DATE

- B. When relinquishing your 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.
- 3.1.7 Ensure proper use of communications equipment (per PEP-3.1.3, "Use of Communications Equipment").
- 3.2 Direct the activities of the Plant Media Center.
- 3.3 Present information about the emergency and its potential effects to the media in a forthright, credible manner.
- 3.4 Coordinate all news activities with the Corporate Spokesman, and with media representatives from federal, state, and local agencies involved in the emergency.
- 3.5 Respond to news inquiries and provide appropriate background information to reporters.
- 3.6 Arrange for interviews with individuals qualified to speak on various subjects.
- 3.7 Arrange for tours of the site and reasonable access to the site for photographic purposes, by obtaining explicit permission from the Site Emergency Coordinator.
- 3.8 Upon termination of an emergency, collect all team logs and pertinent exhibits and deliver to the Emergency Planning Coordinator.



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SITE COMMUNICATIONS SYSTEMS COORDINATOR  
PEP-2.6.14  
REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: R. T. Connolly  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: MS [Signature]  
Plant General Manager

7/2/82  
DATE

- 3.3 Assist in the expansion effort by requisitioning additional equipment through the Logistics Support Director.
- 3.4 Provide general liaison and support necessary for expediting the efforts of the Corporate Systems Communications Coordinator (Administrative and Logistics Manager after Emergency Operations Facility activation).
- 3.5 Upon termination of an emergency, collect all logs and pertinent exhibits and deliver to the Logistics Support Director.



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SUPPORT SERVICES COORDINATOR

PEP-2.6.15

REVISION 2

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Recommend By: *R. T. Conwell*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *Mr. Stanley J.*  
Plant General Manager

7/2/82  
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- 3.5 Report receipt of requisitioned items to Corporate Operations Coordinator (Administrative and Logistics Manager after the Emergency Operations Facility activation).
- 3.6 Upon termination of an emergency, collect all logs and pertinent exhibits and deliver to the Logistics Support Director.



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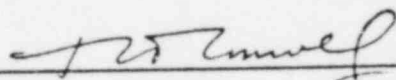
VOLUME 13

EMERGENCY RESPONSE MANAGER

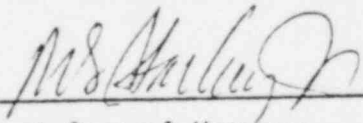
PEP-2.6.16

REVISION 1

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Emergency Planning Coordinator

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Approved By:   
Plant General Manager

7/2/82  
DATE

- 3.1.6
  - A. When assuming the Emergency Response Manager position, request a briefing on the emergency and emergency actions status from the previous position holder. Note completion of this step in the Emergency Response Manager's log.
  - B. When relinquishing the Emergency Response Manager position, brief your successor on the emergency and emergency actions status. Note completion of this step in the Emergency Response Manager'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 Emergency Response Manager's log.
- 3.1.7 Ensure proper use of communications equipment (per PEP-3.1.3, "Use of Communications Equipment").
- 3.2 Activate members of the Emergency Operations Facility Group in coordination with the Site Emergency Coordinator and the Corporate Emergency Operations Center.
- 3.3 Assist the Site Emergency Coordinator by marshalling off-site support.
- 3.4 Coordinate with local and state agencies to keep them informed of on-site activities on a timely basis and provide support for any off-site protective actions required during the emergency.
- 3.5 Upon termination of an emergency, collect all logs and pertinent exhibits and deliver to the Emergency Planning Coordinator.



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ADMINISTRATIVE AND LOGISTICS MANAGER

PEP-2.6.17

REVISION 1

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *T. J. [Signature]*  
Emergency Planning Coordinator

7-1-7  
DATE

Approved By: *W. S. [Signature]*  
Plant General Manager

7/2/82  
DATE

- B. When relinquishing the Administrative and Logistics Manager position, brief your successor on the emergency and emergency actions status. Note completion of this step in the Administrative and Logistics Manager'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 Administrative and Logistics Manager's log.
- 3.1.7 Ensure proper use of communications equipment (per PEP-3.1.3, "Use of Communications Equipment").
  - 3.2 Establish and maintain a cost control/accounting system during the emergency.
  - 3.3 Provide logistics arrangements for support personnel called in to assist the emergency operation.
  - 3.4 Provide assistance to the Logistics Support Director as requested during emergency.
  - 3.5 Prepare an inventory of materials, supplies, and equipment that may be needed and locate potential supplies.
  - 3.6 Provide liaison between the Emergency Response Manager and the Legal Department.
  - 3.7 Upon termination of an emergency, collect all logs and pertinent exhibits and deliver to the Emergency Planning Coordinator.



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VOLUME 13

TECHNICAL ANALYSIS MANAGER  
PEP-2.6.18  
REVISION 1

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Recommend By: *Pat Connors*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *Mr. Stuber*  
Plant General Manager

7/2/82  
DATE

PEP-2.6.18 TECHNICAL ANALYSIS MANAGER

1.0 Responsible Individuals and Objectives

The Technical Analysis Manager is responsible to the Emergency Response Manager for:

- 1.1 Coordinating technical information coming from the Technical Support Center and supplying the Emergency Response Manager with an assessment of the emergency.
- 1.2 Providing interface for the Emergency Response Manager to consultants, regulatory agencies, architect-engineers, and Westinghouse.

2.0 Scope and Applicability

This procedure shall be implemented upon activation of the Emergency Operations Facility Group. The actions and responsibilities are limited to the Technical Analysis Manager and those emergency team members assigned to him.

3.0 Actions and Limitations

3.1 General Activities

- 3.1.1 Report your position and readiness to the Emergency Response Manager.
- 3.1.2 Announce your name and assumed position title to all team leaders that report to you and to other personnel in the Emergency Operations Facility.
- 3.1.3 Ensure that all personnel actively assigned to you are accounted for at all times.
- 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 Technical Analysis Manager'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 Technical Analysis Manager position, request a briefing on the emergency and emergency actions status from the previous position holder. Note completion of this step in the Technical Analysis Manager's log.

- B. When relinquishing the Technical Analysis Manager position, brief your successor on the emergency and emergency actions status. Note completion of this step in the Technical Analysis Manager'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 Technical Analysis Manager's log.
- 3.1.7 Ensure proper use of communications equipment (per PEP-3.1.3, "Use of Communications Equipment").
- 3.2 Provide support to the Emergency Response Manager in coordinating technical information coming from the Technical Support Center.
- 3.3 Provide technical interface as authorized by the Emergency Response Manager to utility groups, consultants, technical investigations groups, and regulatory groups.
- 3.4 Provide assistance to the appropriate groups in the Technical Support Center.
- 3.5 Upon termination of an emergency, collect all logs and pertinent exhibits and deliver to the Emergency Planning Coordinator.





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RADIOLOGICAL CONTROL MANAGER  
PEP-2.6.19  
REVISION 1

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *T. T. Umwel*  
Emergency Planning Coordinator

7-1-7  
DATE

Approved By: *M. S. Robinson*  
Plant General Manager

7/2/82  
DATE

emergency actions status. Note completion of this step in the Radiological Control Manager'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 Radiological Control Manager's log.

- 3.1.7 Ensure proper use of communications equipment (per PEP-3.1.3, "Use of Communications Equipment").
- 3.2 When fully staffed, assume responsibility for off-site radiological and environmental assessment from the Radiological Control Director in the Technical Support Center.
- 3.3 Provide assistance to the Radiological Control Director as required.
- 3.4 Provide off-site monitoring of radioactive effluents.
- 3.5 Recommend to the Emergency Response Manager protective actions necessary to protect public health and safety.
- 3.6 Upon termination of an emergency, collect all team logs and pertinent exhibits and deliver to the Emergency Planning Coordinator.



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EMERGENCY PLAN AND PROCEDURES

VOLUME 13

FOLLOW-UP NOTIFICATIONS AND COMMUNICATIONS

PEP-3.1.1

REVISION 3

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *T. J. Conroy*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *W. S. Staley Jr.*  
Plant General Manager

7/2/82  
DATE

PEP-3.1.1 FOLLOW-UP NOTIFICATIONS AND COMMUNICATIONS

1.0 Responsible Individual and Objectives

Until the Emergency Operations Facility is activated, the Emergency Communicator is responsible to the Site Emergency Coordinator for providing follow-up information regarding the emergency. After the Emergency Operations Facility is activated, the Emergency Response Manager, in coordination with the Emergency Coordinator, is responsible to provide required follow-up information to off-site agencies.

2.0 Scope and Applicability

This procedure shall be implemented and terminated by the Site Emergency Coordinator in accordance with the Emergency Control Procedure in effect (i.e., PEP-2.2, 2.3, 2.4 or 2.5). This procedure should not be implemented until all immediate notifications have been verified except as directed by the Site Emergency Coordinator. (Emergency Response Manager after the Emergency Operations Facility is activated.)

3.0 Actions

3.1 Complete EXHIBIT 3.1.1-1, "Follow-up Communications Information Sheet." If an item is unknown or not applicable, indicate such on the EXHIBIT.

Note: The information sources for the various items are as follows:

<u>Item #(s)</u>	<u>Source</u>
2, 3, 18	Emergency Communicator
1, 4, 10, 11, 17	Site Emergency Coordinator
12, 13, 14, 15, 16	Radiological Control Director
5, 6, 7, 8, 9	Control Operator or Plant Operations Director (The Emergency Response Manager after the Emergency Operations Facility is activated)

3.2 Have the Site Emergency Coordinator review and approve EXHIBIT 3.1.1-1 prior to transmittal.

3.3 Make follow-up notifications

3.3.1 Utilize EXHIBIT 3.1.1-2, "Follow-up Communications Checklist," to determine which organizations and individuals must be contacted for the level of emergency that is currently applicable.

3.3.2 Request from the Site Emergency Coordinator (the Emergency Response Manager after the Emergency Operations Facility is activated) which of the optional contacts should be made.

3.3.3 Contact the organizations/individuals as indicated in EXHIBIT 3.1.1-2.

Note: The specific individuals (including titles and alternates) to be contacted for each organization are contained in PEP-Appendix A.

3.3.4 Transmit the information contained in EXHIBIT 3.1.1-1 to each person contacted.

Note: Items 7 through 9 and 11 through 17 are not required to be transmitted to local agencies and organizations.

3.3.5 Record any questions (whose answers are not contained in EXHIBIT 3.1.1-1 as completed) on EXHIBIT 3.1.1-3, "Follow-up Communications Question Log."

3.3.6 Request a verification call-back from organizations or individuals not previously contacted during the immediate notification phase (PEP-2.2,-.2.3,-.2.4 or-2.5) if there is any question regarding the authenticity of the notification.

3.4 Respond to open questions.

3.4.1 Once all follow-up notifications have been made, per Step 3.3 above, collect answers to any open questions on EXHIBIT 3.1.1-3, "Follow-up Communications Question Log."

Note: Include the source(s) of each answer. The Site Emergency Coordinator is available to assist in obtaining answers to all questions.

3.4.2 Transmit answers to appropriate contact and document transmittal in EXHIBIT 3.1.1-3.

3.5 When the Site Emergency Coordinator has declared the emergency terminated, so inform each organization and individual contacted during the course of the emergency, including personnel requested to standby and all personnel on site.

EXHIBIT 3.1.1-2

FOLLOW-UP COMMUNICATIONS CHECKLIST

FOR:				ORGANIZATION/INDIVIDUAL TO BE CONTACTED	TIME CONTACTED	TIME VERIFIED
U.E.	A.I.	S.E.	G.E.			
#	X	X	X	Nuclear Regulatory Commission		
#	X	X	X	State Bureau of Radiological Health		
#	#	#	#	State Emergency Preparedness Div.		
#	X	X	X	Corporate Headquarters		
#	#	#	#	Darlington County		
#	#	#	#	Chesterfield County		
#	#	#	#	Lee County		
#	#	#	#	Rescue Assistance		
#	#	#	#	Medical Assistance		
#	#	#	#	Fire Fighting Assistance		
#	X	X	X	Westinghouse		
#	X	X	X	Ebasco		
#	X	X	X	INPO		

KEY

X - Contact must be made

# - Contact is optional: Site Emergency Coordinator will circle contacts to be made for the specific emergency.



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VOLUME 13

COMMUNICATIONS ACTIVITIES

PEP-3.1.2

REVISION 3

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *[Signature]*  
Emergency Planning Coordinator

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Approved By: *[Signature]*  
Plant General Manager

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DATE



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VOLUME 13

USE OF COMMUNICATIONS EQUIPMENT

PEP-3.1.3

REVISION 4

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *T. B. [Signature]*  
Emergency Planning Coordinator

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DATE

Approved By: *[Signature]*  
Plant General Manager

7/2/82  
DATE



- e) On all units having the dual channel feature, the operating frequency is controlled by either a two or four frequency selector control. When you transmit, your switch must be turned to the correct channel.

Note: The operating instructions for use of the Motorola Flexar System Radio and Motorola Modem 100 Paging System located in the TSC are found in Exhibit 3.1.3-1 and 3.1.3-2 respectively.

### 3.5 Emergency Radio System\*

Communication with mobile and portable units reserved for an emergency is possible through repeaters on CP&L-assigned frequencies as well as a state-assigned frequencies.

### 3.6 Emergency Phone System

The Robinson emergency telephone system consists of dedicated telephone lines between emergency facilities at Robinson through a manually operated switchboard.

#### 3.6.1 Setting up Emergency Phone System for Operation During an Emergency

3.6.1.1 At Robinson telephones for the Emergency Phone System are stored in each Emergency Center. These phones are set up by an individual or individuals working in these centers. Plant Media Center personnel are responsible for setting up Plant Media Center telephones in the Visitors Center.

#### 3.6.1.2 To use the Emergency Phone system:

- a) To contact the operator - pick up the hand set.

Note: The operator is able to: connect you directly to another emergency center; allow you to dial your own call over an outside or company telephone line; dial your call for you.

- b) To recall the operator - depress your switch hook twice in rapid succession.

Note: The operator can set up conference calls between a maximum of two outside lines and three emergency center lines and/or transfer calls to another extension.

\*In place emergency radio facilities by July, 1981. In the interim, radios to be supplied from other available CP&L sources.

- c) To gain access to the Robinson Emergency Phone system from a phone not in the system, dial numbers listed in the plant telephone directory.

3.6.1.3 To make the operator's console ready for operation:

- a) Roll the shroud away from the console.
- b) Turn "BATTERY" and "BUZZER" switches to the "ON" position (located at the lower right of the console).
- c) Place the three switches in the communications equipment room in the "BELL" position.
- d) Extinguish ("clear") glowing lamps on the console. (Insert a right cord from any cord point momentarily into the jack below each glowing lamp).

Note: When all lamps are "cleared" the buzzer is silent and the console is ready for operation.

- e) Notify the Robinson Plant telephone operator that the emergency phone system is operating.

3.6.1.4 Operating instructions for the emergency communications console are kept on the console table.

Additional information for calls between Automatic Ring Down (ARD) and Bell or CP&L telephone system trunk lines are as follows:

- a) Incoming Call on Automatic Ring Down Circuits Between Consoles. Answer the call using a left cord of a cord pair. If the calling party wishes to make a call over the Bell System or to a CP&L extension not on the emergency console, ask the calling party, "hold please". Next, remove the left cord from the calling Automatic Ring Down and insert into a CP&L or Bell trunk as appropriate. Finally, insert the right cord from the same cord pair into the calling Automatic Ring Down. The Automatic Ring Down is now tied to the Bell or CP&L trunk and you may dial the call as instructed by the calling party.
- b) Incoming Call on Bell or CP&L LINE. Answer the call using a left cord of one cord pair. After receiving information on who is being called and if the call must be placed over an Automatic Ring Down, ask the calling party to "hold please". Leave the left cord of this "plugged in" and using a left cord from a second cord pair, place the call through to the party being called. Once you've reached the called party who is instructed to hold for a call, remove the second

left cord from the Automatic Ring Down circuit and insert the right cord from the first pair (left cord is still plugged into Bell or CP&L trunks) into the Automatic Ring Down circuit. The parties are now connected and you may release from the circuit. The operator will not be signalled when conversation is completed on trunk-to-trunk calls. Consequently, trunk-to-trunk calls must be monitored for conversation every three minutes or less.

3.6.1.5 To return the operators console to a non-emergency mode:

- a) Turn "BATTERY" and "BUZZER" switches to the "OFF" position.
- b) Turn the two switches located in the telephone closet to the "UPWARD" position.
- c) Replace shroud.
- d) Inform the Robinson plant telephone operator that the emergency telephone system is no longer in service.

### 3.7 Offsite Communication

#### 3.7.1 Corporate Telephone System

Interconnected through the plant PBX, the Corporate Telephone System provides a means to communicate with any other Corporate location with which the plant has a need to communicate. Transmission facilities for this system are microwave radios.

To access:

- a line to Brunswick, dial "8283-XXX"
- a line to CP&L Raleigh, dial "891-XXXX"

When the emergency telephone system is not in the emergency mode:

To access:

- a direct line to Brunswick, dial "63-XXX"
- a direct line to Raleigh, dial "62-XXXX"

#### 3.7.2 Southern Bell Lines

Southern Bell lines may be accessed through the plant PBX.

To access:

- a local line dial "9"
- a long distance line dial "9-1-area code"

Note: Certain Southern Bell lines within the plant are restricted. To obtain a local line or a long distance line dial "0" and the plant switchboard operator will assist you.

### 3.7.3 Dedicated Telephone System to Load Dispatcher

This system provides links between the Control Room and the load dispatcher. Transmission facilities are microwave radio. These lines appear on several phones in the Control Room and are selected by pushing the appropriate button on a multibutton phone. The lines are automatically rung at the load dispatcher identifying Robinson as the caller.

To use, push the appropriate button and pick up the handset.

### 3.7.4 Corporate Emergency Communications Network

The Corporate Emergency Communications Network is a system, separate from other communications systems, which provides back-up dedicated telephone and radio\* facilities between emergency response centers. The purpose of these facilities is to ensure priority communications at any time from Robinson Plant to emergency response personnel at the Federal, State and local governments and other Carolina Power & Light facilities, as well as Ebasco and Westinghouse.

### 3.7.5 NRC Emergency Notification System

The NRC operates a dedicated telephone system which allows direct telephone communications from all nuclear power plants to NRC regional and national offices. Telephones connected to this network are located in the Robinson Control Room and Technical Support Center. Primary and secondary sources of power are supplied.

The NRC also operates a second dedicated telephone system which allows telephone communications from all nuclear plants to NRC regional and national offices. Telephones connected to this system are located for access by Health Physics personnel.

\*In place emergency radio facilities by July, 1981. In the interim, radios to be supplied from other available CP&L sources.

EXHIBIT 3.1.3-1

OPERATING INSTRUCTIONS FOR  
MOTOROLA FLEX'R SYSTEM RADIO

1. Ensure radio is plugged into AC wall circuit.
2. Turn volume switch clockwise and adjust volume.
3. Adjust squelch by pushing in monitor button and rotate squelch control to desired position. Pick up transmitter (looks like transmitter - receiver on telephone) and push in button located adjacent to receiver end. This will lock in your squelch setting.
4. If transmitting on Channel 1, F2 button should NOT be depressed. If Channel 1 is the desired channel, then push in button adjacent to receiver to lock in on Channel 1.

If transmitting on Channel 6, F2 button should be depressed. If Channel 6 is the desired channel, then push in button adjacent to receiver to lock in on Channel 6.

5. Turn volume switch off when not in use.

NOTE: Channel 6 appears to be the best selection for use on radio transmission greater than 1 - 2 miles. If transmitting to hand-held radios in the field, hand-held radios must be on Channel 6 also.

EXHIBIT 3.1.3-2

OPERATING INSTRUCTIONS FOR  
MOTOROLA MODEN 100 PAGING SYSTEM

1. Ensure both Motorola Flexar and Moden 100 units are plugged into AC wall circuit.
2. On back of Moden 100 unit is switch with DC - OFF - AC listed. Push switch to AC setting. When this is done, red numbers will appear on screen.
3. Motorola Flexar unit has to be on Channel 6 to page. Channel 6 is selected by depressing the F2 button and pushing in the button adjacent to the phone receiver. Pushing in the button adjacent to the phone receiver locks in the unit to Channel 6.
4. Punch in the appropriate pager number for whom you are to page. These numbers appear on the Moden 100 and are from 1 to 0 with the letters T and P also listed. For example, if you are to page beeper 209, depress the Number 9; 09 will appear on the screen.
5. Once you have selected the proper beeper number, depress the "P" button. The letter P stands for PAGE. The PAGE light will activate meaning that the signal is being transmitted.
6. The PAGE light will shift to TALK. When this occurs, pick up the transmitter (transmitter looks like a phone) and depress the button adjacent to the receiver and give your message. The person with the beeper will hear your message. The person with the beeper cannot talk back to you using the beeper.

An example message would be: Mr. Jones, contact the Robinson Plant at ext. 100.

Repeat your message twice to ensure that the person with the beeper has the message.

7. Cut both systems off when not in use.



H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

NOTIFICATION OF OFF-DUTY PERSONNEL

PEP-3.2.1

REVISION 3

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: R. T. Conroy  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: W. S. Hurler  
Plant General Manager

7/2/82  
DATE

3.2.5.3 Enter the name of each key person contacted on the EXHIBIT from Step 3.1.

- 3.3 Inform Security personnel at the Access Control Point of any special reporting locations for Robinson personnel as indicated on the notification checklist.
- 3.4 When notifications of off-duty personnel and Security have been completed, return the EXHIBIT from Step 3.1 to the Site Emergency Coordinator and note any unsuccessful notification attempts.



EXHIBIT 3.2.1-1

Personnel Responsible for TSC/EOF Setup

TSC

Primary: Sr. Specialist - Emergency Planning  
Engineering Tech. - Emergency Planning

Alternate: Technical Support Group Personnel

EOF

Primary: Principal Engineer - On-Site Nuclear Safety  
Project Specialist - QA/QC

Alternate: Sr. Specialist - Emergency Planning  
Engineering Tech. - Emergency Planning



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TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

MOBILIZATION OF OUTSIDE ORGANIZATIONS AND PERSONNEL

PEP-3.2.2

REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *T. J. Unno*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *W. S. Shuler*  
Plant General Manager

7/2/82  
DATE

## PEP-3.2.2 MOBILIZATION OF OUTSIDE ORGANIZATIONS AND PERSONNEL

### 1.0 Responsible Individuals and Objectives

The objective of this procedure is to provide guidelines for the mobilization of outside agencies. It is the Site Emergency Coordinator's responsibility to assure that the Emergency Communicator contacts and mobilizes outside agencies appropriate to the type and level of emergency at hand. Upon activation of the Emergency Operations Facility, the Emergency Response Manager, in coordination with the Emergency Coordinator, will contact and mobilize outside agencies.

### 2.0 Scope and Applicability

This procedure provides guidelines for use during emergencies requiring assistance from outside organizations, e.g., rescue squad, hospital, fire department, state and federal agencies, vendor and A/E experts, etc.

### 3.0 Actions

- 3.1 When informed of the need to mobilize an organization or individual not a part of the Robinson Emergency Organization, use EXHIBIT 3.2.2-1, "Mobilization of Outside Organizations and Personnel."

Note: Although any member of the Emergency Organization may request assistance, the Site Emergency Coordinator's approval must be received before the contact is made.

- 3.2 Refer to PEP-Appendix A to determine the proper phone number/call sign and frequency to use for making the contact (as well as the contact person for agencies).
- 3.3 Contact the organization or individual and notify them of the request for mobilization:
- 3.3.1 Inform them of the emergency situation at the Robinson plant.
  - 3.3.2 Relay any "pertinent information" included on EXHIBIT 3.2.2-1.
  - 3.3.3 Request a verification call-back from each organization and individual contacted (unless contact is via a dedicated phone line or radio telephone).
  - 3.3.4 Record any problems or questions identified.
- 3.4 Inform Security personnel at the Access Control Point of each individual or organization that has been requested to report to the site. Relay pertinent information related to accessing the plant.

Note: Primarily, pertinent information shall include, but not be limited to, where to direct the arrival and whether the Site Emergency Coordinator has authorized the by-passing of normal processing procedures.



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SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

ACTIVATION OF THE TECHNICAL SUPPORT CENTER (TSC)/

EMERGENCY OPERATIONS FACILITY (EOF)

PEP-3.2.3

REVISION 1

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *J. J. Ennoel*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *MS Stuking*  
Plant General Manager

7/2/82  
DATE

PEP-3.2.3 ACTIVATION OF THE TECHNICAL SUPPORT CENTER (TSC)/  
EMERGENCY OPERATIONS FACILITY (EOF)

1.0 Responsible Individuals and Objectives

The objective of this procedure is to provide guidelines to be used in the activation of the Technical Support Center/Emergency Operations Facility. It is the responsibility of the Site Emergency Coordinator that the appropriate personnel are utilized in setting up the Technical Support Center/Emergency Operations Facility.

2.0 Scope and Applicability

This procedure provides guidelines for the activation of the Technical Support Center/Emergency Operations Facility.

3.0 Actions

3.1 When informed of the need to activate either the Technical Support Center or the Emergency Operations Facility, the appropriate personnel listed in EXHIBIT 3.2.1-1 are to report to their designated facility.

3.2 Follow the floor plans listed in EXHIBIT 3.2.3-1 for the Technical Support Center and EXHIBIT 3.2.3-2 for the Emergency Operations Facility.

3.2.1 Arrange tables as per floor plan.

3.2.2 Place identification cards and wooden blocks on the tables.

3.2.3 Synchronize clock with Control Room. TSC will contact Control Room for correct times and the EOF is to contact the TSC.

3.2.4 Turn on radiation monitoring devices.

3.3 EXHIBIT 3.2.3-3 and EXHIBIT 3.2.3-4 show the location and phone numbers of the telephones for each of the emergency response personnel in the Technical Support Center and Emergency Operations Facility.

NOTE: TSC telephones are stored either in the phone cabinet at the Emergency Switchboard or on tables near their respective jacks. EOF telephones are stored in both of the Emergency Supply Closets.

3.3.1 Place each telephone in the appropriate location.

NOTE: Certain locations have a blue phone and a beige phone. The blue phone is a backup system to the beige phone.

3.3.2 Include at each location an emergency telephone directory. Directories are stored with the telephones.

3.3.3 Plug the phones into the proper jacks; these jacks are numbered for simple installation.

NOTE: Phone jacks for the TSC are located in walls and are numbered in accordance with the proper phone numbers. Phone jacks in the EOF are located in the ceiling panels. A red thumb tack in the panel shows the location of the phone jacks. EXHIBIT 3.2.3-4 shows EOF phone jack locations.

3.3.4 Test the operability of all phones; the blue phones are tied into an emergency switchboard located in the TSC which will be activated by a qualified operator (listed in App. A.1).

3.4 Arrange status boards as shown in EXHIBIT 3.2.3-5 and EXHIBIT 3.2.3-6 for the TSC and EOF, respectively.

3.4.1 Place visual aides on the status boards via hooks as shown in the respective EXHIBIT.

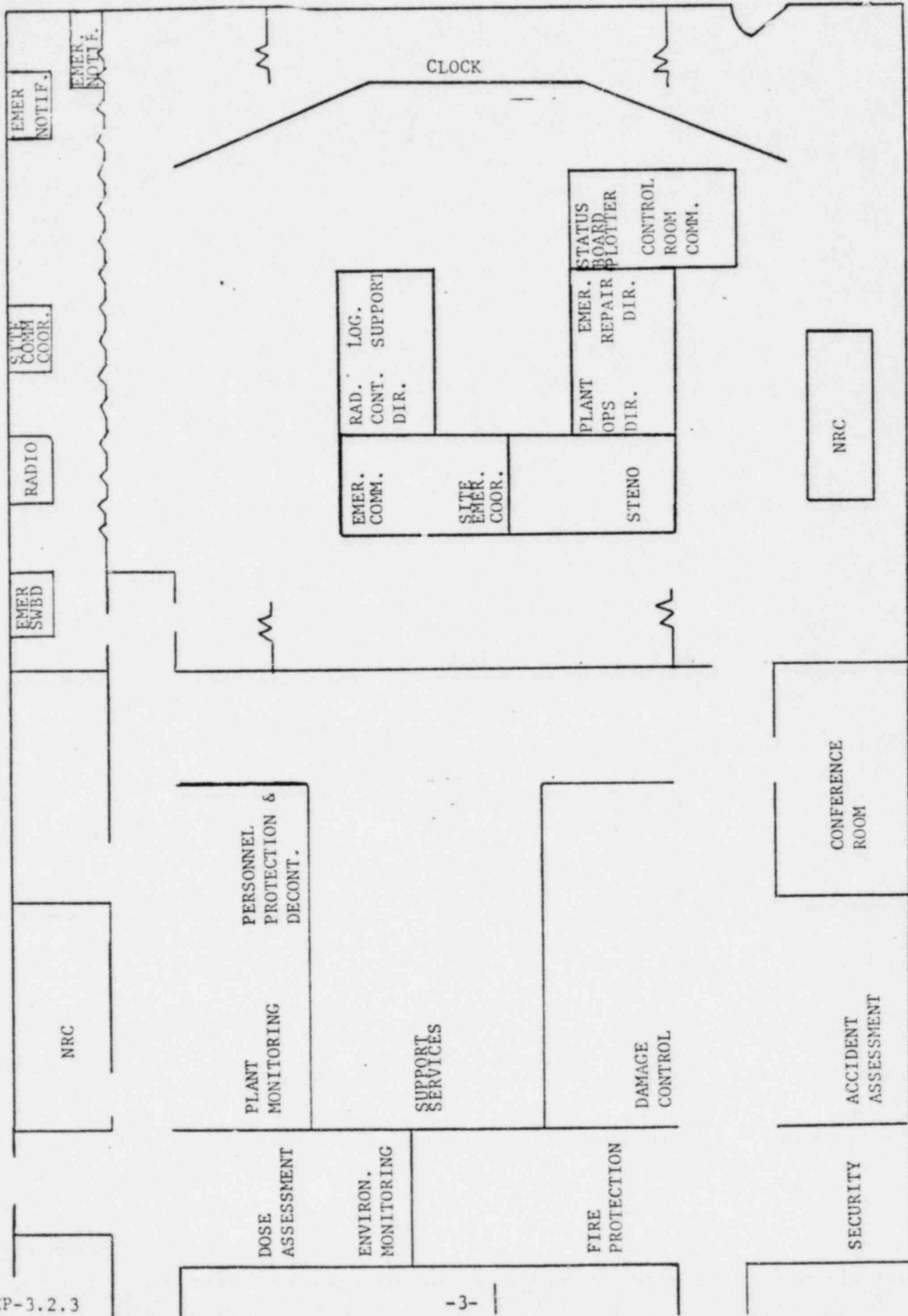
NOTE: TSC visual aides located in a yellow container behind status boards. EOF visual aides located in Emergency Supply closet.

3.4.2 If less than 3 copies of each visual aide are present, contact drafting and ask that additional copies be made for each particular visual aide.

3.5 Review EXHIBIT 3.2.3-7 for any additional equipment that may be needed during an emergency.

3.6 Contact the Emergency Communicator when the TSC or EOF is operational.

NOTE: In the event of a fast breaking emergency situation, emergency personnel may be reporting to the Emergency Response Facility prior to the facility being set up. In such a situation, it will be the responsibility of each director and team leader to set up their equipment.



EMER NOTIF.

STATE COMM COOR.

RADIO

EMER SWBD

NRC

PERSONNEL PROTECTION & DECONT.

PLANT MONITORING

DOSE ASSESSMENT

ENVIRON. MONITORING

SUPPORT SERVICES

FIRE PROTECTION

DAMAGE CONTROL

RAD. LOG. CONT. DIR. SUPPORT

EMER. COMM.

SITE EMER. COOR.

STENO

STATUS BOARD PLOTTER CONTROL ROOM COMM.

PLANT EMER. REPAIR DIR. OPS DIR.

NRC

CONFERENCE ROOM

ACCIDENT ASSESSMENT

SECURITY

CLOCK

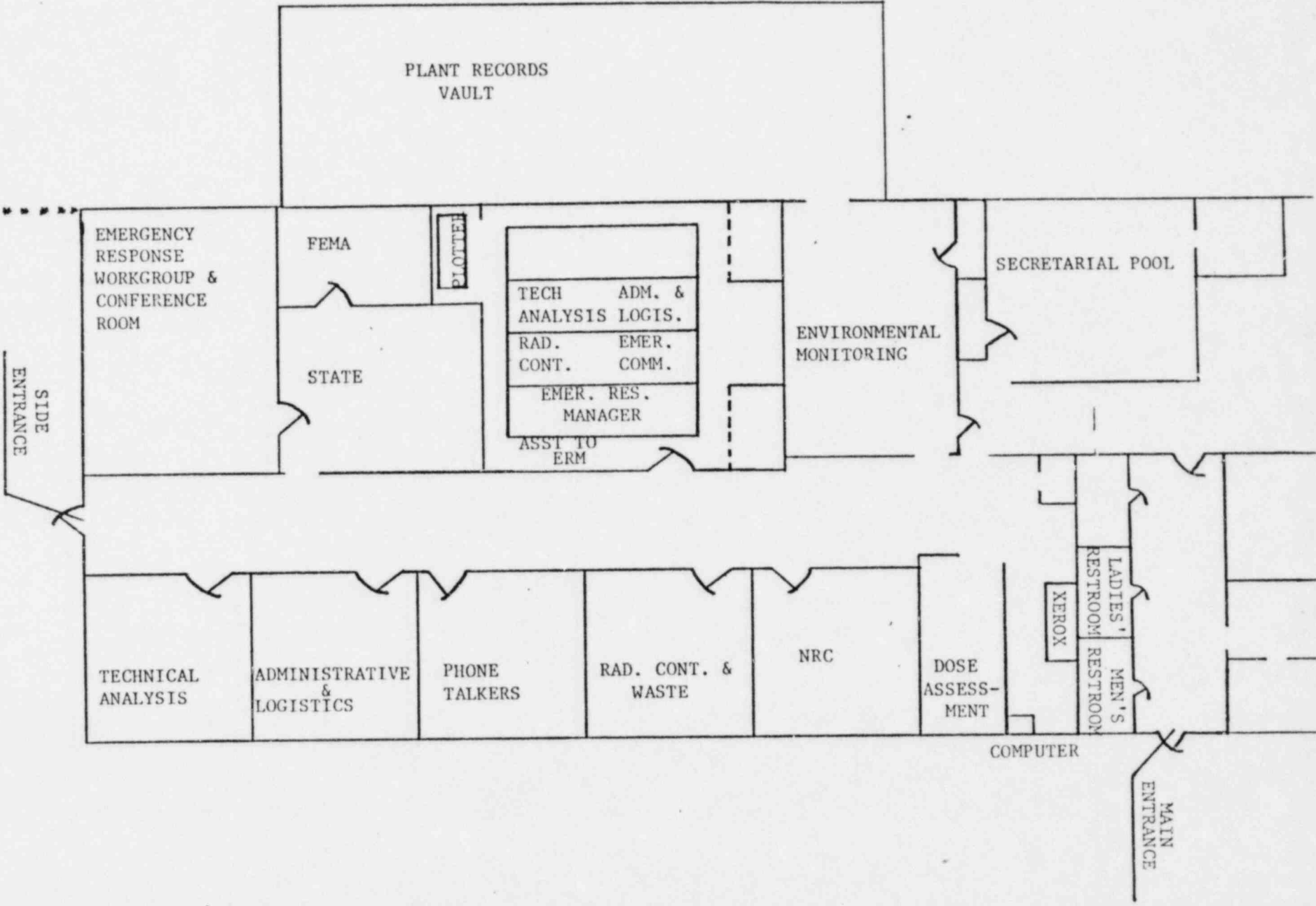


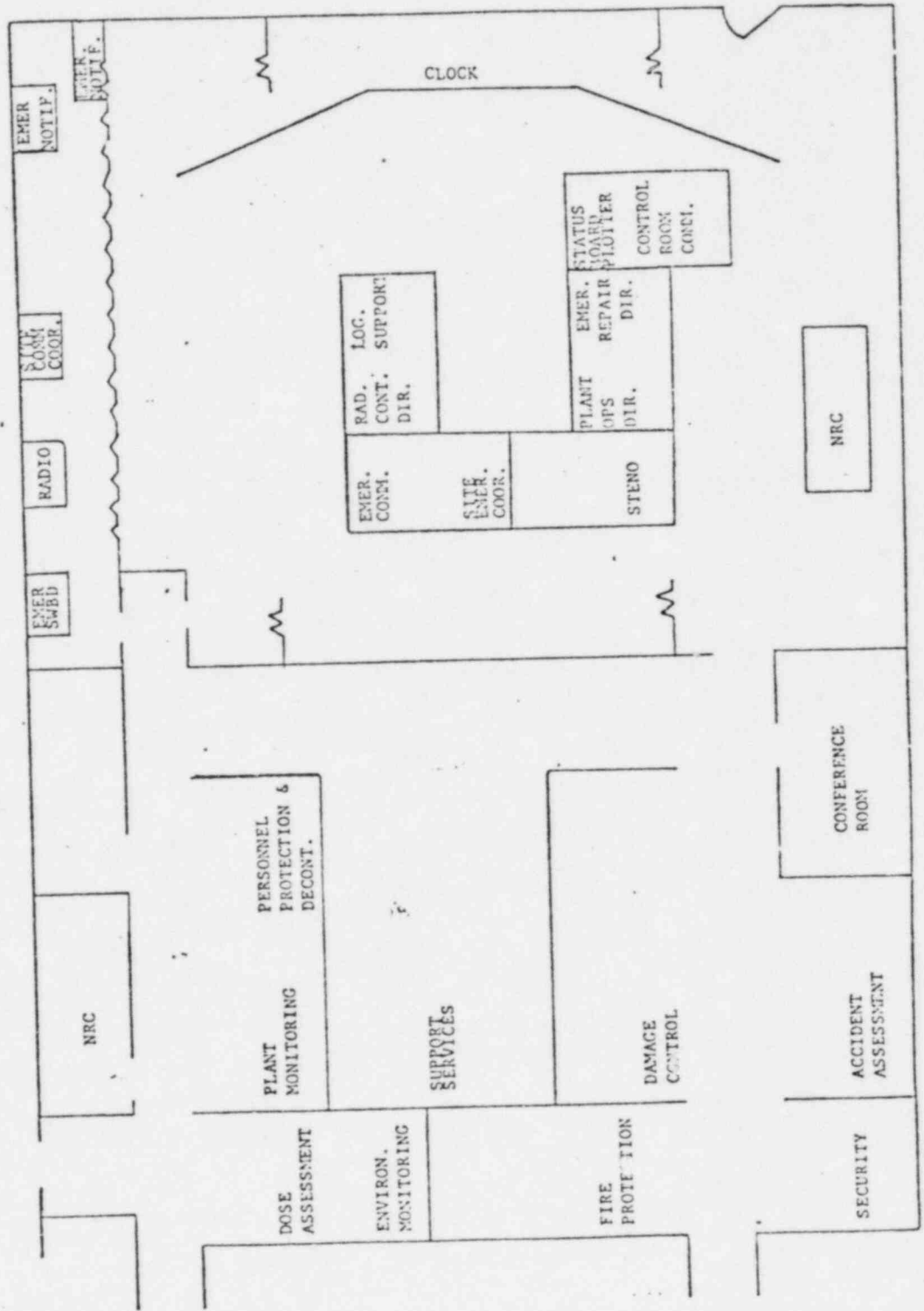
EXHIBIT 3.2.3-2  
EOP Floor Plan



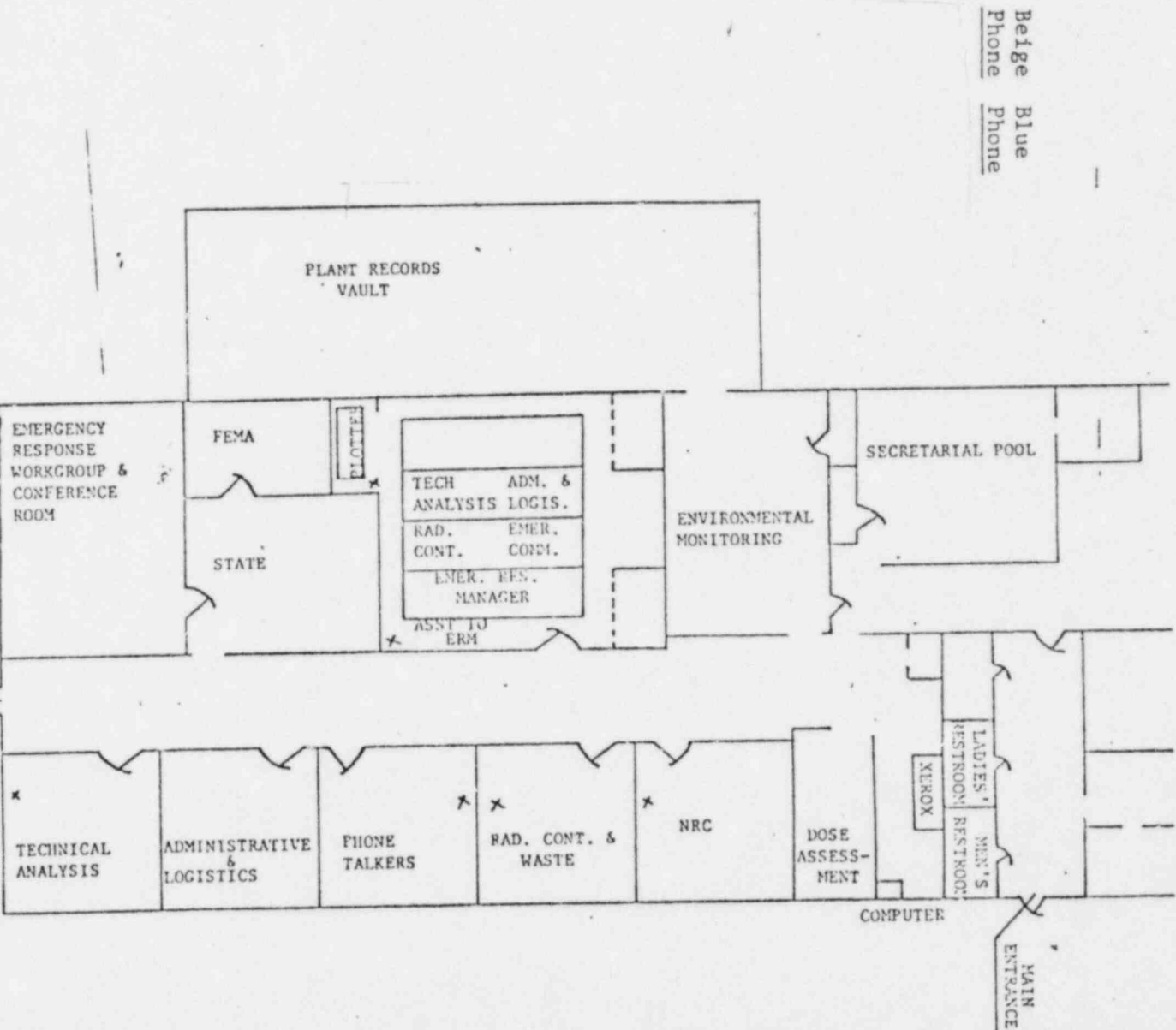
EXHIBIT 3.2.3-3

TSC Phone System

Section	Beige Phone	Blue Phone
Acc. Assess.		
Con. Room		
Comm.		
Damage Cont.		
Dose Assess.		
Emerg. Comm.		
Emerg. Noti.		
Emerg. Noti.		
Emerg. Repair		
Environ.		
Monitoring		
Fire Protect.		
Logistic Sup.		
NRC		
Per. Prot. & Decon.		
Plant Monitor.		
nt OPS Dir.		
. Cont. Dir.		
Security		
Site Comm.		
Coordinator		
Site Emerg.		
Coordinator		
Status Bd.		
Plotter		
Steno.		
Support Serv.		



EOF TELEPHONE SYSTEM



- | Section                       | Beige Phone | Blue Phone |
|-------------------------------|-------------|------------|
| Admin. & Logistics Mang.      |             |            |
| Admin. & Logistics Work Group |             |            |
| Ass. to Emerg. Resp. Mang.    |             |            |
| Dose Assessment Emerg. Comm.  |             |            |
| Emerg. Resp. Mang.            |             |            |
| Env. Monitoring FEMA          |             |            |
| NRC                           |             |            |
| Phone Talkers                 |             |            |
| Rad. Cont. Mang.              |             |            |
| Rad. Cont. Work Group         |             |            |
| State                         |             |            |
| Tech. Bd. Plotter             |             |            |
| Tech. Anal. Mang.             |             |            |
| Tech. Anal. Work Group        |             |            |

NOTE: An "x" marks the approximate location of the telephone jacks for the blue phones.

EXHIBIT 3.2.3-5 TSC VISUAL DISPLAYS

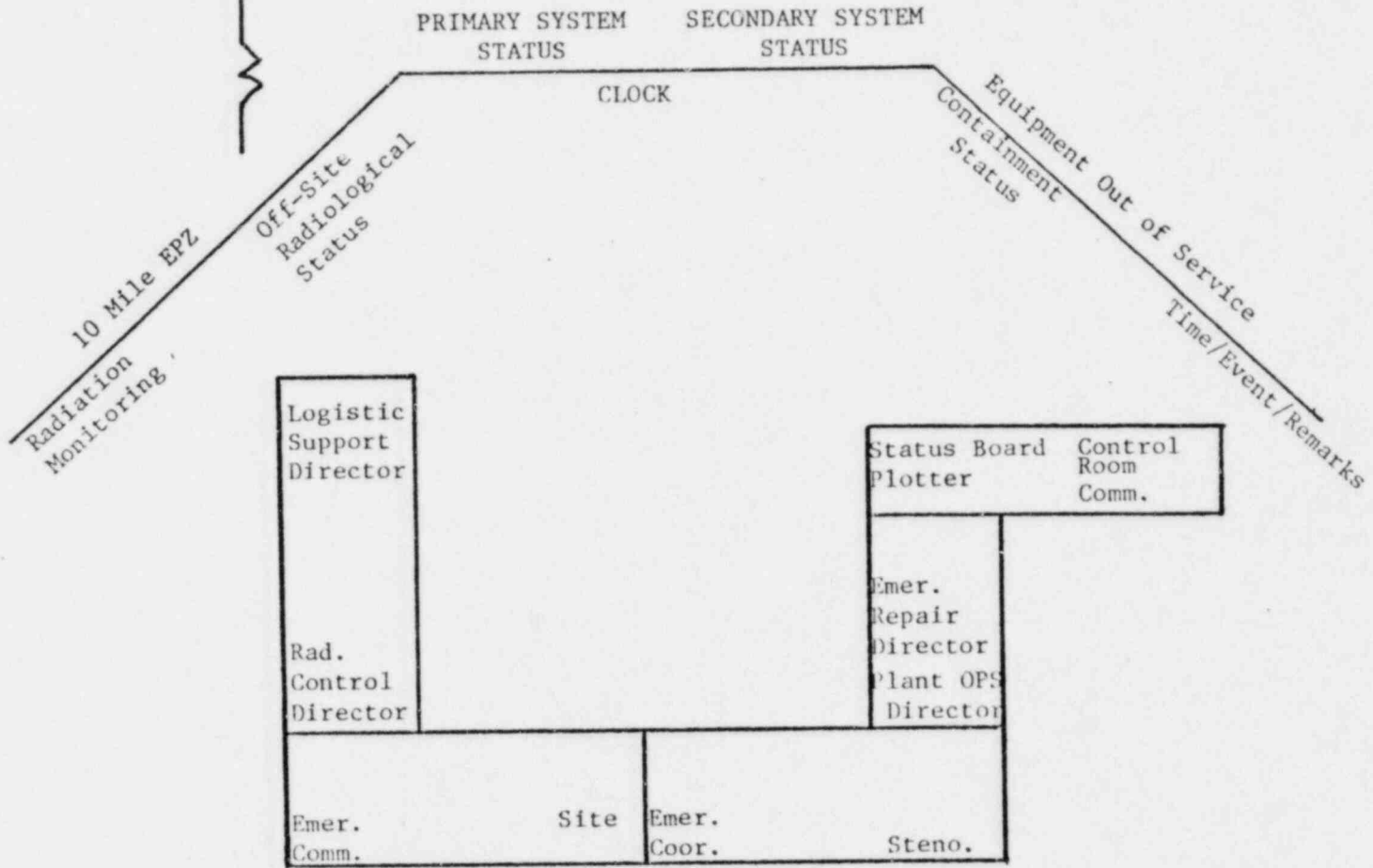
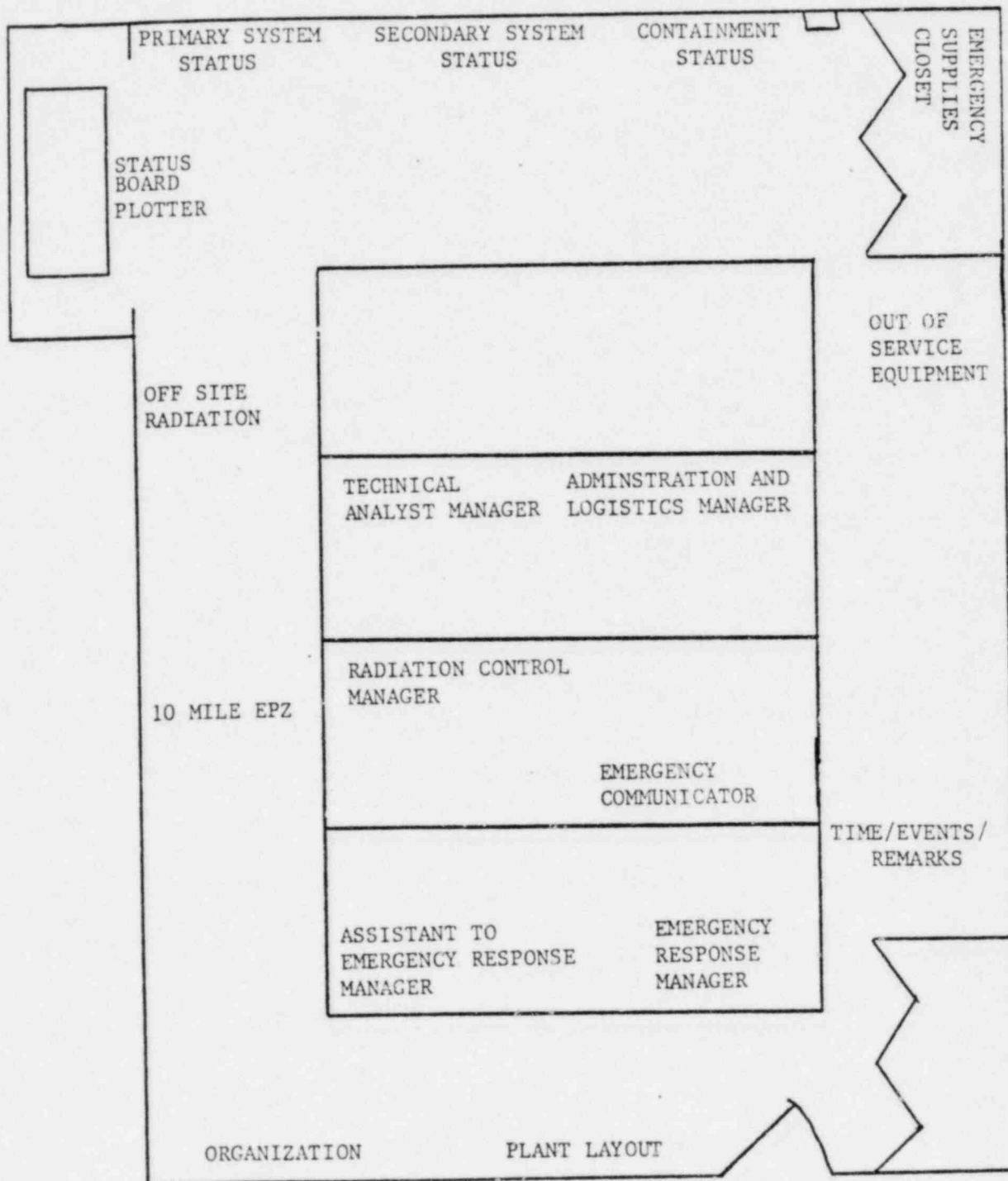


EXHIBIT 3.2.3-6  
EOF VISUAL DISPLAYS



## EXHIBIT 3.2.3-7

## TSC/EOF EMERGENCY SUPPLY LIST

<u>Supplies</u>	<u>TSC Location</u>	<u>EOF Location</u>
1. Telecopier	Receptionist's Desk	Obtain from Eng. Building
2. Xerox Machine	Xerox Room	Xerox Room
3. Radiological Instruments:		
a. Survey Meter MR/HR to R/HR	TSC Emergency Kit	Vault
b. Teletector MR/HR to 1000 R/HR	TSC Emergency Kit	Vault
c. Dosimeters	TSC Emergency Kit	Vault
d. Positioned TLDs	TSC Emergency Kit	Vault
4. Identification Signs for Desks	Phone Cabinet	Emerg. Supplies Chest
5. Clock	On Wall	Emerg. Supplies Closet
6. Emerg. Resources Manual (INPO)	Emerg. Planning Bookcase	Emerg. Supplies Closet
7. Maps		
a. 10 mile EPZ	Behind Status Boards	Emerg. Supplies Closet
b. 50 mile EPZ	Behind Status Boards	Emerg. Supplies Closet
c. Topo Map of Plant Environs	Behind Status Boards	Emerg. Supplies Closet
d. Plant Site Layout	Emerg. Planning File	Emerg. Supplies Closet
8. Mechanical Systems Drawings	Training Library	Vault
9. Electrical Systems Drawings	Training Library	Vault
10. FSAR	Training Library	Vault
11. Systems Descriptions	Training Library	Vault
12. Technical Specifications	Training Library	Vault
13. Emergency Plans		
a. Corporate Plan and Procedures	Emerg. Planning Bookcase	Emerg. Supplies Closet
b. Plant Plan and Procedures	Emerg. Planning Bookcase	Emerg. Supplies Closet
c. State and Local Plans	Emerg. Planning Bookcase	Document Control Library
d. Westinghouse and Ebasco Plans	Plant Emerg. Plan App. B	Plant Emerg. Plan App. B
14. Emergency Notification Phone Lists		
a. Corporate Emergency Response	Emerg. Planning File	Emerg. Supplies Closet
b. HBR Plant Emergency Response	HBR PEP-Appendix 1	HBR PEP-Appendix 1
c. Non-CP&L Emergency Response	HBR PEP-Appendix 2 - Appendix 4	HBR PEP-Appendix 2 - Appendix 4
d. CP&L Corporate Phone Directory	Emerg. Planning Bookcase	Emerg. Supplies Closet
e. Hartsville Telephone Directory	Emerg. Planning File	Document Control Library
f. Raleigh Telephone Directory	Emerg. Planning File	Document Control Library

## EXHIBIT 3.2.3-7

(Continued)

<u>Supplies</u>	<u>TSC Location</u>	<u>EOF Location</u>
15. System Parameter Data and Status Displays		
a. Primary System Status	Behind Status Boards	Emerg. Supplies Closet
b. Secondary System Status	Behind Status Boards	Emerg. Supplies Closet
c. Containment System Status	Behind Status Boards	Emerg. Supplies Closet
d. Equip. Out of Service	Behind Status Boards	Emerg. Supplies Closet
e. Radiation Monitoring	Behind Status Boards	Emerg. Supplies Closet
f. Time/Event/Remarks	Behind Status Boards	Emerg. Supplies Closet
g. Off-site Radiological Status	Behind Status Boards	Emerg. Supplies Closet
16. CP&L Emergency Organization Chart	Behind Status Boards	Emerg. Supplies Closet
17. Emergency Procedure Forms	Emerg. Planning File	Emerg. Supplies Closet
18. Environmental Monitoring Radios	Telephone Cabinet	To Be Brought From HE&EC
19. Office Supplies	Emerg. Planning Bookcase	Office Supplies Closet
20. Site Emerg. Coord./Emerg. Resp. Mang. Notebook	Emerg. Planning Bookcase	Emerg. Supplies Closet



H. B. ROBINSON  
SEG PLANT

TITLE  
EMERGENCY PLAN AND PROCEDURES  
VOLUME 13

COLLECTION OF VERY HIGH LEVEL RADIOACTIVE SAMPLES  
PEP-3.3.3  
REVISION 3

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *T. E. Givens*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *M. S. Harley*  
Plant General Manager

7/2/82  
DATE

### PEP-3.3.3 COLLECTION OF VERY HIGH LEVEL RADIOACTIVE SAMPLES

#### 1.0 Responsible Individuals and Objectives

The Plant Monitoring Team is responsible to the the Radiological Control Director for obtaining required very high level radioactive samples for taking them to the Radiochemistry Laboratory (first priority), Robinson Laboratory (second priority), or the Shearon Harris Energy and Environmental Center Labs.

The Plant Monitoring Team Leader is responsible for utilizing the proper sample equipment, protective clothing and collection methods for obtaining and handling very high level samples, as directed by the Radiological Control Director (Reference PEP-3.7.1, "Radiation Work Permits and Exposure Control," PEP-3.7.2, "Emergency Personnel Monitoring and Dosimetry," and PEP-3.7.3, "Issuance and Use of Protective Gear").

#### 2.0 Scope and Applicability

Samples collected pursuant to this procedure will be collected daily or as directed by the Site Emergency Coordinator or the Radiological Control Director whenever a Site Emergency or General Emergency is declared.

Very high level radioactive samples are so designated, if dose rate level is greater than 2.0 R/hr on contact.

#### 3.0 Actions and Limitations

3.1 Based on anticipated radiation levels or gross monitor readings, the Radiological Control Director shall specify:

- 3.1.1 Protective gear and communication equipment required depending on location and sample (include CAUTIONS) (PEP-3.7.2, "Emergency Personnel Monitoring and Dosimetry").
- 3.1.2 HP-1.1, "Radiation Control Area Surveillance Program" and/or CP-3 Appendix I, "Systems Sampling Procedure," for necessary equipment, limitations/precautions and sampling instructions.
- 3.1.3 Precise plant locations where samples are to be taken, existing radiation barriers, and maximum stay times (PEP-3.7.1, "Radiation Work Permits and Exposure Control").
- 3.1.4 Alternate routes, if necessary.
- 3.1.5 Designated valves or doors to open and close to retrieve samples.
- 3.1.6 Dilution or purge requirements to obtain specified sample.
- 3.1.7 Collection times and/or sample sizes.
- 3.1.8 Labeling of samples and data to be recorded.



- 3.1.9 Location and alternate location for analysis.
- 3.1.10 The collection of the following (as necessary):
  - 3.1.10.1 Filters, charcoal cartridges and fixed samplers.
  - 3.1.10.2 Process and effluent liquid samples (e.g., waste processing system).
  - 3.1.10.3 Reactor Coolant System and Containment Air Samples.
- 3.1.11 Maintain radiation safety and precautions per PEP-3.7.1, "Radiation Work Permits and Exposure Control."
- 3.2 The Plant Monitoring Team shall:
  - 3.2.1 Carry out very high sample collection per information obtained in Steps 3.1.1 through 3.1.10 above and document steps on EXHIBIT 3.3.3-1, "Very High Level Sample Data Sheet."
  - 3.2.2 Record and report status of sample valves before, during and after sample collection on EXHIBIT 3.3.3-2, "Very High Level Sample Collection Status Sheet."
  - 3.2.3 Minimize radiation exposure by effective use of barriers, protective clothing and minimum stay time. (PEP-3.7.1, "Radiation Work Permits and Exposure Control" and PEP-3.7.3, "Issuance and Use of Protective Gear").
  - 3.2.4 Assure each sample container is labeled with:
    - 1. Name and type of sample;
    - 2. Time of sample;
    - 3. Number, if applicable;
    - 4. Location of sample;
    - 5. mR/hr on contact after sample containment.
  - 3.2.5 Deliver sample and EXHIBITS 3.3.3-1 and 3.3.3-2 to lab for analysis.
    - 3.2.5.1 When transporting samples, maximum use of shielding, distance and protective clothing shall be utilized.
    - 3.2.5.2 When storing samples, even while waiting for analysis, utilize shielding, distance and effective use of barriers to minimize dose to personnel (PEP-3.7.1, "Radiation Work Permits and Exposure Control" and PEP-3.7.2, "Emergency Personnel Monitoring and Dosimetry").

- 3.3 Dispose of all contaminated clothing in designated containers.
- 3.4 Assure contaminated equipment is removed from use or properly decontaminated.
- 3.5 Determine and report personal exposure at earliest opportunity.



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TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

ANALYSIS OF VERY HIGH LEVEL RADIOACTIVE SAMPLES

PEP-3.3.4

REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: TET Enwef 7-1-2  
Emergency Planning Coordinator DATE

Approved By: MS Stuckey 7/2/82  
Plant General Manager DATE

PEP-3.3.4 ANALYSIS OF VERY HIGH LEVEL RADIOACTIVE SAMPLES

1.0 Responsible Individual and Objectives

The Plant Monitoring Team is responsible to the Radiological Control Director for assuring that very high level radioactive samples are properly analyzed.

2.0 Scope and Applicability

This procedure shall be implemented as directed by the Site Emergency Coordinator, or Radiological Control Director when very high level radioactive samples are retrieved for analysis, as per PEP-3.3.3, "Collection of Very High Level Radioactive Samples."

3.0 Actions and Limitations

-CAUTION-

IF GROSS FAILURE OF CLADDING OCCURS, SIGNIFICANT QUANTITIES OF NOBLE GASES OR OTHER VOLATILES, AS WELL AS OTHER FISSION PRODUCTS, MAY BE RELEASED. LEVELS TO THE ORDER OF 10,000  $\mu\text{Ci/ml}$  MAY BE PRESENT IN THE SAMPLE MEDIA, THUS THE USUAL LABORATORY ANALYSIS PROCEDURES MAY BE INADEQUATE FOR PROCESSING SUCH SAMPLES.

3.1 The Radiological Control Director shall, based upon measured radiation levels and/or the sample to be analyzed, inform the Plant Monitoring Team of:

- 3.1.1 Specific procedures to be utilized in analysis from existing plant procedures.
- 3.1.2 Specific exceptions to 3.1.1 required.
- 3.1.3 The specific lab equipment and protective gear requirements and locations.
- 3.1.4 Handling precautions and disposal techniques (PEP-3.3.3, "Collection of Very High Level Radioactive Samples").
- 3.1.5 Specific data to be obtained (form of results).
- 3.1.6 Persons to whom results must be communicated in addition to the Radiological Control Director.

The Plant Monitoring Team shall:

- 3.2 Assure receipt of samples with appropriate EXHIBITS 3.3.3-2, "Very High Level Sample Collection Status Sheet," and 3.3.3-1, "Very High Level Sample Data Sheet."
- 3.3 Utilize existing procedures for prescribed analyses unless directed otherwise by the Radiological Control Director or Plant Monitoring Team Leader.

- 3.4 Follow special handling precautions and disposal techniques as directed by the Plant Monitoring Team Leader.
- 3.5 Document on EXHIBIT 3.3.4-1, "Very High Level Radioactive Sample Analysis Results":
  1. All procedures utilized to accomplish a particular sample analysis,
  2. Exceptions and inclusions to be used and/or partially utilized procedures,
  3. All analyses results.
- 3.6 Deliver the completed EXHIBIT 3.3.4-1 with any verbal report deemed necessary or requested to the individual designated by the Plant Monitoring Team Leader.
- 3.7 If local facilities become contaminated or otherwise unusable:
  - 3.7.1 Contact the Plant Monitoring Team Leader and request notification of off-site labs at Brunswick or at the Harris Energy and Environmental Center, and/or a contracted radioactive material shipper, to assist in analysis and shipping.

Note: Inform the Plant Monitoring Team Leader of required schedule for results.
  - 3.7.2 Containerize the sample in accordance with HP-20.
  - 3.7.3 Ship sample and required sample information, shipping information and type of analysis required to the selected off-site lab.

EXHIBIT 3.3.4-1

VERY HIGH LEVEL RADIOACTIVE SAMPLE ANALYSES RESULTS

Sample Identifier	Dilution	Activity (units)*	Isotope	Remarks

NOTE EXCEPTIONS TO PROCEDURES: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\* Include units, e.g., pCi/l, pCi/Kg, mR/hr, etc.

Note: Upon completion of this exhibit, deliver to the Plant Monitoring Team Leader.



H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

INITIAL DOSE PROJECTIONS

PEP-3.4.1

REVISION 6

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *J. J. Emuel*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *H. B. Robinson*  
Plant General Manager

7/2/82  
DATE

3.3 Determine the  $\chi/Q$  value(s).

3.3.1 If the release was out the stack and if the wind velocity at the upper level on the meteorological tower is less than 9.0 miles per hour, EXHIBIT 3.4.1-2 (elevated release) is to be used. In all other cases, use EXHIBIT 3.4.1-3 (ground level release). Ask the Site Emergency Coordinator or Radiological Control Director, as appropriate.

3.3.2 If the wind speed has been inferred as per 3.2.5 above, use 2 m/sec (4.5 mph) for light wind conditions and 4 m/sec (9.0 mph) for stronger winds.

3.3.3 Read across the appropriate row based on wind speed to the  $\chi/Q$  value under the Atmospheric Stability Class determined in Section 3.2.

Note: The  $\chi/Q$  values in EXHIBIT 3.4.1-2 and EXHIBIT 3.4.1-3 are for distances corresponding generally to the site boundary (approx. 1,400 ft.). For other points of interest use PEP-3.4.2, "Whole Body Dose Projections," or PEP-3.4.3, "Thyroid Inhalation Dose Projections."

3.3.4 Record the selected  $\chi/Q$  value in column 2 of EXHIBIT 3.4.1-1.

3.4 Determine the Whole Body Dose Conversion Factor (DCF) from Table 3.4-1 and record in column 3 of EXHIBIT 3.4.1-1.

Note: Select the dose conversion factor that has units of (Rem/hr)/(Ci/m<sup>3</sup>) where the source is given in terms of Ci/sec; or use Rem/(Ci-sec/m<sup>3</sup>) where the source term is given in units of total Curies released over the time period of interest.

Note: If dose projection is for Thyroid (Iodine inhalation) go to Step 3.5.

TABLE 3.4-1

WHOLE BODY DOSE CONVERSION FACTORS

Accident Condition	Dose Conversion Factor	
	(Rem/hr)/(Ci/m <sup>3</sup> )	Rem/(Ci-sec/m <sup>3</sup> )
Unknown/Unidentified	325	0.090
Major Damage to Fuel Cladding	325	0.090
RCS Leaks or steam line leaks but no major cladding failure	198	0.055
Accidental discharge of Waste Gas	49	0.014
Fuel Handling Accident	19	0.005



3.5 Determine the Thyroid (Iodine inhalation) Dose Conversion Factor from Table 3.5-1 and record in column 3 of EXHIBIT 3.4.1-1.

Note: If Dose Projection is for Whole Body, go to Step 3.4.

TABLE 3.5-1

THYROID DOSE CONVERSION FACTORS

Accident Condition	Dose Conversion Factor Rem/(Ci-Sec/m <sup>3</sup> )
Unknown/Unidentified	215
Major Damage to Fuel Cladding	215
RCS leaks or steam line leaks but no major cladding failure	318
Accidental discharge of Waste Gas	522
Fuel Handling Accident	800

3.6 Perform the multiplications and record the projected dose in column 4 of EXHIBIT 3.4.1-1 and initial and date each calculation in column 5.

Note: If the release was elevated as defined by Step 3.3.1, maximum radiological exposures could occur beyond the property boundary depending on stability class. Refer to Step 3.8 and EXHIBIT 3.4.1-4 to project doses at distances beyond the site boundary.

-CAUTION-

THESE PROJECTIONS PERTAIN TO THE RADIOACTIVE GASES AT GROUND LEVEL AND DO NOT INCLUDE RADIATION FROM AN OVERHEAD CLOUD THAT MAY CONTRIBUTE TO THE WHOLE BODY DOSE AT GROUND LEVEL. UNDER CERTAIN METEOROLOGICAL CONDITIONS (ELEVATED RELEASE AND E, F, OR G STABILITY CLASSES), DIRECT RADIATION FROM AN OVERHEAD PLUME MAY PRODUCE SOMEWHAT HIGHER DOSES THAN THOSE CALCULATED BY THIS PROCEDURE.

3.7 Report the projected dose near the site boundary to the Radiological Control Director (Radiological Control Manager if Emergency Operations Facility is activated) or Site Emergency Coordinator. If an elevated release, determine and report maximum off-site projected doses as per Step 3.8.

EXHIBIT 3.4.1-4

EXTRAPOLATION RATIO FOR ESTIMATING DOSES BEYOND ROBINSON

PROPERTY BOUNDARY (1371 FEET) ELEVATED LEVEL RELEASE

DISTANCE FROM PLANT		EXTRAPOLATION RATIO ATMOSPHERIC STABILITY CLASS						
Miles	km	A	B	C	D	E	F	G
1.0	1608	.027	.81	.82	58.3	$2.5 \times 10^4$	$4.5 \times 10^{12}$	$6.0 \times 10^{33}$
2.0	3218	<0.01	.05	.26	33.3	$2.6 \times 10^4$	$2.2 \times 10^{13}$	$6.9 \times 10^{35}$
3.0	4824	<0.01	.02	.13	21.9	$2.1 \times 10^4$	$2.5 \times 10^{13}$	$1.9 \times 10^{36}$
4.0	6432	<0.01	.01	.08	15.3	$1.6 \times 10^4$	$2.5 \times 10^{13}$	$2.8 \times 10^{36}$
5.0	8040	<0.01	<0.01	.05	11.4	$1.3 \times 10^4$	$2.2 \times 10^{13}$	$3.3 \times 10^{36}$
6.0	9648	<0.01	<0.01	.04	8.9	$1.1 \times 10^4$	$2.0 \times 10^{13}$	$3.6 \times 10^{36}$
7.0	11256	<0.01	<0.01	.03	7.2	$9.1 \times 10^3$	$1.8 \times 10^{13}$	$3.8 \times 10^{36}$
8.0	12864	<0.01	<0.01	.02	6.1	$7.9 \times 10^3$	$1.6 \times 10^{13}$	$3.8 \times 10^{36}$
9.0	14472	<0.01	<0.01	.02	5.3	$7.0 \times 10^3$	$1.5 \times 10^{13}$	$3.7 \times 10^{36}$
10.0	16080	<0.01	<0.01	.02	4.4	$6.1 \times 10^{13}$	$1.5 \times 10^{13}$	$3.7 \times 10^{36}$



H. B. ROBINSON  
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TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

WHOLE BODY DOSE PROJECTIONS

PEP - 3.4.2

REVISION 6

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *[Signature]*  
Emergency Planning Coordinator

6-18-82  
DATE

Approved By: *[Signature]*  
Plant General Manager

7/2/82  
DATE

## PEP - 3.4.2 WHOLE BODY DOSE PROJECTIONS

### 1.0 Responsible Individuals and Objectives

The Radiological Control Director or the Dose Projection Coordinator is responsible for calculating Whole Body Dose projections to be used by the Radiological Control Director and the Site Emergency Coordinator in determining and evaluating possible off-site consequences from a release of airborne radioactivity. The Radiological Control Manager shall assume responsibility for calculating off-site whole body dose projections (to be used by the Emergency Response Manager) after the Emergency Operations Facility is activated.

### 2.0 Scope and Applicability

This procedure is intended to be used for all manual calculations of whole body dose subsequent to that in PEP-3.4.1, "Initial Dose Projections." It is intended to provide realistic assessment of doses at any point in the Emergency Planning Zone (EPZ). This procedure shall be performed periodically as directed by the Radiological Control Director, (Radiological Control Manager after the Emergency Operations Facility is activated). These projections pertain to the radioactive gases at ground level and do not include radiations from an overhead cloud that may contribute to the whole body dose at ground level.

Provisions are included for:

- 1) Determining the Atmospheric Dispersion Factor (X/Q) at any point downwind in the Plume Exposure Planning Zone based on the Atmospheric Stability Class, wind speed, and the distance to that point from the point of release.
- 2) Correcting the dose to account for the time after shutdown that the source data is taken when using an assumed mix of noble gases.
- 3) Correcting for distance away from the centerline of the cloud.
- 4) Calculating the dose conversion factor for a known nuclide mix of noble gases.
- 5) Manually constructing dose isopleths.

### 3.0 Actions

#### 3.1 List of Exhibits:

- 3.4.2-1 Whole Body Dose Projections Worksheet
- 3.4.2-2 Determination of Dose Conversion Factor Worksheet
- 3.4.2-3 Gamma Whole Body Dose Conversion Factors and Decay Constants of Noble Gases
- 3.4.2-4  $\chi_u/Q$  with Distance for Elevated Releases
- 3.4.2-5  $\chi_u/Q$  with Distance for Ground Level Releases

- 3.4.2-6 Horizontal Dispersion Coefficient as a Function of Downwind Distance from the Source
- 3.4.2-7 Vertical Dispersion Coefficient as a Function of Downwind Distance from the Source
- 3.4.2-8 Whole Body Dose Conversion Factors for Unknown Mix
- 3.4.2-9 Doses at Various Distances from Cloud Centerline

### 3.2 Source Term (Q)

Use the source term calculated in accordance with appropriate PEP-Section 3.6, "Source Term Assessments and Estimates of Core Damage." The source term should have units of Ci/sec or Ci. Enter the Source Term Value in Column 1 of Exhibit 3.4.2-1. Also note the source term's units in Column 1.

### 3.3 Meteorology ( $\chi/Q$ )

- 3.3.1 Determine the Atmospheric Stability Class, wind direction, and wind speed. For stack releases, use upper wind speeds and wind directions. For releases from any other location, use lower wind speed and wind directions. The following steps, 3.3.1.1 to 3.3.1.5, should be used in order of preference.
  - 3.3.1.1 If available, use appropriate equipment to access the Met Tower directly. The Control Room's process computer can access the Met Tower and compute usable parameters directly. RC&T must first access the tower via an acoustic coupler and then use a tabletop computer to convert the met pulses to usable parameters. Record the wind speed, wind direction, and atmospheric stability class on the worksheet, Exhibit 3.4.2-1.
  - 3.3.1.2 If the Met Tower is unaccessible via phone lines, dispatch an individual to the Met Tower to manually obtain meteorological pulses for each parameter as per PEP 2.6.20 (Exhibit 2.6.20-1).
  - 3.3.1.3 If the on-site meteorological station is completely inoperable, the necessary met data can be obtained from the National Weather Service (see PEP Appendix A.4 for phone numbers) using the steps given in Exhibit 2.6.20-3 of PEP 2.6.20.
  - 3.3.1.4 Call the Licensing & Permits Section in Raleigh and request meteorological data (see PEP Appendix A.4 for phone numbers).
  - 3.3.1.5 If there is no meteorological data readily available, estimate the wind speed and direction, determine, and circle appropriate Atmospheric Stability Class.

	<u>Sunny Day</u>	<u>Cloudy Day</u>	<u>Cloudy Night</u>	<u>Clear Night</u>
light wind or calm ( $\leq 4\text{m/s}$ ) = ( $\leq 8.9$ mph)	B	C	E	F
moderately strong wind ( $> 4\text{m/s}$ ) = ( $> 8.9$ mph)	C	D	D	D

Record wind speed, wind direction, and stability class in Exhibit 3.4.2-1.

Note: Assume Stability Class D whenever it is raining.

3.3.2 Determine the Atmospheric Dispersion Factor ( $\chi/Q$ )

3.3.2.1 Determine the Atmospheric Dispersion Factor,  $\chi/Q$ , by either Step 3.3.2.1.1 or Step 3.3.2.1.2.

3.3.2.1.1 Determine the Atmospheric Dispersion Factor,  $\chi/Q$ , using either Exhibit 3.4.2-4 if the release is via the stack or Exhibit 3.4.2-5 if the release is considered from ground level.

- 1) Determine the point of interest from the plant.
- 2) Read up or down to the line for the appropriate stability class as determined in Step 3.3.1.
- 3) Record the appropriate  $\bar{\chi}u/Q$  from the vertical scale for use in 5 below.
- 4) Record the  $\bar{u}$  (wind speed) from Section 3.3.1 and record below.
- 5) Calculate the  $\chi/Q$  for the point of interest and enter in Column 2 of Exhibit 3.4.2-1.

$$\frac{\chi}{Q} = \frac{\bar{\chi}u}{Q} \div \bar{u}$$

$$\frac{\chi}{Q} = \text{---} \div \text{---} = \text{---}$$

3.3.2.1.2 Determine the Atmospheric Dispersion Factor,  $\chi/Q$ , using the following equation where concentration is to be calculated along the centerline of the plume at ground level.

$$\frac{\chi}{Q} = \frac{1}{\pi \sigma_y \sigma_z \bar{u}} \exp \left[ -\frac{1}{2} \frac{H^2}{\sigma_z^2} \right]$$

- where  $\chi/Q$  = Atmospheric Dispersion Factor, sec/m<sup>3</sup>.
- $\pi$  = 3.1415
- $\bar{u}$  = average wind speed, m/sec.
- $H$  = release emission height (61 m for stack releases, 0 m for ground level releases).
- $\sigma_y$  = horizontal dispersion coefficient, m; (see Exhibit 3.4.2-6).
- $\sigma_z$  = vertical dispersion coefficient m; (see Exhibit 3.4.2-7).

### 3.4 Dose Conversion Factor (DCF)

3.4.1 If the nuclide mix of the source term is unknown, go to Step 3.4.2. If the nuclide mix is known, go to Step 3.4.3.

3.4.2 Determine the Dose Conversion Factor corresponding to the time after Rx shutdown plus the travel time of cloud to the point of interest.

3.4.2.1 Estimate the arrival time of cloud to the point of interest and add it to the time after Rx shutdown.

$$\text{time after shutdown (in hours)} + \frac{\text{distance to point of interest (in meters)}}{3600\bar{u}}$$

= \_\_\_\_\_ hours

3.4.2.2 Select the Dose Conversion Factor from Exhibit 3.4.2-8 corresponding to the cloud passage time of 3.4.2.1. Use the value in units of (Rem/hr)/(Ci/m<sup>3</sup>) if the source term being used is given in terms of Ci/sec. If the source term is in curies, divide the DCF by 3600. Record it in Column 3 of Exhibit 3.4.2-1. Proceed to Step 3.5.

- 3.4.3 On Exhibit 3.4.2-2, enter the known noble gas radionuclides of the source term and their respective concentrations in Column 1.
- 3.4.4 Enter the sample time and release time on the top of Exhibit 3.4.2-2. If there is a difference between the estimated or actual release time and the sample time, use Exhibit 3.4.2-3 to obtain the decay constant for each nuclide and calculate the exponential decay. Multiply the sample concentration by its exponential decay (if applicable) for each identified nuclide to obtain the release concentration and record in Column 5. Determine what percent each nuclide contributes to the total release mix and record in Column 6.
- 3.4.5 From Exhibit 3.4.2-3 obtain the DCF for each nuclide entered in Column 1 and enter these nuclide specific DCF in Column 7.
- 3.4.6 Multiply the % mix by its nuclide DCF for each nuclide and record. Sum these adjusted DCFs to obtain the DCF for that release. Record this DCF on Exhibit 3.4.2-1, Column 3, when the source term is in units of Ci/sec. When the source term in Column 1 is in units of curies, divide this DCF by 3600 and enter this value in Column 3.

### 3.5 Dose Projection Results

- 3.5.1 On Exhibit 3.4.2-1 multiply Columns 1, 2, and 3 to obtain the centerline Whole Body Dose Projection in the downwind sector at the point of interest. If the point of interest is not on the centerline of the cloud, then go to Step 3.6. Record in Column 5 and enter the time and your initials in Column 6. Also note in Column 6 the point of interest that the projected dose is calculated for.

### 3.6 Dose Projection Off the Centerline

- 3.6.1 If the point of interest is not on the centerline of the cloud, correct the dose for lateral distance (y) deviation.

- 3.6.1.1 Estimate the lateral distance (y) between the point of interest and the centerline of the cloud using the appropriate maps.

Record:  $y = \underline{\hspace{2cm}}$  (m)

Note: If not otherwise known, the lateral distance (y) between the point of interest and the centerline of the cloud is estimated by use of triangulation of the point with respect to the plant and the cloud centerline sector on an appropriately scaled map.



- 3.6.1.2 Using Exhibit 3.4.2-6, determine  $\sigma_y$  as a function of distance (downwind distance perpendicular to the point of interest) and Stability Class (Step 3.2) by locating the distance on the horizontal axis, read up to the diagonal line for the stability class, and read the  $\sigma_y$  from the left vertical axis.
- 3.6.1.3 Divide the lateral distance by  $\sigma_y$  to determine the number of  $\sigma_y$ 's between the cloud centerline and the point of interest.
- 3.6.1.4 Using the number of  $\sigma_y$ 's, refer to Exhibit 3.4.2-9 and determine the dose conversion factor. Locate the number of  $\sigma_y$ 's on the horizontal axis and read up to the distance of  $\sigma_y$  (meters). Read across to the vertical axis to obtain the appropriate correction factor (CF). Enter this value in Column 4 of Exhibit 3.4.2-1.
- 3.6.1.5 Perform the multiplications and record the projected dose in Column 5 of Exhibit 3.4.2-1. Initial and date each calculation in Column 6. Also note in Column 6 the point of interest that the projected dose is calculated for.
- 3.7 Report the Whole Body Projected Dose to the Radiological Control Director or Site Emergency Coordinator. Report to the Radiation Control Manager if the Emergency Operations Facility has been activated.
- 3.8 To estimate a source term based on measured radiation levels in the environment, these procedures need only be performed in reverse order solving for the unknown value in Column 1 of Exhibit 3.4.2-1.
- 3.9 Manual Method for Isopleth Determination

This step is used to determine the area within which the radiation exposures will be equal to or greater than some specified dose of interest. As an example, a typical need will be to estimate the area where doses will be greater than a Protective Action Guideline.

- 3.9.1 Select a dose or dose rate of interest and enter into Step 3.9.2.
- 3.9.2 Solve for  $\bar{\chi}\bar{u}/Q$  using the values for  $\bar{u}$ , source term, and DCF as previously determined in this procedure. Note: Ensure that the units of dose, source term, and DCF are compatible.

$$\frac{\bar{\chi}\bar{u}}{Q} = \frac{(\text{Dose: } \underline{\quad}) \times (\bar{u}: \underline{\quad} \text{ m/sec})}{(\text{Source: } \underline{\quad}) \times (\text{DCF: } \underline{\quad})}$$

$$\frac{\bar{\chi}\bar{u}}{Q} = \underline{\hspace{4cm}} \text{ (m}^{-2}\text{)}$$

- 3.9.3 Determine the maximum distance (X-max) downwind for the  $\chi_{u/Q}$  in Step 3.9.2.
- 3.9.3.1 Select the appropriate Exhibit. Use Exhibit 3.4.2-4 if the release is via the stack; otherwise, use Exhibit 3.4.2-5.
- 3.9.3.2 Locate the  $\chi_{u/Q}$  value on the vertical axis and read across to the appropriate Atmospheric Stability Class curve. If using Exhibit 3.4.2-4, read across to the right-most side of the curve.
- 3.9.3.3 Read from the horizontal axis the corresponding distance (X-max) for the  $\chi_{u/Q}$  in Step 3.9.2.
- 3.9.3.4 Draw a line from the release point (plant) on an appropriately scaled full-size map to X-max in the downwind direction from the plant.

Note: Given the maximum distance downwind just derived, the cross sectional distance (width) of the plume can be determined by Steps 3.9.4 and 3.9.5 in increasing order of sophistication.

- 3.9.4 Determine maximum width of affected area based on wind speed.
- 3.9.4.1 If the wind speed is  $>4$  m/sec (8.9 mph), multiply X-max by 0.13 and cross-tee a line at both ends of the X-max line on the map and complete the rectangle.

Note: This represents the maximum width of the area within X-max where the dose may be  $\geq$  dose of interest. This assumes wind meandering will not exceed 1 sector.

- 3.9.4.2 If the wind speed is  $\leq 4$  m/sec (8.9 mph), multiply the X-max by 0.26 and complete the rectangle.

Note: This assumes wind meandering will not exceed 2 sectors.

- 3.9.5 Determine the width of the affected area based on the B. Turner method.
- 3.9.5.1 Divide the line from the plant to X-max into ten equal segments.
- 3.9.5.2 Determine the width (y) at each division of X-max by solving for y in:

$$y = \sqrt{-2 \sigma_y^2 \ln \left[ \frac{\bar{\chi}u/Q \text{ of interest}}{\chi u/Q \text{ at centerline}} \right]}$$

- 1) Select Exhibit 3.4.2-4 if the release was via the stack; otherwise use Exhibit 3.4.2-5.
- 2) For each distance (division of X-max) determine a  $\chi u/Q$  at the distance on the horizontal axis, read up or down to the appropriate stability curve and read the  $\bar{\chi}u/Q$  from the vertical axis.

Note: This is the  $\bar{\chi}u/Q$  at the centerline value to be used in the equation in Step 3.9.2.

- 3) For each distance (division of X-max) determine  $\sigma_y$ . Find the distance on the horizontal axis, in Exhibit 3.4.2-6, read up to the appropriate stability class and then read the  $\sigma_y$  from the vertical axis.

3.9.5.3 After determining (y) for each division of X-max, draw the isopeth on a map.

- 1) Draw in the distance y, perpendicular to the centerline, at the appropriate X-max division.
- 2) Connect the ends of the y lines. The area inside the torpedo shaped isopleth is the area within which the dose is greater than or equal to the dose of interest.

EXHIBIT 3.4.2-1

WHOLE BODY DOSE PROJECTIONS WORK SHEET

Wind		Column (1)	Column (2)	Column (3)	Column (4)	Column (5)	Column (6)
Speed (m/sec)	Direction (from)	Source Term (Step 3.2)	X/Q (Step 3.3)	DCF (Step 3.4)	Correction Factor (Step 3.6)	Projected Dose	Initial Time/Date PT OF INTEREST

EXHIBIT 3.4.2-2  
 DETERMINATION OF DOSE CONVERSION FACTOR  
 WORKSHEET

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

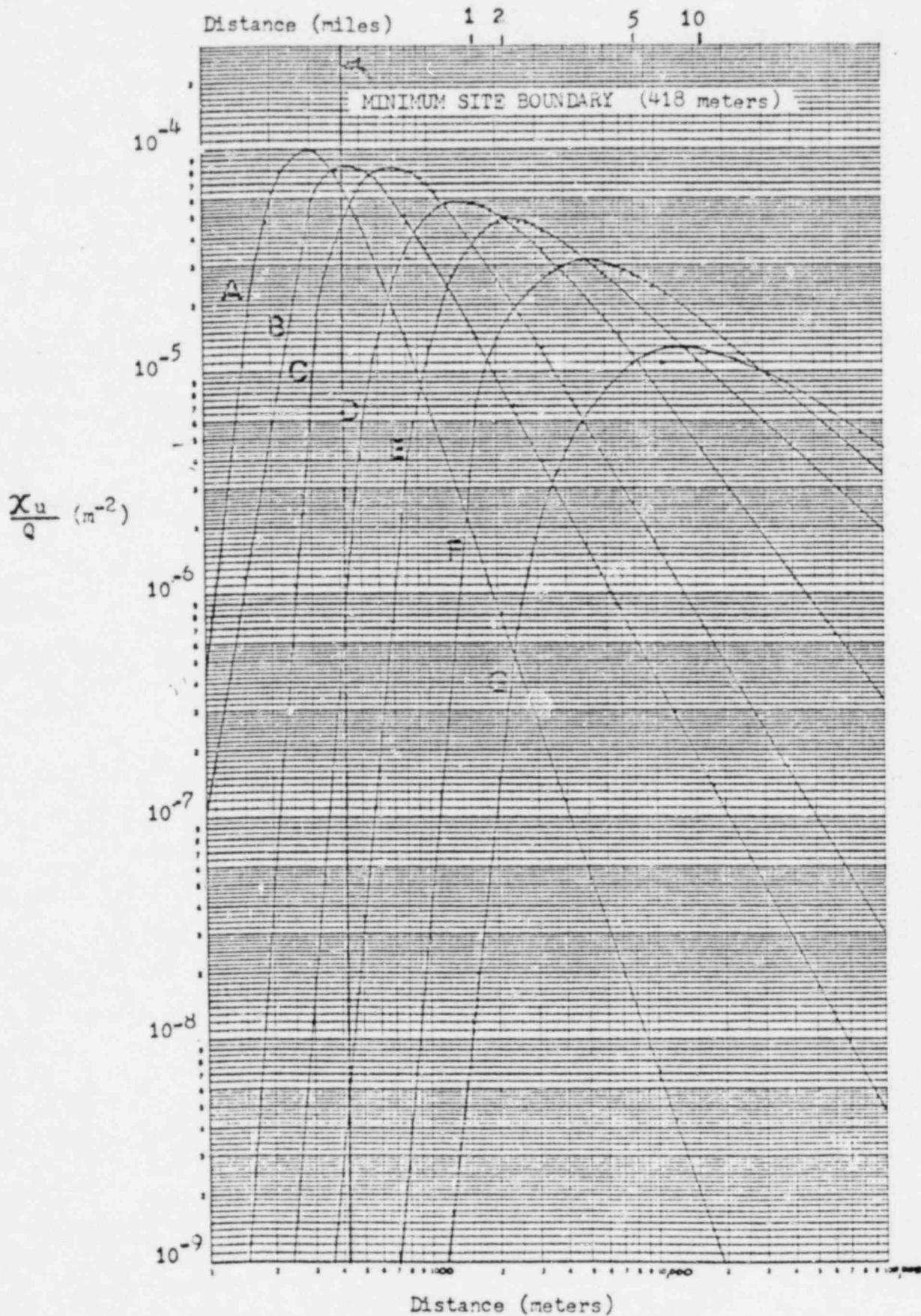
Sample Time \_\_\_\_\_ Release Time \_\_\_\_\_ Difference (t) \_\_\_\_\_ (hr)

Nuclide	Sample Conc.	$\lambda(\text{HR}^{-1})$	$e^{-\lambda t}$	Release Cont.	% of Mix	Nuclide Dose Conversion Factor Exhibit 3.4.2-3	Adjusted DCF
Total DCF (Rem/hr/(Ci/m <sup>3</sup> ) Is The Sum Of Adjusted DCFs. →							

EXHIBIT 3.4.2-3  
 GAMMA WHOLE BODY DOSE CONVERSION FACTORS  
 AND DECAY CONSTANTS OF NOBLE GASES

Nuclide	Gamma - WB DCF (Rem/hr)/(Ci/m <sup>3</sup> )	λ(HR <sup>-1</sup> )
KR-85M	8.46 x 10 <sup>+1</sup>	0.158
KR-85	1.12 x 10 <sup>+0</sup>	7.4 x 10 <sup>-6</sup>
KR-87	4.79 x 10 <sup>+2</sup>	0.878
KR-88	1.23 x 10 <sup>+3</sup>	0.248
KR-89	1.08 x 10 <sup>+3</sup>	13.075
XE-131M	4.46 x 10 <sup>+0</sup>	0.002
XE-133M	1.54 x 10 <sup>+1</sup>	0.013
XE-133	1.78 x 10 <sup>+2</sup>	0.005
XE-135M	2.28 x 10 <sup>+2</sup>	2.665
XE-135	1.52 x 10 <sup>+2</sup>	0.076
XE-137	1.02 x 10 <sup>+2</sup>	10.662
XE-138	6.70 x 10 <sup>+2</sup>	2.376

EXHIBIT 3.4.2-4  
 $\bar{x}\bar{u}/Q$  With Distance for Elevated Releases (61M)  
 By Stability Class



$\chi u/Q$  With Distance for Ground Level Releases (0m) by Stability Class

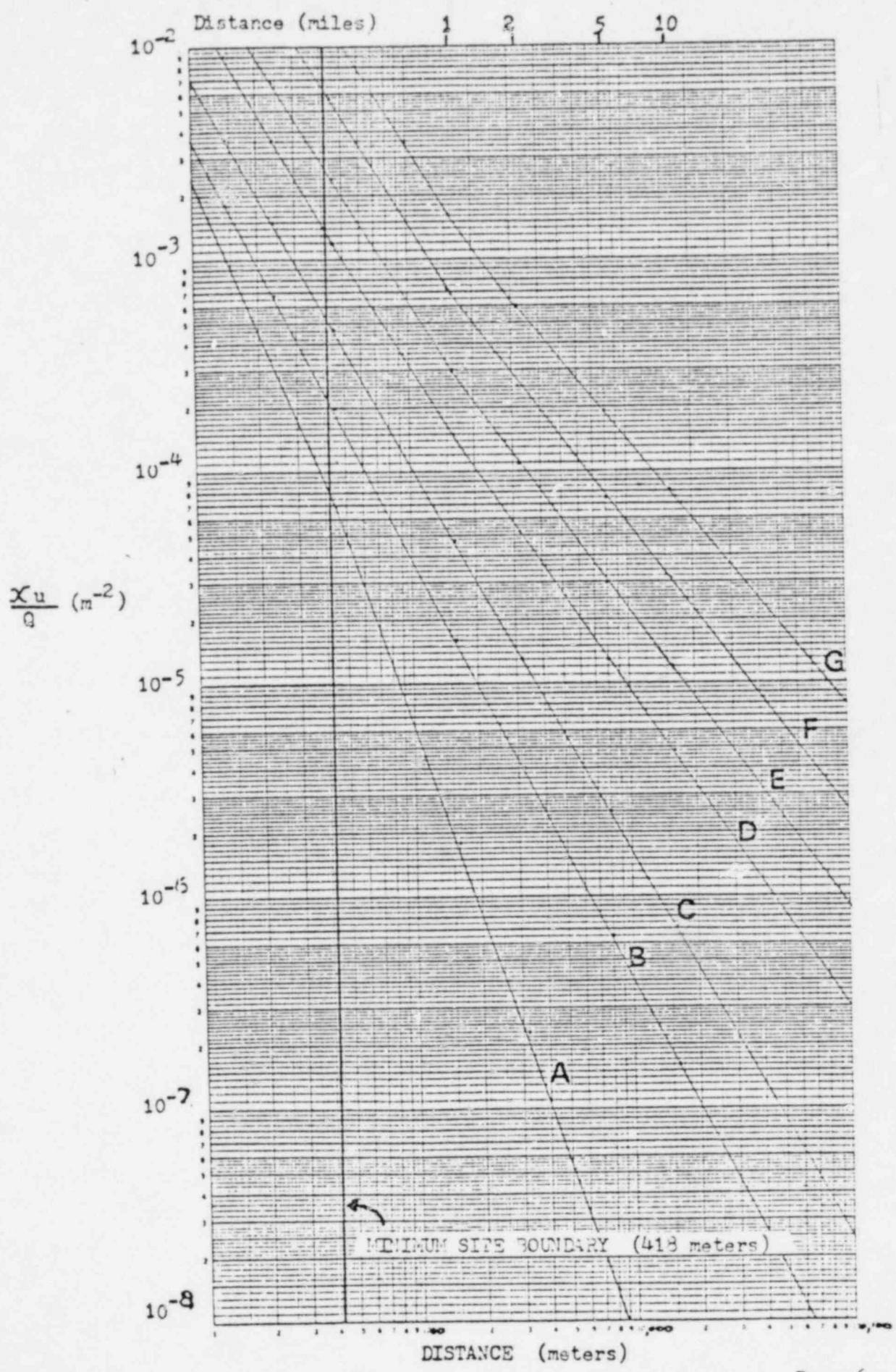


Exhibit 3.4.2-5



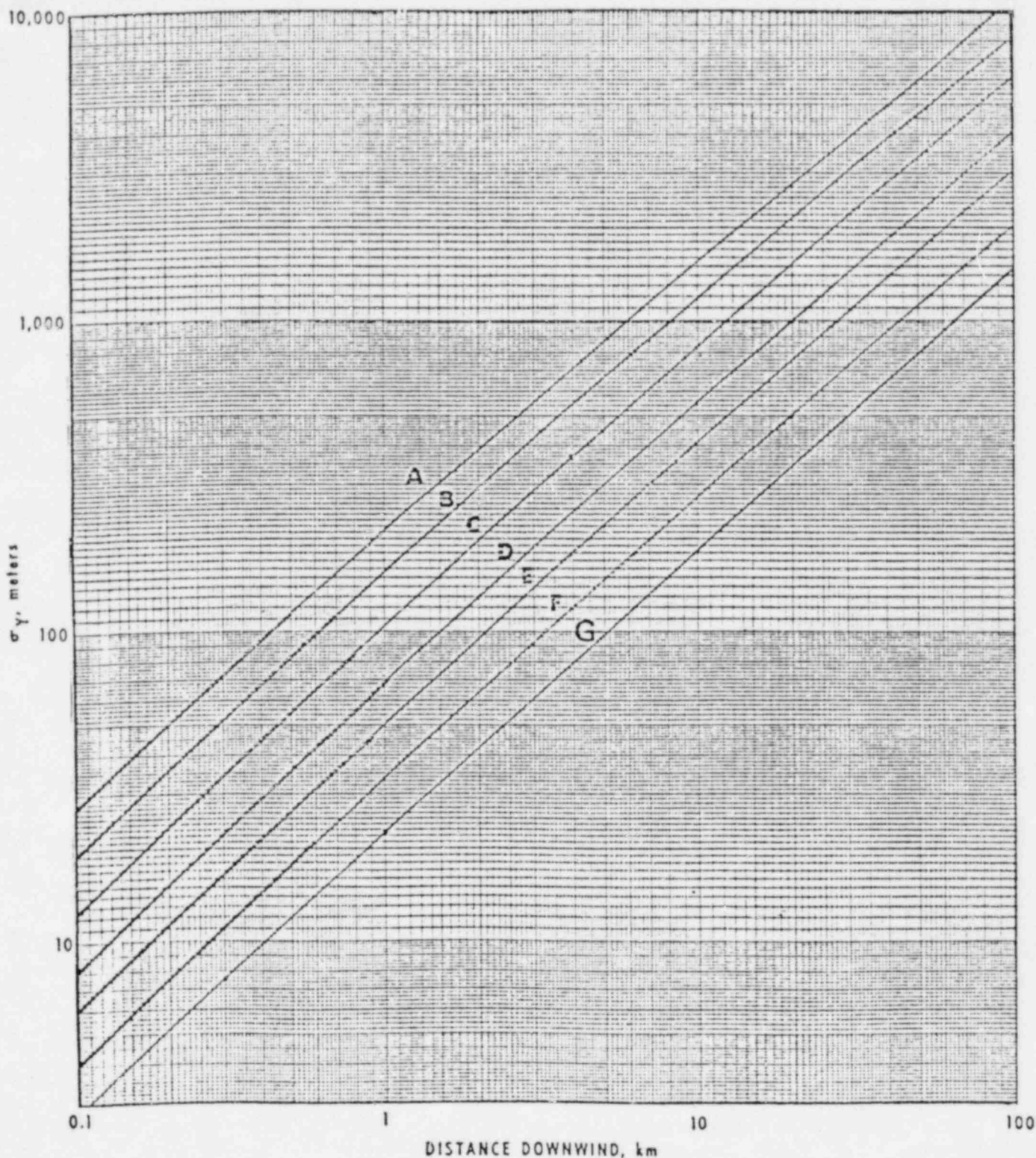


EXHIBIT 3.4.2-6 Horizontal Dispersion Coefficient as a Function of Downwind Distance from the Source

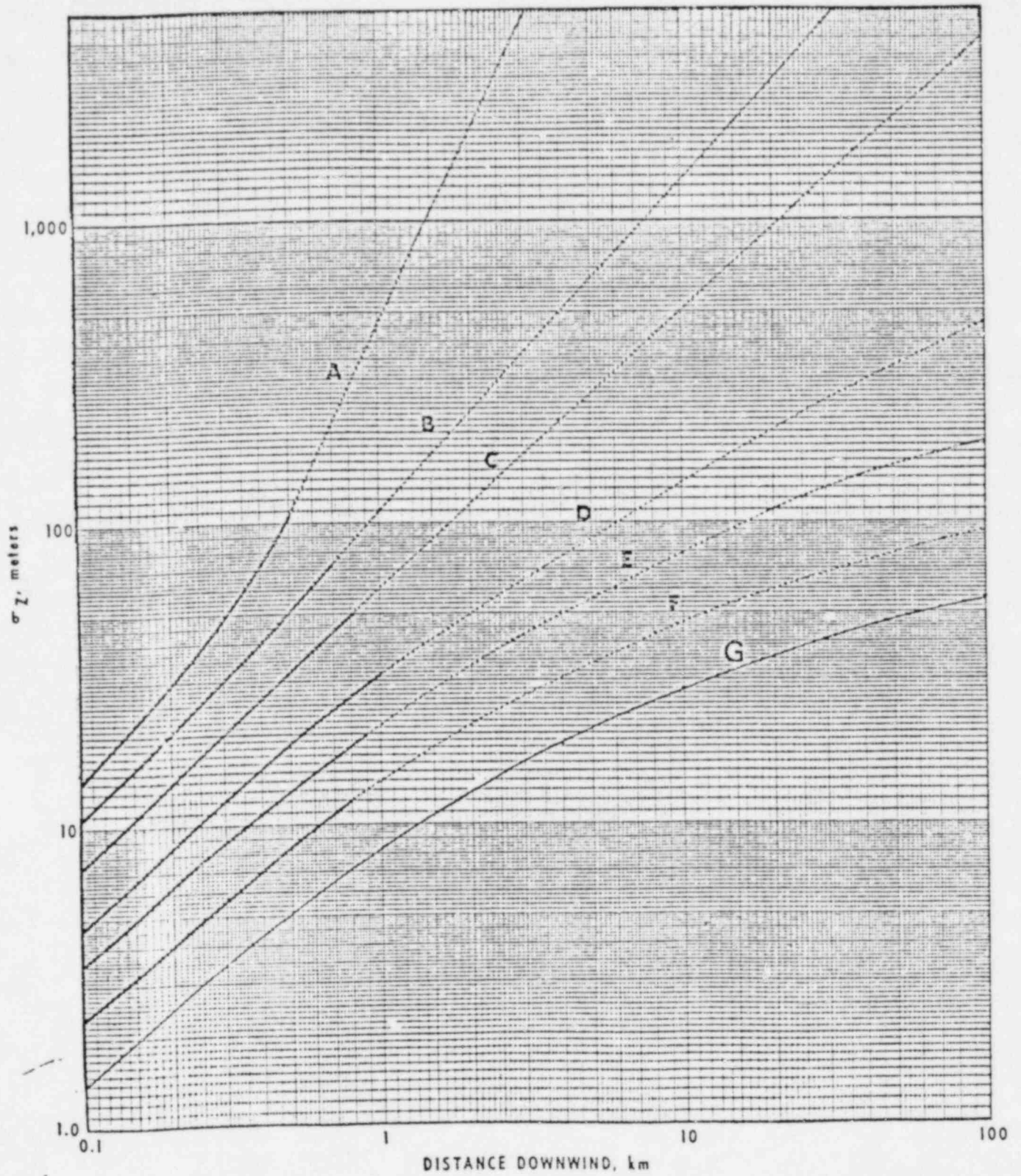
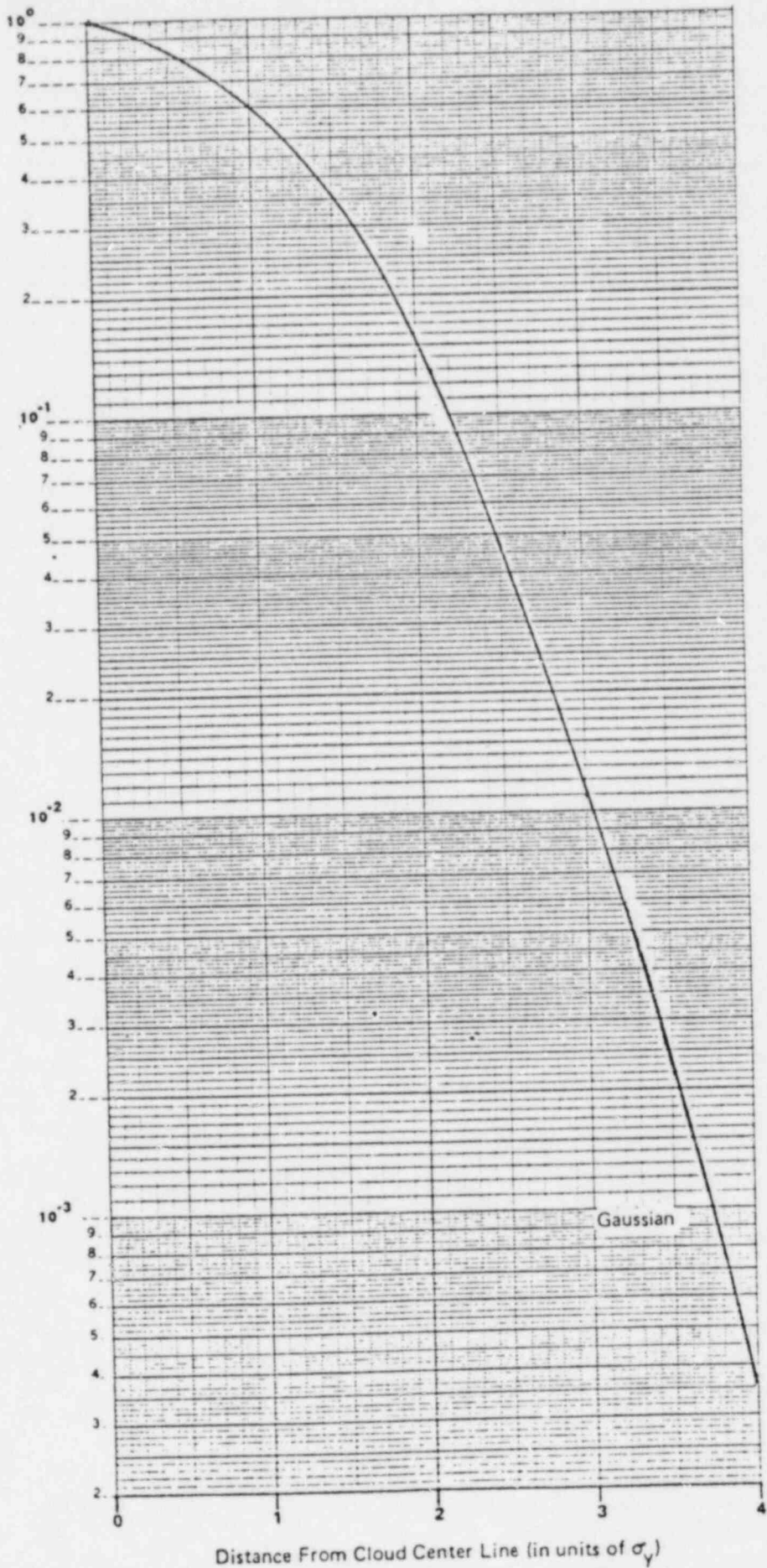


EXHIBIT 3.4.2-7 Vertical Dispersion Coefficient as a Function of Downwind Distance from the Source

EXHIBIT 3.4.2-8  
WHOLE BODY CONVERSION FACTORS FOR UNKNOWN MIX

Time After Rx Shutdown (Hr.)	Dose Conversion Factor (Rem/hr)/(Ci/m <sup>3</sup> )
0.5	356
1	325
2	283
5	198
8	142
12.5	95
24	49
72	19

Dose As A Fraction of Peak Cloud Centerline Dose



[The Gaussian Distribution represents the reduction in concentration as a function of distance from the cloud centerline at any distance.]

EXHIBIT 3.4.2-9



H. B. ROBINSON  
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EMERGENCY PLAN AND PROCEDURES

VOLUME 13

THYROID DOSE PROJECTIONS

PEP - 3.4.3

REVISION 5

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *J. D. Linnell*  
Emergency Planning Coordinator

6-18-82  
DATE

Approved By: *W. S. Hatcher, Jr.*  
Plant General Manager

7/2/82  
DATE

## PEP - 3.4.3 THYROID DOSE PROJECTIONS

### 1.0 Responsible Individuals and Objectives

The Radiological Control Director or the Dose Projection Coordinator is responsible for calculating thyroid dose projections to be used by the Radiological Control Director and the Site Emergency Coordinator in determining and evaluating possible off-site consequences from a release of airborne radioactivity. The Radiological Control Manager shall assume responsibility for calculating off-site thyroid dose projections (to be used by the Emergency Response Manager) after the Emergency Operations Facility is activated.

### 2.0 Scope and Applicability

This procedure is intended to be used for all manual calculations of thyroid dose subsequent to that in PEP-3.4.1, "Initial Dose Projections." It is intended to provide realistic assessment of doses at any point in the Emergency Planning Zone (EPZ). This procedure shall be performed periodically as directed by the Radiological Control Director, (Radiological Control Manager after the Emergency Operations Facility is activated).

Provisions are included for:

- 1) Determining the Atmospheric Dispersion Factor (X/Q) at any point downwind in the Plume Exposure Planning Zone based on the Atmospheric Stability Class, wind speed, and the distance to that point from the point of release.
- 2) Correcting the dose to account for the time after shutdown that the source data is taken when using an assumed mix of radioiodine gases.
- 3) Correcting for distance away from the centerline of the cloud.
- 4) Calculating the dose conversion factor for a known nuclide mix of radioiodine gases.
- 5) Manually constructing dose isopleths.

### 3.0 Actions

#### 3.1 List of Exhibits:

- 3.4.3-1 Thyroid Dose Projections Worksheet
- 3.4.3-2 Determination of Dose Conversion Factor Worksheet
- 3.4.3-3 Thyroid (iodine inhalation) Dose Conversion Factors and Decay Constants of Radioiodines
- 3.4.3-4  $\chi_u/Q$  with Distance for Elevated Releases
- 3.4.3-5  $\chi_u/Q$  with Distance for Ground Level Releases
- 3.4.3-6 Horizontal Dispersion Coefficient as a Function of Downwind Distance from the Source
- 3.4.3-7 Vertical Dispersion Coefficient as a Function of Downwind Distance from the Source

- 3.4.3-8 Thyroid Dose Conversion Factors for Unknown Mix
- 3.4.3-9 Doses at Various Distances from Cloud Centerline

### 3.2 Source Term (Q)

Use the source term calculated in accordance with appropriate PEP-3.6, "Source Term Assessments." The source term needs to be in terms of total curies of iodine released. If the source term is based on stack/ vent monitor readings, use 15 percent of this monitor-based source term. If the curies of iodine released can be determined from isotopic analysis, use this source term directly. Enter the Source Term Value in Column 1 of Exhibit 3.4.3-1.

### 3.3 Meteorology (X/Q)

- 3.3.1 Determine the Atmospheric Stability Class, wind direction, and wind speed. For stack releases, use upper wind speeds and wind directions. For releases from any other location, use lower wind speed and wind directions. The following steps, 3.3.1.1 to 3.3.1.5, should be used in order of preference.
  - 3.3.1.1 If available, use appropriate equipment to access the Met Tower directly. The Control Room's process computer can access the Met Tower and compute usable parameters directly. RC&T must first access the tower via an acoustic coupler and then use a tabletop computer to convert the met pulses to usable parameters. Record the wind speed, wind direction, and atmospheric stability class on the worksheet, Exhibit 3.4.3-1.
  - 3.3.1.2 If the Met Tower is unaccessible via phone lines, dispatch an individual to the Met Tower to manually obtain meteorological pulses for each parameter as per PEP-2.6.20 (Exhibit 2.6.20-1).
  - 3.3.1.3 If the on-site meteorological station is completely inoperable, the necessary met data can be obtained from the National Weather Service (see PEP Appendix A.4 for phone numbers) using the steps given in Exhibit 2.6.20-3 of PEP 2.6.20.
  - 3.3.1.4 Call the Licensing & Permits Section in Raleigh and request meteorological data (see PEP Appendix A.4 for phone numbers).
  - 3.3.1.5 If there is no meteorological data readily available, estimate the wind speed and direction, determine, and circle appropriate Atmospheric Stability Class.

	<u>Sunny Day</u>	<u>Cloudy Day</u>	<u>Cloudy Night</u>	<u>Clear Night</u>
light wind or calm ( $<4\text{m/s}$ ) = ( $<8.9$ mph)	B	C	E	F
moderately strong wind ( $>4\text{m/s}$ ) = ( $>8.9$ mph)	C	D	D	D

Record wind speed, wind direction, and stability class in Exhibit 3.4.2-1.

Note: Assume Stability Class D whenever it is raining.

### 3.3.2 Determine the Atmospheric Dispersion Factor ( $\chi/Q$ )

3.3.2.1 Determine the Atmospheric Dispersion Factor,  $\chi/Q$ , by either Step 3.3.2.1.1 or Step 3.3.2.1.2.

3.3.2.1.1 Determine the Atmospheric Dispersion Factor,  $\chi/Q$ , using either Exhibit 3.4.3-4 if the release is via the stack or Exhibit 3.4.3-5 if the release is considered from ground level.

- 1) Determine the point of interest from the plant.
- 2) Read up or down to the line for the appropriate stability class as determined in Step 3.3.1.
- 3) Record the appropriate  $\chi\bar{u}/Q$  from the vertical scale for use in 5 below.
- 4) Record the  $\bar{u}$  (wind speed) from Section 3.3.1 and record below.
- 5) Calculate the  $\chi/Q$  for the point of interest and enter in Column 2 of Exhibit 3.4.3-1.

$$\frac{\chi}{Q} = \frac{\chi\bar{u}}{Q} \div \bar{u}$$

$$\frac{\chi}{Q} = \text{---} \div \text{---} = \text{---}$$

3.3.2.1.2 Determine the Atmospheric Dispersion Factor,  $\chi/Q$ , using the following equation where concentration is to be calculated along the centerline of the plume at ground level.



$$\frac{\chi}{Q} = \frac{1}{\pi \sigma_y \sigma_z \bar{u}} \exp \left[ -\frac{1}{2} \frac{H^2}{\sigma_z^2} \right]$$

- where  $\chi/Q$  = Atmospheric Dispersion Factor,  $\text{sec}/\text{m}^3$ .
- $\pi$  = 3.1415
- $\bar{u}$  = average wind speed,  $\text{m}/\text{sec}$ .
- $H$  = release emission height (61 m for stack releases, 0 m for ground level releases).
- $\sigma_y$  = horizontal dispersion coefficient, m; (see Exhibit 3.4.3-6).
- $\sigma_z$  = vertical dispersion coefficient m; (see Exhibit 3.4.3-7).

### 3.4 Dose Conversion Factor (DCF)

3.4.1 If the nuclide mix of the source term is unknown, go to Step 3.4.2. If the nuclide mix is known, go to Step 3.4.3.

3.4.2 Determine the Dose Conversion Factor corresponding to the time after Rx shutdown plus the travel time of cloud to the point of interest.

3.4.2.1 Estimate the arrival time of cloud to the point of interest and add it to the time after Rx shutdown.

$$\text{time after shutdown (in hours)} + \frac{\text{distance to point of interest (in meters)}}{3600\bar{u}}$$

= \_\_\_\_\_ hours

3.4.2.2 Select the Dose Conversion Factor from Exhibit 3.4.3-8 corresponding to the cloud passage time of 3.4.2.1.

3.4.3 On Exhibit 3.4.3-2, enter the known radioiodine nuclides of the source term and their respective concentrations in Column 1.

- 3.4.4 Enter the sample time and release time on the top of Exhibit 3.4.3-2. If there is a difference between the estimated or actual release time and the sample time, use Exhibit 3.4.3-3 to obtain the decay constant for each nuclide and calculate the exponential decay. Multiply the sample concentration by its exponential decay (if applicable) for each identified nuclide to obtain the release concentration and record in Column 5. Determine what percent each nuclide contributes to the total release mix and record in Column 6.
- 3.4.5 From Exhibit 3.4.3-3 obtain the DCF for each nuclide entered in Column 1 and enter these nuclide specific DCF in Column 7.
- 3.4.6 Multiply the % mix by its nuclide DCF for each nuclide and record. Sum these adjusted DCFs to obtain the DCF for that release. Record this DCF on Exhibit 3.4.3-1, Column 3.

### 3.5 Dose Projection Results

- 3.5.1 On Exhibit 3.4.3-1 multiply Columns 1, 2, and 3 to obtain the centerline thyroid dose projection in the downwind sector at the point of interest. If the point of interest is not on the centerline of the cloud, then go to Step 3.6. Record in Column 5 and enter the time and your initials in Column 6. Also note in Column 6 the point of interest that the projected dose is calculated for.

### 3.6 Dose Projection Off the Centerline

- 3.6.1 If the point of interest is not on the centerline of the cloud, correct the dose for lateral distance (y) deviation.

- 3.6.1.1 Estimate the lateral distance (y) between the point of interest and the centerline of the cloud using the appropriate maps.

Record:  $y = \underline{\hspace{2cm}}$  (m)

Note: If not otherwise known, the lateral distance (y) between the point of interest and the centerline of the cloud is estimated by use of triangulation of the point with respect to the plant and the cloud centerline sector on an appropriately scaled map.

- 3.6.1.2 Using Exhibit 3.4.3-6, determine  $\sigma_y$  as a function of distance (downwind distance perpendicular to the point of interest) and Stability Class (Step 3.2) by locating the distance on the horizontal axis, read up to the diagonal line for the stability class, and read the  $\sigma_y$  from the left vertical axis.

- 3.6.1.3 Divide the lateral distance by  $\sigma_y$  to determine the number of  $\sigma_y$ 's between the cloud centerline and the point of interest.
- 3.6.1.4 Using the number of  $\sigma_y$ 's, refer to Exhibit 3.4.3-9 and determine the dose conversion factor. Locate the number of  $\sigma_y$ 's on the horizontal axis and read up to the Gaussian curve. Read across to the vertical axis to obtain the appropriate correction factor (CF). Enter this value in Column 4 of Exhibit 3.4.3-1.
- 3.6.1.5 Perform the multiplications and record the projected dose in Column 5 of Exhibit 3.4.3-1. Initial and date each calculation in Column 6. Also note in Column 6 the point of interest that the projected dose is calculated for.
- 3.7 Report the Whole Body Projected Dose to the Radiological Control Director or Site Emergency Coordinator. Report to the Radiation Control Manager if the Emergency Operations Facility has been activated.
- 3.8 To estimate a source term based on measured radiation levels in the environment, these procedures need only be performed in reverse order solving for the unknown value in Column 1 of Exhibit 3.4.3-1.
- 3.9 Manual Method for Isopleth Determination

This step is used to determine the area within which the radiation exposures will be equal to or greater than some specified dose of interest. As an example, a typical need will be to estimate the area where doses will be greater than a Protective Action Guideline (PAG).

- 3.9.1 Select a dose or dose rate of interest and enter into Step 3.9.2.
- 3.9.2 Solve for  $\chi\bar{u}/Q$  using the values for  $\bar{u}$ , source term, and DCF as previously determined in this procedure. Note: Ensure that the units of dose, source term, and DCF are compatible.

$$\frac{\chi\bar{u}}{Q} = \frac{(\text{Dose: } \underline{\quad}) \times (\bar{u}: \underline{\quad} \text{ m/sec})}{(\text{Source: } \underline{\quad}) \times (\text{DCF: } \underline{\quad})}$$

$$\frac{\chi\bar{u}}{Q} = \underline{\hspace{4cm}}$$

- 3.9.3 Determine the maximum distance (X-max) downwind for the  $\chi\bar{u}/Q$  in Step 3.9.2.
- 3.9.3.1 Select the appropriate Exhibit. Use Exhibit 3.4.3-4 if the release is via the stack; otherwise, use Exhibit 3.4.3-5.

- 3.9.3.2 Locate the  $\bar{\chi}u/Q$  value on the vertical axis and read across to the appropriate Atmospheric Stability Class curve. If using Exhibit 3.4.3-4, read across to the right-most side of the curve.
- 3.9.3.3 Read from the horizontal axis the corresponding distance (X-max) for the  $\bar{\chi}u/Q$  in Step 3.9.2.
- 3.9.3.4 Draw a line from the release point (plant) on an appropriately scaled full-size map to X-max in the downwind direction from the plant.

Note: Given the maximum distance downwind just derived, the cross sectional distance (width) of the plume can be determined by Steps 3.9.4 and 3.9.5 in increasing order of sophistication.

3.9.4 Determine maximum width of affected area based on wind speed.

- 3.9.4.1 If the wind speed is  $>4$  m/sec (8.9 mph), multiply X-max by 0.13 and cross-tee a line at both ends of the X-max line on the map and complete the rectangle.

Note: This represents the maximum width of the area within X-max where the dose may be  $\geq$  dose of interest. This assumes wind meandering will not exceed 1 sector.

- 3.9.4.2 If the wind speed is  $\leq 4$  m/sec (8.9 mph), multiply the X-max by 0.26 and complete the rectangle.

Note: This assumes wind meandering will not exceed 2 sectors.

3.9.5 Determine the width of the affected area based on the B. Turner method.

- 3.9.5.1 Divide the line from the plant to X-max into ten equal segments.
- 3.9.5.2 Determine the width (y) at each division of X-max by solving for y in:

$$y = \sqrt{-2 \sigma_y^2 \ln \left[ \frac{\bar{\chi}u/Q \text{ of interest}}{\bar{\chi}u/Q \text{ at centerline}} \right]}$$

- 1) Select Exhibit 3.4.3-4 if the release was via the stack; otherwise use Exhibit 3.4.3-5.

- 2) For each distance (division of X-max) determine a  $\chi_u/Q$  at the distance on the horizontal axis, read up or down to the appropriate stability curve and read the  $\chi_u/Q$  from the vertical axis.

Note: This is the  $\chi_u/Q$  at the centerline value to be used in the equation in Step 3.9.2.

- 3) For each distance (division of X-max) determine  $\sigma_y$ . Find the distance on the horizontal axis, in Exhibit 3.4.3-6, read up to the appropriate stability class and then read the  $\sigma_y$  from the vertical axis.

3.9.5.3 After determining (y) for each division of X-max, draw the isopeth on a map.

- 1) Draw in the distance y, perpendicular to the centerline, at the appropriate X-max division.
- 2) Connect the ends of the y lines. The area inside the torpedo shaped isopleth is the area within which the dose is greater than or equal to the dose of interest.

EXHIBIT 3.4.3-1

THYROID DOSE PROJECTIONS WORK SHEET

Wind		Column (1)	Column (2)	Column (3)	Column (4)	Column (5)	Column (6)
Speed (m/sec)	Direction (from)	Source Term (Step 3.2)	X/Q (Step 3.3)	DCF (Step 3.4)	Correction Factor (Step 3.6)	Projected Dose	Initial Time/Date PT OF INTEREST

EXHIBIT 3.4.3-3  
 THYROID (IODINE INHALATION) DOSE CONVERSION FACTORS  
 AND DECAY CONSTANTS OF RADIOIODINES

Nuclide	DOSE CONVERSION FACTOR $\frac{\text{Rem-m}^3}{\text{Sec-Ci}}$	$\lambda(\text{HR}^{-1})$
I-130	108	5.64E-2
I-131	926	3.59E-3
I-132	11	3.07E-1
I-133	226	3.41E-2
I-134	3	7.97E-1
I-135	46	1.04E-1

EXHIBIT 3.4.3-2  
 DETERMINATION OF DOSE CONVERSION FACTOR  
 WORKSHEET

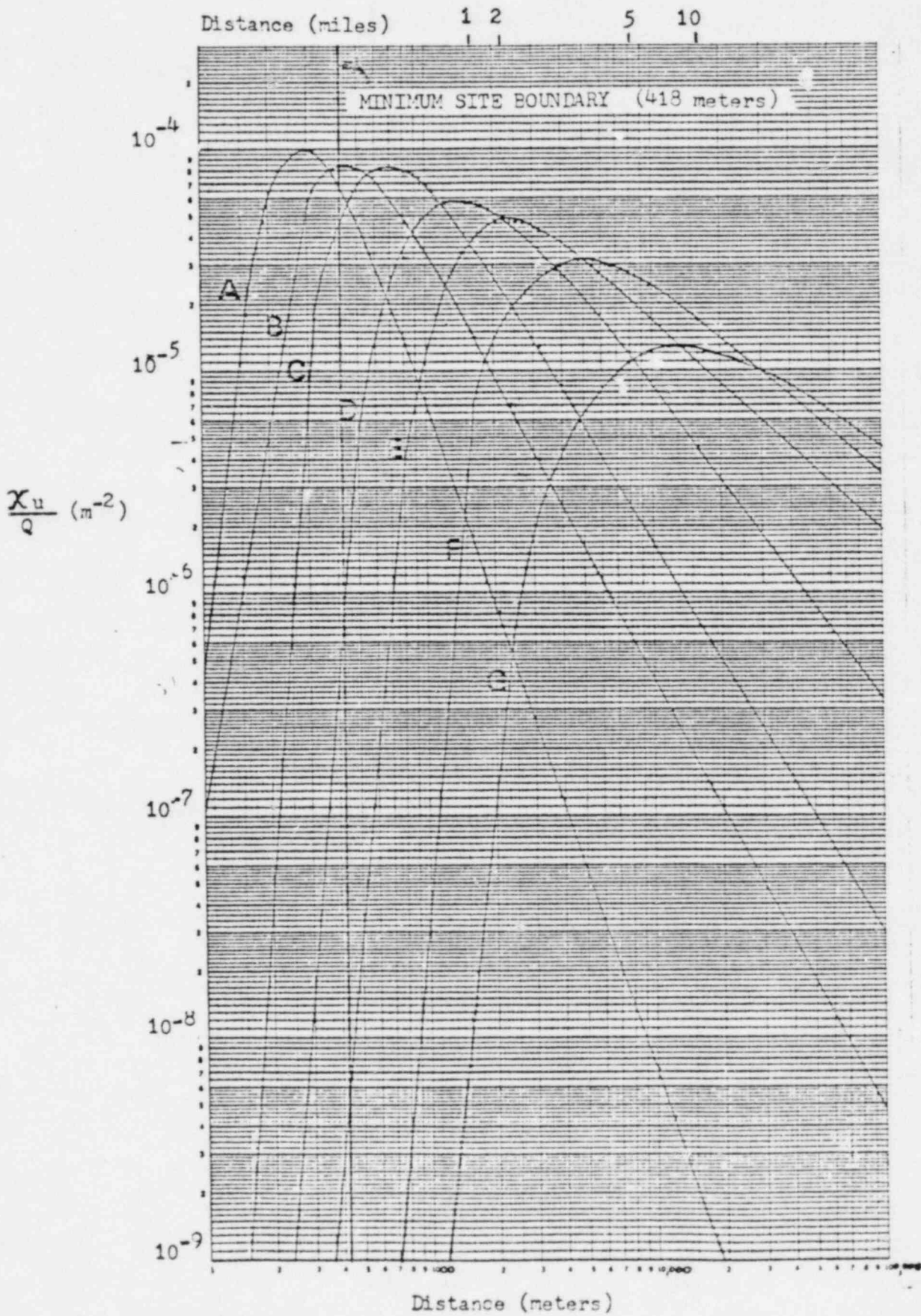
Date: \_\_\_\_\_

Sample Time \_\_\_\_\_ Release Time \_\_\_\_\_ Difference (t) \_\_\_\_\_ (hr)

Nuclide	Sample Conc.	$\lambda(\text{HR}^{-1})$	$e^{-\lambda t}$	Release Cont.	% of Mix	Nuclide Dose Conversion Factor Exhibit 3.4.3-3	Adjusted DCF
Total DCF $\frac{\text{Rem-M}^3}{\text{Ci-Sec}}$ Is The Sum Of Adjusted DCFs. →							



EXHIBIT 3.4.3-4  
 $\bar{x}\bar{u}/Q$  With Distance for Elevated Releases (61m)  
 By Stability Class



$\bar{x}\bar{u}/Q$  With Distance for Ground Level Releases (0m) by Stability Class

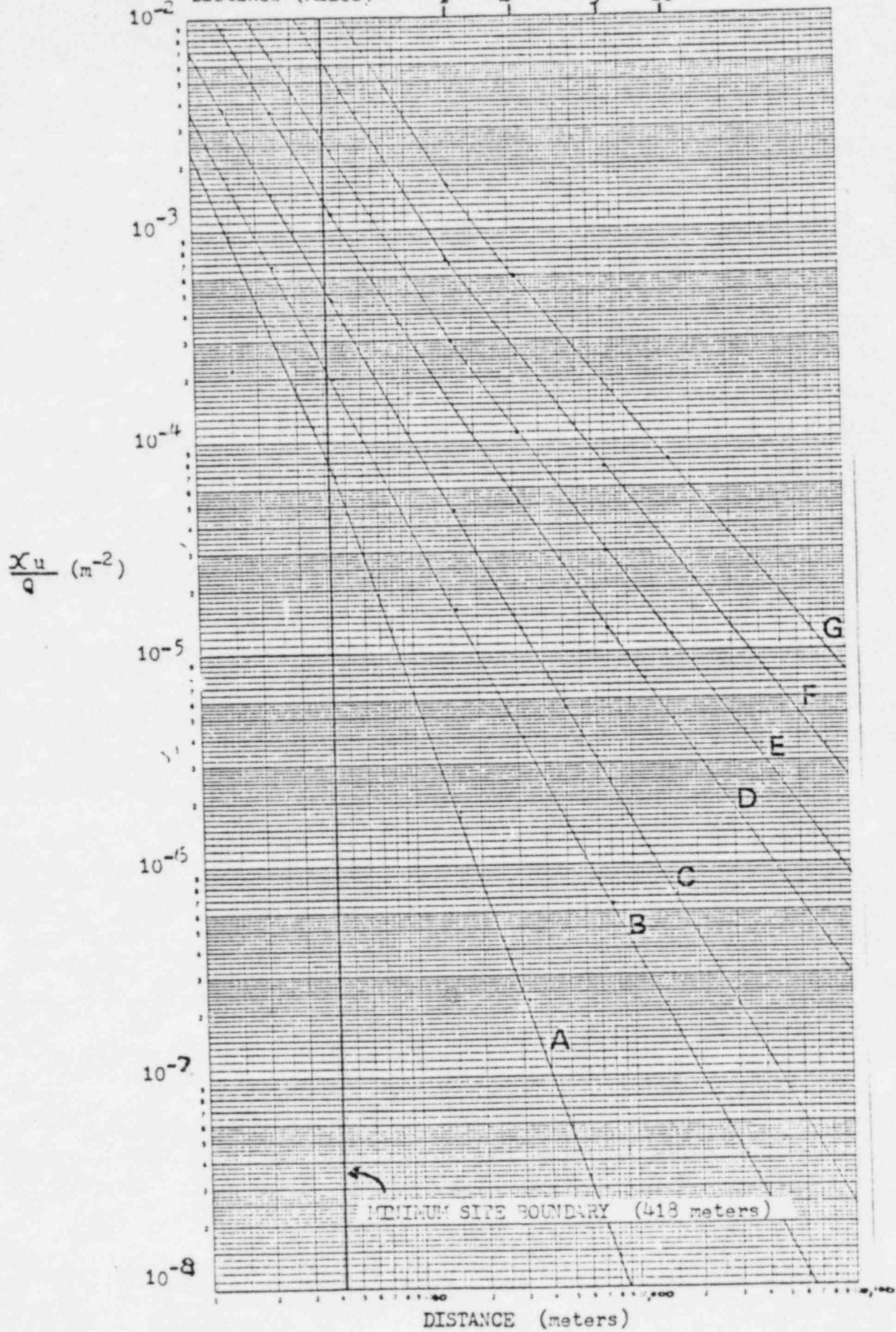


EXHIBIT 3.4.3-5

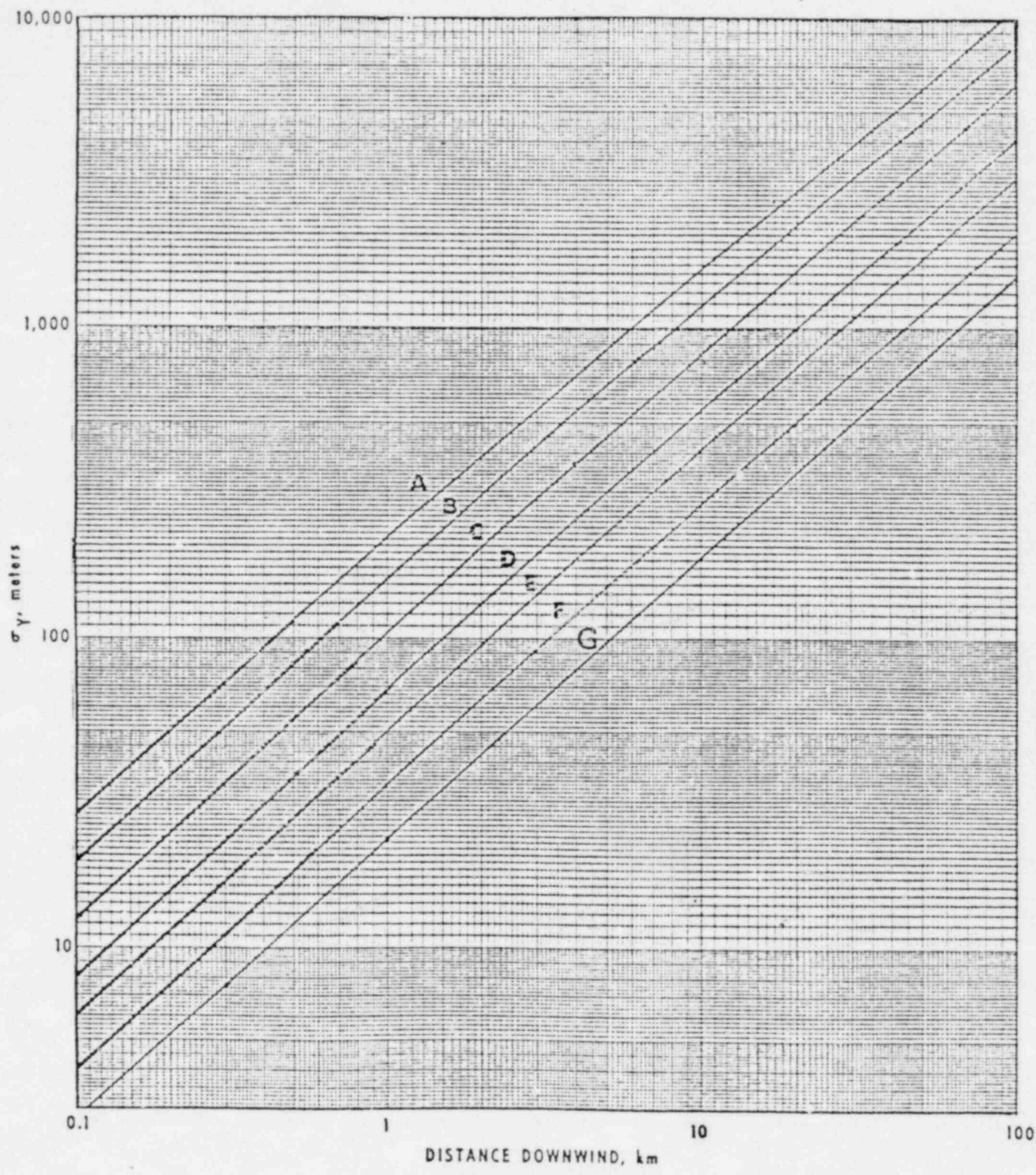


EXHIBIT 3.4.3-6 Horizontal Dispersion Coefficient as a Function of Downwind Distance from the Source

EXHIBIT 3.4.3-8  
THYROID DOSE CONVERSION FACTORS FOR UNKNOWN MIX

Time After Rx Shutdown (Hr.)	Dose Conversion Factor $\frac{\text{Rem-m}^3}{\text{Sec-Ci}}$
0.5	189
1	215
2	244
5	318
8	363
12	415
24	527
72	800

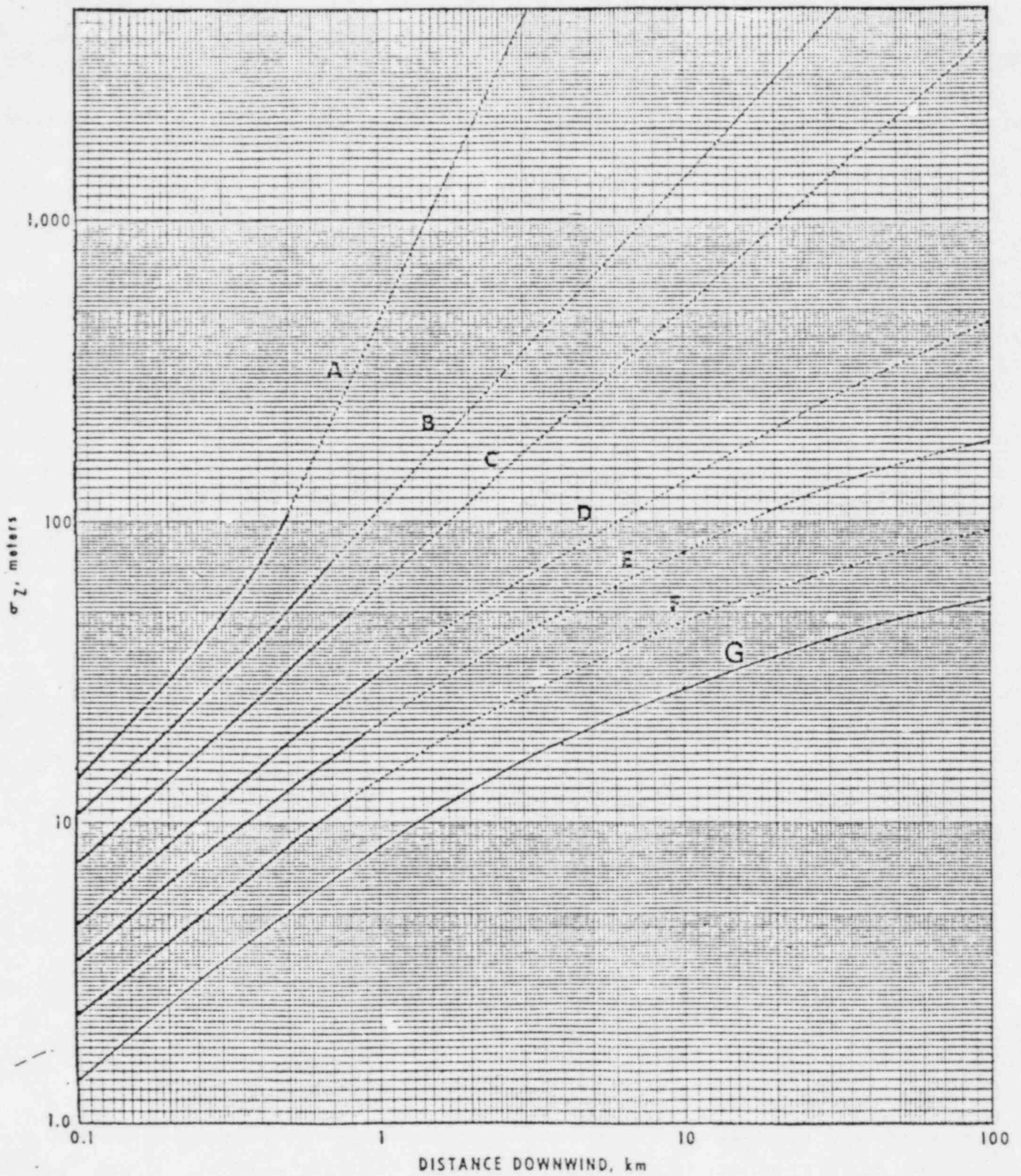
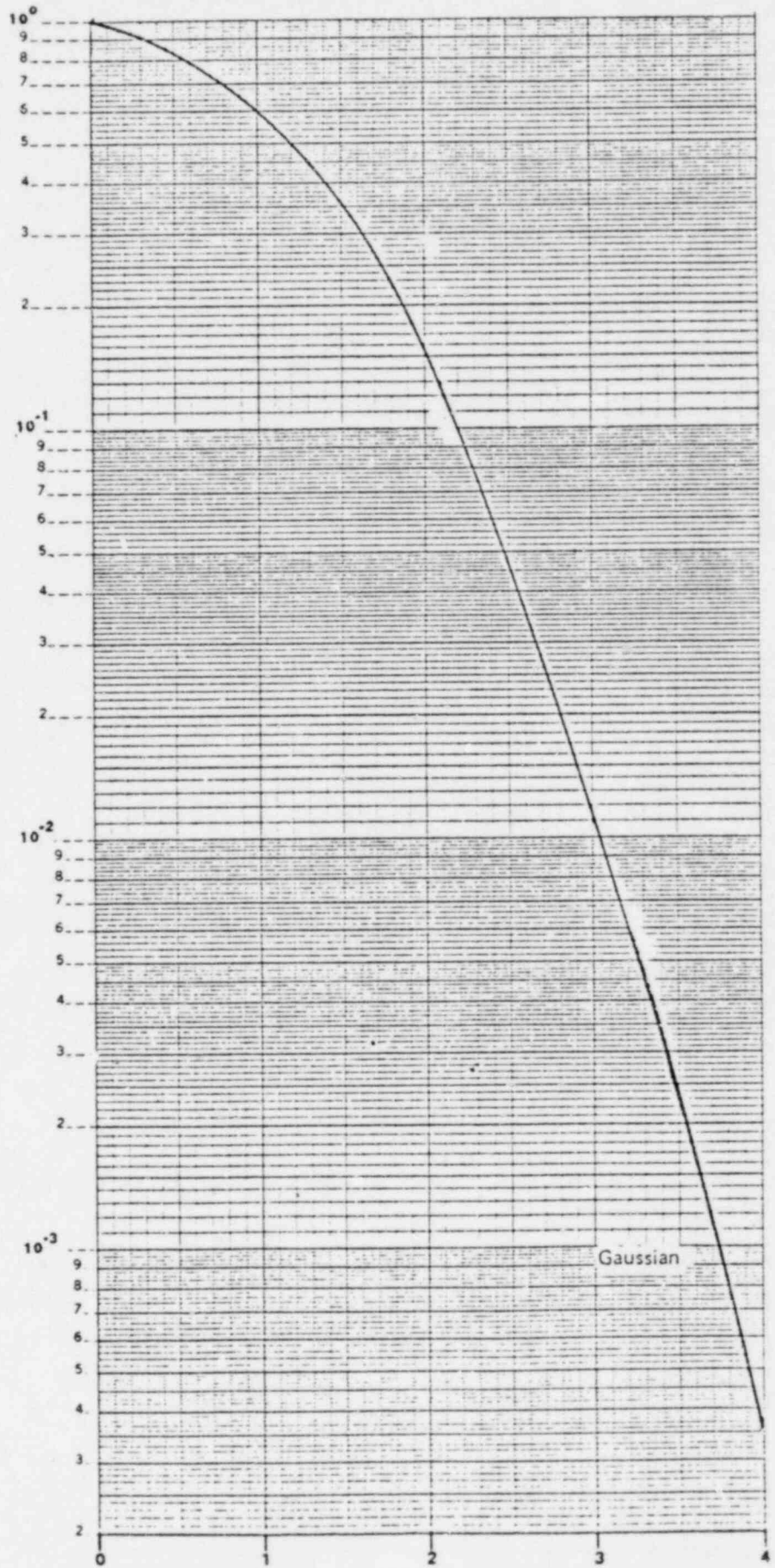


EXHIBIT 3.4.3-7 Vertical Dispersion Coefficient as a Function of Downwind Distance from the Source

Dose at various distances from cloud centerline

Dose As A Fraction of Peak Cloud Centerline Dose



[The Gaussian Distribution represents the reduction in concentration as a function of distance from the cloud centerline at any distance.]

EXHIBIT 3.4.3-9



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EMERGENCY PLAN AND PROCEDURES

VOLUME 13

AUTOMATION OF DOSE ASSESSMENT

PEP-3.4.5

REVISION 0

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE
1	RBS / CS	11-18-81						
2	RBS / md	12-11-81						
3	RBS / md	7-2-82						

Recommend By: T. F. Connolly  
Assistant to General Manager

9/25/91  
DATE

Approved By: W. S. [Signature]  
Plant General Manager

9/25/91  
DATE

## PEP-3.4.5 AUTOMATION OF DOSE ASSESSMENT PROCEDURES

### 1.0 Responsible Individual and Objectives

The Radiological Control Director or the Dose Assessment Coordinator is responsible for calculating dose projections to be used by the Radiological Control Director and the Site Emergency Coordinator in determining and evaluating possible off-site consequences from a release of radioactivity. The Radiological Control Manager shall assume responsibility for calculating off-site dose projections (to be used by the Emergency Response Manager) after the Emergency Operations Facility is activated.

### 2.0 Scope and Applicability

This procedure is intended to describe the use of a computer program which automates many of the calculations performed in PEP-3.4.2, Whole Body Dose Projections; PEP 3.4.3, Thyroid Dose Projections. The program is intended for use on a Hewlett-Packard Model 9830A tabletop computer.

Individuals using this program to automate dose projections should be very familiar with the above mentioned procedures. The program allows the capability of calculating downwind centerline doses at any distance including the direction dependent site boundary distance, 1, 2, 5, and 10 miles. The program can also provide X and Y coordinates (X being in the downwind direction) for plotting any desired isopleth. The program does not include provisions for calculating the lateral deviation if the point of interest is not on the centerline of the cloud. This provision can be included if the correction factor is determined manually and then applied directly to the computer program's results where appropriate.

### 3.0 Actions

Refer to the appropriate Plant Emergency Procedure for guidance in determining the necessary inputs called for by the computer program. PEP-3.4.2 is for Whole Body Dose Projections, PEP-3.4.3 is for Thyroid Dose Projections. The worksheet EXHIBITS in each of these procedures can be used for recording dose projections.

The computer program uses the same calculational methods as those described in the procedures mentioned above. The program calculates X/Q values from the basic equation using inputs of release height, stability class, ambient temperature, stack flow rate, wind direction, and wind velocity. Other inputs include an appropriate source term and time after reactor shutdown. Inputting the time after shutdown allows the computer to choose the dose conversion factor corresponding to the time that the cloud is projected to pass by the point of interest. The program calculates isopleth coordinates based on the B. Turner method described in PEP-3.4.2 and 3.4.3.



The following steps explain the procedure for using the program.

- 3.1 Load the programmed cassette into the HP9830A, enter REWIND, enter LOAD 0 EXECUTE, and enter RUN EXECUTE.

NOTE: Press the EXECUTE button after each entry into the computer to allow the program to proceed.

- 3.2 The display will read "PRESET(1) OR KNOWN(2) INVENTORY?" The program is asking if the radionuclide mix of the release is known. If the mix is unknown enter 1 and proceed to Step 3.3, if the mix is known enter 2 and proceed to Step 3.13.
- 3.3 The display will read "0=WHOLE BODY...1=THYROID?" The program is asking whether the user intends to make a whole body dose projection or a thyroid dose projection. This entry will allow the program to access the correct dose conversion factors.
  - 3.3.1 If a 0 was entered (whole body), then the display will read "SOURCE TERM=?" Enter the appropriate source term in either Ci/sec or Ci's. The display will then read "SOURCE TERM UNITS 0=CI/SEC...1=CI". Enter the appropriate response and proceed to Step 3.4.
  - 3.3.2 If a 1 was entered (thyroid), then the display will read "SOURCE TERM=(CI)?" Enter the source term in total curies.
- 3.4 The display will read "HEIGHT OF RELEASE (METERS)." If the release was via the stack, enter 61 meters. If the release was from anywhere else, enter the correct height above ground level in meters.
- 3.5 The display will read "TIME SINCE SHUTDOWN..(X.X HRS)?" Enter the time since reactor shutdown.
- 3.6 The display will read "STABILITY CLASS...1=A, 2=B?" Enter the appropriate stability class, i.e., for stability class E, enter a 5.
- 3.7 The display will read "AMBIENT TEMPERATURE (DEG F) = ?" Enter the appropriate outside temperature in units if fahrenheit.
- 3.8 The display will read "STACK FLOW RATE (CFM) = ?" Enter the appropriate flow rate in cubic feet per minute.

Note: Obtain this information from the TSC or the Control Room.
- 3.9 The display will read "WIND VELOCITY...(MPH)?" Enter the appropriate wind speed in units of miles per hour.
- 3.10 The display will read "OUTPUT TO PRINTER (Y OR N)?" The program is asking if a printer is hooked up to the HP9830A for use in printing results. Without a printer, results will need to be transcribed from the 9830 display by hand. If there is no printer, then enter a 1. If there is a printer, enter a 0.



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EMERGENCY PLAN AND PROCEDURES

VOLUME 13

EXPANDED ENVIRONMENTAL MONITORING

PEP-3.5.2

REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *[Signature]*  
Emergency Planning Coordinator

7-2-1  
DATE

Approved By: *[Signature]*  
Plant General Manager

7/2/82  
DATE

- Notes:
- 1) These locations are indicated on the 10 mil. rad us map at the back of this manual. The symbol is " Δ ".
  - 2) The following is found on each emergency TLD:

EMERGENCY RADIATION MONITORING DEVICE  
CAROLINA POWER AND LIGHT COMPANY  
H. B. ROBINSON SEG PLANT  
HARTSVILLE, S. C. 29550



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EMERGENCY PLAN AND PROCEDURES  
VOLUME 13

COORDINATION WITH STATE MONITORING

PEP-3.5.4

REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: T. J. [Signature]  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: W. D. [Signature]  
Plant General Manager

7/2/82  
DATE



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EMERGENCY PLAN AND PROCEDURES

VOLUME 13

RELEASE ESTIMATES BASED UPON STACK/VENT READINGS

PEP-3.6.1

REVISION 3

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: R. T. Lavelle  
EMERGENCY PLANNING COORDINATOR

7-1-2  
DATE

Approved By: M. S. Hurling  
PLANT GENERAL MANAGER

7/2/82  
DATE

EXHIBIT 3.6.1-2

Source Term Calculation from R-12 (1)

(NOBLE GAS)

TIME	DETECTOR READING (CPM)	FLOW <sup>(2)</sup> RATE (CFM)	CONVERSION <sup>(3)</sup> FACTOR	SOURCE TERM ( $\mu\text{Ci/sec}$ )
			$2.05 \times 10^{-5}$	

(1) Equation:  $\text{CPM} \times \text{Flow Rate} \times \text{Conversion Factor} = \mu\text{Ci/sec.}$

- (2) HVE 1A - 34,000 CFM Redundant Containment Purge  
 HVE 1B - 34,000 CFM Redundant Containment Purge  
 HVE 2A - 53,900 CFM Redundant Containment Purge  
 HVE 2B - 50,400 CFM Redundant Containment Purge  
 HVE 15A - 12,500 CFM During Fuel Handling or R-21 alarm

(3) If  $\text{CPM} \geq 5 \times 10^4$  use the following equation:

$$\text{Source Term} = \frac{\text{CPM} \times 4.72 \times 10^2 \times (\text{vent flow rate})}{2.3 \times 10^7 - (38.3 \times (\text{CPM}))}$$

EXHIBIT 3.6.1-3

Source Term Calculation from R-14

(NOBLE GAS)				
TIME	DETECTOR READING (CPM)	FLOW <sup>(2)</sup> RATE (CFM)	CONVERSION <sup>(3)</sup> FACTOR	SOURCE TERM ( $\mu\text{Ci/sec}$ )
			$1.58 \times 10^{-6}$	

(1) Equation:  $\text{CPM} \times \text{Flow Rate} \times \text{Conversion Factor} = \mu\text{Ci/sec.}$

- (2) HVE 1A - 34,000 CFM Redundant Containment Purge  
 HVE 1B - 34,000 CFM Redundant Containment Purge  
 HVE 2A - 53,900 CFM Redundant Aux. Bldg. Purge  
 HVE 2B - 50,400 CFM Redundant Aux. Bldg. Purge  
 HVE 15A - 12,500 CFM During Fuel Handling or R-21 alarm

- (3) If  $\text{CPM} > 4 \times 10^5$  use R-35.  
 If  $\text{CPM} \geq 1 \times 10^5$  use the following equation:

$$\text{Source Term} = \frac{\text{CPM} \times 4.72 \times 10^2 \times (\text{vent flow rate})}{2.99 \times 10^8 - (498 \text{ (CPM)})}$$

EXHIBIT 3.6.1-9

Source Term Calculation from R-36<sup>(1)</sup>

(MAIN STACK HIGH-RANGE NOBLE GAS)

TIME	DETECTOR READING <u>mR/hr</u>	FLOW <sup>(2)</sup> RATE <u>(CFM)</u>	CONVERSION <sup>(3)</sup> FACTOR <u>4.72 X 10<sup>2</sup></u>	SOURCE TERM <u>(<math>\mu</math>Ci/sec)</u>

(1) Equation:  $\text{mR/hr} \times \text{Flow Rate} \times \text{Conversion Factor} = \mu\text{Ci/sec.}$

- (2) HVE 1A - 34,000 CFM      Redundant Containment Purge  
 HVE 1B - 34,000 CFM  
 HVE 2A - 53,900 CFM      Redundant Aux. Bldg. Purge  
 HVE 2B - 50,400 CFM  
 HVE 15A - 12,500 CFM      During Fuel Handling or R-21 alarm



EXHIBIT 3.6.1-10

Source Term Calculation From R-31 A, B, or C<sup>(1)</sup>  
(Steam Line Monitors)

TIME	LENGTH OF TIME VALVE OPEN	DETECTOR READING mR/hr	FLOW <sup>(2)</sup> RATE CC/SEC	CONVERSION <sup>(3)</sup> FACTOR	SOURCE TERM ( $\mu$ Ci/sec)
------	---------------------------------	------------------------------	---------------------------------------	-------------------------------------	-----------------------------------

(1) Equation:  $\text{mR/hr} \times \text{Flow Rate} \times \text{Conversion Factor} = \mu\text{Ci/sec}$

(2) Main Steam Line PORV to Atmosphere =  $1.67 \times 10^8$  cc/sec  
 PORV and 1 SRV =  $3.40 \times 10^8$  cc/sec  
 PORV and 2 SRV =  $5.13 \times 10^8$  cc/sec  
 PORV and 3 SRV =  $6.86 \times 10^8$  cc/sec  
 PORV and 4 SRV =  $8.59 \times 10^8$  cc/sec

(3) Time After Accident (Conversion factor)

T = 0 min  $1.00 \times 10^{-2}$   
 T = 30 min  $7.71 \times 10^{-3}$   
 T = 60 min  $1.54 \times 10^{-2}$   
 T = 2 hours  $1.88 \times 10^{-2}$

NOTE: If it is unknown how many safety valves are open, assume the PROV and all 4 safety relief valves are open.



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VOLUME 13

EMERGENCY WORK PERMITS AND EXPOSURE CONTROL

PEP-3.7.1

REVISION 3

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *T. B. Linn*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *W. S. Stuber*  
Plant General Manager

7/2/82  
DATE

3.1.3.1 Record location of TLD on EXHIBIT 3.7.1-3.

3.1.3.2 Periodically replace TLDs and record readings obtained from removed TLDs on EXHIBIT 3.7.1-3.

3.1.4 Collect all "Exposure Record Sheets" and all TLDs for exiting personnel from Security for reading, as directed by the Team Leader.

3.2 Actions of all personnel entering a radiation area.

Note: Contact Personnel Protection and Decontamination Team Leader for where to obtain Special Radiation Work Permits and special dosimetry.

3.2.1 Obtain and complete a Special Radiation Work Permit prior to entering a radiation area. The Radiological Control Director or the Personnel Protection and Decontamination Team Leader may sign in lieu of the Shift Foreman.

3.2.2. Obtain a high range dosimeter when:

3.2.2.1 Entering a radiation field  $\geq 10$  R/hr.

3.2.2.2 Entering a radiation field of unknown intensity.

3.2.3 Obtain finger badges when:

3.2.3.1 Handling radioactive material where expected extremity dose rate  $> 100$  R/hr.

3.2.3.2 Working on pipes or equipment where expected extremity dose rate  $> 25$  R/hr.

3.2.4 Record any and all additional dosimetry on the Special Radiation Work Permit for each person entering the radiation area.

3.2.5 Obtain authorization for the Special Radiation Work Permit from the Site Emergency Coordinator, Plant General Manager or the Radiological Control Director when exposures are expected to exceed the limits set forth in 10CFR20 ( $> 3$  Rem/Qtr).

Note: Guidelines for exposure in excess of 3 Rem/Qtr may be found in EXHIBIT 3.2.1-4, "Control of Personnel Radiation Exposure."

3.2.6 The Site Emergency Coordinator may, at his discretion and as conditions warrant, waive requirements for a Special Radiation Work Permit, or portions thereof, prior to entry into a radiation area and give his authorization verbally.

3.2.6.1 A Special Radiation Work Permit shall be completed by the individuals making a verbally authorized entry, as time permits, after the entry.

Note: Any person that has received a whole body dose totaling  $\geq 5$  Rem by TLD for the year shall not be permitted to enter a controlled radiation area without approval of the Site Emergency Coordinator.



H. B. ROBINSON

SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

EMERGENCY PERSONNEL MONITORING AND DOSIMETRY

PEP-3.7.2

REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *[Signature]*  
Emergency Planning Coordinator

7-1-2  
DATE

Approved By: *[Signature]*  
Plant General Manager

7/2/82  
DATE



H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

ISSUANCE AND USE OF PROTECTIVE GEAR

PEP-3.7.3

REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: TR. T. Currier  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: W. S. Anderson  
Plant General Manager

7/2/82  
DATE



H. B. ROBINSON  
SEG PLANT

TITLE  
EMERGENCY PLAN AND PROCEDURES  
VOLUME 13

EVACUATION  
PEP-3.8.1  
REVISION 3

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *[Signature]*  
Emergency Planning Coordinator

7-1-2  
DATE

Approved By: *[Signature]*  
Plant General Manager

7/2/82  
DATE

# CP&L

H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

PERSONNEL ACCOUNTABILITY

PEP-3.8.2

REVISION 3

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: T. E. Emuel  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: M. S. Stuckey  
Plant General Manager

7/2/82  
DATE



3.1.3 The Emergency Security Team shall:

3.1.3.1 Obtain and maintain personnel accountability records in accordance with S-14.

3.1.3.2 Report the names and last known locations of missing persons to the Emergency Security Team Leader within thirty (30) minutes subsequent to the notice to evacuate.

3.2 Actions Upon Sounding of a Site Evacuation Alarm (Emergency Assembly or Site Evacuation)

3.2.1 All personnel, with the exception of those required to remain at a particular job location, shall proceed in an orderly manner to the evacuation assembly area.

3.2.2 Upon arrival at the assembly area, all personnel shall report to their respective supervisor, leader, or director for the purposes of accountability and for further instructions.

Note: All visitors shall report directly to the Evacuation Assembly Area Leader.

3.2.3 Personnel in the Emergency Organization with emergency assignments shall:

3.2.3.1 Notify their respective team leader/director for the purposes of accountability and for further instructions.

3.2.3.2 Carry out their emergency assignment;

3.2.4 Work group supervisors/leaders shall:

3.2.4.1 Conduct a roll call accountability of the personnel assigned to them on site.

3.2.4.2 Complete EXHIBIT 3.8.2-1, "Emergency Accountability Form," listing personnel not accounted for, and submit form to Evacuation Assembly Area Leader within 15 minutes. If all personnel reporting to you are accounted for, enter "None" on the EXHIBIT.

3.2.5 Upon direction of the Logistics Support Director, members of the Emergency Security Team designated by the Emergency Security Team Leader shall:

3.2.5.1 Obtain and maintain plant accountability in accordance with Security Instruction S-14.

3.2.5.2 Receive EXHIBIT 3.8.2-1 from Evacuation Assembly Area Leader and deliver it to the Emergency Security Team Leader.



H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

ADMINISTRATION OF RADIOPROTECTIVE DRUGS

PEP-3.8.3

REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: TJ Zinnolf  
Emergency Planning Coordinator

7-1-2  
DATE

Approved By: W. B. Stuckey  
Plant General Manager

7/2/82  
DATE

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: \_\_\_\_\_  
\_\_\_\_\_

3.1.3 Decide whether or not 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.

Note: KI pills are stored in the TSC telephone cabinet. These pills are inventoried semiannually for quantity and shelf life expiration.

3.1.5 Consult the Company designated physician (phone no. in PEP-Appendix A.4) for determination of daily continuance for those persons identified on EXHIBIT 3.8.3-1.

Physician consulted: \_\_\_\_\_ / \_\_\_\_\_  
initials 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 PERCAUTIONARY LABELS.

3.2 Actions of the Personnel Protection and Decontamination Team Leader when administering 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.





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SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

ACCESS CONTROL

PEP-3.8.4

REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *TJ Emwef*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *MS Stuckey Jr*  
Plant General Manager

7/2/82  
DATE



H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

FIRST AID AND MEDICAL CARE

PEP-3.9.2

REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: T. W. Zimmelf  
Emergency Planning Coordinator

7-1-2  
DATE

Approved By: M. S. [Signature]  
Plant General Manager

7/2/82  
DATE

- 3.3 Contact Personnel Protection and Decontamination Team Leader to request transportation for patients requiring immediate hospitalization, communicating any special treatments patients may require enroute or upon arrival.

Note: Patients are not to be transported to the hospital for treatment if medical attention by the physician can be accomplished at the plant site.

- 3.4 Personnel Protection and Decontamination Team Leader or an Emergency Medical Technician shall:

- 3.4.1 Determine (or estimate) the following data for overall assessment of necessary medical aid:

- 1) Number of injured personnel;
- 2) Nature and severity of injuries;
- 3) Locations of injured personnel;
- 4) Contamination levels and dose rates;
- 5) Number of First Aid Team members on hand;
- 6) Any special medical needs;
- 7) Injured persons names;
- 8) Cause of injuries.

- 3.4.2 Notify the Site Emergency Coordinator of any outside assistance needed and obtain approval to notify the Emergency Communicator.

- 3.4.3 Notify Emergency Communicator of outside assistance needed.



H. B. ROBINSON  
SEG PLANT

TITLE  
EMERGENCY PLAN AND PROCEDURES  
VOLUME 13

TRANSPORTING OF CONTAMINATED INJURED PERSONNEL  
PEP-3.9.3  
REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *T. J. Emwep*  
Emergency Planning Coordinator

7-1-87  
DATE

Approved By: *M. S. Hickey Jr*  
Plant General Manager

7/2/87  
DATE





H. B. ROBINSON  
SEG PLANT

TITLE  
EMERGENCY PLAN AND PROCEDURES  
VOLUME 13

SEARCH AND RESCUE  
PEP-3.9.6  
REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *[Signature]*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *[Signature]*  
Plant General Manager

7/2/82  
DATE



H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

DAMAGE CONTROL ACTIVITIES

PEP-3.10

REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *T. F. Conway*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *MS [Signature]*  
Plant General Manager

7/2/82  
DATE

## PEP-3.10 DAMAGE CONTROL ACTIVITIES

### 1.0 Responsible Individuals and Objectives

The Damage Control Team is responsible to the Emergency Repair Director for the completion of damage control missions during declared emergencies, including:

- 1.1 Damage inspection and repair
- 1.2 Contamination control
- 1.3 Special installations

### 2.0 Scope and Applicability

This procedure shall be implemented during declared emergencies upon the activation of a Damage Control Team by the Emergency Repair Director or Site Emergency Coordinator.

### 3.0 Actions and Limitations

The Damage Control Team shall:

- 3.1 Assess and report equipment damage on EXHIBIT 3.10-1, "Equipment Damage and Repair Log."
- 3.2 Perform the prescribed damage control activities necessary to bring the plant and equipment to a safe condition in accordance with PEP-3.7.1, Emergency Repair Procedures, or with existing plant procedures.
- 3.3 Record on EXHIBIT 3.10-1 all emergency repairs, installations, and clean-up activities that are performed.



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TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

RECORD KEEPING AND DOCUMENTATION

PEP-4.1

REVISION 2

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *T. J. Connelley*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *W. D. Hurler*  
Plant General Manager

7/2/82  
DATE

- EXHIBIT 4.1-2 Phone Listing Verification - Key Plant Personnel
- EXHIBIT 4.1-3 Phone Listing Verification - All Listed Plant Numbers
- EXHIBIT 4.1-4 Phone Listing Verification - Outside Agencies
- EXHIBIT 4.1-5 PEP Review Verification (for annual PEP review)

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

- The Radiological Emergency 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 a competent organization, either internal or external to CP&L, not directly responsible for emergency preparedness.

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

3.1.3.2 Results of the audit shall be documented and reported to appropriate CP&L corporate personnel, plant management personnel, and involved Federal, State, and local organizations.

3.1.3.3 Results of the audit shall be retained for five years at a minimum (in accordance with plant or corporate record keeping procedures).

3.1.4 Following an emergency or emergency exercise, collect and maintain the following records of emergency operations and completed actions, at a minimum:

3.1.4.1 Emergency communications.

3.1.4.2 Sequence of events.

3.1.4.3 Radiation records.

3.1.4.4 Security/Accountability records.

3.1.4.5 Site Emergency Coordinator, Plant Media Center, Emergency Operations Facility, Group, and Technical Support Group logs.

3.1.5 Ensure availability of logbooks for the Site Emergency Coordinator, each Technical Support Group member, the

EXHIBIT 4.1-1

Emergency Preparedness Checklist

Date Initiated \_\_\_\_\_ Quarter  
1st 2nd 3rd 4th  
Date Completed \_\_\_\_\_

Review Frequencies

Q: Quarterly S: Semi-Annually A: Annually B: Bi-Annually

Review Items:

- Q: Inventories of all emergency equipment and supplies in accordance with PEP-4.2, "Emergency Facilities and Equipment." \_\_\_\_\_  
Radiation Control Foreman
- Q: All changes issued to date have been promulgated and acknowledged by holders of PEP Manuals.  
Remarks: \_\_\_\_\_  
Sr. Specialist - Emergency Planning
- Q: Radiation detection equipment is within required calibration per Health Physics Procedures, and located per inventories. \_\_\_\_\_  
Radiation Control Foreman
- Q: Personnel Emergency Team assignments in Appendix A are up-to-date.  
Remarks: \_\_\_\_\_  
Sr. Specialist - Emergency Planning
- Q: Source documents have been reviewed for changes and PEP updated as necessary. (e.g., ANSI Standards, Reg. Guides, 10CFR20)  
Remarks: \_\_\_\_\_  
Sr. Specialist - Emergency Planning
- Q: Referenced Health Physics Procedures have been reviewed, and all recent changes are reflected in the Plant Emergency Procedures. \_\_\_\_\_  
Radiation Control Foreman

- Q: Conducted random review of copies of the PEP for content of latest revisions (minimum of three manuals plus more if errors found).  
Sr. Specialist - Emergency Planning
- Q: Reviewed current NRC documentation and requirements, and Q.A. comments from file for applicability, and incorporate if applicable.  
Sr. Specialist - Emergency Planning
- Q: Phone listings for key plant personnel verified.  
(Complete EXHIBIT 4.1-2).  
Sr. Specialist - Emergency Planning
- Q: Phone listings for outside agencies verified.  
(Complete) EXHIBIT 4.1-4).  
Sr. Specialist - Emergency Planning
- S: Discrepancies noted from previous drills reviewed and corrections to PEP initiated.  
Sr. Specialist - Emergency Planning
- S: PEP reviewed for technical content and accuracy, i.e., sampling methods, protective measures, significant levels.  
Environmental & Chemistry Supervisor
- A: All listed plant phone numbers audited and verified. (Complete EXHIBIT 4.1-3.)  
Sr. Specialist - Emergency Planning
- A: Personnel in Emergency Organization have received required training in past year.  
Remarks:  
Sr. Specialist - Emergency Planning
- A: Emergency Preparedness Program reviewed for content and adequacy.  
Sr. Specialist - Emergency Planning

A: Personnel not in the Emergency Organization  
(including non-badged personnel)  
have received required training  
in past year.

Remarks:

\_\_\_\_\_  
Training Supervisor

A: Training conducted within past  
year to ensure preparedness  
of local support agencies.

\_\_\_\_\_  
Sr. Specialist - Emergency Planning

A: PEP submitted to PNSC for annual  
review.

Remarks:

\_\_\_\_\_  
Sr. Specialist - Emergency Planning

B: Re-issue letters of agreement (in the  
Radiological Emergency Plan).

\_\_\_\_\_  
Sr. Specialist - Emergency Planning



EXHIBIT 4.1-2

PHONE LISTING VERIFICATION - KEY PLANT PERSONNEL

1. Phone listings have been verified and the following have changed and are updated. Key personnel to be verified are listed, along with numbers. (Provided by Sr. Specialist - Emergency Planning.)
2. Listings to be verified:

<u>TITLE</u>	<u>PERSON</u>	<u>PHONE NO.</u>	<u>CHANGED TO</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

All key personnel listed have been re-verified and PEP-Appendix A updated.

Remarks:

Date: \_\_\_\_\_  
Office Staff: \_\_\_\_\_  
Sr. Specialist - Emergency Planning: \_\_\_\_\_



EXHIBIT 4.1-4

PHONE LISTING VERIFICATION

OUTSIDE AGENCIES

1. Phone listings have been verified and updated quarterly in conjunction with the annual letter of agreement verification. Outside agencies whose numbers have changed are listed, along with their old and new numbers (provided by Emergency Planning Coordinator).

<u>REPRESENTATIVE OR CONTACT</u>	<u>ORGANIZATION</u>	<u>OLD PHONE NO.</u>	<u>PHONE NO. CHANGED TO:</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

All phone listings for the outside agencies listed have been re-verified and PEP-Appendix A has been updated.

Remarks:

Date: \_\_\_\_\_  
Office Staff: \_\_\_\_\_  
Sr. Specialist - Emergency Planning: \_\_\_\_\_



H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

EMERGENCY FACILITIES AND EQUIPMENT

PEP-4.2

REVISION 3

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *T. J. Zimm*  
Emergency Planning Coordinator

7-1-2  
DATE

Approved By: *W. S. ...*  
Plant General Manager

7/1/82  
DATE

- 3.4 Verify the performance of calibration of emergency equipment in accordance with existing calibration procedures.
- 3.5 Ensure the inventory of protective facilities and equipment (i.e., decontamination facilities), first aid and medical facilities, supplies and equipment and damage control equipment and supplies, at specific periodic intervals and after each use, in accordance with PT-43, "Emergency Kit Inventory" and AI-11.9, "First Aid, Injury and Illness."
- 3.6 Maintain a copy of an inventory sheet in its respective emergency kit.
- 3.7 Transmission and Distribution Supervisor will conduct testing and reporting of results on the siren system. (Sirens malfunctioning outside normal work hours may be reported on the next work day.)
  - 3.7.1 Transmission and Distribution will forward records of all semi-monthly, quarterly, and annual test as recorded on the public notification siren and inspection test form to H. B. Robinson Plant, attention Emergency Planning Specialist.
  - 3.7.2 Emergency Planning Specialist will notify the appropriate County Civil Defense Director when sirens are out of service for any reason, including maintenance, breakdown, or test failure. Likewise, notify Civil Defense Director when equipment is returned to service. (Notification to County Civil Defense Directors can be made the next working day.)
  - 3.7.3 Emergency Planning Specialist will prepare and forward to the State an annual report certifying the successful testing of the sirens in the area of the plant during the previous year.



H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES  
VOLUME 13

PERFORMANCE OF TRAINING, EXERCISES AND DRILLS

PEP-4.3

REVISION 4

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: T. J. Zinner  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: M. S. H. [Signature]  
Plant General Manager

7/2/82  
DATE



H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES  
VOLUME 13

PUBLIC EDUCATION AND INFORMATION

PEP-4.5

REVISION 3

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *T D Emmel*  
Emergency Planning Coordinator

7-2-2  
DATE

Approved By: *MS Hankins*  
Plant General Manager

7/2/82  
DATE

## PEP 4.5 PUBLIC EDUCATION AND INFORMATION

### 1.0 Responsible Individuals and Objectives

The Emergency Planning Coordinator is responsible to the Plant General Manager for the coordination of the public education and information program. This program is intended to ensure that members of the public are: (a) aware of the potential for an occurrence of a radiological emergency; (b) able to recognize a radiological emergency notification; and (c) knowledgeable of the proper, immediate actions to be taken upon notification.

### 2.0 Scope and Applicability

CP&L Corporate Communications is responsible for assuring the annual dissemination of information to the public living in the plume exposure Emergency Planning Zone, as an ongoing effort.

### 3.0 Actions and Limitations

CP&L Corporate Communications shall:

- 3.1 In cooperation with the State of South Carolina, local governments and with corporate CP&L efforts, ensure that all public education and information efforts are consistent and complimentary.
- 3.2 Ensure that a public information program for persons living in the plume exposure Emergency Planning Zone includes the following elements:
  - 3.2.1 Brochures containing educational information on emergency preparedness, nuclear power and radiation, and how to contact CP&L for more information.
  - 3.2.2 An emergency preparedness speakers bureau allowing qualified personnel to address civic, religious, social, and occupational organizations.
  - 3.2.3 News material for television, radio and the press and for numerous community and business newsletters circulating in the area.
- 3.3 Ensure that the public education program includes the following information:
  - 3.3.1 The potential for occurrence of a radiological emergency.
  - 3.3.2 How to recognize a radiological emergency notification.
  - 3.3.3 What proper, immediate actions (e.g., return to home, close windows and turn on radio) should be taken upon notification.





H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

H. B. ROBINSON UNIT 2 PERSONNEL

PEP-APPENDIX A.1

REVISION 4

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: TR. T. Conroy  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: W. S. Stuber  
Plant General Manager

7/2/82  
DATE

RADIATION CONTROL FOREMAN (PERSONNEL PROTECTION AND DECONTAMINATION LEADER)

R. E. Denney

Alternate

B. J. Sanza

ENVIRONMENTAL AND CHEMISTRY SUPERVISOR (ENVIRONMENTAL MONITORING LEADER)

J. A. Eaddy

Alternate

M. L. Layton

SPECIALIST - RADIATION CONTROL (DOSE PROTECTION COORDINATOR)

B. F. Forgy

Alternate

R. R. Hitch

RADIATION CONTROL FOREMAN (PLANT MONITORING LEADER)

W. T. Ritchie

Alternate

K. O. Traegde

MAINTENANCE ENGINEER (DAMAGE CONTROL LEADER)

P. M. Odom

Alternate

B. Murphy

I&C FOREMAN (OPERATIONAL SUPPORT CENTER)

L. P. Sansbury

Alternate

L. E. Lear

OPERATIONS ENGINEER (ACCIDENT ASSESSMENT LEADER)

J. F. Benjamin

Alternate

E. M. Shoemaker

Environmental and Radiation Control  
Supervisors

Home

Office

J. A. Eaddy (E&C)  
W. L. MacCready (RC)

Foreman

Home

Office

D. F. Boan (RC)  
E. Denney (RC)  
T. Ritchie (RC)  
F. Watkins (E&C)  
D. Crabtree (RC)

E&RC Specialists/Engineers

B. F. Forgy (RC)  
R. R. Hitch (E&C)  
M. L. Layton (E&C)  
J. E. Petitgout (RC ALARA)  
B. J. Sanza (RC)  
B. L. Tomlin (E&C)  
K. O. Traegde (RC)  
T. W. Woenker (RC)

Operations

Shift Technical Advisors (STA)

P. P. Binuya  
J. L. Buckingham  
J. B. Gee  
R. J. Rhodes  
E. M. Shoemaker  
J. M. Moon, Jr.  
D. L. Watkins

Shift Foreman

J. E. Brooks  
E. A. Lee  
F. S. Pearce  
D. R. Nelson  
D. V. Seagle  
D. B. Snipes  
D. Batton

Regulatory Compliance

Home

Office

F. Gilman  
C. L. Wright  
H. T. Cox

Senior Specialist - Emergency Planning

D. Gainey

Instruments & Controls Foremen (I&C)

Home

Office

R. C. Abbott  
J. A. Huntley  
L. P. Sansbury  
N. H. Lawrimore

Mechanical Foreman

D. R. Clark  
C. P. Oates  
L. E. Lear  
C. R. Scott

Qualified Operators for Emergency Switchboard

Penny Ballard  
Sally Griggs  
Tanya Griggs  
Tonda McLeod  
Gaye Moore  
Arlene Stokes

Fire Protection

W. E. Brown  
M. L. Floyd  
E. Y. Roper

Director - Corporate QA/QC

H. J. Young

Operations & Maintenance Supervisor Unit 1

W. T. Traylor

Training Supervisor

C. A. Bethea



H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

FEDERAL, STATE AND COUNTY AGENCIES

PEP-APPENDIX A.2

REVISION 3

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *T. T. Linn*  
Emergency Planning Coordinator

7-1-82  
DATE

Approved By: *W. S. [Signature]*  
Plant General Manager

7/2/82  
DATE

APPENDIX A.2 FEDERAL, STATE AND COUNTY AGENCIES

U.S. NUCLEAR REGULATORY COMMISSION, REGION II  
Atlanta, Georgia

(Daytime, Nights and Holidays)

U.S. NRC OPERATIONS CENTER

Telephone System	Telephone #
1. Emergency Notification System to NRC Operations	Lift receiver from cradle
2. Commercial Telephone System to NRC Operations Center (via Bethesda Central Office)	
3. Commercial Telephone System to NRC Operations Center (Silver Springs Center Office)	
4. Health Physics Network to NRC Operations Center	
5. Commercial Telephone System to NRC Operator (via Bethesda Central Office)	

DEPARTMENT OF ENERGY

Savannah River Operations Office

Radiological Assistance Teams  
W.T. Thornton

S.R. Wright

SOUTH CAROLINA DEPARTMENT OF HEALTH & ENVIRONMENTAL CONTROL

Bureau of Radiological Health

After working hours (8:30a.m.-5:00p.m.)

SOUTH CAROLINA EMERGENCY PREPAREDNESS DIVISION



H. B. ROBINSON  
SEG PLANT

TITLE

EMERGENCY PLAN AND PROCEDURES

VOLUME 13

POLICE, FIRE AND MEDICAL PHONE NUMBERS

PEP-APPENDIX A.3

REVISION 3

REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE	REV.	APPROVED BY	DATE

Recommend By: *R. T. Conway*  
Emergency Planning Coordinator

7-1-2  
DATE

Approved By: *W. B. Staley*  
Plant General Manager

7/1/82  
DATE

APPENDIX A.3 POLICE, FIRE, AND MEDICAL PHONE NUMBERS

	Office	Home
<u>MEDICAL CONSULTANTS TO CP&amp;L</u> Dr. M. B. Nickles, Jr.		

RADIATION EMERGENCY ASSISTANCE CENTER

Training Site (Reacts)  
Dr. Karl F. Hübner, Director

HOSPITALS

Byerly Hospital

RESCUE SQUADS

Lake Robinson

Capt: Robin Brock  
Alternate: Mack Johnson

Radio Frequency:

receive  
transmit

Hartsville Rescue Squad

Capt: Russell Ziebell  
Alternate: Gene Hucklebee

Radio Frequency:

Darlington County EMS

Coordinator: Jim McKelvey  
Alternate: Supervisor on Call  
at the Sheriff's Dept.

\*Radio Frequency:

\*The radio frequency for Darlington County EMS is the same as for Byerly, Darlington, and Wilson Hospitals.



Office

Home

SHERIFF'S DEPARTMENTS:

Darlington County

Sheriff: Clyde Dudley  
Alternate: W. M. Conner  
Radio Frequency:

receive  
transmit

[ ] |

Lee County

Sheriff: Liston Truesdale  
Alternate: W. A. Mozingo, Jr.  
Radio Frequency:

Mega Hertz

| ] |

Chesterfield County

Sheriff: Ralph Freeman  
Alternate: David Lisonby  
Radio Frequency:

[ ] |

Regional Radio Frequency for Darlington and Lee County:

receive  
transmit

When contacting any of the three Sheriff's Departments via radio, address the departments by their appropriate names and not their call numbers.

POLICE DEPARTMENT:

Hartsville Police Department

Chief: J. L. Hesser  
Alternate: Richard F. Rich

Darlington City Police Department

Chief: Roy Williams  
Alternate: Cecil Thomas

SOUTH CAROLINA HIGHWAY PATROL:

FIRE DEPARTMENTS:

Hartsville Fire Department

Chief: Tommy Livingston  
Alternate: Alan Tyner  
David Perkinson  
Dwayne Cassidy  
Radio Frequency:

Lake Robinson Fire Department

Chief: Elliott Brock  
Alternate: Russell Luther

Radio Frequency:

receive  
transmit