Progress Energy

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United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
CHANGE TO EMERGENCY PLAN IMPLEMENTING PROCEDURES

Ladies and Gentlemen:

In accordance with 10 CFR 50, Appendix E, Progress Energy Carolinas, Inc. is transmitting one copy each of recently revised Harris Nuclear Plant Emergency Plan implementing procedures. The enclosure to this letter identifies the revised emergency plan implementing procedures and the effective date.

If you should have any questions regarding this submittal, please do not hesitate to contact me at (919) 362-3137.

Sincerely,

John R. Caves
Supervisor, Licensing/Regulatory Programs
Harris Nuclear Plant

MGW

Enclosures

c: Mr. R. C. Hagar (NRC Resident Inspector, HNP)
Mr. L. A. Reyes (NRC Regional Administrator, Region II) two copies of procedure
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A045

**Progress Energy Carolinas, Inc.**
Harris Nuclear Plant
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## CHANGES TO EMERGENCY PLAN IMPLEMENTING PROCEDURES

| PROCEDURE NUMBER | TITLE | EFFECTIVE DATE |
|---|---|---|
| PEP-260 Revision 10 | Activation and Operation of the Operations Support Center | 06/23/03 |
| PEP-270 Revision 10 | Activation and Operation of the Emergency Operations Facility | 06/26/03 |
| PEP-330 Revision 6 | Radiological Consequences | 06/27/03 |

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CAROLINA POWER & LIGHT COMPANY

SHEARON HARRIS NUCLEAR POWER PLANT

PLANT OPERATING MANUAL

VOLUME 2

PART 5

PROCEDURE TYPE: Plant Emergency Procedure

NUMBER: PEP-260

TITLE: Activation and Operation of the Operations Support Center

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## 1.0 PURPOSE

1. This procedure implements Section 2.4 and Section 3.4 of the Emergency Plan PLP-201.

2. It specifies the actions taken by Emergency Response Organization (ERO) personnel who report to the Operations Support Center (OSC).

## 2.0 INITIATING CONDITIONS

1. An Alert or higher classification has been declared.

2. A decision has been made to activate the OSC.

## 3.0 PROCEDURE STEPS

**NOTE:** The steps in the checklists may be performed in any order, or more than once, as necessary.

1. Attachments 1-9 are to be used as guidance for the positions listed below.

2. Attachment 10 is the Facility Log sheet.

3. If an action is not appropriate under existing conditions or was not necessary for the event enter N/A when completing documentation for submittal.

| IF YOUR ERO POSITION IS: | REFER TO POSITIONAL ATTACHMENTS: |
|---|---|
| EMERGENCY REPAIR DIRECTOR | PEP-110, Attachment 4<br>PEP-260, Attachment 1<br>PEP-260, Attachment 8 |
| DAMAGE CONTROL COORDINATOR | PEP-260, Attachment 2<br>PEP-260, Attachment 7<br>PEP-260, Attachment 9<br>PEP-350, Attachment 4 |
| RADIOLOGICAL CONTROL COORDINATOR | PEP-260, Attachment 3<br>PEP-260, Attachment 9<br>PEP-330, Attachment 10<br>PEP-330, Attachment 11<br>PEP-330, Attachment 12<br>PEP-330, Attachment 14 |
| CHEMISTRY COORDINATOR | PEP-260, Attachment 4<br>PEP-260, Attachment 9 |
| MAINTENANCE PLANNER | PEP-260, Attachment 5 |
| OSC LOGKEEPER | PEP-260, Attachment 6 |
| OSC POOL POSITION | PEP-260, Attachment 9 |

## 4.0 GENERAL

1. All functional capabilities do not need to be staffed for the OSC to be activated if the Emergency Repair Director (ERD) determines missing functions are not presently required to adequately deal with the situation.

2. If a subordinate position with an augmentation time requirement is not filled, the supervisory position may fulfill the responsibilities provided they are trained to perform the activities.

3. Logkeeping

   a. Individual logs and facility logs are legal records of activities that occurred during an emergency. It is vital that they are as complete as possible.

   b. Logs should include such information as:

      1) Times of major events and subsequent actions taken (such as, change in emergency classifications, fission product barrier status, discovery of an unplanned radiological release).

      2) Times and content of important communications with other members of the ERO that are related to major events (such as, decisions made during turnover or routine briefings and subsequent actions taken).

      3) Specific actions taken to mitigate equipment failures, contain chemical or radiological spills or fires, and so forth.

      4) Specific references to Emergency Radiation Work Permits, clearances, procedure deviations authorized emergency radiation exposures authorized, and so forth.

   c. All records shall be made by black indelible means, such as ink or typing.

   d. Corrections shall be made by drawing a single line through and initialing and dating the incorrect entry.

   e. Preparation of Activity Logs

      1) Initiate the last sheet of the applicable checklists as follows:

         - DATE

         - PAGE OF: Enter "1" on the first page and sequential numbers on the following pages as they are used.

3. Logkeeping

2) Enter chronologically those events that are pertinent to the particular individual or organizations:

- TIME: Record the time (using the 24 hour clock) that a message or information was received or action was taken.

- SUMMARY OF ACTIVITY PERFORMED: Briefly record the incident, message, or order received or transmitted. Indicate the time of the incident and actions taken.

3) Upon relief from the position or termination of the emergency, complete the log as follows:

- PAGE OF: Enter the total number of pages used at the top of each page (that is, Page 1 of 12, Page 2 of 12, and so forth).

- NAME AND SIGNATURE: Check the log for completeness, then in the Comments Section of the last page used in the log, print and sign your name.

4) The person relieving the position will initiate and maintain a new log and review any previously prepared logs to allow for continuity of the position.

5) Upon termination of the emergency or exercise/drill, provide all completed logs to the Damage Control Coordinator who will then forward them to the Emergency Preparedness unit.

4. Following a loss of the site telephone system, refer to the Emergency Phone List (EPL-001), section 2.4 for guidance.

## 5.0 REFERENCES

### 5.1 PLP-201- Emergency Plan References

1. Section 2.4, "Assignment of Responsibilities"

2. Section 3.4, "Operations Support Center"

5.2 Referenced Plant Emergency Procedures

1. PEP-110, "Emergency Classification and Protective Action Recommendations"

2. PEP-330, "Radiological Consequences"

3. PEP-342, "Core Damage Assessment"

4. PEP-350, "Protective Actions"

5.3 Other References

1. EPL-001, "Emergency Phone List"

2. AP-535, "Performing Work in Radiological Control Areas"

3. ADM-NGGC-0104, "Work Management Process"

4. CRC-821, "Post Accident Sampling"

5. NUREG-0737, "Clarification of TMI Actions Plan Requirements"

6. HPS-NCCG-0003, "Radiological Posting, Labeling and Surveys"

6.0 DIAGRAMS/ATTACHMENTS

See Table of Contents

# EMERGENCY REPAIR DIRECTOR CHECKLIST

**Position Function:** Direct and supervise the repair and damage control emergency response actions.

✓

**Responsibility/Activity**

1. Assume the position of Emergency Repair Director (ERD) ☐

   a) Sign in on the facility organization chart. Remove name tag from board.

   b) Obtain the Positional Notebook/Binder from the storage area.

   c) Perform a formal relief when permanently relieving another ERD.

      1) Review the activity log.

      2) Obtain a briefing on the emergency and any actions that have been completed or are in progress using PEP-110, Attachment 4, Event Information Worksheet.

   d) Inform a staff member when temporarily leaving the work area (such as to the restroom).

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

2. Activate the facility ☐

NOTE: If a Security Threat /Event has been declared, the responding OSC and TSC personnel will be directed to take shelter in place or assemble at the alternate assembly area located at the HEEC/EOF.

   a) Verify that the personnel and equipment necessary to activate the facility are present. Refer to sheet 5 of this attachment for OSC minimum staffing requirements.

   b) Verify that damage control, radiological control, and chemistry teams are available and ready.

   c) Inform the Site Emergency Coordinator-Technical Support Center (SEC-TSC) that the OSC is ready to activate.

3. Verify a log of activities is being maintained by the OSC Logkeeper's position. ☐

4. Designate a person to monitor ERFIS, if available. ☐

## EMERGENCY REPAIR DIRECTOR CHECKLIST

✓

**Responsibility/Activity**

5. Perform facility brief using sheet 6 of 6, when necessary. ☐

6. Perform accountability for OSC personnel using the OSC Logkeeper. ☐

   a) Report missing personnel to the Security Director.

   b) Maintain accountability of personnel assigned to the OSC per PEP-350.

7. Direct the onsite repair, equipment restoration, and maintenance activities. ☐

   a) Supervise the activities of the Damage Control Coordinator (DCC).

   b) Ensure adequate personnel and material resources are available for the onsite response.

      1) Request any materials or supplies not available on site from the Administrative and Logistics Manager (ALM).

   c) Ensure that work activities are coordinated with the Radiological Control Coordinator (RCC) and Plant Operations Director (POD) as necessary.

8. Control and maintain accountability of personnel other than the Damage Control Missions as follows: ☐

   a) Operations/Fire Brigade/First Aid - Plant Operations Director (POD) will direct and control these personnel from the MCR.

   b) EC/RC - The Chemistry and Radiological Control Coordinators will direct and control these activities from the OSC.

9. Coordinate support activities in accordance with the priorities established by the SEC-TSC. ☐

   a) Ensure that the Coordinators, Team Leaders (if applicable), and team members are kept informed of the overall focus of the emergency and existing radiological conditions (refer to sheet 6 of this attachment, if applicable).

   b) Ensure that the Coordinators maintain an awareness of the activities and concerns of OSC team members and team leaders.

## EMERGENCY REPAIR DIRECTOR CHECKLIST

✓

**Responsibility/Activity**

c) Ensure that mission priorities are consistent with the priorities established by the SEC-TSC.

NOTE: If multiple missions exist within a single priority classification, confer with the SEC to establish the preferred sequence.

1) High (H): The mission is necessary to protect the immediate health and safety of the public. Plant conditions are allowing the rapid deterioration of safety barriers, or barriers have already been broken such that a release is either occurring or is imminent.

2) Medium (M): Any task that requires action by the OSC and should be worked on at the immediate time period, but does not fit the criteria of a health and safety of the public related mission (for example, there is a leak, or there is a secondary plant problem, and so forth).

3) Low (L): Any mission which can be worked on when resources permit (for example, an Auxiliary Boiler will not light off, but is not immediately needed as the Main Steam Isolation Valves have been shut due to a SI or RCB isolation signal).

d) Inform the SEC-TSC of changing situations in the plant based on information received from dispatched teams.

e) Ensure that the Mission Status Board or equivalent is updated as new tasks are assigned, old tasks are completed, and as priorities are changed.

10. Develop special procedures and tasks to reduce consequences and implement recovery. ☐

a) Obtain approval from an S-SO prior to deviating from any existing plant procedure or prior to performing an action for which no procedure exists, but would normally require a procedure per current station document control requirements.

b) The SEC-TSC is responsible for overall control of the plant. Obtain concurrence prior to directing any action which could adversely affect the operability of a plant system.

## EMERGENCY REPAIR DIRECTOR CHECKLIST

✓

**Responsibility/Activity**

11. Evaluate a suitable location should the recommendation to relocate the OSC be given by the Radiological Control Director (RCD) ☐

NOTE: Radiological conditions which may warrant relocation of the OSC include:
- Exposure rates > 50 mRem/Hr
- Projected doses > 1 Rem TEDE
- Airborne concentrations > 0.25 DAC actual long lived (half life > 2 hours) particulate activity.

a) The decision to relocate personnel should include the following:

1) Current radiological conditions within the OSC.

2) Radiological conditions at the proposed OSC.

3) Radiological conditions en route.

4) The adequacy of response from the alternate location.

b) Consider the Turbine Building 261' North (Old First Aid Room) or the Technical Support Center as possible locations.

c) Coordinate evacuation of the OSC with the RCD and RCC.

1) Announce the decision and new location over the PA system.

2) Notify Security and ALM to instruct incoming personnel to report to the alternate OSC.

3) Ensure all equipment and materials needed for the alternate OSC are packaged and delivered to the new location. Use Attachment 8 as a checklist for equipment/items needed for each location.

4) Notify Security that a guard will be required for personnel access through Door 52 if the Turbine Building 261' North (Old First Aid Room) is used.

## EMERGENCY REPAIR DIRECTOR CHECKLIST

✓

**Responsibility/Activity**

12. Termination of the Emergency ☐

    a) Provide all records to the Damage Control Coordinator.

    b) Replenish content of your positional notebook/binder.

    c) Restore facility to stand-by readiness.

    d) Inventory facility equipment as applicable.

**OSC Minimum Staffing Requirements**

| On-Shift Response | √ | 30-45 Minute Response | √ | 75 Minute Response | √ |
|---|---|---|---|---|---|
| 2 RC Technicians | | 4 RC Technicians * | | 4 RC Technicians * | |
| 1 Chemistry Technician | | 2 Electrical/I&C Technicians | | 1 Chemistry Technician | |
| 1 Mechanical Maintenance | | | | 2 Mechanical Maintenance | |
| 1 Electrical/I&C Technician | | | | 1 Electrical/I&C Technician | |
| | | | | Emergency Repair Director | |
| | | | | Damage Control Coordinator | |
| | | | | Radiological Control Coord. | |
| | | | | Chemistry Coordinator | |
| | | | | | |

* EOF and TSC RC Technicians may be part of this pool.

## EMERGENCY REPAIR DIRECTOR CHECKLIST

### INTRA-FACILITY BRIEFING GUIDELINE

RECAP CURRENT CONDITIONS

- CLASSIFICATION LEVEL
- PLANT CONDITIONS
- MITIGATING ACTIVITIES AND PRIORITIES
- PERSONNEL SAFETY ISSUES

| MAINTENANCE | |
|---|---|
| 1. Missions ongoing<br>2. Equipment Status<br>3. Personnel needs | NOTES: |
| **RADIOLOGICAL** | |
| 1. Release<br>2. Plant conditions<br>3. Missions ongoing<br>4. KI Issuance<br>5. ERWP Issuance<br>6. Habitability conditions of affected areas | NOTES: |
| **CHEMISTRY** | |
| 1. Missions ongoing<br>2. Sampling requirements | NOTES: |

**SET EXPECTATIONS**

- ANTICIPATE PLANT CONDITIONS
- CRITICAL OSC ACTIVITIES
- OTHER AREAS OF FOCUS

**FINISH BRIEFING**

- ANNOUNCE WHEN THE NEXT BRIEFING WILL OCCUR
- ANNOUNCE "END OF BRIEFING" AND ENSURE ALL HAVE UNDERSTOOD

# DAMAGE CONTROL COORDINATOR CHECKLIST

**Position Function:** Coordinate and supervise the damage control, repair, and restoration activities necessary to establish or maintain safe shutdown of the plant.

✓

**Responsibility/Activity**

1. Assume the position of Damage Control Coordinator (DCC) ☐

   a) Sign in on the facility organization chart. Remove name tag from board.

   b) Obtain the Positional Notebook/Binder from the storage area.

   c) Upon arrival to the facility obtain the following information from the On-Shift Staff;

      1) Clearance Status.

      2) Work in progress.

      3) Turnover items pertinent to the emergency.

      4) A list of Out-of-Service equipment.

      5) A list of available personnel already in the field (On-Shift).

   d) Perform a formal relief when permanently relieving another DCC.

      1) Review the activity log.

      2) Obtain a briefing on the emergency and any actions that have been completed or are in progress.

      3) Direct a responding DCC or a pool position with appropriate discipline/expertise to assist in the assigned duties of the position, if available.

   e) Inform a staff member when temporarily leaving the work area (such as to the restroom).

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

## DAMAGE CONTROL COORDINATOR CHECKLIST

| Responsibility/Activity | ✓ |
|---|---|
| 2. Maintain a log of activities. (Attachment 10) | ☐ |
| a) Document repair actions in accordance with ADM-NGGC-0104 as needed. | |
| 3. Supervise the activities of OSC personnel. | ☐ |
| 4. Direct the responding Maintenance personnel to follow Attachment 9 guidelines. | ☐ |
| 5. Determine equipment damage and provide recommendations for corrective actions to the Emergency Repair Director (ERD). | ☐ |
| a) Advise the Emergency Repair Director whether requested work is within the scope of existing plant procedures. | |
| b) Ensure that mission preparation is completed as quickly as possible. | |
| 6. Direct and monitor the activities of the Damage Control Teams | ☐ |

**NOTE:** Use Attachment 7 for guidance during the briefing process.

a) Assign a Damage Control Team Leader (DCTL), if needed (this is a responding Mechanic or Electrical/I&C with expertise for the specific mission) to provide direct supervision of the Damage Control Teams and instruct the DCTL to:

1) Ensure Damage Control Teams are properly equipped for the specific mission.

2) Ensure adequate procedures, instructions and documents are available for the specific mission.

3) Assess the nature and extent of any identified damage or failures while dispatched.

4) Perform assessment, repair and mitigating actions.

5) Maintain accountability of personnel assigned to the Damage Control Team.

b) Ensure the Damage Control Teams are properly briefed on the mission and radiological or other hazards prior to being dispatched.

## DAMAGE CONTROL COORDINATOR CHECKLIST

✓

**Responsibility/Activity**

c) Obtain clearance, dispatch and direct the activities of the Damage Control Teams.

d) Maintain accountability of dispatched personnel per PEP-350.

e) Provide mission status reports to the Emergency Repair Director.

7. Coordinate activities with the Radiological Control Coordinator ☐

8. Ensure adequate materials and supplies are available for assigned missions ☐

a) Advise the Emergency Repair Director of the need for additional personnel, tools, supplies, or equipment that will be required.

b) Request any materials, supplies, or personnel needs from the Administrative and Logistics Manager (ALM).

9. Termination of the Emergency ☐

a) Collect all OSC generated logs and records and provide them to Emergency Preparedness.

b) Replenish contents of the Positional Notebook/Binder.

c) Restore facility to stand-by readiness.

d) Inventory facility equipment as applicable.

## RADIOLOGICAL CONTROL COORDINATOR CHECKLIST

**Position Function:** Advise the Damage Control Coordinator regarding radiological monitoring requirements, appropriate radiation protection/ALARA, and contamination control measures for emergency response teams dispatched from the OSC. Supervise and coordinate the activities of the RP personnel assigned to the OSC.

✓

**Responsibility/Activity**

1. Assume the position of Radiological Control Coordinator (RCC) ☐

   a) Sign in on the facility organization chart. Remove name tag from board.

   b) Obtain the Positional Notebook/Binder from the storage area.

   c) Determine if restrictions on eating and drinking are in effect.

      1) Ensure the Emergency Repair Director (ERD) and OSC personnel are aware of the restrictions. Remove food and drinks from tabletops and easy access areas to aid in meeting restriction.

      2) Post restrictions inside the OSC and at the OSC entrance.

   d) Perform a formal relief when permanently relieving another RCC.

      1) Review the activity log.

      2) Obtain a briefing on the emergency and any actions that have been completed or are in progress.

   e) Inform a staff member when temporarily leaving the work area.

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

   f) Direct the responding RC personnel to follow Attachment 9 guidelines.

   g) Report readiness status to the ERD and Radiological Control Director (RCD) when prepared to assume the RCC position.

   h) Dispatch a qualified Radiation Monitoring System (RMS) technician to the MCR, if required and perform the following:

      1) Establish communications with the OSC.

      2) Verify dosimetry use.

      3) Perform habitability surveys when applicable.

## RADIOLOGICAL CONTROL COORDINATOR CHECKLIST

✓

**Responsibility/Activity**

2. Maintain a log of activities. (Attachment 10) ☐

   a) Monitor plant RMS and maintain record of significant and unusual indications.

   b) During the beginning of a declared event obtain initial Potassium Iodide (KI) information per PEP-330, along with PEP-330 Attachment 13. Initiate PEP-330, Attachment 17 for data gathering.

   c) Identify list of "volunteers" for Lifesaving and Emergency Reentry/Repair actions based on PEP-330, Attachments 1 and 2.

   d) Direct the ERWP Writer to verify allowable dose for responding facility personnel, if available.

3. Assign Radiation Control personnel to assist in emergency response activities. ☐

   a) Provide personnel to conduct in-plant radiological surveys.

   b) Provide personnel to accompany Damage Control Teams requiring radiological support.

   c) Provide radiological support for the assessment, treatment, and transportation of contaminated injured personnel.

      1) Monitor patients for contamination and decontaminate as appropriate.

**NOTE:** Ensure personnel retrieving radioactive waste from a hospital are "shipping" qualified per plant procedures/qualifications.

      2) Make arrangements to pick up personnel and radioactive waste from offsite treatment locations.

      3) Obtain concurrence from the Site Emergency Coordinator-Technical Support Center (SEC-TSC) through the RCD prior to releasing the hospital's Radiological Emergency Room or the ambulance for uncontrolled use.

   d) Brief emergency teams when they are assembled for a mission.

      1) Discuss dose limits, expected and maximum dose rates, and stay times. Advise team members to immediately contact or return to the OSC when dose rates or stay times approach the established limits.

      2) Discuss dosimetry requirements.

      3) Discuss protective clothing and respiratory protection requirements.

## RADIOLOGICAL CONTROL COORDINATOR CHECKLIST

✓

**Responsibility/Activity**

4) Discuss Emergency Radiation Work Permit (ERWP) and travel route requirements.

5) Advise team members on monitoring and decontamination procedures following mission completion.

e) Dispatch radiological control teams to assist in the site evacuation per PEP-350.

1) Relocate onsite personnel and vehicle monitoring stations if portal monitors are in alarm.

2) Coordinate with the Radiological Control Manager (RCM) to relocate monitoring activities to an offsite location if onsite monitoring is not possible.

f) Maintain continuous accountability of dispatched Radiation Control Team personnel.

4. Establish dosimetry, protective clothing, and other protective equipment requirements for onsite ERO personnel ☐

a) At a minimum, specify requirements for Main Control Room, Radwaste Control Room, TSC, OSC, Security, and Damage Control Team personnel.

b) Use normal criteria when establishing requirements for dosimetry, protective clothing, and respiratory protection equipment whenever possible.

c) Ensure exposure data is entered into Total Exposure or equivalent system.

d) Direct radiological control team personnel to read TLDs if exposure limits are approached.

5. Ensure the specified access controls for radiologically affected and unknown areas are implemented. ☐

a) Notify the RCD and ensure SEC-TSC authorization for radiation exposures expected to exceed 5 Rem TEDE or when exposure rates > 25 Rem/Hr may be encountered.

## RADIOLOGICAL CONTROL COORDINATOR CHECKLIST

✓

**Responsibility/Activity**

b) Suspend any existing Radiation Work Permit (RWP) (except for members of security during a safeguards event) at an Alert or higher classification.

c) Suspend normal requirements of AP-535 and HPS-NCCG-0003 for performing work in radiologically controlled areas if necessary.

d) Suspend radiological posting requirements for areas outside the normal RCA that are affected by the accident.

NOTE:
- ERWP documentation may be deferred when immediate action is necessary to mitigate a situation that severely threatens plant or personnel safety.
- The accompanying Radiation Control Team member becomes a "Walking ERWP" and may determine what radiological precautions are appropriate for the situation.

e) Determine whether ERWPs are required.

1) Ensure ERWPs are prepared as necessary.

2) Ensure exposure histories and allowable dose for each individual are determined and entered on the ERWP.

6. Complete the issuance of Potassium Iodide (KI) to onsite emergency workers per PEP-330. ☐

NOTE: ALARA consideration should be given for the protective ventilation envelope found within the Alternate OSC, if applicable.

a) Direct team members to administer KI to OSC, MCR and other personnel (Security and other trained response personnel) found within the Protected Area. Use the Security Director (SD) to assist in locating personnel, if needed.

b) Communicate with the RCM regarding KI administration for workers outside the Protected Area boundary, if applicable.

c) Record remaining KI issuance information.

d) Evaluate iodine uptakes for persons issued KI.

## RADIOLOGICAL CONTROL COORDINATOR CHECKLIST

✓

**Responsibility/Activity**

7. Direct the decontamination efforts of personnel, equipment, and onsite areas as appropriate. ☐

8. Ensure radiological and chemical habitability is established and periodic monitoring is conducted in occupied and assembly areas as necessary, particularly when a release is in progress. Refer to PEP-330 for guidance. ☐

   a) At a minimum, verify habitability in the Main Control Room, TSC, OSC, and Security Building.

   b) Determine the need for OSC relocation and recommend the area(s) to be utilized.

      1) Consider OSC relocation under the following conditions:

         - Dose rates > 50 mRem/Hr.
         - Projected doses > 1 Rem TEDE.
         - Long lived (half life > 2 hours) particulate airborne activity > 0.25 DAC.

      2) Survey alternate locations such as the Turbine Building 261' North (Old First Aid Room) or the Technical Support Center for habitability prior to relocation if possible.

9. Coordinate HNP radiological assistance for Immediate Response Organizations entering and leaving the site. ☐

   a) Establish protective requirements for the responders.

   b) Assign a member of the Radiation Control Team to accompany the responders if necessary.

   c) Collect and read dosimetry and survey vehicles and personnel leaving the site as necessary.

10. Ensure adequate materials and supplies are available for assigned missions ☐

    a) Request any materials, supplies, or personnel needs from the Administrative and Logistics Manager (ALM).

## RADIOLOGICAL CONTROL COORDINATOR CHECKLIST

✓

**Responsibility/Activity**

11. Termination of the Emergency ☐

    a) Provide all logs and records to the Damage Control Coordinator.

    b) Replenish contents of your Positional Notebook/Binder.

    c) Restore facility to stand-by readiness.

    d) Inventory facility equipment as applicable.

## CHEMISTRY COORDINATOR CHECKLIST

**Position Function:** Coordinate and supervise the plant chemistry emergency response actions.

| Responsibility/Activity | ✓ |
|---|---|
| 1. Assume the position of Chemistry Coordinator (CC) | ☐ |
| a) Sign in on the facility organization chart. Remove name tag from board. | |
| b) Obtain the Positional Notebook/Binder from the storage area. | |
| c) Perform a formal relief when permanently relieving another CC. | |
| 1) Review the activity log. | |
| 2) Obtain a briefing on the emergency and any actions that have been completed or are in progress. | |
| d) Direct the responding Chemistry personnel to follow Attachment 9 guidelines. | |
| e) Inform a staff member when temporarily leaving the work area. | |
| 1) Designate an individual to answer the phones while away. | |
| 2) Upon return, obtain a briefing on any events which have occurred while away. | |
| 2. Maintain a log of activities. (Attachment 10) | ☐ |
| NOTE: Sample priority and requests are specified by the Radiological Control Director (RCD). | |
| 3. Obtain status of current chemistry activities and sample requests in progress, contacting the POD when available. | ☐ |
| a) Collect data from chemistry activities that were directed by the MCR prior to OSC activation. | |
| 4. Coordinate sampling activities with the Radiological Control Coordinator (RCC). | ☐ |

## CHEMISTRY COORDINATOR CHECKLIST

**Responsibility/Activity** ✓

5. Coordinate compensatory sampling measures with the Control Room if applicable. ☐

NOTE: When obtaining samples ensure Operations valve lineups are performed prior to going into the field.

6. Supervise the activities of the Chemistry Teams. ☐

7. Assign, brief, and dispatch personnel to obtain chemistry samples as requested. ☐
   a) Obtain the necessary Emergency Radiation Work Permits (ERWP).
   b) Brief chemistry teams on plant status.
   c) Assign personnel to collect GRAB samples from the plant vent stacks.
   d) Assign personnel to obtain and analyze samples for accident purposes.
   e) Ensure that Chemistry Team personnel are briefed on radiological conditions prior to leaving the OSC.

8. Maintain accountability of dispatched Chemistry Team personnel. ☐

9. Provide sample results to accident and dose assessment personnel (inform the RCD). ☐

10. Monitor recirculation sump chemistry data to ensure proper NaOH concentrations. ☐

11. Ensure adequate materials and supplies are available for assigned missions. ☐
    a) Request any materials, supplies, or personnel needs not available on site from the Administrative and Logistics Manager (ALM).

12. Termination of the Emergency ☐
    a) Provide all logs and records to the Damage Control Coordinator.
    b) Replenish contents of your Positional Notebook/Binder.
    c) Restore facility to stand-by readiness.
    d) Inventory facility equipment as applicable.

## CHEMISTRY COORDINATOR CHECKLIST

### Post Accident SAMPLE CAPABILITIES

| Sample Description | RHR[1] | RCS[2] |
|---|---|---|
| Diluted Boron | ✓ | ✓ |
| pH | ✓ | ✓ |
| Specific Activity[3] | ✓ | ✓ |

(1) Samples collected from the RHR system when the RHR pumps are in service. One of the isolation valves (1RH-16 or 1RH-54) must be opened by the Main Control Room.

(2) Sample flow from the RCS Hot Leg Loop 2 or 3. The Main Control Room must provide valve alignment.

(3) Nuclides readily identified in an accident sample would be Iodine and Cesium. Nuclides listed in PEP-342 may be identified in a gamma scan after sufficient decay time.

## CHEMISTRY COORDINATOR CHECKLIST

### Post Accident SAMPLE CAPABILITIES

1. The Remote Sample Dilution Panel (RSDP) has the capability of sampling the Reactor Containment Building (RCB) atmosphere at various locations under postulated conditions[1].

2. The following GRAB samples can be obtained:

   a) Hydrogen

   b) Specific Activity[2]

   c) Silver-Zeolite Cartridge for iodine

3. The samples may be obtained from the following locations within the RCB:

   a) Dome

   b) Reactor Coolant Pump and Steam Generator 1A

   c) Reactor Coolant Pump and Steam Generator 1B

   d) Reactor Coolant Pump and Steam Generator 1C

   e) Pressurizer

   f) RCP area (below the flux mapping room)

(1) Sampling is performed as per CRC-821, "Post Accident Sampling."
(2) To collect any samples, the containment hydrogen analyzer train A must be in operation.

# MAINTENANCE PLANNER CHECKLIST

**Position Function:** Provide support for the emergency damage control and repair efforts.

**Responsibility/Activity** ✓

1. Assume the position of Maintenance Planner ☐

   a) Sign in on the facility organization chart.

   b) Obtain the Positional Notebook/Binder from the storage area.

   c) Report readiness to the Damage Control Coordinator.

   d) Perform a formal relief when permanently relieving another Maintenance Planner.

      1) Review the activity log.

      2) Obtain a briefing on the emergency and any actions that have been completed or are in progress.

   e) Inform a staff member when temporarily leaving the work area (such as to the restroom).

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

2. Assist the Damage Control Coordinator and the Emergency Repair Director in the development of missions and repair plans. ☐

3. Determine necessary parts and equipment. ☐

4. Assess the nature and extent of any identified damage or failures while dispatched. ☐

5. Provide time estimates for repair tasks. ☐

6. Remove faxes from machine and distribute as appropriate. ☐

## MAINTENANCE PLANNER CHECKLIST

| Responsibility/Activity | ✓ |
|---|---|
| 7. Termination of the Emergency | ☐ |
| a) Provide all records to the Damage Control Coordinator. | |
| b) Replenish contents of your Positional Notebook/Binder. | |
| c) Restore facility to stand-by readiness. | |
| d) Inventory facility equipment as applicable. | |

## OSC LOGKEEPER CHECKLIST

**Position Function:** Maintain a chronological log of all major OSC activities and decisions throughout the emergency. Maintain the Damage Control Mission Boards or equivalent.

| Responsibility/Activity | ✓ |
|---|---|
| 1. Assume the position of OSC Logkeeper | ☐ |
| a) Sign in on the facility organization chart. Remove name tag from board. | |
| b) Obtain the Positional Notebook/Binder from the storage area. | |
| c) Perform a formal relief when permanently relieving another OSC Logkeeper. | |
| 1) Review the activity log. | |
| 2) Obtain a briefing on the emergency and any actions that have been completed or are in progress. | |
| d) Inform a staff member when temporarily leaving the work area. | |
| 1) Designate an individual to answer the phones while away. | |
| 2) Upon return, obtain a briefing on any events which have occurred. | |
| 2. Maintain the facility log by recording OSC activities. (Attachment 10) | ☐ |
| 3. Set or verify facility clocks to ERFIS time. | ☐ |
| 4. Adjust the PA speaker volume, if needed (screwdriver available in the OSC cabinet tool box). | ☐ |
| 5. Perform accountability of personnel arriving in the facility as soon as practicable using PEP-350. | ☐ |
| 6. Update the Mission Status Board or equivalent as new tasks are assigned, old tasks are completed, and as priorities are changed. Communicate with the TSC ERFIS Operator position to ensure the TSC and OSC boards are the same (when using manual method). | ☐ |
| 7. Complete accountability of personnel in the OSC using PEP-350 when required. | ☐ |

## OSC LOGKEEPER CHECKLIST

| Responsibility/Activity | ✓ |
|---|---|
| 8. Remind the Emergency Repair Director (ERD) of pre-designated briefing times. | ☐ |
| 9. Termination of the Emergency | ☐ |
| a) Provide all logs and records to the Damage Control Coordinator. | |
| b) Replenish contents of your Positional Notebook/Binder. | |
| c) Restore facility to stand-by readiness. | |
| d) Inventory facility equipment as applicable. | |

## OSC/Damage Control Team Briefing Checklist

Team Number: _____ Date: __/ __/ __ Team Leader:

As team leader you are responsible for the following items.

Mission: _____

_____

Members: _____ _____ _____

- ☐ Team member qualifications have been verified.
- ☐ Team members are logged on the OSC status board or equivalent and accounted for during the mission.
- ☐ Members sign on ERWP (#_____), if necessary.
- ☐ Obtain HP/ALARA brief. (Team members practice ALARA during the mission)
- ☐ Proper clearances are obtained.
- ☐ Heat Stress evaluation is needed for this job.
- ☐ Perform a radio check upon exiting the OSC to ensure adequate communications are established between the team and DCC.
- ☐ Update the DCC upon arrival and inspection at the assigned location to provide preliminary results of the inspection.
- ☐ Provide timely status to the DCC of on-going mission activity.
- ☐ Team has appropriate tools/test equipment/keys/drawings necessary to perform mission.
- ☐ Procedure is needed for this activity.
- ☐ Transit routes have been established for the mission.

### Post Mission Debrief

- ☐ Mission performed as planned.
- ☐ Mission scope changed (provide what & why changed):_____

_____

- ☐ Additional work is required to complete repairs: W/O # _____
- ☐ Lessons learned from mission:
  - ☐ Preparation activities_____
  - ☐ Communications: _____
  - ☐ Support group interface:_____
  - ☐ Work execution: _____

Comments: _____

Key Phone/Radio Numbers:

Radio Channel: 2

Emergency Repair Director (ERD): 3036

Damage Control Coordinator (DCC): 3021

Accident Assessment : Mechanical: 3063

Work Control Center: 3007/3018

Radiological Control Coordinator (RCC): 3023

Mech. Planner: 3013

Electrical Planner: 3012

Electrical/I&C: 3064

## Alternate OSC Relocation Checklist

Note: This is for guidance only. Other equipment/items may or may not be required depending on the classification and type of the emergency.

| Equipment/Item to be moved to new location | Turbine Building 261' North (Old First Aid Room) | Technical Support Center |
|---|---|---|
| Potassium Iodine (KI) Tablets | * | * |
| Flashlight with Batteries | * | Provided in facility |
| PEP attachments located in the Book Rack or Cabinet | * | Provided in facility |
| Lantern Lights with Batteries | * | Provided in facility |
| OSC Activated Signs with Frisker Stand | * | Provided in facility |
| ERD Box, Access Keys, and Timer | * | * |
| Hand Held Radios w/ Batteries/Chargers | * | * |
| Dosimetry (TLDs and SRPDs) with charger | * | * |
| Table Nameplates | * | * |
| Emergency Phone Books | * | Provided in facility |
| PEP and PLP-201 Procedures | * | Provided in facility |
| Protective Clothing | * | Provided in facility |
| OSC Tool Boxes with gag tool | * | * |
| Site Map | * | Provided in facility |
| OSC Mission Status Board (Manual) | Provided in facility | Provided in facility |
| Emergency Classification Placards | * | * |
| Health Physics Instrument/Items<br>1. RO2 and RO2A or equivalent<br>2. LM-177 or equivalent<br>3. Teletectors (extenders) or equivalent<br>4. Portable Air Samplers<br>5. Smears, survey maps, air sample filters, charcoal cartridges | * | * |
| First Aid Kit | * | Provided in facility |
| Accountability Trakker | * | Provided in facility |
| Wall Clock | Provided in facility | Provided in facility |
| Facility Organization Chart | Provided in facility | Provided in facility |
| Telephones | Provided in facility (TB 261' Decon Cabinet) | Provided in facility |
| Tables and Chairs | Provided in facility (key with ERD keys) | Provided in facility |

* Equipment/Items needed for relocation

## OSC Pool Position Checklist

MAINTENANCE TEAM

- ☐ Sign in and out of the Facility Sign-in Board when entering or leaving the OSC.
- ☐ Check in with the DCC and assist with troubleshooting and mission planning.
- ☐ Verify operability of radios in cabinets (use channel 2 or other designated number).
- ☐ Pick up from the Calibration Laboratory various I&C equipment that may be needed.
- ☐ Verify Tool Box inventories if seals are broken.
- ☐ Remove Emergency Phone Lists from the cabinet and place on various tables for usage.
- ☐ Receive status of plant from the Emergency Repair Director, or designee.
- ☐ Dress in modesty garments (scrubs) in preparation for missions.
- ☐ Read through procedures (PEPs and the Emergency Plan).
- ☐ Ensure you are accounted for on the Damage Control Mission Board or equivalent when assigned to a mission.
- ☐ Constantly update the DCC of your location when out in the field.

RADIATION CONTROL TEAM

- ☐ Sign in and out of the Facility Sign-in Board when entering or leaving the OSC.
- ☐ Check in with the RCC and assist with troubleshooting and mission planning.
- ☐ Setup nameplates for positions on appropriate tables.
- ☐ Acquire instrumentation and perform operability checks.
- ☐ Ensure everyone assigned to the OSC has dosimetry.
- ☐ Place OSC Exit/Entry signs in appropriate places (guidance on back of signs).
- ☐ Setup entrance area to the OSC for monitoring personnel/equipment, if needed.
- ☐ Remind the RCC of habitability survey concerns.
- ☐ Assist the RCC in the control of Damage Control Missions entering or exiting the facility.
- ☐ Sign in and out of the EC/RC Sign-In board whenever leaving or entering the facility for a mission.
- ☐ Receive status of plant from the Emergency Repair Director, or designee.
- ☐ Dress in modesty garments (scrubs) in preparation for missions.
- ☐ Read through procedures (PEPs and the Emergency Plan).
- ☐ Ensure you are accounted for on the Damage Control Mission Board or equivalent when assigned to a mission.
- ☐ Constantly update the RCC of your location when out in the field.

CHEMISTRY TEAM

- ☐ Sign in and out of the Facility Sign-in Board when entering or leaving the OSC.
- ☐ Check in with the CC and assist with troubleshooting and mission planning.
- ☐ Sign in and out of the EC/RC Sign-In board whenever leaving or entering the facility for a mission.
- ☐ Receive status of plant from the Emergency Repair Director, or designee.
- ☐ Dress in modesty garments (scrubs) in preparation for missions.
- ☐ Read through procedures (PEPs and the Emergency Plan).
- ☐ Remind the Chemistry Coordinator about Chemistry Lab setup requirements.
- ☐ Prior to dispatch for sampling remind the Chemistry Coordinator to **verify system lineup**.
- ☐ Constantly update the RCC of your location when out in the field.

## OSC LOG

**POSITION:**_____

| OSC | DATE: | PAGE _____ OF _____ |
|---|---|---|
| **Time** | **Comments** | |
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**Upon relief or termination of the emergency, ensure that the log is completed by checking the log for completeness, then printing and signing your name in the comments section.**

## Revision Summary

PEP-260 Revision 10

| Page | Section | Changes |
|---|---|---|
| 2 | TOC, 16, 23, 28, 33 | Added Attachment 10. One log sheet will be used by OSC members versus duplicating log sheets for each position. Deleted position specific log sheets. |
| 3 | 3.0 | Added step referring to Attachment 10 for facility log sheet. |
| 11 | Att. 1 sheet 5 | Deleted OSC minimum staffing position for the 1 RC technician position to be filled by a Chemistry Technician. |
| 14, 18, 24, 31 | Step 2 | Added, "(Attachment 10)" on the position specific checklist steps that stated to maintain a log of activities. |
| All | Various | Corrected typographical and grammatical errors. |

CAROLINA POWER & LIGHT COMPANY

SHEARON HARRIS NUCLEAR POWER PLANT

PLANT OPERATING MANUAL

VOLUME 2

PART 5

PROCEDURE TYPE: Plant Emergency Procedure

NUMBER: PEP-270

TITLE: Activation and Operation of the Emergency Operations Facility

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## 1.0 PURPOSE

1. This procedure implements Section 2.4 and Section 3.5 of the Emergency Plan PLP-201.

2. It specifies the actions taken by Emergency Response Organization (ERO) personnel who report to the Emergency Operations Facility (EOF).

## 2.0 INITIATING CONDITIONS

1. An Alert or higher classification has been declared.

2. A decision has been made to activate the EOF.

## 3.0 PROCEDURE STEPS

NOTE: The steps in the checklists may be performed in any order, or more than once, as necessary.

1. Attachments 1-23 are to be used as guidance for the positions listed below.

2. If an action is not appropriate under existing conditions or was not necessary for the event enter N/A when completing documentation for submittal.

3. Attachment 24 is used by the EOF Logkeeper to log in/out of the ERFIS facility logs.

4. Attachment 25 is used by the ERFIS Operator to display ERFIS data.

5. Attachment 26 is the Facility Log sheet.

3.0 PROCEDURE STEPS (continued)

| IF YOUR ERO POSITION IS: | REFER TO POSITIONAL ATTACHMENTS |
|---|---|
| EMERGENCY RESPONSE MANAGER (ERM) | PEP-270 Att 1<br>PEP-110 Att 4 |
| EMERGENCY PREPAREDNESS ADVISOR | PEP-270 Att 2<br>PEP-110 Att 4 |
| RADIOLOGICAL CONTROL MANAGER (RCM) | PEP-270 Att 3 |
| TECHNICAL ADVISOR | PEP-270 Att 4 |
| DOSE PROJECTION TEAM LEADER (DPTL) | PEP-270 Att 5 |
| DOSE PROJECTION TEAM MEMBER | PEP-270 Att 6 |
| ENVIRONMENTAL FIELD COORDINATOR (EFC) | PEP-270 Att 7 |
| ENVIRONMENTAL TEAM MEMBER | PEP-270 Att 8 |
| EOF HP TECHNICIAN | PEP-270 Att 9 |
| COMMUNICATIONS MANAGER (CM) | PEP-270 Att 10<br>PEP-310 Att 1-5 |
| EMERGENCY COMMUNICATOR-STATE/COUNTY | PEP-270 Att 11 |
| EMERGENCY COMMUNICATOR-CORP COMM/JIC | PEP-270 Att 12 |
| NEWS COORDINATOR | PEP-270 Att 13 |
| REP - STATE/COUNTY EOC | PEP-270 Att 14 |
| TECHNICAL ANALYSIS MANAGER (TAM) | PEP-270 Att 15 |
| EOF SENIOR REACTOR OPERATOR | PEP-270 Att 16 |
| EOF ACCIDENT ASSESSMENT TEAM (EOF AAT) | PEP-270 Att 17 |
| EOF ERFIS OPERATOR | PEP-270 Att 18<br>PEP-270 Att 25 |
| ADMINISTRATIVE AND LOGISTICS MANAGER (ALM) | PEP-270 Att 19 |
| ADMINISTRATIVE TEAM LEADER | PEP-270 Att 20 |
| EOF LOGKEEPER | PEP-270 Att 21<br>PEP-270 Att 24 |
| ASSEMBLY AREA LEADER (AAL) | PEP-270 Att 22 |
| EOF TELECOM/COMPUTER SUPPORT | PEP-270 Att 23 |

4.0 GENERAL

1. Prior to activation, the SEC-MCR may assign support function to the EOF as deemed necessary to relieve on-shift personnel.

2. The EOF must meet minimum staffing requirements for activation prior to the ERM relieving the SEC-MCR of his portion of emergency management responsibilities. Both the TSC and EOF will need to activate together.

3. If a position with an augmentation time requirement is not filled, a supervisory position may fulfill the responsibilities provided they are trained to perform the assigned activities of that position. For example: the Communications Manager could perform the duties of the State and County Communicator.

4. Logkeeping

   a. Individual logs and facility logs are legal records of activities that occurred during an emergency. It is vital that they are as complete as possible.

   b. Logs should include such information as:

      1) Times of major events and subsequent actions taken (such as, change in emergency classifications, fission product barrier status, discovery of an unplanned radiological release).

      2) Times and content of important communications with other members of the ERO that are related to major events (such as, decisions made during turnover or routine briefings and subsequent actions taken).

      3) Specific actions taken to mitigate equipment failures, contain chemical or radiological spills or fires, and so forth.

      4) Specific references to Emergency Radiation Work Permits, clearances, procedure deviations authorized, emergency radiation exposures authorized, and so forth.

      5) All records shall be made by black indelible means, such as ink or typing.

      6) Corrections shall be made by drawing a single line through and initialing and dating the incorrect entry.

   c. Preparation of Activity Logs

      1) Initiate 'Log' as follows:

         - DATE: Enter the date that the log sheet is initiated.

         - PAGE OF: Enter "1" on the first page and sequential numbers on the following pages as they are used.

         - POSITION: Enter the position title.

Logkeeping (continued)

2) Enter chronologically those events that are pertinent to the particular individual or organizations:

   - TIME: Record the time (using the 24 hour clock) that a message or information was received or action was taken.

   - SUMMARY OF ACTIVITY PERFORMED: Briefly record the incident, message, or order received or transmitted. Indicate the time of the incident and actions taken.

3) Upon relief from the position, or termination of the emergency, complete the log as follows:

   - PAGE OF : Enter the total number of pages used at the top of each page (that is, Page 1 of **12**, Page 2 of **12**, and so forth).

   - NAME AND SIGNATURE: Check the log for completeness, then in the Comments Section of the last page used in the log, print and sign your name.

4) The person relieving the position will initiate and maintain a new log and any previously prepared logs to allow for continuity of the position.

5) Upon termination of the emergency or exercise/drill, provide all completed logs to Emergency Preparedness.

## 5.0 REFERENCES

### 5.1 Emergency Plan (PLP-201) References

1. Section 2.4, "Assignment of Responsibilities"

2. Section 3.5, "Emergency Operations Facility"

### 5.2 Referenced Plant Emergency Procedures

1. PEP-110, "Emergency Classification and Protective Action Recommendations"

2. PEP-310, "Notifications and Communications"

3. PEP-330, "Radiological Consequences"

4. PEP-500, "Recovery"

## 5.3 Other References

1. EPL-001, "Emergency Phone List"

## 6.0 DIAGRAMS/ATTACHMENTS

See Table of Contents

# EMERGENCY RESPONSE MANAGER CHECKLIST

**Position Function:** Provide overall authority for the direction and management of the Progress Energy response to an incident requiring implementation of the HNP Emergency Plan and command and control of the offsite emergency response.

**Responsibility/Activity** ✓

1. Assume the Position of Emergency Response Manager ☐

   a) Sign in on the facility organization chart.

   b) Obtain the positional notebook/binder from the storage area.

   c) Obtain dosimetry.

   d) Determine if restrictions on eating and drinking are in effect and ensure EOF personnel are aware of the restrictions. Remove food and drinks from tabletops and easy access areas to aid in meeting restriction.

   e) Perform a formal relief when permanently relieving another ERM.

      1) Review the activity log.

      2) Obtain a briefing on the emergency and any actions that have been completed or are in progress.

   f) Inform a staff member when temporarily leaving the work area (such as to the restroom).

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

2. Direct the EOF Logkeeper to maintain a facility log ☐

## EMERGENCY RESPONSE MANAGER CHECKLIST

**Responsibility/Activity** ✓

3. Evaluate the adequacy of the EOF staff for activation. Minimum staffing includes: ☐

   - ERM
   - Emergency Preparedness Advisor
   - Radiological Control Manager
   - Dose Projection Team Leader
   - Environmental Monitoring personnel (4)
   - EOF HP Tech
   - Communications Manager
   - Emergency Communicator - State/County
   - News Coordinator
   - Technical Analysis Manager
   - Admin and Logistics Manager

4. Activate the Facility ☐

NOTE: If a Security Threat/Event has been declared the responding OSC and TSC personnel may be directed to take shelter in place or assemble at the alternate assembly areas located at the Harris E&EC/EOF area.

a) Assume command and control of the EOF.

NOTE: Formal authorization must be provided by the ERM when filling an EOF position with an individual not listed on the active ERO roster (EPL-001).

1) Direct the arriving EOF staff to prepare for facility activation and the assumption of emergency response duties (offsite and industry notifications, emergency classifications, dose assessment and PARs, and long term accident assessment and mitigation). ☐

   - Direct the EOF SRO to monitor fission product barrier and plant status.
   - Direct the RCM to monitor radioactive release pathways.

2) Ensure communications have been established with the TSC, State and County EOCs, and Corporate Communications (or the JIC as applicable).

## EMERGENCY RESPONSE MANAGER CHECKLIST

**Responsibility/Activity** ✓

3) Contact the SEC-TSC to discuss the status of plant conditions and coordinate preparation for turnover of responsibilities from the SEC-CR.

4) Conduct a turnover conference call with the TSC and MCR (utilizing PEP-110 Attachment 4) to relieve the SEC-CR of the following responsibilities:

- Formal notifications and communications with State and County officials.
- Offsite Protective Action Recommendations.
- Offsite dose projection.
- Coordination of Environmental Monitoring Teams.
- Notifications to other offsite organizations.
- Approval of Progress Energy press releases.
- Additional augmentation of the Progress Energy ERO.

b) Ensure the other facilities and response organizations are notified of the EOF activation.

5. Review and Approve Emergency Notification Forms (non-delegable) ☐

NOTE: Upgrading classification of the emergency should be performed as soon as verification of changed conditions is established but should not be beyond 15 minutes of recognition.

a) Review plant conditions and provide concurrence with the SEC-TSC on changes to the classification level.

b) Ensure formal initial and follow-up notifications are routinely provided to State and local agencies.

1) Review, edit and approve messages prior to release.

2) Ensure the CM performs notifications to the State and County authorities whenever an emergency is reclassified.

## EMERGENCY RESPONSE MANAGER CHECKLIST

**Responsibility/Activity** ✓

NOTE: Where lasting damage has occurred to the fission product barriers or to safety systems, transition to recovery based upon the criteria contained in PEP-500 rather than simply downgrading the emergency.

c) Consult with State and County authorities prior to downgrading or terminating from a General Emergency.

6. Determine Appropriate PARs (non-delegable) ☐

a) Determine the appropriate PAR per PEP-110.

b) Reevaluate the adequacy of PARs when plant conditions, dose projection, meteorological, or environmental measurements change.

c) Confer with State authorities prior to PAR issuance if possible.

NOTE:
- News releases do not have to be approved by the ERM if they contain only the JIC activation time, media/public inquiry telephone numbers, or media briefing times.
- These non-technical news releases are prepared by the JIC Director once the JIC is activated.

7. Review and approve Progress Energy news releases prior to issuance (non-delegable). ☐

8. Authorize offsite HNP emergency worker exposures > 5 Rem TEDE or entry into fields > 25 Rem/Hr. ☐

9. Authorize the administration of KI to offsite HNP emergency workers when calculated or estimated doses to the thyroid will exceed 50 rem CDE. ☐

10. Review and approve the Severe Accident Management Strategy recommended by the TSC. ☐

- Evaluate the offsite consequences.

## EMERGENCY RESPONSE MANAGER CHECKLIST

**Responsibility/Activity** ✓

11. Conduct periodic briefings of State and local officials in the EOF on plant conditions and response activities. ☐

    a) Ensure verbal updates on the emergency condition are provided to the State and Counties at approximately 30 to 60 minute intervals, or more frequently as conditions warrant.

    b) Consult with Wake County or State personnel if decontamination of site personnel and/or vehicles can not be achieved.

    c) Notify Wake County or State personnel of the evacuation of contaminated site individuals and determine if monitoring and decontamination stations are in place.

    d) Notify Wake County or State personnel to discuss whether relocation of site personnel to an off site assembly area should occur.

12. Assign personnel to prepare information to brief the NRC Site Team upon their arrival. ☐

13. Request assistance from Federal agencies in support of HNP response efforts. ☐

14. Maintain communications with the SEC-TSC to discuss plant conditions and on and off site response actions. ☐

15. Ensure the CM notifies appropriate offsite plant support agencies. ☐

    a) Ensure the CM notifies INPO and ANI within 4 hours of the declaration of an Alert or higher classification level.

    b) Ensure the CM notifies Nuclear Mutual Limited of any fire damage to HNP equipment.

    c) Approve notifications to INPO and ANI prior to transmission.

16. Establish Time Periods for and Conduct Periodic Facility Briefings ☐

    a) Conduct briefings using the Event Information Worksheet (PEP-110) as a guide.

    b) Establish briefing periods at approximately 30 to 60 minute intervals or as conditions change.

## EMERGENCY RESPONSE MANAGER CHECKLIST

c) Instruct the EOF Logkeeper to keep track of briefing times and to provide prompts when briefings are due.

17. Request any materials or supplies not available on site from the ALM or Admin Team. ☐

    a) Direct the ALM to develop shift relief schedules for Progress Energy ERO personnel.

    b) Coordinate onsite requests for support and resources with offsite services and organizations.

    c) Determine the need for additional assistance and direct the ALM/TAM to coordinate with the appropriate agency or company.

18. Conduct Recovery Operations per PEP-500 when appropriate. ☐

19. Termination of the emergency ☐

    a) Provide all logs and records to Emergency Preparedness upon termination of the emergency.

    b) Replenish content of your position book.

    c) Restore the facility to stand-by readiness.

    d) Inventory facility equipment if applicable.

# EMERGENCY RESPONSE MANAGER CHECKLIST - EOF CHECKLIST

## INTRAFACILITY BRIEFING GUIDELINE

DATE:
TIME:

RECAP CURRENT CONDITONS

- CLASSIFICATION
- PLANT CONDITIONS
- OFFSITE ACTIVITIES AND PRIORITIES
- PERSONNEL SAFETY ISSUES

| RADIOLOGICAL | |
|---|---|
| • Release<br>• PARs<br>• Plant conditions<br>• KI Issuance | **NOTES:** |
| **COMMUNICATIONS/NOTIFICATIONS** | |
| • Local<br>• Regional<br>• National | **NOTES:** |
| **ENGINEERING** | |
| **1) Mitigating Activities**<br>• strategies<br>• priorities<br>**2) Equipment**<br>• OOS<br>• Equipment Needs | **NOTES:** |
| **LOGISTICS** | |
| • Onsite resources/Offsite resources<br>• Response teams<br>• Lodging, transportation, plant access | **NOTES:** |
| **OFFSITE** | |
| • Facility Status<br>• Actions/Response | **NOTES:** |

SET EXPECTATIONS

- ANTICIPATE OFFSITE CONDITIONS
- CRITICAL EOF ACTIVITIES
- OTHER AREAS OF FOCUS

## EMERGENCY PREPAREDNESS ADVISOR CHECKLIST

**Position Function:** Provide guidance and information on the implementation of the Emergency Plan and procedure activities.

**Responsibility/Activity** ✓

1. Assume the position of Emergency Preparedness Advisor. ☐

   a) Sign in on the facility organization chart.

   b) Obtain the positional notebook/binder from the storage area.

   c) Obtain dosimetry.

   d) Perform a formal relief when permanently relieving another EP Advisor.

      1) Review the activity log.

      2) Obtain a briefing on the emergency and any actions that have been completed or are in progress.

   e) Inform a staff member when temporarily leaving the work area (such as to the restroom).

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

2. Maintain a log of activities (Attachment 26) ☐

3. Ensure that ERO personnel are performing their duties as defined by the appropriate PEPs. ☐

   a) Assist with the activation of the ERFs.

      1) Verify that the EOF Security Guard is notified of the EOF activation announcement.

   b) Assist the ALM in arranging the arrival, transportation, lodging, plant access, and food for personnel involved in the emergency.

   c) Review the checklists of key EOF personnel to verify required activities are completed and assist as necessary.

## EMERGENCY PREPAREDNESS ADVISOR CHECKLIST

| Responsibility/Activity | ✓ |
|---|---|
| 4. Coordinate the arrival of NRC and State/Local representatives with the ALM. | ☐ |
| a) Support the briefing of the NRC Site Team using the Event Information Worksheet as a guide (PEP-110). | |
| b) Assist with the integration of State/NRC representatives within the facility. | |
| c) Familiarize off site officials with work locations, phones, etc. | |
| 5. Monitor status boards for accuracy. | ☐ |
| 6. Participate in facility staff briefings. | ☐ |
| 7. Request any materials or supplies not available on site from the ALM or Admin Team. | ☐ |
| 8. Termination of the emergency | ☐ |
| a) Provide all logs and records to Emergency Preparedness upon termination of the emergency. | |
| b) Replenish content of your position book. | |
| c) Restore the facility to stand-by readiness. | |
| d) Inventory facility equipment if applicable. | |

# RADIOLOGICAL CONTROL MANAGER CHECKLIST

**Position Function:** Direct and supervise the offsite radiological assessment and monitoring emergency response actions.

**Responsibility/Activity** ✓

1. Assume the position of Radiological Control Manager. ☐

   a) Sign in on the facility organization chart.

   b) Obtain the positional notebook/binder from the storage area.

   c) Evaluate the need for dosimetry and inform the EOF-ERM.

      1) Direct personnel to obtain dosimetry from the supply cabinet when appropriate.

      2) Do not delay facility activation to issue dosimetry.

   d) Determine if restrictions on eating and drinking are in effect and ensure the Emergency Response Manager and EOF personnel are aware of the restrictions. Remove food and drinks from tabletops and easy access areas to aid in meeting restriction.

   e) Perform a formal relief when permanently relieving another RCM.

      1) Review the activity log.

      2) Obtain a briefing on the emergency and any actions that have been completed or are in progress.

   f) Inform a staff member when temporarily leaving the work area (such as to the restroom).

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

2. Maintain a log of activities. (Attachment 26) ☐

3. Facility Activation ☐

   a) Relieve the MCR of dose assessment responsibilities as soon as possible.

## RADIOLOGICAL CONTROL MANAGER CHECKLIST

**Responsibility/Activity** ✓

NOTE: Emergency release is defined as any unplanned quantifiable discharge to the environment of radioactive effluent attributable to a declared emergency event.

b) Determine if a release is in progress.

4. Develop and provide recommendations for EAL and classification level changes based on radiological considerations to the ERM. ☐

   a) Compare dose projection and field survey results with EAL criteria to determine the impact on the existing classification level.

   b) Notify the ERM of any EALs effected by changes in radiological conditions.

5. Develop and provide recommendations for offsite PARs based on radiological considerations to the ERM. ☐

   a) Document HNP PARs whenever a General Emergency is declared.

6. Coordinate and direct the dose assessment and environmental monitoring efforts. ☐

   a) Supervise the activities of the Technical Advisor and the Dose Projection Team Leader.

   b) Ensure the Emergency Telecommunication System (ETS) is manned when requested by the NRC (principally by the Technical Advisor position).

   c) Determine the periodicity of dose projection calculations.

   d) Analyze dose assessment and environmental information to determine any actual or potential offsite consequences of the event.

      1) Ensure environmental monitoring is performed to confirm dose projections.

      2) Verify that projected dose is compared with actual readings.

   e) Conduct periodic briefings with the ERM to discuss the status of offsite radiological information and assessments.

## RADIOLOGICAL CONTROL MANAGER CHECKLIST

**Responsibility/Activity** ✓

f) Compare dose assessment and environmental monitoring efforts with the State Division of Radiation Protection in the State EOC and/or in the EOF

g) Compare dose assessment and environmental monitoring efforts with the NRC Environmental Dose Assessment Coordinator once the NRC Site Team is in the EOF.

7. Determine and direct the requirements for offsite emergency exposure and contamination controls. ☐

a) Evaluate the need for and coordinate the authorization of the allowance of offsite HNP emergency worker exposures > 5 Rem TEDE or entry into radiation fields greater than 25 rem/hr.

NOTE: ALARA considerations should be given for the protective ventilation envelope found within the EOF.

b) Coordinate the authorization of the administration and issuance of KI to offsite HNP Emergency workers when calculated or estimated doses to the thyroid will exceed 50 rem CDE.

c) Determine the appropriate use of protective clothing and respiratory protection equipment.

d) Ensure personnel decontamination activities are conducted as necessary.

e) Ensure appropriate bioassay procedures are implemented or developed to support the event.

8. Determine and direct EOF habitability controls ☐

a) Ensure habitability surveys are performed in the EOF as per PEP-330.

b) Ensure EOF food and drinking water supplies are consumable.

c) Ban eating, drinking, smoking, and chewing at the GE declaration.

9. Ensure the activation of the EOF ventilation system, if needed. ☐

10. Maintain communications with the Radiological Control Director to discuss radiological conditions and on and off site response actions. ☐

## RADIOLOGICAL CONTROL MANAGER CHECKLIST

**Responsibility/Activity** ✓

a) Periodically contact the RCD to provide updates on new dose projections, results of environmental monitoring and to provide technical assistance as needed.

11. Request any materials or supplies not available on site from the ALM or Admin Team. ☐

    a) Request assistance for radiological monitoring support from outside sources as necessary.

    b) Coordinate with the ALM to provide additional environmental monitoring team members to support State monitoring activities upon request from the State Division of Radiation Protection.

12. Determine and establish controls for the storage and shipment of radioactive waste generated as a result of the event. ☐

    a) Coordinate the design of special packaging required for the transport of radioactive wastes resulting from the emergency.

13. Termination of the emergency ☐

    a) Provide all logs and records to Emergency Preparedness upon termination of the emergency.

    b) Replenish content of your position book.

    c) Restore the facility to stand-by readiness.

    d) Inventory facility equipment if applicable.

# TECHNICAL ADVISOR CHECKLIST

**Position Function:** Assist the RCM in fulfilling the radiological assessment and monitoring functions.

**Responsibility/Activity** ✓

1. Assume the position of Technical Advisor. ☐

   a) Sign in on the facility organization chart.

   b) Obtain the positional notebook/binder from the storage area.

   c) Obtain dosimetry.

   d) Perform a formal relief when permanently relieving another Technical Advisor.

      1) Review the RCM's activity log.

      2) Obtain a briefing on the emergency and any actions that have been completed or are in progress.

   e) Inform the RCM when temporarily leaving the work area (such as to the restroom).

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

2. Assist the RCM and DPTL in expediting the initial activities necessary to make the EOF ready for activation. ☐

NOTE: Facility status boards are formatted to support NRC ETS information communications.

3. Upon request from the NRC, continuously man the ETS line and provide radiological information using the status boards as a guide. ☐

4. Request any materials or supplies not available on site from the ALM or Admin Team. ☐

## TECHNICAL ADVISOR CHECKLIST

| Responsibility/Activity | ✓ |
|---|---|
| 5. Termination of the emergency | ☐ |
| a) Provide all logs and records to Emergency Preparedness upon termination of the emergency. | |
| b) Replenish content of your position book. | |
| c) Restore the facility to stand-by readiness. | |
| d) Inventory facility equipment if applicable. | |

# DOSE PROJECTION TEAM LEADER CHECKLIST

**Position Function:** Coordinate and supervise the activities of the dose projection and environmental monitoring personnel and the EOF HP Technician.

**Responsibility/Activity** ✓

1. Assume the position of Dose Projection Team Leader. ☐

   a) Sign in on the facility organization chart.

   b) Obtain the positional notebook/binder from the storage area.

   c) Obtain dosimetry.

   d) Perform a formal relief when permanently relieving another Dose Projection Team Leader.

      1) Review the activity log.

      2) Obtain a briefing on the emergency and any actions that have been completed or are in progress.

   e) Inform a staff member when temporarily leaving the work area (such as to the restroom).

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

2. Maintain a log of activities. (Attachment 26) ☐

3. Facility activation. ☐

   a) Relieve the MCR of dose projection responsibilities as soon as possible.

NOTE: Emergency release is defined as any unplanned quantifiable discharge to the environment of radioactive effluent attributable to a declared emergency event.

   b) Determine if a release is in progress.

   c) Ensure communications with the RCD are operable.

   d) Assign personnel to track and post meteorological and radiological data in the main room of the EOF.

## DOSE PROJECTION TEAM LEADER CHECKLIST

**Responsibility/Activity** ✓

4. Perform offsite dose assessment to determine actual or potential consequences of the event. ☐

   a) Assign personnel to conduct source term and offsite dose calculations.

   b) Obtain current and forecast meteorological information.

      1) Obtain met data from the plant met system or the contracted meteorological services vendor.

   c) Obtain field survey and sample data necessary for dose projection activities from the Environmental Field Coordinator.

   d) Provide results of offsite dose analysis consistent with the information necessary to develop dose based PARs.

      1) Prepare an Offsite PAR Worksheet for the RCM at the declaration of a General Emergency.

   e) Perform dose calculations which are based on actual and adverse meteorological conditions. (Adverse meteorological looks at the worst case met conditions; 'G' stability class and wind speed of 1.0 mph).

   f) Document and post dose projection results and meteorological data following RCM review and approval.

   g) Recalculate actual dose projections at least once per hour or whenever significant radiological or meteorological changes occur.

5. Ensure habitability is established and periodic monitoring is conducted in the EOF as necessary. ☐

6. Ensure personnel monitoring is conducted in the EOF as necessary. ☐

7. Develop a field team deployment strategy to coordinate dose assessment and environmental monitoring activities. ☐

   a) Ensure the Environmental Field Coordinator directs the field teams in a manner which will provide the data necessary for dose projection activities.

   b) Ensure the Environmental Field Coordinator has taken appropriate radiological precautions when directing the field team activities.

## DOSE PROJECTION TEAM LEADER CHECKLIST

**Responsibility/Activity** ✓

NOTE: ALARA considerations should be given for the protective ventilation envelope found within the EOF.

8. Control the specified issuance of KI to offsite emergency workers when calculated or estimated doses to the thyroid will exceed 50 rem CDE. ☐

   a) Direct team members to administer KI to EOF, Environmental Monitoring teams, Security and other trained response personnel outside the protected area.

   b) Record KI issuance information.

   c) Evaluate iodine uptakes for persons issued KI.

9. Conduct frequent discussions with State and Federal counterparts located in the EOF to compare information and coordinate monitoring activities. ☐

10. Request any materials or supplies not available on site from the ALM or Admin Team. ☐

11. Termination of the emergency ☐

    a) Provide all logs and records to Emergency Preparedness upon termination of the emergency.

    b) Replenish content of your position book.

    c) Restore the facility to stand-by readiness.

    d) Inventory facility equipment if applicable.

# DOSE PROJECTION TEAM MEMBER CHECKLIST

**Position Function:** Perform dose assessment as directed by the Dose Projection Team Leader.

| Responsibility/Activity | ✓ |
|---|---|
| 1. Assume the position of Dose Projection Team Member. | ☐ |
| a) Sign in on the facility organization chart. | |
| b) Obtain the positional notebook/binder from the storage area. | |
| c) Obtain dosimetry. | |
| d) Perform a formal relief when permanently relieving another Dose Projection Team Member. | |
| 1) Review the DPTL's activity log. | |
| 2) Obtain a briefing on the emergency and any actions that have been completed or are in progress. | |
| e) Inform DPTL when temporarily leaving the work area (such as to the restroom). | |
| 2. Activate the dose assessment computer model. | ☐ |
| 3. Provide dose assessment results to the Dose Projection Team Leader. | ☐ |
| a) Based on actual meteorological data. | |
| b) Based on adverse met (Adverse meteorological looks at the worst case met conditions; 'G' stability class and wind speed of 1.0 mph). | |
| 4. Perform additional dose assessment related duties as instructed by the Dose Projection Team Leader. | ☐ |
| 5. Request any materials or supplies not available on site from the ALM or Admin Team. | ☐ |
| 6. Termination of the emergency | ☐ |
| a) Provide all logs and records to Emergency Preparedness upon termination of the emergency. | |
| b) Replenish content of your position book. | |
| c) Restore the facility to stand-by readiness. | |
| d) Inventory facility equipment if applicable. | |

# ENVIRONMENTAL FIELD COORDINATOR CHECKLIST

**Position Function:** Coordinate and supervise the offsite radiological environmental monitoring emergency response actions.

**Responsibility/Activity** ✓

1. Assume the position of Environmental Field Coordinator. ☐

   a) Sign in on the facility organization chart.

   b) Obtain the positional notebook/binder from the storage area.

   c) Obtain dosimetry.

   d) Perform a formal relief when permanently relieving another Environmental Field Coordinator.

      1) Review the activity log.

      2) Obtain a briefing on the emergency and any actions that have been completed or are in progress.

   e) Inform a staff member when temporarily leaving the work area (such as to the restroom).

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

2. Maintain a log of activities. (Attachment 26) ☐

3. Obtain meteorological data from the DPTL, ERFIS or the contracted meteorological services vendor. ☐

4. Supervise the activities of the plant Environmental Monitoring Teams. ☐

   a) Ensure field team personnel are properly briefed and dispatched.

   b) Position teams downwind of the plant to take initial surveys prior to any release if possible.

   c) Implement the field team deployment strategy to obtain representative environmental information.

NOTE: Locations nearest the site boundary should have priority for environmental surveys.

## ENVIRONMENTAL FIELD COORDINATOR CHECKLIST

**Responsibility/Activity** ✓

1) Direct field teams to survey the plume dose rates at various distances.

2) Attempt to determine plume width at various distances.

3) Obtain air samples of the plume for iodine analysis as soon as feasible.

4) Direct monitoring and sampling to assess ground deposition after plume passage.

d) Ensure dispatched teams are periodically briefed on plant conditions.

e) Maintain accountability of dispatched field team personnel.

1) Maintain a list of personnel assigned to each environmental monitoring team and their locations.

f) Control the specified issuance of KI to field team personnel.

1) Direct team members to administer KI, as per PEP-330.

2) Record KI issuance information.

3) Evaluate iodine uptakes for persons issued KI.

g) Determine and direct the placement of emergency environmental TLDs.

h) Inform the DPTL if additional personnel or resources are needed.

5. Coordinate offsite field survey and monitoring efforts with the State to maximize resources. ☐

a) Provide meteorological, radiological and release information to State environmental monitoring personnel.

6. Coordinate the assessment and analysis of field environmental samples with the HEEC and/or Division of Radiation Protection (DRP) as appropriate. ☐

Note: The DRP defines 1mrem/hr on contact with an environmental sample "Hot" or "High Risk". Hot samples should be identified to the Mobile Laboratory upon receipt.

## ENVIRONMENTAL FIELD COORDINATOR CHECKLIST

**Responsibility/Activity** ✓

a) Sample delivery by the teams

1) Contact the DRP's Mobile Lab Coordinator and inform him/her of the estimated time of arrival (ETA) for Progress Energy Environmental Monitoring Teams.

2) Request the location of the DRP's Mobile Lab and relay this to the PROGRESS ENERGYEnvironmental Monitoring Teams.

3) Ensure the samples delivered to the Mobile Lab are labeled correctly.

4) Direct Progress Energy Environmental Monitoring Teams back into the field or to a designated area for decontamination and debrief.

b) Sample delivery by a courier

1) Contact the DRP's Mobile Laboratory Coordinator and agree upon a low dose/contamination area location for sample exchange.

2) Provide this location to Progress Energy Environmental Monitoring Teams and ensure they monitor the area upon arrival.

3) Ensure the samples delivered to the courier are labeled correctly.

4) Direct Progress Energy Environmental Monitoring Teams back into the field or to a designated area for decontamination and debrief.

c) Sample delivery to the HEEC

Note: Environmental samples ≥1 mrem/hr will not be delivered to the Harris E&E Center for analysis.

1) Contact the HEEC Lab and inform them of the ETA of Progress Energy Environmental Monitoring Teams.

2) Ensure the samples are labeled correctly.

3) Dispatch an HP Technician to the HEEC Lab to assist in the setup and handling of the radioactive samples.

4) Direct Progress Energy Environmental Monitoring Teams back into the field or to a designated area for decontamination and debrief.

## ENVIRONMENTAL FIELD COORDINATOR CHECKLIST

**Responsibility/Activity** ✓

d) Request lab results from the DRP's Mobile Lab and/or the HEEC.

e) Provide the results of field team surveys and samples to the DPTL.

f) Evaluate sample results with EPA PAGs.

g) Notify the DPTL of any emergency planning Subzones exceeding EPA PAGs as indicated by environmental measurement.

7. Request any materials or supplies not available on site from the ALM or Admin Team. ☐

8. Termination of the emergency ☐

a) Provide all logs and records to Emergency Preparedness upon termination of the emergency.

b) Replenish content of your position book.

c) Restore the facility to stand-by readiness.

d) Inventory facility equipment if applicable.

## ENVIRONMENTAL TEAM MEMBER CHECKLIST

**Position Function:** Conduct of offsite plume tracking, monitoring and sampling activities.

| Responsibility/Activity | ✓ |
|---|---|
| 9. Assume the position of Environmental Team Member. | ☐ |
| a) Sign in on the facility organization chart. | |
| b) Obtain the positional notebook/binder from the storage area. | |
| c) Obtain dosimetry. | |
| d) Assemble, obtain equipment, perform checks, obtain a briefing and proceed to the designated monitoring location. | |
| 10. Monitor radiation exposure levels and obtain guidance for entry into areas which exceed pre-established levels. | ☐ |
| 11. Obtain air samples and measure air activity, when appropriate. | ☐ |
| 12. Measure and record ambient radiation levels. | ☐ |
| 13. Distribute emergency environmental TLDs. | ☐ |
| 14. Collect, label and transport environmental samples. | ☐ |
| 15. Advise, instruct and issue KI to field team members as directed. | ☐ |
| 16. Return to the staging area and perform inventories. | ☐ |
| 17. Termination of the emergency | ☐ |
| a) Provide all logs and records to Emergency Preparedness upon termination of the emergency. | |
| b) Replenish content of your position book. | |
| c) Restore the facility to stand-by readiness. | |
| d) Inventory facility equipment if applicable. | |

# EOF HP TECHNICIAN CHECKLIST

**Position Function:** Perform radiological control activities for the EOF.

| Responsibility/Activity | ✓ |
|---|---|
| 1. Assume the position of EOF HP Technician. | ☐ |
| a) Sign in on the facility organization chart. | |
| b) Obtain the positional notebook/binder from the storage area. | |
| c) Obtain dosimetry. | |
| d) Notify the Dose Projection Team Leader (DPTL) of arrival. | |
| e) Perform a formal relief when permanently relieving another EOF HP Technician. | |
| f) Inform DPTL when temporarily leaving the EOF. | |
| 2. Ensure EOF personnel have signed out dosimetry from the Emergency Personnel Dosimetry Cabinet. If personnel have assigned TLD with him/her do not issue another facility TLD. Ensure all responding personnel have either a Self Reading Pocket Dosimeter (SRPD) or electronic dosimeter (EPD). | ☐ |
| 3. Response check survey instruments. | ☐ |
| 4. Confirm proper EOF ventilation system Radiation Monitoring operability, per Part 1, Sheet 4 of this Attachment. | ☐ |
| 5. Confirm proper EOF ventilation system line-up, per Part 2, Sheet 4 of this Attachment. | ☐ |
| 6. Start the EOF ventilation system if directed, per Part 3, Sheet 4 of this Attachment. | ☐ |
| 7. Monitor the EOF ventilation system's radiation monitor approximately every hour during a known release per Sheet 5 of this Attachment. | ☐ |
| 8. Shut down the EOF ventilation, if directed, per Part 4 Sheet 4 of this Attachment. | ☐ |
| 9. Activate a frisker at the security station entrance to the EOF. | ☐ |
| a) Post signs at the EOF entrance requiring personnel to frisk and the instructions for performing the frisk, if applicable. | |
| b) Inform the security guard that frisking is required and request that they notify the DPTL if the frisker alarms. | |
| 10. Perform EOF habitability surveys. | ☐ |
| a) Perform EOF air samples when directed. | |

## EOF HP TECHNICIAN CHECKLIST

**Responsibility/Activity** ✓

b) Report the results of EOF habitability surveys to the DPTL.

11. Facility Deactivation. ☐

a) Return all radiological equipment and supplies to the appropriate storage locations and perform inventories.

b) Shutdown the EOF ventilation system and return to the normal mode, per Part 4, sheet 4 of this Attachment, if applicable.

c) Collect dosimetry, record SRPD or EPD readings and forward EOF issued TLDs to dosimetry for processing.

d) Complete all records and surveys and provide them to the DPTL.

12. Termination of the emergency ☐

a) Provide all logs and records to Emergency Preparedness upon termination of the emergency.

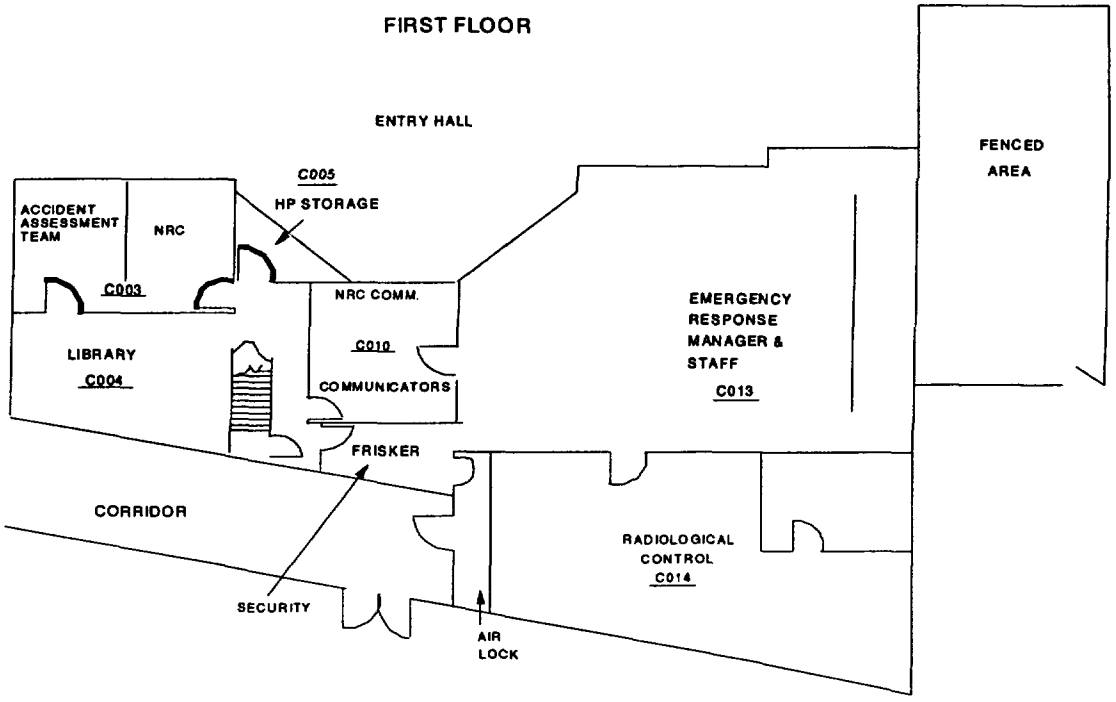
b) Replenish content of your positional notebook/binder.

c) Restore the facility to stand-by readiness.

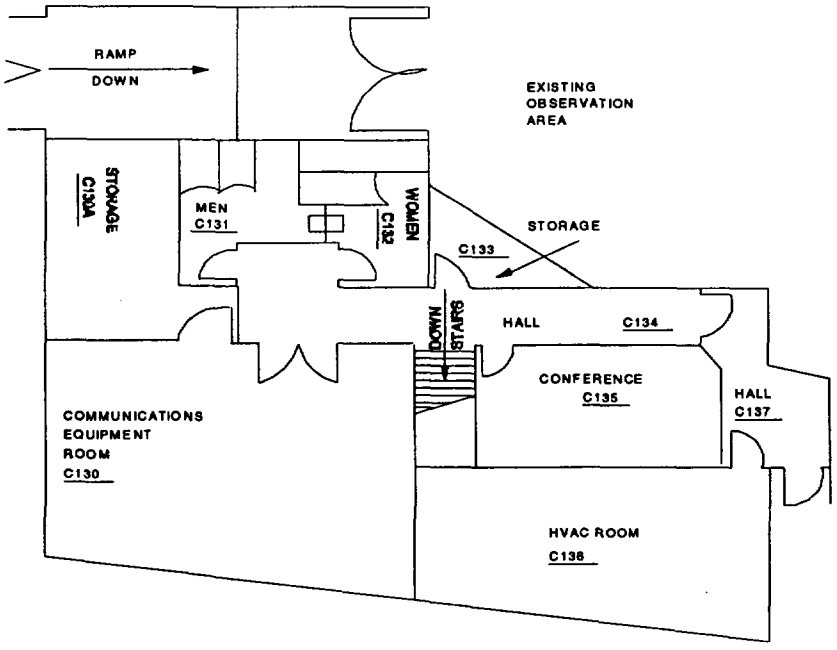
d) Inventory facility equipment, if applicable.

# EOF FLOOR PLAN

FIRST FLOOR




SECOND FLOOR



# EOF VENTILATION SYSTEM STATUS CHECKLIST

## PART 1: Check system operation (NORMAL MODE) on the EOF Ventilation System Radiation Monitor in the Radiological Control Room (C014) as follows:

1. Check that the large green OPERATE light [15] is ON. ☐
2. Check that the small green LED "OPER" lights [14] are on for channels 1 and 2. ☐
3. Perform a source test. (Key for source test is located in the EOF Library key box)
   a) Press channel 1 button [16] ☐
   b) Press the C/S BUTTON [17] then RELEASE. ☐
      1) After a few seconds delay, the button will light. ☐
      2) When the C/S BUTTON light goes out, the LED OPERATE light should continue to burn. ☐
      3) If not, the channel has failed the source check.
   c) Select channel 2 [13] and repeat the process (step 3.b.) ☐
   d) Report system Operational or Non-Operational to the Dose Projection Team Leader. ☐

## PART 2: Check system pre-operational lineup in the HVAC Room (C136) as follows:

1. Check the Ventilation System Control Panel [1]. ☐
   a) Check that the MAINT. SWITCH is in NORMAL [9]. ☐
   b) Check that the Green NORMAL MODE light is ON [2]. ☐
2. Check that the CHARCOAL TEST CANISTERS [3] isolation valves are closed. ☐
3. Verify EMERGENCY FAN breaker box [4] disconnect switch to closed (ON) position (located on wall behind emergency fan). ☐
4. Verify EMERGENCY FAN CONTROL BOX button [5] to AUTO position (button is pushed in)(located below the emergency fan breaker box). ☐
5. Verify CIRCUIT BREAKER NO. 26 [6] to ON (located in electrical PANEL 'P on the wall beside HVAC room entrance). ☐
6. Report system Operational or Non-Operational to the Dose Projection Team Leader. ☐

## PART 3: Start of System in the HVAC Room (C136) as follows:

1. Turn the SYSTEM MODE SWITCH [7] to MANUAL (located on the Ventilation System Control Panel). ☐
2. In the Radiological Control Room (C014) confirm that the large red HEPA FILTER MODE light [12] on the EOF Ventilation System Radiation Monitor [10] is on. ☐
3. Report system Operational or Non-Operational to the Dose Projection Team Leader. ☐

## PART4: Shutdown the emergency ventilation in the HVAC Room (C136) as follows:

1. Press the SYS RESET button [8]. ☐
2. Verify the EMERGENCY FAN stopped. ☐
3. Verify NUCLEAR DAMPER D2 shifted to NORMAL POSITION. ☐
4. Verify NUCLEAR DAMPER D3 shifted to NORMAL POSITION CLOSED. ☐

## EOF VENTILATION SYSTEM RADIATION MONITOR LOG

Page _____ of _____

| Date/Time | Reading μCi/cc No. 1 | Reading μCi/cc No. 2 | Status Lights (G, Y, R) No. 1 | Status Lights (G, Y, R) No. 2 |
|---|---|---|---|---|
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Channel Status Lights:

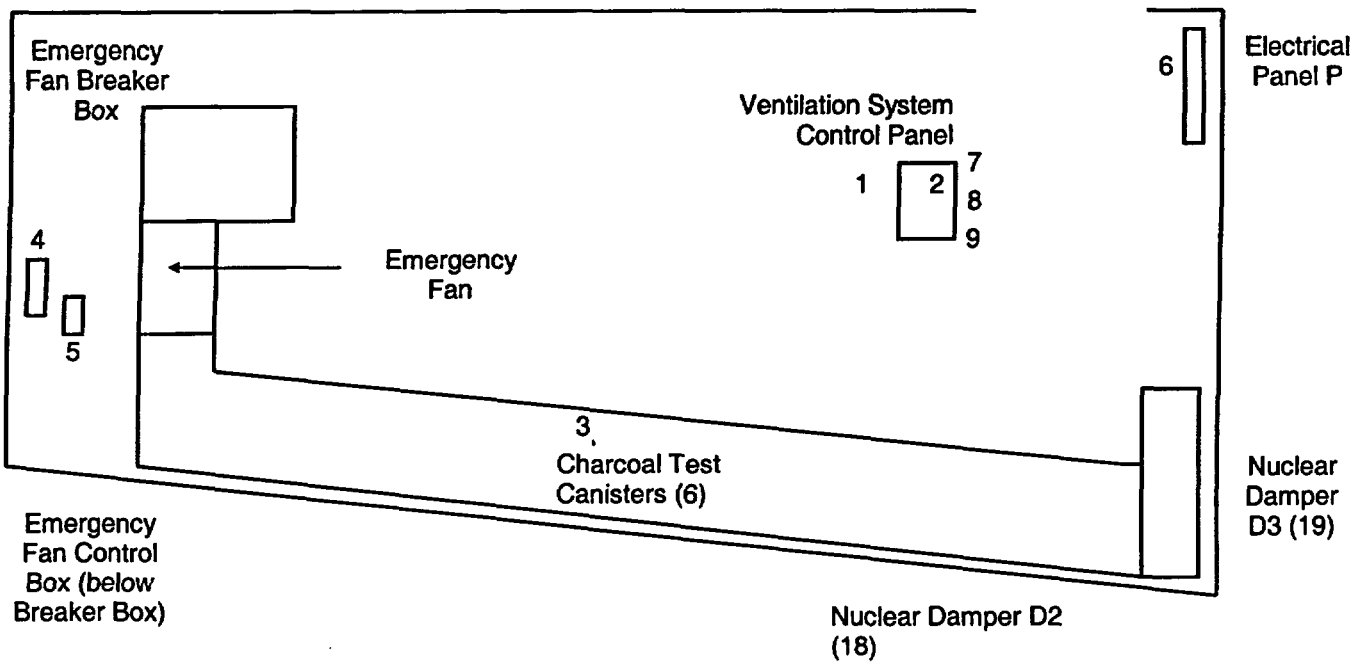
1. Green (G) Normal operation
2. Yellow (Y) Alert alarm (horn will sound)
   a) Acknowledge the alarm.
   b) Inform the Dose Projection Team Leader.
3. Red (R) High alarm (horn will sound)
   a) Acknowledge the alarm.
   b) Inform the Dose Projection Team Leader.
   c) Verify that the nuclear dampers D2 (18) and D3 (19) in HVAC room (C136) have shifted to the Emergency Position.

Remarks: _____

_____

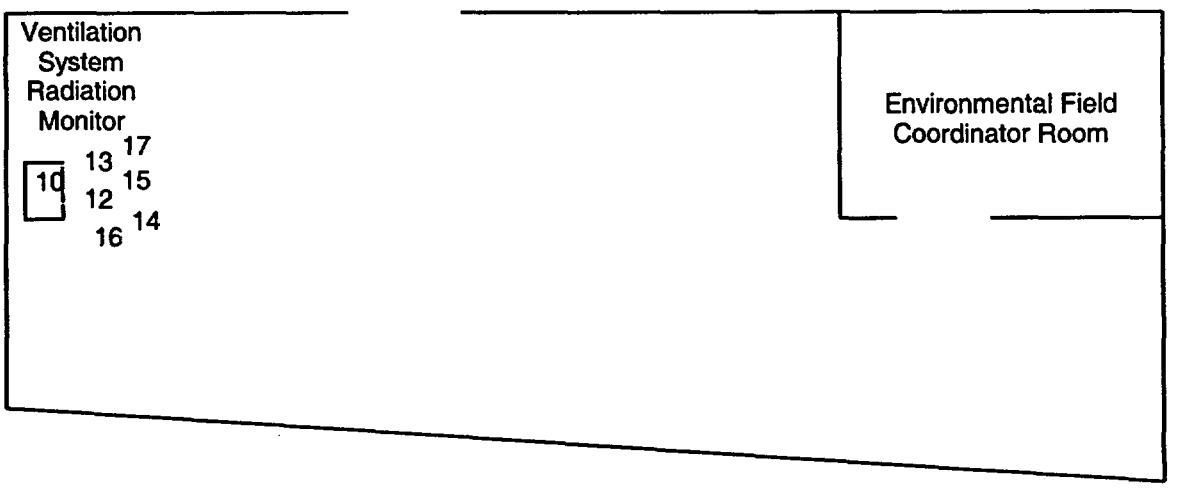
_____

## HVAC Room (C-136)




NOTE: Drawing is not to scale

## Radiological Control Room (C-014)



## COMMUNICATIONS MANAGER CHECKLIST

**Position Function:** Direct and supervise the offsite notification and communication emergency response activities.

**Responsibility/Activity** ✓

1. Assume the position of Communications Manager. ☐

   a) Sign in on the facility organization chart.

   b) Obtain the positional notebook/binder from the storage area.

   c) Obtain dosimetry.

   d) Perform a formal relief when permanently relieving another Communications Manager.

      1) Review the activity log.

      2) Obtain a briefing on the emergency and any actions that have been completed or are in progress.

   e) Inform a staff member when temporarily leaving the work area (such as to the restroom).

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

2. Notify the State and County EOCs and Corporate Communications (or the JIC if activated) when the EOF becomes activated. ☐

3. Ensure that communications equipment is in place and functioning properly. ☐

NOTE: Do not create a new notification form in RTIN until responsibility for notifications is assumed by the ERM.

   a) Verify the CM, EC-State/County (Selective Signaling System), EC-Corp Comm/JIC, and the State/County Decision Line telephones are operational.

   b) Verify the automatic ring-down telephones (EC to TSC and EC to JIC) are operational.

## COMMUNICATIONS MANAGER CHECKLIST

**Responsibility/Activity** ✓

c) Verify the News Coordinator, dose projection, CM (ERFIS/RTIN), and EOF AAT computers are operational.

d) Verify that the back up telephone system is functioning for each position when loss of the HEEC Telephone System occurs. See the Emergency Phone List EPL-001 Section 2.6.

4. Supervise the activities of the Emergency Communicators and the HNP EOC Representatives. ☐

a) Ensure the EC-State/County has verification codes.

b) Ensure that questions received by the ECs are recorded and delivered to the appropriate person for response.

c) Ensure that responses to inquires are provided to the ECs for transmittal.

5. Ensure the timely notification and transfer of emergency information to the State and County agencies is performed. ☐

a) Ensure that an Emergency Notification Form is completed.

b) Ensure the Emergency Notification Forms are approved by the ERM and transmitted per PEP-310 within 15 minutes of:

1) The declaration of an emergency.

2) A change in emergency classification level.

3) A change in offsite Protective Action Recommendations.

c) Ensure the follow-up Emergency Notification Forms are approved by the ERM and transmitted per PEP-310 as follows:

1) Within 60 minutes of the last notification.

2) Whenever a new EAL is exceeded regardless of whether or not it results in a change in the classification level.

3) As soon as significant changes in dose projection and/or field monitoring data is available.

d) Ensure State and County officials are informed of any on site events requiring assistance from offsite support organizations.

## COMMUNICATIONS MANAGER CHECKLIST

**Responsibility/Activity** ✓

6. Ensure the timely transfer of emergency information to Corporate Communications or the JIC is performed. ☐

   a) Ensure that copies of notifications provided to the State and County are transmitted to the JIC and the TSC.

   b) Coordinate with the News Coordinator to ensure that draft news releases are issued no later than 45 minutes after an emergency classification change, radiological release, or other significant event which is provided via the Emergency Notification Form.

7. Ensure the notifications and requests for assistance to external support services and organizations is performed. ☐

   a) Notify ANI and INPO within 4 hours of the declaration of an Alert or higher classification level.

   b) Ensure that Nuclear Mutual Limited is notified of any fire damage to HNP equipment.

   c) Ensure TSC Directors are kept informed of HNP requests for offsite assistance.

8. Request any materials or supplies not available on site from the ALM or Admin Team. ☐

   a) Coordinate with the ALM to establish Status Board Plotters to post current plant status and offsite information upon sustained loss of EOF electronic display capabilities using the PPIF forms in PEP-310.

9. Termination of the emergency ☐

   a) Ensure that a termination message is written, approved, and transmitted to the State and counties.

   b) Provide all logs and records to Emergency Preparedness upon termination of the emergency.

   c) Replenish content of your position book.

   d) Restore the facility to stand-by readiness.

   e) Inventory facility equipment if applicable.

## EMERGENCY COMMUNICATOR - STATE/COUNTY CHECKLIST

**Position Function:** Conduct timely notification and transfer of emergency information to the State and Counties.

**Responsibility/Activity** ✓

1. Assume the position of Emergency Communicator-State/County. ☐

   a) Sign in on the facility organization chart.

   b) Obtain the positional notebook/binder from the storage area.

   c) Obtain dosimetry.

   d) Perform a formal relief when permanently relieving another Emergency Communicator-State/County.

      1) Obtain a briefing on the emergency and any actions that have been completed or are in progress.

   e) Inform the CM when temporarily leaving the work area (such as to the restroom).

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

2. Communicate the Emergency Notification Forms to the State and counties. ☐

   a) Ensure the Emergency Notification Forms have been approved by the ERM.

   b) Obtain verification code words.

   c) Transmit the notification.

      1) Ensure the initial Emergency Notification Forms are transmitted within 15 minutes of any change in classification or PAR.

      2) Ensure the follow-up Emergency Notification Forms are transmitted no greater than 60 minutes from the last notification.

3. Prepare Event Notification Checklists as per PEP-310. ☐

4. Request any materials or supplies not available on site from the ALM or Admin Team. ☐

## EMERGENCY COMMUNICATOR - STATE/COUNTY CHECKLIST

**Responsibility/Activity** ✓

5. Termination of the emergency ☐

   a) Ensure that a termination message is transmitted and communicated to the State and counties.

   b) Provide all logs and records to Emergency Preparedness upon termination of the emergency.

   c) Replenish content of your position book.

   d) Restore the facility to stand-by readiness.

   e) Inventory facility equipment if applicable.

## EMERGENCY COMMUNICATOR - CORP COMM/JIC CHECKLIST

**Position Function:** Provide information to support public information emergency response activities.

**Responsibility/Activity** ✓

1. Assume the position of Emergency Communicator-Corporate Communications/JIC. ☐

   a) Sign in on the facility organization chart.

   b) Obtain the positional notebook/binder from the storage area.

   c) Obtain dosimetry.

   d) Perform a formal relief when permanently relieving another Emergency Communicator-Corporate Communications/JIC.

      1) Review the activity log.

      2) Obtain a briefing on the emergency and any actions that have been completed or are in progress.

   e) Inform a staff member when temporarily leaving the work area (such as to the restroom).

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

2. Maintain a log of activities. (Attachment 26) ☐

3. Provide information to the News Coordinator to support the preparation of news releases. ☐

4. Provide technical clarification for the Site Communications Manager to support preparation activities for news media briefings prior to JIC activation. ☐

5. Following JIC activation: ☐

   1) Inform Site Communications Manager of time of activation.

   2) Provide information to support preparations for news media briefings.

6. Request any materials or supplies not available on site from the ALM or Admin Team. ☐

## EMERGENCY COMMUNICATOR - CORP COMM/JIC CHECKLIST

| Responsibility/Activity | ✓ |
|---|---|
| 7. Termination of the emergency | ☐ |
| a) Provide all logs and records to Emergency Preparedness upon termination of the emergency. | |
| b) Replenish content of your position book. | |
| c) Restore the facility to stand-by readiness. | |
| d) Inventory facility equipment if applicable. | |

# NEWS COORDINATOR CHECKLIST

**Position Function:** Prepare and coordinate the approval of news releases.

**Responsibility/Activity** ✓

1. Assume the position of News Coordinator. ☐

   a) Sign in on the facility organization chart.

   b) Obtain the positional notebook/binder from the storage area.

   c) Obtain dosimetry.

   d) Perform a formal relief when permanently relieving another News Coordinator.

      1) Review the activity log.

      2) Obtain a briefing on the emergency and any actions that have been completed or are in progress.

   e) Inform a staff member when temporarily leaving the work area (such as to the restroom).

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

2. Maintain a log of activities. (Attachment 26) ☐

3. Verify the operability of the computer and printer (report any problems to the ALM). ☐

4. Contact Corporate Communications: ☐

   a) Establish contacts and mechanisms for distributing news releases on the Progress Energy Internet, prior to JIC activation.

5. Contact Site Communications: ☐

   a) Establish contacts for the distribution of press releases prior to JIC activation.

6. Inform Site Communications Manager or Corporate Communications if contacted by the Control Room for events involving a fire or transportation of a contaminated, injured person. ☐

## NEWS COORDINATOR CHECKLIST

**Responsibility/Activity** ✓

7. Prepare news releases. ☐

   a) Obtain emergency information from the EOF for use in news releases and media briefings.

NOTE: The EC-Corporate Communications/JIC is the primary source of information for the preparation of news releases.

   b) Use the EAL Reference Manual as a non-technical source of information for emergency descriptions.

8. Ensure news releases are issued no later than 45 minutes after an event classification change, radiological release, or other significant event that has been provided to the State and Counties via the Emergency Notification Form. ☐

   a) Coordinate with Corporate Communications or the JIC Director (when the JIC is activated) to ensure the correct issue times and chronological numbers are recorded on the news release (the JIC Director will record the time prior to issue).

   b) Place 'DRAFT' in the block for issue time for the news release.

   c) Ensure Corporate Communications receives final, approved news releases.

   d) Ensure the Emergency Response Manager has approved all news releases prior to distribution.

   e) Ensure news releases issued with information that needs to be corrected are corrected and reissued with corrections noted.

NOTE:
- News releases do not have to be approved by the ERM if they contain only the JIC activation time, media/public inquiry telephone numbers, or media briefing times.
- These non-technical news releases are prepared by the JIC Director once the JIC is activated.

## NEWS COORDINATOR CHECKLIST

**Responsibility/Activity** ✓

9. Coordinate the release of news information. ☐

   a) Coordinate release through the JIC Director (or through Corporate Communications if the JIC is not yet activated).

   b) Coordinate distribution to EOF, TSC, and NRC Site Team personnel through the Administrative Team Leader.

10. Direct media response activities. ☐

    a) Gather, assess and ensure distribution of emergency information.

       1) Ensure proper approval and issuance of the news releases.

       2) Obtain technical assistance to assess plant data as necessary.

       3) Coordinate with offsite agency public affairs personnel to ensure State and County agencies are aware of emergency information issued by Progress Energy.

    b) Ensure a smooth transition of media response activities from the EOF to the JIC when JIC activation occurs.

11. Inform JIC Director of Corporate Communications and Site Communications contacts. ☐

12. Request any materials or supplies not available on site from the ALM or Admin Team. ☐

13. Termination of the emergency ☐

    a) Provide all logs and records to Emergency Preparedness upon termination of the emergency.

    b) Replenish content of your position book.

    c) Restore the facility to stand-by readiness.

    d) Inventory facility equipment if applicable.

## REP - STATE/COUNTY EOC CHECKLIST

**Position Function:** Act as technical liaison to provide classification and protective action information to Emergency Management authorities.

**Responsibility/Activity** ✓

1. Assume the position of Rep - State/County EOC at the appropriate EOC. ☐

   a) Notify Emergency Management Authorities of your presence in the EOC.

      1) Determine their level of awareness of the event.

NOTE: Do not speculate on plant conditions or actions. Contact the EOF to obtain information prior to answering any questions.

      2) Determine if there are any outstanding questions that could be answered by the plant ERO staff.

   b) Contact the EOF to indicate arrival at the EOC.

      1) Provide the EOF with a contact phone number at the EOC.

      2) Attempt to gain answers through the EOF for any initial questions from the EOC staff.

   c) Locate the stored plant visual aids package and be prepared to provide information about the plant as necessary.

   d) When relieving another individual, review the activity log, obtain a briefing on the emergency and any actions that have been completed or are in progress, and inform those present of the position being filled.

2. Maintain a log of activities. (Attachment 26) ☐

3. Monitor the progress of the emergency from the EOC. ☐

   a) Remain available to the EOC staff to answer questions about plant design, layout, normal operations, etc.

   b) Act as a liaison between the EOC and EOF to resolve questions and confusion on the part of the EOC staff.

4. Review incoming notification forms to ensure the EOC staff understands plant conditions and is receiving accurate and timely information. ☐

## REP - STATE/COUNTY EOC CHECKLIST

**Responsibility/Activity** ✓

5. Termination of the emergency ☐

   a) Provide all logs and records to Emergency Preparedness upon termination of the emergency.

   b) Replenish content of your position book.

   c) Restore the facility to stand-by readiness.

   d) Inventory facility equipment if applicable.

# TECHNICAL ANALYSIS MANAGER CHECKLIST

**Position Function:** Direct and supervise the long term (> 12 hours) accident assessment and technical support emergency response actions.

**Responsibility/Activity** ✓

6. Assume the position of Technical Analysis Manager. ☐

   a) Sign in on the facility organization chart.

   b) Obtain the positional notebook/binder from the storage area.

   c) Obtain dosimetry.

   d) Perform a formal relief when permanently relieving another Technical Analysis Manager.

      1) Review the activity log.

      2) Obtain a briefing on the emergency and any actions that have been completed or are in progress.

   e) Inform a staff member when temporarily leaving the work area (such as to the restroom).

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

7. Maintain a log of activities. (Attachment 26) ☐

8. Supervise the activities of the EOF Accident Assessment Team. ☐

   a) Ensure the EOF AAT is adequately staffed.

   b) Determine the need for additional company or outside personnel to provide technical support.

   c) Ensure EOF-AAT efforts are focused on long term support activities.

9. Monitor and assess vital plant parameters and conditions. ☐

   a) Coordinate the receipt and assessment of technical information from on site and off site sources related to plant systems and operations.

   b) Ensure the ERM is informed of the status of short and long term repair activities.

## TECHNICAL ANALYSIS MANAGER CHECKLIST

| Responsibility/Activity | ✓ |
|---|---|
| 10. Provide a technical interface with external support and regulatory agencies. | ☐ |
| 11. Ensure adequate personnel and material resources are available to support the long term (>12 hours) technical response. | ☐ |
| 12. Coordinate technical support and engineering efforts with the TAD. | ☐ |
| a) Contact the TAD to discuss on site activities and to determine if assistance is needed. | |
| b) Provide engineering support to the TAD and TSC-AAT on short term repair activities as needed. | |
| 13. Request any materials or supplies not available on site from the ALM or Admin Team. | ☐ |
| a) Coordinate with the ALM to obtain assistance from the Nuclear Steam Supply System vendor, architect/engineer, or other contractors not currently on your staff, if assistance is needed. | |
| b) Ensure the ALM has arranged for relief staffing for the EOF-AAT. | |
| 14. Termination of the emergency | ☐ |
| a) Provide all logs and records to Emergency Preparedness upon termination of the emergency. | |
| b) Replenish content of your position book. | |
| c) Restore the facility to stand-by readiness. | |
| d) Inventory facility equipment if applicable. | |

# EOF SENIOR REACTOR OPERATOR CHECKLIST

**Position Function:** Provide analysis and advice regarding the impact of plant conditions on emergency classifications, Protective Action Recommendations, and accident mitigation.

| Responsibility/Activity | ✓ |
|---|---|
| 1. Assume the position of EOF Senior Reactor Operator. | ☐ |
| a) Sign in on the facility organization chart. | |
| b) Obtain the positional notebook/binder from the storage area. | |
| c) Obtain dosimetry. | |
| d) Perform a formal relief when permanently relieving another EOF Senior Reactor Operator. | |
| 1) Obtain a briefing on the emergency and any actions that have been completed or are in progress. | |
| e) Inform a staff member when temporarily leaving the work area (such as to the restroom). | |
| 1) Designate an individual to answer the phones while away. | |
| 2) Upon return, obtain a briefing on any events which have occurred while away. | |
| 2. Maintain a log of activities by providing input to the EOF log keeper. | ☐ |
| 3. Monitor fission product barrier and plant status on ERFIS. | ☐ |
| a) Provide recommendations for EAL changes. | |
| b) Provide recommendations for PAR changes. | |
| c) Update the fission product barrier status board. | |
| 4. Assist in clarifying ERFIS or Plant Parameter Information Forms data. | ☐ |
| a) Coordinate with the EOF ERFIS operator to display vital plant information pertinent to the event. | |

## EOF SENIOR REACTOR OPERATOR CHECKLIST

| Responsibility/Activity | ✓ |
|---|---|
| 5. Request any materials or supplies not available on site from the ALM or Admin Team. | ☐ |
| 6. Termination of the emergency | ☐ |
| a) Provide all logs and records to Emergency Preparedness upon termination of the emergency. | |
| b) Replenish content of your position book. | |
| c) Restore the facility to stand-by readiness. | |
| d) Inventory facility equipment if applicable. | |

# EOF SENIOR REACTOR OPERATOR CHECKLIST

## Directions for Use of the Operations Mitigation Line

Establish a Conference Call

- Place receiver and wireless headset on self
- Push green toggle switch to 'ON'
- Remove handset from cradle
- Hit 'FLASH' button
- Dial Plant Operations Director phone number
- Hit 'FLASH' button
- Dial TSC Senior Reactor Operator's phone number
- Hit 'FLASH' button
- Verify conference call has been established

Disconnect a Conference Call

- Push green toggle switch to 'OFF' position
- Hang up receiver unit on cradle
- Hang up handset on cradle

# EOF ACCIDENT ASSESSMENT TEAM CHECKLIST

**Position Function:** Provide engineering analysis and trouble shooting, as directed, to assist in accident mitigation.

| Responsibility/Activity | ✓ |
|---|---|
| 1. Assume the position of EOF Accident Assessment Team Engineer. | ☐ |
| a) Sign in on the facility organization chart. | |
| b) Obtain the positional notebook/binder from the storage area. | |
| c) Obtain dosimetry. | |
| d) Perform a formal relief when permanently relieving another EOF AAT Member. | |
| 1) Review the activity log. | |
| 2) Obtain a briefing on the emergency and any actions that have been completed or are in progress. | |
| e) Inform a staff member when temporarily leaving the work area (such as to the restroom). | |
| 1) Designate an individual to answer the phones while away. | |
| 2) Upon return, obtain a briefing on any events which have occurred while away. | |
| 2. Maintain an accident assessment log by providing input to the TAM. | ☐ |
| 3. Obtain necessary drawings. | ☐ |
| 4. Resolve long term engineering problems. | ☐ |
| 5. Assist as requested in the resolution of short term engineering problems in support of onsite repair efforts. | ☐ |
| 6. Maintain a listing of out-of service equipment. | ☐ |
| 7. Request any materials or supplies not available on site from the ALM or Admin Team. | ☐ |

## EOF ACCIDENT ASSESSMENT TEAM CHECKLIST

| Responsibility/Activity | ✓ |
|---|---|
| 8. Termination of the emergency | ☐ |
| a) Provide all logs and records to Emergency Preparedness upon termination of the emergency. | |
| b) Replenish content of your position book. | |
| c) Restore the facility to stand-by readiness. | |
| d) Inventory facility equipment if applicable. | |

# EOF ERFIS OPERATOR CHECKLIST

**Position Function:** Operate ERFIS to obtain and display plant information.

**Responsibility/Activity** ✓

1. Assume the position of EOF ERFIS Operator. ☐
   a) Sign in on the facility organization chart.
   b) Obtain the positional notebook/binder from the storage area.
   c) Obtain dosimetry.
   d) Perform a formal relief when permanently relieving another EOF ERFIS Operator.
      1) Obtain a briefing on the emergency and any actions that have been completed or are in progress.
   e) Inform the EOF SRO when temporarily leaving the work area (such as to the restroom).
      1) Designate an individual to answer the phones while away.
      2) Upon return, obtain a briefing on any events which have occurred while away.
2. Log on to the ERFIS terminal. ☐
3. Coordinate with the EOF SRO to operate the facility display system. ☐
4. Print ERFIS reports as needed. ☐
5. Termination of the emergency ☐
   a) Provide all logs and records to Emergency Preparedness upon termination of the emergency.
   b) Replenish content of your position book.
   c) Restore the facility to stand-by readiness.
   d) Inventory facility equipment if applicable.

# ADMINISTRATIVE AND LOGISTICS MANAGER CHECKLIST

**Position Function:** Direct and supervise the administrative and logistic support emergency response actions.

**Responsibility/Activity** ✓

1. Assume the position of Administrative and Logistics Manager. ☐
   a) Sign in on the facility organization chart.
   b) Obtain the positional notebook/binder from the storage area.
   c) Obtain dosimetry.
   d) Perform a formal relief when permanently relieving another Administrative and Logistics Manager.
      1) Review the activity log.
      2) Obtain a briefing on the emergency and any actions that have been completed or are in progress.
   e) Inform a staff member when temporarily leaving the work area (such as to the restroom).
      1) Designate an individual to answer the phones while away.
      2) Upon return, obtain a briefing on any events which have occurred while away.
2. Maintain a log of activities. (Attachment 26) ☐
3. Synchronize EOF clocks with the MCR using ERFIS time. ☐
4. Supervise the activities for access authorization into the EOF. ☐
   a) Inform the EOF security guard of EOF activation when announced by the ERM.
   b) Notify the EOF security guard that the ALM or ERM will be the point of contact at the EOF if verification of personnel is needed to allow access.
5. Supervise the activities of the Administrative Team and Assembly Area Leader. ☐
   a) Coordinate necessary relief and stand-by personnel for the Assembly Area.

## ADMINISTRATIVE AND LOGISTICS MANAGER CHECKLIST

**Responsibility/Activity** ✓

b) Direct the Assembly Area Leader to return assembled personnel to work following instructions from the SEC-TSC or a PA announcement.

NOTE: Permission is required from the SEC-TSC or ERM prior to staffing ERO positions with non-ERO personnel.

NOTE: The Security Director will identify and contact security force personnel. Schedules and logistics for these personnel should be coordinated with the Security Director.

6. Direct the development of relief schedules for all HNP emergency response facilities to provide 24 hour coverage. ☐

   a) Contact the SEC-TSC to coordinate relief times for the on site ERO staff.

   b) Coordinate movement of relief personnel with State officials if offsite protective actions are underway.

   c) Contact the relief personnel to inform them of shift schedules.

   d) Obtain direction and approval by the ERM or SEC-TSC when qualified alternates can not be contacted to fill an ERO position.

7. Make arrangements for personnel, equipment, supplies and other resources in support of the emergency. ☐

   a) Coordinate the acquisition of offsite resources with emergency facility managers.

   b) Coordinate the purchasing efforts to locate, order, and receive resources used in support of the response activities.

   c) Coordinate the processing of offsite support personnel called in to provide assistance with Security.

   d) Determine the need and make arrangements for additional contracts, services and facilities necessary to support the emergency organization.

      1) Support the TAM in acquiring assistance from offsite Agreement Organizations as needed.

   e) Provide logistical arrangements for support and Federal response personnel brought in to assist with the event.

## ADMINISTRATIVE AND LOGISTICS MANAGER CHECKLIST

**Responsibility/Activity** ✓

f) Provide and coordinate any additional facilities and equipment support for the emergency response facilities.

1) Direct requests for installation, maintenance and operation of communication or computer equipment in the EOF or JIC to the Telecommunications Technical Assistance Center.

g) Provide and coordinate any additional administrative and clerical support for the emergency response facilities.

8. Maintain accountability for EOF personnel. ☐

a) Ensure EOF managers are accounting for their personnel while a release is in progress.

9. Termination of the emergency ☐

a) Provide all logs and records to Emergency Preparedness upon termination of the emergency.

b) Replenish content of your position book.

c) Restore the facility to stand-by readiness.

d) Inventory facility equipment if applicable.

## AGREEMENT ORGANIZATION ASSISTANCE REQUEST FORM

- ☐ INPO
- ☐ Westinghouse
- ☐ Washington Group
- ☐ Framatone
- ☐ Other: _____
- ☐ American Nuclear Insurers
- ☐ Nuclear Mutual Limited
- ☐ Department of Energy

Assistance Requested: _____

_____

_____

_____

Authorization: _____ Date: _____ Time: _____
(Emergency Response Manager)

Individuals Contacted: _____ Date: _____ Time: _____

Assistance They Have Agreed to Provide: _____

_____

_____

_____

Individuals Who Will Be Reporting To The Site:

| Name | Location Reporting To | Expected Arrival Date | Expected Arrival Time |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Notification Completed: _____
(Administrative and Logistics Manager)

# ADMINISTRATIVE TEAM LEADER CHECKLIST

**Position Function:** Perform administrative activities in the EOF.

**Responsibility/Activity** ✓

1. Assume the position of Administrative Team Leader. ☐

   a) Sign in on the facility organization chart.

   b) Obtain the positional notebook/binder from the storage area.

   c) Obtain dosimetry.

   d) Perform a formal relief when permanently relieving another Administrative Team Leader.

      1) Obtain a briefing on the emergency and any actions that have been completed or are in progress.

   e) Inform a staff member when temporarily leaving the work area (such as to the restroom).

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

2. Ensure sufficient clerical support exists in the EOF to adequately support EOF personnel. ☐

3. Direct Administrative Team members to perform administrative support functions as necessary. ☐

   a) Update facility controlled documents as appropriate.

   b) Copy ERFIS data and distribute to appropriate personnel within the facility, including the NRC, if needed.

   c) Copy Plant Parameter Information Forms and distribute to appropriate personnel within the facility, including the NRC, if ERFIS is not available.

   d) Distribute news releases to EOF, TSC and NRC personnel within the EOF.

   e) Post current plant and offsite information upon a sustained loss of EOF electronic display capability.

   f) Verify phone and fax numbers within the Administrative Guidance Document and distribute to the Administrative Team member, as needed.

## ADMINISTRATIVE TEAM LEADER CHECKLIST

| Responsibility/Activity | ✓ |
|---|---|
| 4. Copy and transmit information to other locations as directed. | ☐ |
| 5. Obtain procedures and reference materials as requested. | ☐ |
| 6. Termination of the emergency | ☐ |
| a) Provide all logs and records to Emergency Preparedness upon termination of the emergency. | |
| b) Replenish content of your position book. | |
| c) Restore the facility to stand-by readiness. | |
| d) Inventory facility equipment if applicable. | |

# EOF LOGKEEPER CHECKLIST

**Position Function:** Maintain a chronological log of all major EOF activities and decisions throughout the emergency.

**Responsibility/Activity** ✓

1. Assume the position of EOF Logkeeper. ☐
   a) Sign in on the facility organization chart.
   b) Obtain the positional notebook/binder from the storage area.
   c) Obtain dosimetry.
   d) Perform a formal relief when permanently relieving another EOF Logkeeper.
      1) Obtain a briefing on the emergency and any actions that have been completed or are in progress.
   e) Inform a staff member when temporarily leaving the work area (such as to the restroom).
      1) Designate an individual to answer the phones while away.
      2) Upon return, obtain a briefing on any events which have occurred while away.
2. Maintain the EOF log by recording EOF activities. ☐
3. Remind the ERM of predesignated briefing times. ☐
4. Ensure the JIC is united with the EOF via speakerphone during regularly scheduled EOF briefings. ☐
   a) Advise the JIC in advance of upcoming EOF briefings.
   b) Just prior to commencement of EOF briefings contact the JIC and place the JIC on the speakerphone to monitor EOF briefing reports.
5. Termination of the emergency ☐
   a) Provide all logs and records to Emergency Preparedness upon termination of the emergency.
   b) Replenish content of your position book.
   c) Restore the facility to stand-by readiness.
   d) Inventory facility equipment if applicable.

# ASSEMBLY AREA LEADER CHECKLIST

**Position Function:** Coordinate and supervise the activities in the Assembly Area.

**Responsibility/Activity** ✓

1. Activation of the facility. ☐

   a) Upon declaration of an emergency with instructions to assemble (usually an Alert of higher), report to the Admin Building CR#228 and coordinate assembly of personnel.

   b) Obtain the positional notebook/binder from CR#228.

   c) Contact the Radiological Control Director (RCD) at extension 3034 or listen to the P.A. announcements to determine if there are restrictions on eating and drinking. Ensure personnel are aware of the restrictions.

   d) Advise the Administrative and Logistics Manager (ALM) at 362-3657 that the Assembly Area is ready to activate.

   e) Announce to personnel in the room that you are the Assembly Area Leader.

2. Instruct arriving personnel to sign in and await instructions. ☐

   a) Ensure that personnel reporting to the assembly area log in on the roster.

   b) If a Site Area Emergency or greater is declared instruct all nonessential personnel (company employees that are not on the ERO and contractors) to leave the site via established evacuation routes. Instruct ERO personnel not assigned to emergency duties to travel to the HE&EC auditorium. Report when all personnel have left the Admin Building to the ALM and proceed to the HEEC.

   c) If a Site Area Emergency is not declared then direct assembled personnel to return to work following instructions from the Site Emergency Coordinator -TSC or a P.A. announcement once verified by the ALM.

## ASSEMBLY AREA LEADER CHECKLIST

**Responsibility/Activity** ✓

3. Termination of the emergency. ☐

   a) Provide records to Emergency Preparedness upon termination of the emergency.

   b) Replenish contents of the position book.

   c) Restore the facility to stand-by readiness.

# EOF TELECOM/COMPUTER SUPPORT CHECKLIST

**Position Function:** Provide telecom/computer support to EOF Staff

**Responsibility/Activity** ✓

1. Assume the Position of EOF Telecom/Computer Support. ☐

   a) Sign in on the facility organization chart.

   b) Obtain the positional notebook/binder from the storage area.

   c) Perform a formal relief when permanently relieving another EOF Telecom/Computer Support.

      1) Obtain a briefing on the emergency and any actions that have been completed or are in progress.

   d) Inform a staff member when temporarily leaving the work area (such as to the restroom).

      1) Designate an individual to answer the phones while away.

      2) Upon return, obtain a briefing on any events which have occurred while away.

2. Provide computer support as required to assist EOF Staff. ☐

NOTE: Disabling the ERDS link prior to establishing a connection will cause an "ERROR" status on the ERFIS display.

3. Termination of the emergency ☐

   a) Provide all logs and records to Emergency Preparedness upon termination of the emergency.

   b) Replenish content of your position book.

   c) Restore the facility to stand-by readiness.

   d) Inventory facility equipment if applicable.

# EOF Logkeeper Instructions

## 1. ERFIS Logon Instructions

a) Press F3 or type turn-on-code (TOC) ***MENU***

b) Select *Emergency Preparedness Functions Menu* or type TOC ***EP***

c) Select *Log into Network Database* or type TOC ***LOGIN***

d) Select EOF log keeper from the position menu

e) Type your name and press login

f) Select *Declare Event* or type TOC ***EVENT*** and press ***OK***

g) Select *Access EP Logs* or type TOC ***POSLOG***

h) Select *ADD* to began typing in the subject area

i) Select *SAVE* after each entry is completed.

## 2. ERFIS Relief Instructions

a) Select *SAVE* for the last entry and press EXIT

b) Select *Log Out Of Network Data Base* or type TOC ***LOGOUT.*** This will allow the log to be continued by the relief person.

c) Select *Log into Network Database* or type TOC ***LOGIN***

d) Select EOF log keeper from the position menu

e) Type your name and press login

f) Select *Access EP Logs* or type TOC ***POSLOG***

g) Select *ADD* to began typing in the subject area

## 3. ERFIS Log Printing Instructions

a) Select **SAVE** for the last entry and press **EXIT**

b) Select **FACLOG** EVENT LOG LIST from the Emergency Preparedness Function Menu or type turn-on code **FACLOG**

c) Select **BY POSITION** (upper left)

d) Select **EOFLOG** from the drop down selections

e) Select **PRINT** (upper right)

## EOF Logkeeper Instructions

f) Select **REPORT FACILITY LOG**

g) ERFIS will respond with "requested report is complete and Qued for printing" Click on OK

h) Select **EXIT**

4. ERFIS Logoff Instructions

a) Select *Terminate Event* or type TOC ***NOEVENT***

b) Select *Log Out Of Network Data Base* or type TOC ***LOGOUT***

c) Select YES

## EOF ERFIS Operator Instructions

| | |
|---|---|
| 1. ACTIVATION OF THE LARGE SCREEN DISPLAYS: | |
| a) Activate the 3 large screen projectors from the black AMX touch screen controller by selecting screen display EOF1, EOF2, and EOF3. | |
| b) Select one of the three computers that provide the display by: | |
| • pressing the "Ctrl" key, | |
| • releasing the "Ctrl" key and then | |
| • selecting 1, 2, or 3 (Computer 1, 2, or 3) | |
| 2. GENERAL INSTRUCTIONS FOR ERFIS USE: | |
| a) ERFIS defaults to the "MASTER MENU" screen. Press F3 or type "MENU" to return to the "MASTER MENU" from any screen | |
| b) Menu items may be selected by typing the TURN-ON-CODE (TOC) at the top of the screen or by selecting the menu item with the mouse and clicking | |
| c) Menu items that are useful for emergency preparedness are: | |
| ROUTINE EP DATA GROUPS: | |
| **3TSCDAT1** | DATA GR 1 FOR EMERGENCY USE IN TSC |
| **3TSCDAT2** | DATA GR 2 FOR EMERGENCY USE IN TSC |
| **3TSCDAT3** | DATA GR 3 FOR EMERGENCY USE IN TSC |
| **3EALS** | DATA FOR ACCIDENT ASSESSMENT TEAM |
| **3DOSE** | DOSE PROJECTION INFORMATION |
| OTHER AVAILABLE EP DATA GROUPS: | |
| **3TSCRMS1** | RAB RADIATION MONITORS |
| **3TSCRMS2** | WPB/TSC RADIATION MONITORS |
| **3TSCRMS3** | FHB RADIATION MONITORS |
| **3TSCRMS4** | CNMT, EFFLUENT, AND MISC RAD MON |

**EOF ERFIS Operator Instructions**

| OTHER AVAILABLE EP DATA GROUPS: | |
|---|---|
| **REAL** | Realtime Data Menu |
| **GL** | Group Libraries |
| **PL** | Plot Library |
| **EP** | Emergency Preparedness Function Menu |
| **Status** | Emergency Preparedness Display Menu |
| 3. INSTRUCTIONS FOR PRINTING THE EP DATA GROUPS EVERY 15 MINUTES | |
| a) From the Master Menu select "Periodic Logs Menu" | |
| b) Select "Start Periodic Facility Log" to start the logs. They will print every 15 minutes | |
| c) Select "Stop Periodic Facility Log" to terminate the printing of the logs | |
| 4. INSTRUCTIONS FOR THE REMOTE DISPLAYS IN THE NRC OVERFLOW ROOM AND THE RADIOLOGICAL CONTROL ROOM (DOSE PROJECTION ROOM) | |
| a) Turn on the video screen from the front of the monitor | |
| b) Select, from the wall panel behind the monitor, the desired display (EOF1, EOF2, or EOF3, video, etc.) | |
| 5. INSTRUCTIONS FOR SECURING THE FACILITY: | |
| a) Stop Periodic Facility Logs | |
| b) Sign off ERFIS by terminating the event and logging out | |
| c) Turn off the overhead projectors by selecting the SHUTDOWN function from the black AMX touch screen controller. | |
| d) Turn off the video screen from the front of the monitor | |

# EOF LOG

**POSITION:** _____

| EOF | DATE: | PAGE . OF |
|---|---|---|
| TIME | COMMENTS | |
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**Upon relief, or termination of the emergency, ensure that the log is completed by checking the log for completeness, then printing and signing your name in the comments section .**

## Revision Summary for PEP-270, Rev.10

This revision addresses PRR 87529

| Section/Page | Change |
|---|---|
| 6.0 / pg 2 | Added Attachment 26 EOF Log Sheet |
| 3.0 / pg 3 | Added #5 "Attachment 26 is the facility log sheet" |
| Attachment 1<br>Sheet 1, section 3 | Moved step #3 to step #4 and moved step #4 to step#3 as described in PRR 87529 |
| Attachments 2,3,5, 7,10,14,15, 19, | Changed "Maintain a log of activities using your log sheet" to "Maintain a log of activities. (Attachment 26) |
| Attachments 2,3,5, 7,10,14,15, 19, | Deleted logs from attachments. |
| Entire document | Changed CP&L to Progress Energy |
| Entire document | Revision includes conversion from word 95 to word 2000. Organizational changes and typographical errors were corrected, as appropriate. Updated layout and formatting to conform to AP-005 standards. |
| Attachment 24<br>Step #3 | Added ERFIS printing instructions suggested from drill critique comments. |
| Attachment 23<br>Sheet 1 | Added corrective action from AR #84317-02 that reads:<br>NOTE: Disabling the ERDS link prior to establishing a connection will cause an "ERROR" status on the ERFIS display. |

CAROLINA POWER & LIGHT COMPANY

SHEARON HARRIS NUCLEAR POWER PLANT

PLANT OPERATING MANUAL

VOLUME 2

PART 5

| | |
|---|---|
| PROCEDURE TYPE: | Plant Emergency Procedure |
| NUMBER: | PEP-330 |
| TITLE: | Radiological Consequences |

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## 1.0 PURPOSE

The purpose of this procedure is specify the methods to be used for conducting emergency plant monitoring, radiological controls for emergency workers, dosimetry for Immediate Response Organization (IRO) Personnel, the administration of potassium iodide and environmental monitoring.

## 2.0 INITIATING CONDITIONS

An emergency has been declared and airborne radiological or hazardous chemical surveys or plant samples are required.

## 3.0 PROCEDURE STEPS

### 3.1 Emergency Plant Monitoring

Monitoring of radiation during an emergency shall be performed using existing plant procedures, where practical. The exposure guidelines, as stated in Attachment 1, shall be followed.

### 3.2 Radiological Controls for Emergency Workers

Radiation Control (RC) Team personnel shall:

1. Write necessary Emergency Radiation Work Permits (ERWP) using guidance provided in HPP-600 or Attachments 10 and 11.

2. Issue needed equipment specified on the ERWP.

3. Document issuance of dosimetry and respirators. Documentation may be deferred until after the task is complete.

4. Assist individuals in donning protective clothing and respirators.

5. Accompany teams to provide continuous radiological coverage as specified on the ERWP.

6. Assist emergency workers in removing protective equipment and monitoring for contamination when the task is complete.

7. Record exposures from dosimetry on the ERWP or via the Passport sign out process. This information may be verbally transmitted to the RCC who shall have the information transcribed onto the ERWP.

8. Ensure that any deferred documentation is completed.

3.3 Dosimetry for Immediate Response Organization (IRO) Personnel

1. Security Team personnel shall issue a dosimetry packet to each individual arriving on-site. No documentation need be completed at the time of issue.

2. IRO personnel exposures shall be controlled by the accompanying RC Team members. RC technicians will record initial dosimeter readings on Attachment 12.

NOTE: IRO personnel leaving site with a contaminated injured individual may keep their dosimetry until it is collected and recorded by an accompanying RC Team member.

3. When IRO personnel are ready to leave the site, an RC Team member shall collect their dosimetry and record the name, Badge number, TLD and SRPD serial numbers, and the reading on the SRPD for each individual on Attachment 12.

4. RC Team personnel shall process the dosimetry of IRO personnel.

5. The RC Team shall inform the Radiological Control Coordinator (RCC) of exposure information for IRO personnel when it is available.

3.4 Radiological Habitability Controls for the Emergency Response Facilities

1. Perform habitability surveys in each facility (TSC, OSC, Control Room, and EOF) after activation and at appropriate intervals thereafter.

2. Resurvey the facility if there is a potential for an airborne radiological release or a release has occurred. Follow up should be performed as needed.

3. Ensure the habitability status is posted in the facility.

4. Ensure that personnel are aware of restrictions as a result of habitability surveys in their facility.

3.5 Administration of Potassium Iodide (KI)

1. Guidance for Controlling Doses to Emergency Workers

   a. Dose to workers during an emergency should be limited to 5 rem.

   b. Workers participating in activities in which dose will exceed 25 rem to the whole body should do so on a voluntary basis and be aware of the risks. (See Attachment 1)

   c. Workers performing services during an emergency should be limited to 50 rem to the thyroid.

   d. KI should be considered as a potential dose reducing option for any situation in which airborne radioactive iodine is present (an additional ALARA option).

2. Dose Determination

   a. KI should be administered to emergency workers to maintain dose to the thyroid below 50 rem.

      (1) KI is 90% effective in blocking the uptake of radioiodine by the thyroid if administered within the first hour, and is 50% effective if administered within four (4) hours.

      (2) Almost no benefit will be obtained if KI is administered 10-14 hours after exposure.

   b. The isotopic halogen concentrations must be determined before a thyroid dose can be estimated. Concentrations can be determined by direct measurement of each isotope or by estimations based on a known I-131 concentration (See Attachment 5)

   c. When estimated concentrations are used, the estimations should be confirmed by direct measurement as soon as practical.

   d. Thyroid dose, in mrem, can be determined from isotopic concentrations (in $\mu$Ci/cc) using Attachment 15.

3. Issuing KI

NOTE: The Radiological Control Director is responsible for coordinating the administration of KI to on site HNP emergency workers with the approval of the Site Emergency Coordinator. The Radiological Control Manager is responsible for coordinating the administration of KI to off site (Environmental Monitoring Teams) HNP emergency workers with the approval of the Emergency Response Manager.

3.5 Administration of Potassium Iodide (KI) (continued)

a. Utilizing Attachment 17 as guidance, notify those who are to receive KI to report to a designated location for distribution.

b. Ask each individual if they have ever had an allergic reaction to iodide (advice them that most table salt and shellfish contain iodide).

c. Advise personnel that the use of KI is voluntary and to read the packet insert (an example is provided as Attachment 13).

---

CAUTION

Individuals who have known allergies to iodide shall NOT be issued KI.

---

d. Issue one 130 mg KI tablet to each individual who is to receive KI.

e. Instruct each individual to report back the next day (continue issuing one 130 mg KI tablet to each individual daily for 10 days or as directed by medical personnel).

f. Ensure approval and documentation is logged including the following:

(1) Lot number and expiration date (if available) of the KI administered.

(2) Name and badge number of each individual the KI was given.

(3) Name of any individual declining to take the KI and the reason for not taking the drug.

4. Follow up Actions

a. Evaluate if an individual was actually exposed to elevated concentrations of airborne radioiodine where a dose commitment to the thyroid of 25 rem Committed Dose Equivalent (CDE) could have been exceeded.

b. Contact medical personnel and request follow-up care and further instruction for personnel who have been issued KI using the following guidance as appropriate:

(1) Perform a whole body count and a thyroid count for each individual exposed (if possible) before the additional KI tablet is administered.

3.5 Administration of Potassium Iodide (KI) (continued)

(2) If the whole body burden of I-131, decay corrected to the time of exposure, is less than 17 μCi, discontinue administering KI.

(3) If a whole body count cannot be performed, or if the whole body burden, less the thyroid burden decay corrected to the time of exposure, exceeds 17 μCi, administer an additional dosage of KI.

(4) If actual exposure to an individual is not suspected, do not administer any additional KI.

3.6 Environmental Monitoring

The Environmental Monitoring Team Startup Checklist is Attachment 16.

1. Team Exposure Controls

a. Teams should notify Control prior to entering areas with exposure rates greater than 50 mrem/hr or exceeding individual exposure of 300 mrem TEDE.

b. Teams shall receive permission from the Emergency Response Manager through Control prior to entering areas with exposure rates greater than 25 rem/hr or exceeding individual exposure of 5 rem TEDE.

2. Operation of Air Sampling Equipment

a. Place sampler in an appropriate location.

b. Start the gasoline generator (if applicable) nearby or use the outlet located on the siren poles.

c. Ensure the line switch is off and plug sampler into the power outlet on the generator or at the siren pole. Exercise caution if water or other liquids are on the floor or ground.

d. Obtain an iodine air sample as follows:

(1) Install a filter paper and iodine cartridge (activated charcoal unless directed otherwise) in the filter housing.

(2) Place the switch at VARIABLE position.

(3) Adjust flow control knob to obtain approximately 2 CFM flow rate. Do not exceed 3 CFM.

(4) Record the start time on Attachment 3.

(5) When the desired volume has been sampled, place the switch in OFF. Typically, the sampler is run for 10 minutes at 2 CFM to obtain a 20 $ft^3$ volume.

(6) Record the stop time.

(7) Remove the filter and cartridge with forceps or gloves and place them in separate plastic bags. Complete air sample label and place on bags. Leave the iodine cartridge bag open to allow the cartridge to off-gas.

e. Save the filter and/or cartridge for field estimation of I-131 activity or for isotopic analysis.

3. Field Estimate of Airborne I-131 Activity

a. Obtain the iodine collection cartridge and carry it to an area of relatively low background.

b. Record the background level on Attachment 3.

NOTE: The measurements should be made through the plastic bag.

c. Ensure that at least five minutes have elapsed after removing the cartridge from sampler and place the HP-210 type GM tube probe against one flat surface of the cartridge and record the observed measurement on Attachment 3.

d. Place the survey probe against the opposite side of the cartridge and record the measurement.

e. Calculate the net measurement of each flat surface and select the higher value. Immediately report any off-scale readings to Control.

f. Determine the I-131 μCi per cc of air sampled for the net CPM of the cartridge using Attachment 5.

g. Record this value on Attachment 3 and sample label.

h. Report the results to Control.

i. Save the sample for laboratory analysis. All small samples may be placed in a larger bag.

3.6 Environmental Monitoring (continued)

4. Measurement of Ambient Radiation Readings

a. Using the radiation measurement instrument per direction of Control, take radiation intensity measurements at about 6 inches above ground and at about 1 meter (waist high). Survey the area to ensure that the measurement is indicative of general location and not affected by local hot spots.

b. Record the results on Attachment 3.

c. Report all significant measurements to Control.

5. Measurement of Integrated Exposure by TLDs

NOTE: The TLDs in the field are for routine radiological environmental monitoring and should not be removed by EMTs. This section addresses the placement of emergency environmental TLDs as directed by Control.

a. Go to the location directed by Control. Fasten new TLD packets to tree, power pole, or other specified location. The location must be conspicuous.

b. Place TLD in a plastic bag or equivalent to prevent moisture accumulation in the crystal.

c. Provide a description of the area and log information on Attachment 14, and/or mark the location where the TLD is placed so that it may be easily located by other EMT members.

6. Labeling Environmental Samples

a. Each environmental team will be given a team number upon deployment. The first two digits of the sample control number will be the team number.

b. Place the team number, sample type from Attachment 6, and sample number, in sequence, on the sample label as illustrated on Attachment 4.

c. Specify the sample type. For example, if the sample is food crop, state is it is turnips, collards, or potatoes, or so forth.

d. Write down map location as accurately as possible. Specify whether sample was taken by the road, in a pasture, and so forth.

e. Measure sample radioactivity levels (mrem/hr) with a survey instrument and record the reading on the label.

3.6 Environmental Monitoring (continued)

f. Place radioactive material stickers, labels, tape, or equivalent on samples that are greater than the background dose rates.

g. Write initials, date, and time on the label.

h. Place the label on sample container.

i. Log samples on Attachment 3.

7. Collection of Environmental Samples

NOTE: The Off-site Dose Calculation Manual (ODCM) may be referred to for routine environmental monitoring locations.

a. Soil Sampling (sediment and surface soil)

(1) Clear vegetation, rocks, litter, and other non-soil items from a 1 square foot area and mark out the area. A plastic bag in the sampling kit has a template with an area of 1 square foot.

(2) Remove soil from the marked area to a depth of about 1 inch and place in a container.

(3) Do not seal the container until the sample is delivered to sample control point specified by Control.

(4) Label the sample.

b. Ground Water Supplies

(1) Flush all sample lines and rinse sample container.

(2) Collect at least a gallon of sample and replace cap securely.

(3) Label the sample.

c. Surface Water, Snow, or Ice

NOTE: Surface water samples from cooling tower intake and discharge structures may be collected from the composite samplers or by grab sampling described below.

(1) Collect a gallon surface water sample from a boat, highway bridge, canal structure or shore.

(2) Collect the equivalent of 500 ml liquid of snow or ice samples, for analysis. This might require collection in 4 liter containers.

(3) Label the samples.

3.6 Environmental Monitoring (continued)

d. Rainwater

(1) Collect rainwater by cutting top off a cubitainer or other suitable container and placing it in a clearing away from trees or buildings.

(2) Label the sample and record the approximate collection area of the container on the label so that an estimate of µCi/cc/sq. cm can be made.

e. Vegetation and Crops

(1) Collect approximately 3 pounds of leafy vegetation from exposed areas, since deposition is unlikely under trees. Larger leafy vegetation is preferable. Avoid pine needles.

(2) Collect samples of pasture grass each time milk is sampled. Clip grass close to roots without including dirt in the sample. Note the approximate size of the area from which the sample was taken ($ft^2$ or $m^2$).

(3) Collect approximately 3 pounds of aquatic vegetation from exposed areas (areas not covered by tree limbs or overhangs).

(4) Close sample containers.

(5) Label the samples.

f. Milk

(1) Milk sampling should begin the day after an atmospheric release and every two days thereafter until I-131 levels return to normal.

(2) Collect at least 1 gallon sample either from bulk tanks after thorough mixing or from a single cow.

g. Shellfish and Fin Fish

(1) Collect the equivalent of 500-1000 grams (1-2 pounds) of shellfish or fin fish for analysis.

(2) Close sample containers.

(3) Label the sample.

3.6 Environmental Monitoring (continued)

8. Sample Transport

NOTE: Environmental samples > 1 mrem/hr will not be delivered to the HEEC for analysis.

a. Sample delivery by the teams

(1) Inform Environmental Field Coordinator of the estimated time of arrival (ETA) to the Vehicle Monitoring-Contamination Control location (Division of Radiation Protection's (DRP) Mobile Laboratory.

(2) Ensure the samples delivered to the Mobile Lab are labeled correctly and loose surface contamination is either removed or sample is placed in another "clean" bag/container.

(3) Upon arrival at the Vehicle Monitoring-Contamination Control location, deliver the samples to the Sample Control person and await instructions from the Vehicle Monitoring-Contamination Control Leader.

(4) Contact the Environmental Field Coordinator and await further instructions.

b. Sample delivery by the courier

(1) Inform Environmental Field Coordinator of the estimated time of arrival (ETA) to the agreed upon location.

(2) Ensure the samples delivered to the courier are labeled correctly and loose surface contamination is either removed or sample is placed in another "clean" bag/container.

(3) Upon arrival at the agreed upon location deliver the samples to the courier per his/her instructions and continually verify the area as low dose/contamination.

(4) Contact the Environmental Field Coordinator and await further instructions.

c. Sample delivery to the HEEC

(1) Inform Environmental Field Coordinator of the estimated time of arrival (ETA) to the HEEC.

(2) Ensure the samples delivered to the HEEC are labeled correctly and loose surface contamination is either removed or sample is placed in another "clean" bag/container.

3.6 Environmental Monitoring (continued)

(3) Upon arrival at the HEEC deliver the samples to the Sample Control person briefing the laboratory personnel on the radiological conditions of the samples.

(4) Contact the Environmental Field Coordinator and await further instructions.

9. Termination of EMT Activities

a. Ensure containers are securely sealed.

b. Ensure proper labels are on samples with accurate map locations.

c. Return to HE&EC and return vehicle keys, TLDs, the environmental kits, and the radios, when directed by Control.

d. Perform appropriate inventories.

e. Forward all Environmental Monitoring Data Logs to the Environmental Field Coordinator in the EOF.

3.7 On-Shift RC Technician duties

NOTE: This guidance is provided to direct radiation protection personnel during an event classification of an alert or higher, as to where to report and how to ensure proper radiological protection during an event response.

1. At a classification of an alert or higher the two on-shift RC technicians will come to the control room. (If a fire emergency exists one of the two RC technicians will normally report with the fire brigade.)

2. Once the OSC is manned at least one RC technician will stay with the control room staff at all times. The primary purpose of this RC technician is to provide guidance to the POD and SEC-MCR on changing radiological conditions and protective measures that must be taken for people being sent into the plant.

3. The POD is accountable for ensuring accountability of all members on the shift. If any shift members are dispatched from the control room the POD must be informed. He will confer with the control room RC technician to ensure radiological protective measures are being met. The OSC should be used for guidance, direction and for development of emergency radiation work permits.

4. The POD will normally direct the control room RC technician to coordinate with the RCC in the OSC to ensure proper guidance is given to operators being sent out in the plant. Guidance that may be given includes:

a. No increased radiological concerns exist. Normal access is permitted in the area assigned.

b. Increased radiological conditions exist and additional awareness and actions may be needed to ensure dose is minimized.

c. There are significant concerns about dose rates in the plant. Further actions will be needed such as a briefing and RP escort.

NOTE: Doses up to and including lethal doses are possible during some fuel failure events if great care is not given to where personnel are being sent.

5. Members of the control room must take care when assigning people who are already dispatched to perform additional duties prior to returning. The POD must be informed when this occurs and the RC technician in the MCR should provide concurrence that the previous radiological guidance is still adequate.

6. Operators sent into the plant must also take responsibility for their dose. They should ask about dose rates and make sure they or someone has talked to RP on their behalf.

7. Doses to protect equipment and save lives must be managed per PEP-330

8. Guidance during a fire emergency includes the following recommendations.

   a. The control room, generally the USCO and the POD, will use the input of the RC technician in the control room to provide information and protection to the fire brigade team leader (FBTL).

   b. The FBTL should work with the POD when the fire is out to ensure personnel exposure is considered, this includes activities such as cleanup, re-flash watch and so forth.

## 4.0 GENERAL

1. The release of radioiodine is postulated for nearly every accident scenario that involves significant off-site exposures. Radioiodine poses a threat to the thyroid gland and will require protective action to minimize the thyroid exposure.

2. Stable iodine is a useful agent to block the uptake of radioiodine by the thyroid gland. Blocking occurs when the thyroid gland is saturated with stable iodine, thus preventing the uptake of radioactive iodine species. KI has been approved by the Food and Drug Administration for this use.

3. The risk of detrimental side effects from the short term use of KI for thyroid blocking in a radioactive emergency have been determined by the U. S. Food and Drug Administration to be outweighed by the risks of radioiodine induced thyroid nodules or cancer at a projected dose to the thyroid gland of 25 rem CDE or greater.

## 5.0 REFERENCES

1. PLP-201, Section 4.4, "Assessment Actions"
2. PLP-201, Section 4.6, "Protective Actions for On-Site Personnel"
3. HPP-600, "Preparation of Radiation Work Permits"

## 6.0 DIAGRAMS/ATTACHMENTS

See Table of Contents

**Limitations for Lifesaving and Emergency Reentry/Repair Actions**

1. A Declared Pregnant Woman shall not take part in these actions.

2. Internal exposure should be minimized by the use of the most appropriate respiratory protection or ALARA practice whenever possible, and contamination should be controlled by the use of protective clothing when practical.

3. Emergency worker exposures during lifesaving and repair/reentry efforts should be limited to the following:

| DOSE LIMIT (rem TEDE) | ACTIVITY | CONDITION |
|---|---|---|
| 5 | All | All |
| 10 | Protecting valuable property | Lower dose not practicable |
| 25 | Lifesaving or protection of large populations | Lower dose not practicable |
| >25 | Lifesaving or protection of large populations | Only on a voluntary basis to persons fully aware of the risks involved |

4. Limit dose to the lens of the eye to three (3) times the above values and doses to any other organ (including thyroid, skin and body extremities) to ten (10) times the above values.

5. Entry into radiation fields of greater than 25 rem/hr or exposure in excess of 5 rem TEDE shall not be permitted unless specifically authorized by the Site Emergency Coordinator.

6. In emergency situations where a exposure in excess of 25 rem TEDE would be required, the following additional criteria shall be considered:

   a. Rescue personnel must be volunteers.

   b. Rescue personnel should have a full awareness of the risks involved (See Attachment 2).

   c. Other things being equal, volunteers above the age of 45 should be selected whenever possible for the purpose of avoiding unnecessary genetic effects.

   d. Exposure under these conditions should be limited to once in a lifetime, and shall be included when calculating future lifetime permissible exposures.

**Potential Health Effects of Exposure to Ionizing Radiation**
**Health Effects Associated with Whole-Body Absorbed Doses Received Within a Few Hours[a]**

| Whole Body Absorbed Dose (rad) | Early Fatalities[b] (%) | Whole Body Absorbed Dose (rad) | Prodromal Effects[c] (% affected) |
|---|---|---|---|
| 140 | 5 | 50 | 2 |
| 200 | 15 | 100 | 15 |
| 300 | 50 | 150 | 50 |
| 400 | 85 | 200 | 85 |
| 460 | 95 | 250 | 98 |

(a) Risks will be lower for protracted periods.

(b) Supportive medical treatment may increase the dose at which these frequencies occur by approximately 50 percent.

(c) Forewarning symptoms of more serious health effects associated with large doses of ionizing radiation.

**Approximate Cancer Risk to Average Individuals from 25 Rem Effective Dose Equivalent Delivered Promptly**

| Age at Exposure (years) | Approximate Risk of Premature Death (deaths/1000 people exposed) | Average Years of Life Lost if Premature Death Occurs (years) |
|---|---|---|
| 20 to 30 | 9.1 | 24 |
| 30 to 40 | 7.2 | 19 |
| 40 to 50 | 5.3 | 15 |
| 50 to 60 | 3.5 | 11 |

## Potential Health Effects of Exposure to Ionizing Radiation
## Radiation Doses Causing Acute Injury to Organs

NOTE: All doses shown are total effective dose equivalent in rem.

| Organ | Volume or Area of Exposure | Risk of injury in five years 5 percent | 50 percent | Type of Injury |
|---|---|---|---|---|
| Bone marrow | whole | 230 | 340 | aplasia and pancytopenia |
| | segment | 1135 | 1360 | |
| Liver | whole | 1000 | 1360 | acute and chronic hepatitis |
| Stomach | 100 $cm^2$ | 1464 | 1665 | ulcer, perforation, hemorrhage |
| Intestine | 400 $cm^2$ | 1465 | 1665 | ulcer, perforation, hemorrhage |
| | 100 $cm^2$ | 1570 | 1855 | |
| Lung | whole | 720 | 1000 | acute and chronic pneumonitis |
| | 100 $cm^2$ | 1135 | 1245 | |
| | 75 percent | 770 | ------- | |
| Kidney | whole | 875 | 1000 | acute and chronic ephrosclerosis |
| Brain | whole | 1770 | 1950 | infarction, necrosis |
| Spinal cord | 10 cm | 1465 | 1665 | infarction, necrosis |
| Heart | 60 percent | 1465 | 1665 | pericarditis and pancarditis |
| Skin | --- | 1665 | 1950 | ulcers, fibrosis |
| Fetus | whole | 200 | 314 | death |
| Lens of eye | whole | 355 | 620 | cataracts |
| Ovary | whole | 200-430 | 410-875 | permanent sterilization |
| Testes | Whole | 340-720 | 410-875 | permanent sterilization |

# ENVIRONMENTAL MONITORING DATA LOG

Date _____ Log Page _____ of _____

## Field Team Data

Team ID _____ Team Members _____
Air Sampler S/N _____ Flow Rate _____
Survey Instrument Type _____ S/N _____ Response Check ☐
Survey Instrument Type _____ S/N _____ Response Check ☐
Survey Instrument Type _____ S/N _____ Response Check ☐

## Ambient Radiation Levels

Instrument Used _____ Readings: 6 inches 1 meter

Time _____ Location _____
Time _____ Location _____
Time _____ Location _____
Time _____ Location _____
Time _____ Location _____
Time _____ Location _____
Time _____ Location _____
Time _____ Location _____

## Air Filter/Cartridge Field Measurements

| | Location | Location | Location |
|---|---|---|---|
| Time | | | |
| Coordinates (degrees\miles) | | | |
| Run Time min | | | |
| Sample Volume in $ft^3$ ($ft^3$ = CFM x number of minutes) | | | |
| Filter Dose Rate mrem/hr | | | |
| Filter Sample ID | | | |
| Cartridge sample ID | | | |
| Cartridge Side 1 cpm | | | |
| Cartridge Side 2 cpm | | | |
| Background cpm | | | |
| Net Counts Per Minute | | | |
| I-131 Estimate µCi/cc | | | |
| Cartridge Dose Rate mrem/hr | | | |

Form PEP-330-3-1

# ENVIRONMENTAL MONITORING DATA LOG

## Environmental Samples

| Sample ID | Time | Type | Vol/Wt/Area | mrem/hr | Location |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

## Personnel Dosimeter Reading

| Time | Team Member | Initial Reading mrem | Final Reading mrem |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Form PEP-330-3-1

# SAMPLE LABELS

## ENVIRONMENTAL SAMPLE LABEL (Example)

SAMPLE CONTROL NUMBER 02FC03
SAMPLE TYPE Food Crop - Turnip Greens
LOCATION James Rest Home
TAKEN BY John Doe DATE/TIME 4/1/90/1430
ACTIVITY UPON
COLLECTION less than 0.05 mrem/HR
COMMENTS _____

## AIR SAMPLE LABEL

SAMPLE CONTROL NUMBER
AIR SAMPLER _____ TAKEN BY _____
LOCATION _____
SAMPLE ON (DATE/TIME/INITIAL) / /
SAMPLE OFF (DATE/TIME/INITIAL) / /
TOTAL SAMPLE TIME (MIN.) _____
FLOW ($ft^3$/min.) _____
VOLUME ($ft^3$) _____
INITIAL ACTIVITY _____ mrem/hr
I-131 ACTIVITY ESTIMATE _____ µCi/cc
COMMENTS _____

## ESTIMATED IODINE-131 µCi/cc

| | TOTAL FLOW (CUBIC FEET) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NET CPM | 10 | 12 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 70 | 80 |
| 100 | 9.2E-08 | 7.7E-08 | 6.2E-08 | 4.6E-08 | 3.7E-08 | 3.1E-08 | 2.3E-08 | 1.8E-08 | 1.5E-08 | 1.3E-08 | 1.2E-08 |
| 200 | 1.8E-07 | 1.5E-07 | 1.2E-07 | 9.2E-08 | 7.4E-08 | 6.2E-08 | 4.6E-08 | 3.7E-08 | 3.1E-08 | 2.6E-08 | 2.3E-08 |
| 300 | 2.8E-07 | 2.3E-07 | 1.8E-07 | 1.4E-07 | 1.1E-07 | 9.2E-08 | 6.9E-08 | 5.5E-08 | 4.6E-08 | 4.0E-08 | 3.5E-08 |
| 400 | 3.7E-07 | 3.1E-07 | 2.5E-07 | 1.8E-07 | 1.5E-07 | 1.2E-07 | 9.2E-08 | 7.4E-08 | 6.2E-08 | 5.3E-08 | 4.6E-08 |
| 500 | 4.6E-07 | 3.9E-07 | 3.1E-07 | 2.3E-07 | 1.8E-07 | 1.5E-07 | 1.2E-07 | 9.2E-08 | 7.7E-08 | 6.6E-08 | 5.8E-08 |
| 600 | 5.5E-07 | 4.6E-07 | 3.7E-07 | 2.8E-07 | 2.2E-07 | 1.8E-07 | 1.4E-07 | 1.1E-07 | 9.2E-08 | 7.9E-08 | 6.9E-08 |
| 700 | 6.5E-07 | 5.4E-07 | 4.3E-07 | 3.2E-07 | 2.6E-07 | 2.2E-07 | 1.6E-07 | 1.3E-07 | 1.1E-07 | 9.2E-08 | 8.1E-08 |
| 800 | 7.4E-07 | 6.2E-07 | 4.9E-07 | 3.7E-07 | 3.0E-07 | 2.5E-07 | 1.8E-07 | 1.5E-07 | 1.2E-07 | 1.1E-07 | 9.2E-08 |
| 900 | 8.3E-07 | 6.9E-07 | 5.5E-07 | 4.2E-07 | 3.3E-07 | 2.8E-07 | 2.1E-07 | 1.7E-07 | 1.4E-07 | 1.2E-07 | 1.0e-07 |
| 1000 | 9.2E-07 | 7.7E-07 | 6.2E-07 | 4.6E-07 | 3.7E-07 | 3.1E-07 | 2.3E-07 | 1.8E-07 | 1.5E-07 | 1.3E-07 | 1.2e-07 |
| 1500 | 1.4E-06 | 1.2E-06 | 9.2E-07 | 6.9E-07 | 5.5E-07 | 4.6E-07 | 3.5E-07 | 2.8E-07 | 2.3E-07 | 2.0E-07 | 1.7E-07 |
| 2000 | 1.8E-06 | 1.5E-06 | 1.2E-06 | 9.2E-07 | 7.4E-07 | 6.2E-07 | 4.6E-07 | 3.7E-07 | 3.1E-07 | 2.6E-07 | 2.3E-07 |
| 2500 | 2.3E-06 | 1.9E-06 | 1.5E-06 | 1.2E-06 | 9.2E-07 | 7.7E-07 | 5.8E-07 | 4.6E-07 | 3.9E-07 | 3.3E-07 | 2.9E-07 |
| 3000 | 2.8E-06 | 2.3E-06 | 1.8E-06 | 1.4E-06 | 1.1E-06 | 9.2E-07 | 6.9E-07 | 5.5E-07 | 4.6E-07 | 4.0E-07 | 3.5E-07 |
| 3500 | 3.2E-06 | 2.7E-06 | 2.2E-06 | 1.6E-06 | 1.3E-06 | 1.1E-06 | 8.1E-07 | 6.5E-07 | 5.4E-07 | 4.6E-07 | 4.0E-07 |
| 4000 | 3.7E-06 | 3.1E-06 | 2.5E-06 | 1.8E-06 | 1.5E-06 | 1.2E-06 | 9.2E-07 | 7.4E-07 | 6.2E-07 | 5.3E-07 | 4.6E-07 |
| 5000 | 4.6E-06 | 3.9E-06 | 3.1E-06 | 2.3E-06 | 1.8E-06 | 1.5E-06 | 1.2E-06 | 9.2E-07 | 7.7E-07 | 6.6E-07 | 5.8E-07 |
| 6000 | 5.5E-06 | 4.6E-06 | 3.7E-06 | 2.8E-06 | 2.2E-06 | 1.8E-06 | 1.4E-06 | 1.1E-06 | 9.2E-07 | 7.9E-07 | 6.9E-07 |
| 7000 | 6.5E-06 | 5.4E-06 | 4.3E-06 | 3.2E-06 | 2.6E-06 | 2.2E-06 | 1.6E-06 | 1.3E-06 | 1.1E-06 | 9.2E-07 | 8.1E-07 |
| 8000 | 7.4E-06 | 6.2E-06 | 4.9E-06 | 3.7E-06 | 3.0E-06 | 2.5E-06 | 1.8E-06 | 1.5E-06 | 1.2E-06 | 1.1E-06 | 9.2E-07 |
| 9000 | 8.3E-06 | 6.9E-06 | 5.5E-06 | 4.2E-06 | 3.3E-06 | 2.8E-06 | 2.1E-06 | 1.7E-06 | 1.4E-06 | 1.2E-06 | 1.0E-06 |
| 10000 | 9.2E-06 | 7.7E-06 | 6.2E-06 | 4.6E-06 | 3.7E-06 | 3.1E-06 | 2.3E-06 | 1.8E-06 | 1.5E-06 | 1.3E-06 | 1.2E-06 |
| 15000 | 1.4E-05 | 1.2E-05 | 9.2E-06 | 6.9E-06 | 5.5E-06 | 4.6E-06 | 3.5E-06 | 2.8E-06 | 2.3E-06 | 2.0E-06 | 1.7E-06 |
| 20000 | 1.8E-05 | 1.5E-05 | 1.2E-05 | 9.2E-06 | 7.4E-06 | 6.2E-06 | 4.6E-06 | 3.7E-06 | 3.1E-06 | 2.6E-06 | 2.3E-06 |
| 25000 | 2.3E-05 | 1.9E-05 | 1.5E-05 | 1.2E-05 | 9.2E-06 | 7.7E-06 | 5.8E-06 | 4.6E-06 | 3.9E-06 | 3.3E-06 | 2.9E-06 |
| 30000 | 2.8E-05 | 2.3E-05 | 1.8E-05 | 1.4E-05 | 1.1E-05 | 9.2E-06 | 6.9E-06 | 5.5E-06 | 4.6E-06 | 4.0E-06 | 3.5E-06 |
| 35000 | 3.2E-05 | 2.7E-05 | 2.2E-05 | 1.6E-05 | 1.3E-05 | 1.1E-05 | 8.1E-06 | 6.5E-06 | 5.4E-06 | 4.6E-06 | 4.0E-06 |
| 40000 | 3.7E-05 | 3.1E-05 | 2.5E-05 | 1.8E-05 | 1.5E-05 | 1.2E-05 | 9.2E-06 | 7.4E-06 | 6.2E-06 | 5.3E-06 | 4.6E-06 |
| 50000 | 4.6E-05 | 3.9E-05 | 3.1E-05 | 2.3E-05 | 1.8E-05 | 1.5E-05 | 1.2E-05 | 9.2E-06 | 7.7E-06 | 6.6E-06 | 5.8E-06 |

Estimated activity of Iodine-131 in air versus observed net count rate (using HP-210 probe, or equivalent, in contact with a plastic bag 0.004 inch (4 mil) thick containing an iodine collection cartridge). The average efficiency is 0.00172

# ENVIRONMENTAL SAMPLE TYPES

Sample Types

| | |
|---|---|
| AC | Air Cartridge |
| AP | Air Particulate |
| AV | Aquatic Vegetation |
| FC | Food Crops |
| GW | Groundwater |
| IC | Ice |
| MK | Milk |
| OT | Other |
| RA | Rain Water |
| SD | Sediment (shoreline) |
| SS | Surface Soil |
| SN | Snow |
| SW | Surface Water |
| TV | Terrestrial Vegetation |
| SF | Shellfish |
| FF | Fin fish |

## Potential Emergency Environmental Monitoring Sites

| Code | Coordinates (Deg/miles) | Description |
|---|---|---|
| A-1 | 009/2.6 | Near the intersection of SR 1011 and SR 1134 at the Dixie pipeline maintenance point adjacent to the Seaboard Coastline Railroad. |
| A-2 | 001/3.2 | Approximately 0.8 mile from SR 1011 on SR 1140. |
| A-3 | 353/4.3 | Approximately 1.7 miles from SR 1141 on SR 1142, 1.4 miles from end of SR 1903, 0.3 mile from Wake County line in Chatham County. |
| A-4 | 357/6.2 | On SR 1900 approximately 0.2 mile east of the intersection of SR 1900 and SR 1901. |
| A-5 | 004/7.4 | Intersection of US 64, SR 1001, and 751. |
| A-6 | 350/9.0 | On SR 1747 by Jordan Lake finger, approximately 1.4 miles from 751. |
| A-7 | 359/9.6 | Intersection of 751 and SR 1761. |
| A-8 | 007/9.6 | Intersection of SR 1742 and SR 1743. |
| A-9 | 010/9.4 | Intersection of SR 1604 and SR 1603. |
| B-1 | 023/2.1 | Approximately 0.15 mile south of US 1 and SR 1134 and intersection of SR 1189. |
| B-2 | 023/3.6 | New Hill, North Carolina--intersection of SR 1011, SR 1141, and SR 1127. |
| B-3 | 011/4.9 | Intersection of SR 1141 and SR 1142 south of railroad track. |
| B-4 | 025/5.6 | Intersection of SR 1145 and SR 1146 which if off SR 1142 at Mt. Zion Baptist Church. |
| B-5 | 016/6.7 | Intersection of SR 1160 and SR 1145. |
| B-6 | 023/7.2 | Intersection of SR 1160 and SR 1162 approximately 1.2 miles east from SR 1145 on SR 1160. |
| B-7 | 011/7.7 | On US 64 approximately 0.3 mile west of SR 1602 on the west side of an old abandoned railroad track. |
| B-8 | 016/8.0 | Intersection of US 64 and SR 1601. |
| B-9 | 024/8.6 | Intersection of US 64 and SR 1163. |
| B-10 | 013/9.1 | On SR 1603 approximately 1.0 mile northwest from SR 1601. White Oak Creek and old abandoned railroad track. |

## Potential Emergency Environmental Monitoring Sites

| Code | Coordinates (Deg/miles) | Description |
|---|---|---|
| B-11 | 030/9.2 | Intersection of US 64 and NC 55. On northwest corner from intersection off a one-lane dirt road. |
| B-12 | 023/9.2 | Intersection of SR 1601 and SR 1600. Short distance east of intersection. |
| C-1 | 033/2.3 | Off SR 1127 to end of SR 1182 near James Rest Home (J. C. Garner Station on SR 1127; turn on SR 1182). |
| C-2 | 052/2.2 | Off SR 1127 at parking lot of the Harris Energy and Environmental Center south of the intersection of SR 1127 and SR 1135. |
| C-3 | 047/3.6 | On SR 1149 between SR 1151 and SR 1152. Large house on side of SR 1149 with one-lane dirt road. |
| C-4 | 044/4.6 | Intersection of US 1 and SR 1149 and SR 1154 south of US 1. |
| C-5 | 036/5.7 | Intersection of SR 1011 and SR 1149. |
| C-6 | 034/6.2 | Approximately 0.3 mile north of SR 1011 on SR 1187 which connects back to SR 1163. |
| C-7 | 046/6.0 | At the end of SR 1170 which is dead end. SR 1170 intersects SR 1011. |
| C-8 | 040/7.2 | Approximately 0.7 mile northeast from intersection of SR 1163 on SR 1011. Approximately 0.6 mile southwest from intersection of SR 1162 on SR 1011. Along Seaboard Coastline Railroad track. |
| C-9 | 048/7.4 | Intersection of US 1 and SR 1153. |
| C-10 | 042/9.0 | Intersection of SR 1011 and SR 1037 (West Chatham Street) in the town of Apex. |
| C-11 | 049/8.6 | Intersection of US 1 and NC 55 at the Days Inn parking lot, Apex exit. |
| D-1 | 069/4.1 | Near the bridge (area of Harris Lake) on SR 1162 approximately 1.3 miles southeast of SR 1149. There is a clear path to Harris Plant on the southeast side of the bridge which is a utility line going to Harris. |
| D-2 | 059/6.2 | Intersection of SR 1154 and SR 1153. |

## Potential Emergency Environmental Monitoring Sites

| Code | Coordinates (Deg/miles) | Description |
|---|---|---|
| D-3 | 069/6.2 | Between SR 1152 and intersection of SR 1154 and SR 1153 on SR 1153 approximately 0.5 mile from SR 1152 and approximately 0.3 mile southwest of a small cemetery and approximately 0.7 mile southeast of a bridge over Little Branch. |
| D-4 | 064/7.8 | Intersection of NC 55 and SR 1301. |
| D-5 | 070/8.9 | Intersection of SR 1301 and SR 1302. SR 1302 is approximately 1.48 miles southeast from NC 55 on SR 1301. |
| D-6 | 076/9.2 | Intersection of SR 1301 and SR 1152. |
| E-1 | 084/2.3 | Approximately 1.3 miles south of Harris Energy and Environmental Center on SR 1127. Approximately 0.6 mile north of bridge on Harris Lake. Open knoll on east side of road. |
| E-2 | 081/7.1 | In the town of Holly Springs near the intersection of NC 55 and SR 1152. Site is located in the Wake Recreation Park off Avent Ferry Road and Ballentine Street. |
| E-3 | 091/7.5 | Southern intersection of NC 55 and SR 1114. Approximately 1.5 miles south of Holly Springs (junction of 55 and SR 1152).<br><br>NOTE: SR 1114 is a loop which intersects NC 55 twice |
| E-4 | 088/8.9 | On SR 1393 approximately 2.0 miles from SR 1152. South of Bass lake at Robencliff Housing Development. |
| E-5 | 092/9.3 | Intersection of SR 1393 and SR 1397. |
| F-1 | 114/2.8 | Intersections of SR 1127, SR 1130, and SR 1115 (Holleman's Crossroads). |
| F-2 | 112/4.2 | On SR 1127 approximately 1.3 miles southeast from the intersection of SR 1127 and SR 1115 and approximately 0.8 mile northwest of the intersection of SR 1127 and SR 1116 (pavement ends). |
| F-3 | 102/5.5 | Intersection of SR 1116 and SR 1125. |
| F-4 | 121/5.8 | Intersection of SR 1119 and SR 1123. Approximately 0.3 mile south of SR 1123. |
| F-5 | 111/7.0 | Intersection of SR 1101 and SR 1110. |

## Potential Emergency Environmental Monitoring Sites

| Code | Coordinates (Deg/miles) | Description |
|---|---|---|
| F-6 | 118/9.5 | In Fuquay-Varina at Action Park which is off NC 55 (Wake Chapel Road) and the intersection of the Norfolk Southern Railway. |
| G-1 | 121/2.6 | Approximately 0.6 mile southwest of Holleman's Crossroads (intersection of SR 1127 and SR 1130) on SR 1130. |
| G-2 | 140/2.3 | At the boat landing parking lot on SR 1130 approximately 1.8 miles from the intersection of SR 1130 and SR 1127. |
| G-3 | 138/3.9 | At the end (west) of SR 1116 and approximately 0.6 mile west of the intersection of SR 1116 and SR 1117. |
| G-4 | 140/5.9 | Near the intersection of NC 42 and SR 1403. Approximately 0.4 mile from intersection (Macedonia Baptist Church). |
| G-5 | 136/7.0 | Intersection of NC 42 and SR 1407 (Duncan Baptist Church). |
| G-6 | 124/7.8 | Intersection of NC 42 and SR 1101 (Piney Grove Baptist Church). |
| G-7 | 131/8.2 | Intersection of SR 1412 and SR 1413. |
| G-8 | 139/8.0 | Intersection of SR 1409 and SR 1417 (Church of God). |
| G-9 | 140/8.9 | Intersection of SR 1418, SR 1415, SR 1412, and SR 1409. |
| G-10 | 127/9.7 | On SR 1414 approximately 2.0 miles southeast from NC 42 and SR 1101 which changes to SR 1414 when crossing into Harnett and Wake Counties; approximately 0.5 mile southeast from county lines; Carolina and Northwestern Railway next to SR 1414. |
| H-1 | 160/4.5 | On SR 1915 approximately 0.8 mile west from the intersection of SR 1402 and SR 1401 in Harnett County. SR 1402 changes to SR 1915 in Chatham County. |
| H-2 | 150/4.8 | Intersections of SR 1402, SR 1401, and SR 1400 on SR 1401 before intersection of SR 1401 and SR 1402. |
| H-3 | 163/5.9 | Intersection of NC 42 and SR 1450. |
| H-4 | 150/7.1 | Intersection of SR 1403 and SR 1407. |
| H-5 | 155/7.4 | Intersection of SR 1503 and SR 1420. Approximately 0.3 mile from SR 1403 on SR 1420. |

## Potential Emergency Environmental Monitoring Sites

| Code | Coordinates (Deg/miles) | Description |
|---|---|---|
| H-6 | 160/8.0 | Intersection of SR 1403 and SR 1518 (Cokesbury). |
| H-7 | 150/9.0 | Intersection of SR 1418 and SR 1427. |
| H-8 | 162/8.9 | Cumberland Union Baptist Church on SR 1403 approximately 0.8 mile south of intersection SR 1418 and SR 1403. |
| H-9 | 147/9.6 | Intersection of SR 1412 and SR 1427 at the Baptist Grove Church. |
| J-1 | 172/2.7 | West end of SR 1130 near Barricade (Wake County line) approximately 0.1 mile from end of the road. |
| J-2 | 175/6.0 | Intersection of NC 42 and SR 1917. |
| J-3 | 170/8.3 | Chalk Level C.M.E. Church approximately 1.6 miles from the intersection of SR 1418 and SR 1403 on SR 1418. Approximately 1.4 miles south of church; SR 1418 changes from pavement to a gravel road. |
| K-1 | 203/3.8 | Prince's Chapel Church on SR 1912 approximately 0.8 mile north from the intersection of NC 42 and SR 1912. |
| K-2 | 194/4.5 | Boat ramp on Harris Lake at the end of SR 1914 which intersects SR 1912. (SR 1914 goes east of SR 1912.) |
| K-3 | 194/4.5 | Intersection of NC 42 and Norfolk Southern Railway and Northwestern Railway. Approximately 0.4 mile north on NC 42 from Buckhorn Creek. |
| K-4 | 207/4.9 | Buckhorn United Methodist Church on NC 42 near the intersection of NC 42 and SR 1918. Northeast of the community of Corinth. |
| K-5 | 210/5.7 | Intersection of NC 42 and SR 1916. |
| K-6 | 199/5.8 | On SR 1921 approximately 1.1 miles from the intersection of NC 42 and SR 1921 southeast of the community of Corinth. |
| K-7 | 212/6.9 | Intersection of NC 42 and Cape Fear River. Wildlife boat and fishing area. |
| K-8 | 198/7.6 | Approximately 0.5 mile northeast of SR 1540 which intersects SR 1538. |
| K-9 | 213/7.8 | Intersection of NC 42 and SR 1500. |

## Potential Emergency Environmental Monitoring Sites

| Code | Coordinates (Deg/miles) | Description |
|---|---|---|
| K-10 | 205/9.1 | Chestnut A.M.E.Z. Church which is southwest of the intersection of SR 1538 and SR 1539. |
| K-11 | 193/9.2 | Intersection of SR 1538 and SR 1541. |
| L-1 | 215/2.8 | Christian Chapel Church on SR 1912 which is approximately 1.7 miles southeast from the intersection of SR 1912 and SR 1924. |
| L-2 | 232/3.3 | On SR 1924 approximately 2.3 miles from the intersection of SR 1924 and SR 1916. |
| L-3 | 229/5.1 | Intersection of SR 1916 and SR 1924. |
| L-4 | 224-225/5.8 | Intersection of SR 1916 and SR 1923 at the Cherokee Brick Company. |
| L-5 | 219/7.8 | Intersection of SR 1500 and SR 1505. |
| L-6 | 236/8.2 | Intersection of SR 1504 and SR 1503. |
| L-7 | 218/8.7 | Intersection of SR 1537 and SR 1505. |
| L-8 | 234/9.3 | Intersection of SR 1002 and Norfolk Southern Railway, south of the community of Rosser. |
| M-1 | 253/5.3 | On SR 1916 near Boise Cascade. Site is near the intersection of Seaboard Coast Railroad and Carolina and Northwestern Railway on SR 1916. SR 1916 goes south of SR 1011. |
| M-2 | 240/5.7 | Cape Fear Power Plant at the end of SR 1925 which intersects SR 1916. Approximately 1.5 miles south of the intersection of SR 1011 and SR 1916. |
| M-3 | 252/7.0 | On SR 1501 approximately 0.4 mile from the intersection of SR 1500 and SR 1501. |
| M-4 | 246/6.8 | On SR 1500 approximately 0.7 mile southeast from SR 1501 and approximately 1.4 miles north from the intersection of SR 1500 and SR 1425. |
| M-5 | 237/7.2 | Intersection of SR 1500 and SR 1425. |
| M-6 | 255/7.7 | North 0.2 mile from the intersections of SR 1002, SR 1500, and SR 1434 near the Federal Paper Bond Company Plant. |

## Potential Emergency Environmental Monitoring Sites

| Code | Coordinates (Deg/miles) | Description |
|---|---|---|
| M-7 | 246/8.0 | Northeast 0.2 mile on SR 1502 from the intersection with SR 1002. SR 1502 is approximately 0.8 mile north of the intersection of SR 1002 and SR 1425. |
| M-8 | 249/9.7 | Intersection of SR 1425 and SR 1423. |
| M-9 | 258/10.0 | Deep River Fire Department at the intersection of SR 1466 and SR 1423. |
| N-1 | 273/1.9 | Near the gate at the end of SR 1911. SR 1911 intersects SR 1912 near SR 1011. |
| N-2 | 261/2.9 | On SR 1912 approximately 0.4 mile north of the intersection of SR 1912 and SR 1924. Transmission line right-of-way to Harris Plant. |
| N-3 | 280/3.4 | Near the intersection of SR 1011 and SR 1912 around the trash bin container area. |
| N-4 | 269/5.5 | Intersection of US 1 and SR 1972. |
| N-5 | 269/7.0 | At the Moncure School on SR 1931 near the intersection of SR 1931 and SR 1970 and approximately 0.3 mile from the intersection of SR 1931 and US 1. |
| N-6 | 272/7.7 | Intersection of SR 1970 and SR 1971. |
| N-7 | 266/7.8 | Intersection of US 1 and SR 1012. |
| N-8 | 269/8.0 | Near the Haywood Moncure Community Center on SR 1012 approximately 0.7 mile northwest from the intersection of US 1 and SR 1012. |
| N-9 | 279/9.2 | At the Gum Springs Church on SR 1943 approximately 0.5 mile from the intersection of SR 1943 and SR 1012. |
| N-10 | 262/9.4 | On SR 1466 approximately 1.0 mile northeast of the intersection of SR 1466 and SR 1423 and approximately 0.55 mile from the intersection of SR 1466 and SR 1469. |
| P-1 | 287/2.2 | Approximately 0.6 to 0.7 mile from the intersection of SR 1912 and SR 1911 on SR 1911. |
| P-2 | 296/2.3 | Approximately 0.8 mile northeast of the intersection of US 1 and SR 1011. |
| P-3 | 291/4.5 | On SR 1909 approximately 0.2 mile from the intersection of SR 1910 and SR 1909. |
| P-4 | 293/5.1 | New Elam Christian Church located at the intersection of SR 1972 and SR 1910 near Holts Grocery Center. |

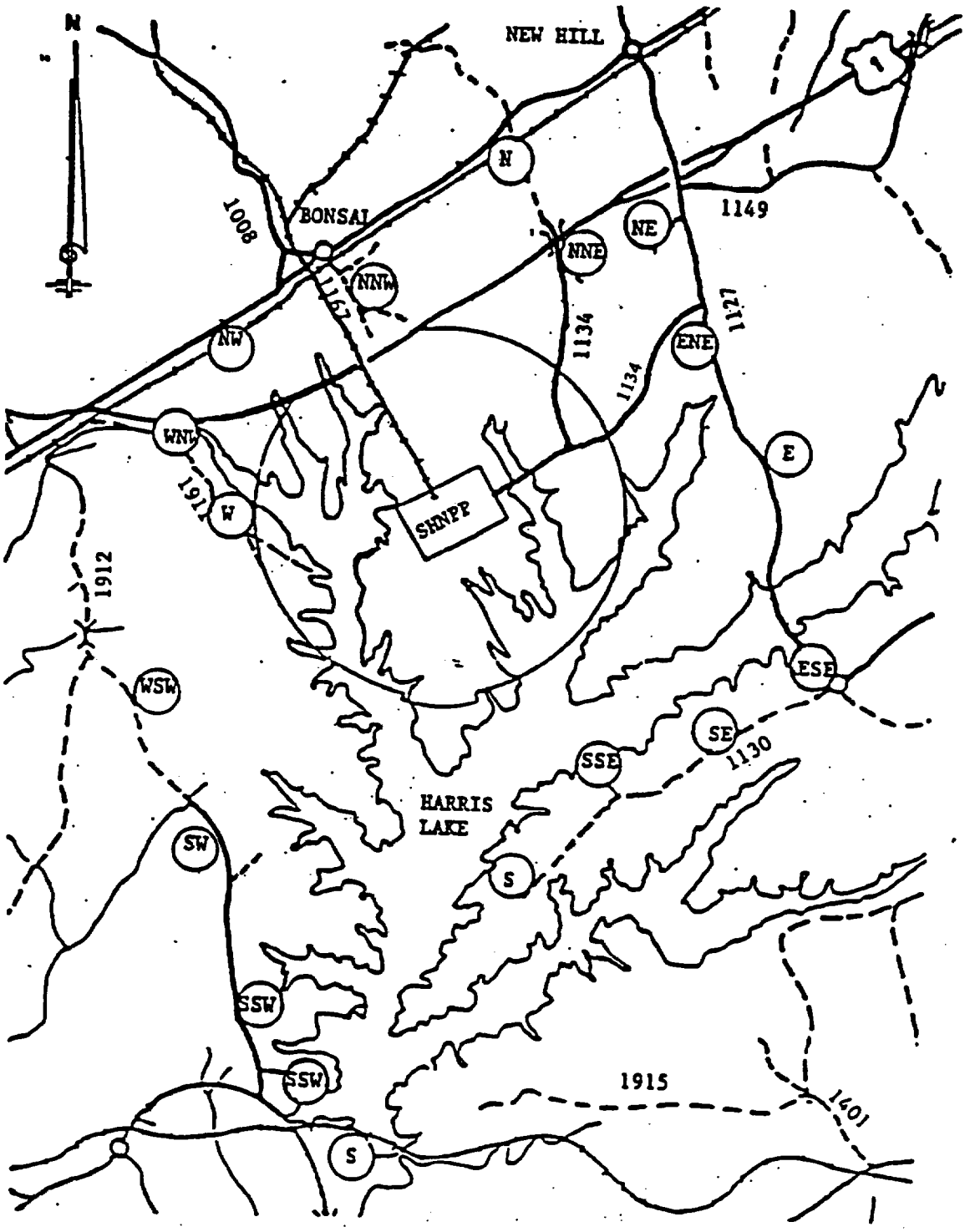
## Potential Emergency Environmental Monitoring Sites

| Code | Coordinates (Deg/miles) | Description |
|---|---|---|
| P-5 | 301/5.7 | At the end of SR 1974 which runs into Lake Jordan. SR 1974 intersects SR 1972. |
| P-6 | 283/6.4 | By the Lake Jordan Dam which is at the end of SR 1970. |
| P-7 | 288/8.0 | Intersection of SR 1943 and SR 1977. |
| P-8 | 298/9.0 | Intersection of SR 1943 and SR 1939. |
| Q-1 | 324/1.8 | Southeast from community of Bonsal on SR 1167. After crossing over Seaboard Coast Line Railroad, turn southwest (right) into private road leading to a farmhouse (Fish residence) and proceed approximately 0.5 mile west to sharp bend in road. |
| Q-2 | 320/4.5 | On SR 1008 approximately 0.6 mile northwest from the intersection of SR 1008 and SR 1976. Approximately 1.2 miles southeast from the Jordan Lake Bridge on SR 1008. |
| Q-3 | 314/5.7 | Intersections of SR 1972, SR 1906, and SR 1907. |
| Q-4 | 324/5.9 | Ebenezer Church recreation area (state park on Lake Jordan) off SR 1008 approximately 0.4 mile northeast from the bridge on SR 1008 over Lake Jordan. |
| Q-5 | 312/7.4 | At the boat ramp and fishing dock at the end of SR 1700 on Lake Jordan. |
| Q-6 | 313/8.4 | Intersection of SR 1700 and SR 1941. |
| Q-7 | 326/8.8 | On US 64 west of bridge on Lake Jordan approximately 2.7 miles west of the intersections of US 64 and SR 1700 and approximately 1.9 miles east from intersection of US 64 and SR 1700. Sampling area is around boat ramp access road. |
| Q-8 | 314/10.0 | Intersection of US 64 and SR 1700 (Griffins Crossroads). |
| R-1 | 335/1.9 | Southeast community of Bonsal near the intersection of SR 1167 and SR 1136. |
| R-2 | 329/2.1 | Intersection of SR 1008 and SR 1963 in the railroad yard. |
| R-3 | 338/4.2 | At the end of SR 1903 where the road runs into Lake Jordan. |
| R-4 | 336/6.5 | Intersection of SR 1008 and SR 1975. |

## Potential Emergency Environmental Monitoring Sites

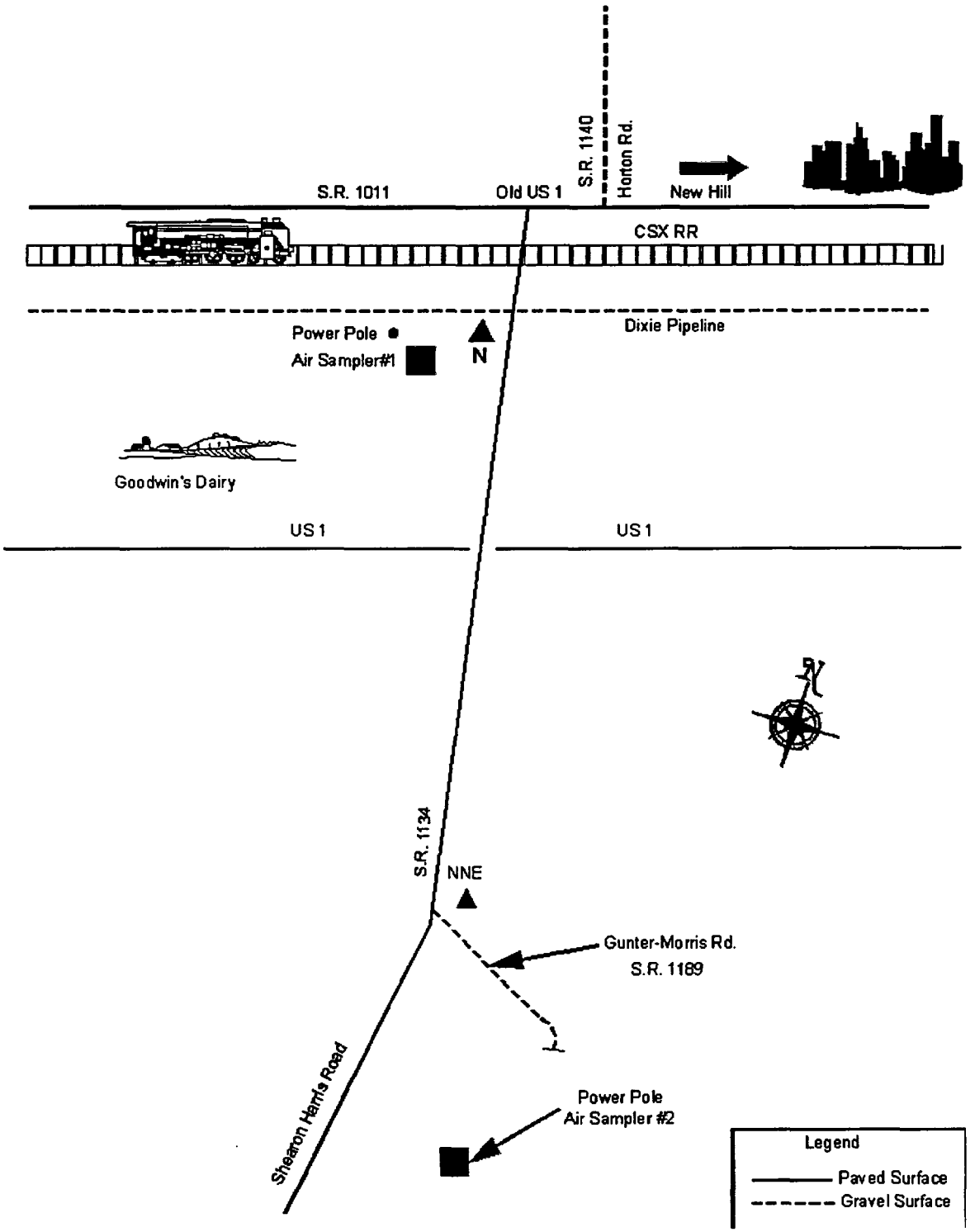
| Code | Coordinates (Deg/miles) | Description |
|---|---|---|
| R-5 | 340/6.2 | On SR 1900 approximately 0.7 mile east from the intersection of SR 1008 and SR 1900 (SR 1975 on maps). Approximately 0.3 mile east from the bridge over Lake Jordan fingers on SR 1900. |
| R-6 | 341/7.5 | Intersection of US 64 and SR 1008, Wilsonville. |
| R-7 | 349/7.2 | Intersection of US 64 and SR 1745. |
| R-8 | 342/8.7 | North of the bridge over Lake Jordan on SR 1008 at Bells Church approximately 1.5 miles north from the intersection of US 64 and SR 1008. |
| R-9 | 344/9.5 | Intersection of SR 1008 and SR 1747. |
| R-10 | 346/9.9 | Intersection of SR 1003 and SR 1750. |

## Emergency Environmental Monitoring Location Map



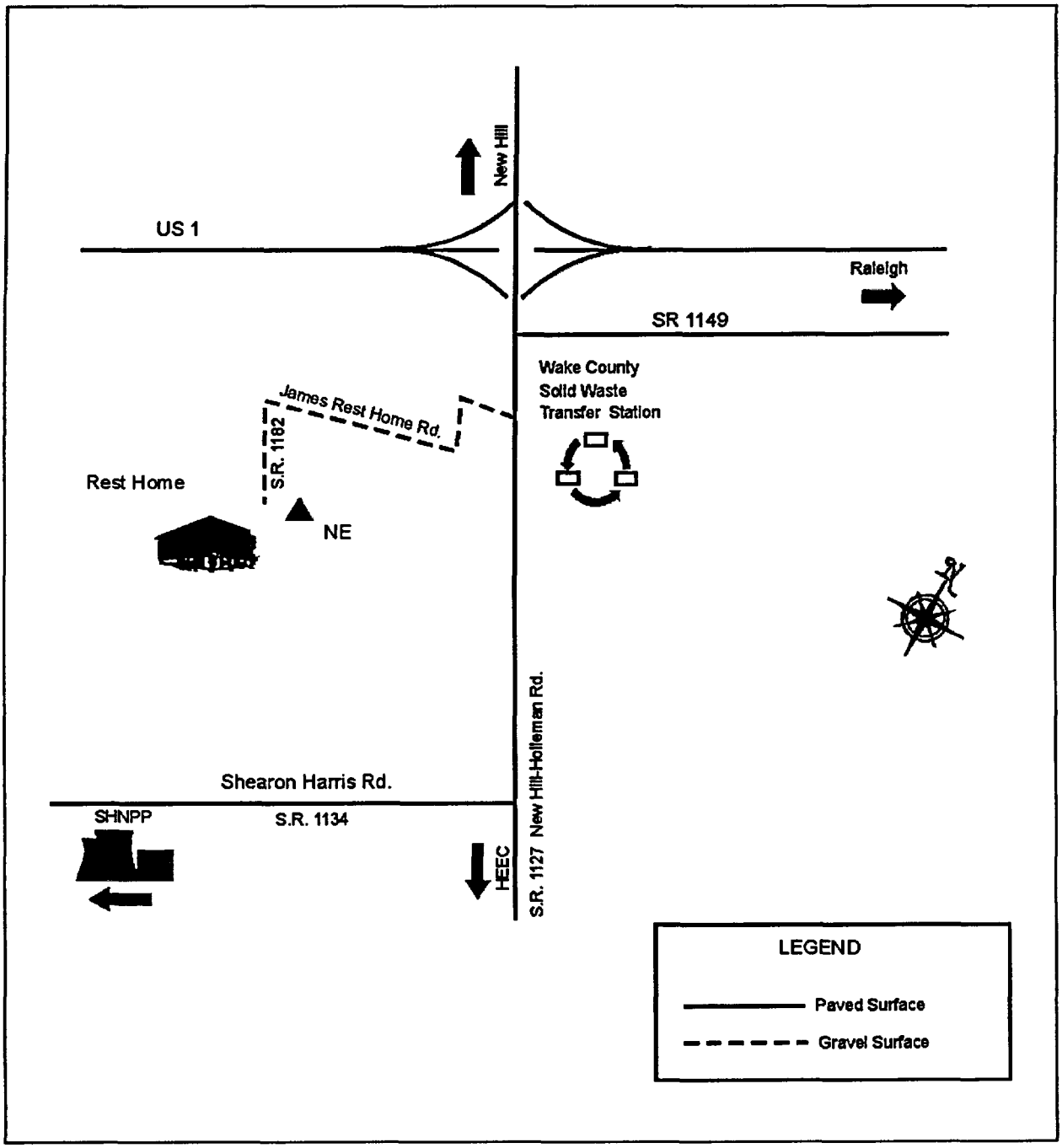
## Emergency Environmental Monitoring Location Map

## Detailed Locations: North And North Northeast



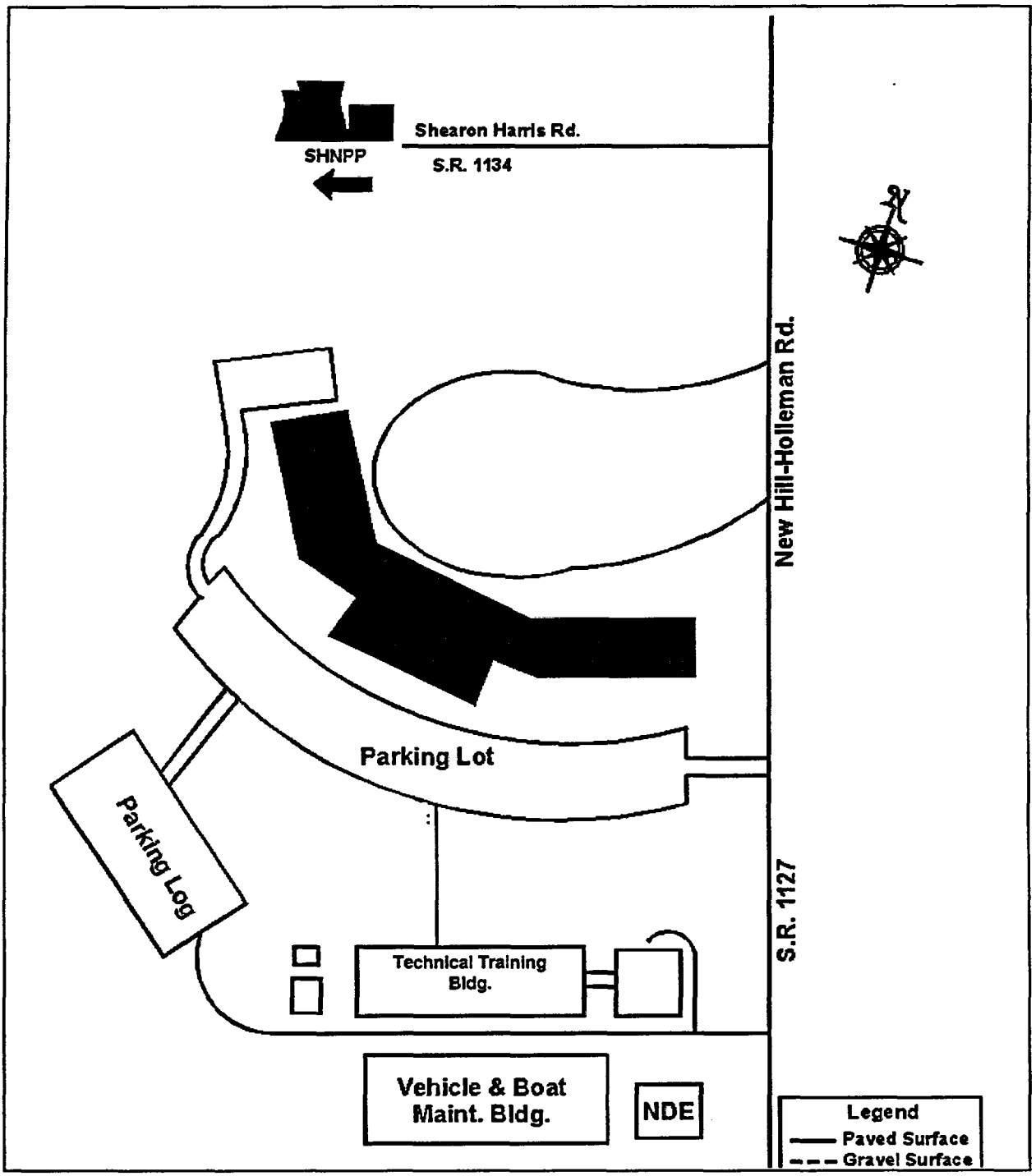
## Emergency Environmental Monitoring Location Map

### Detailed Location: Northeast



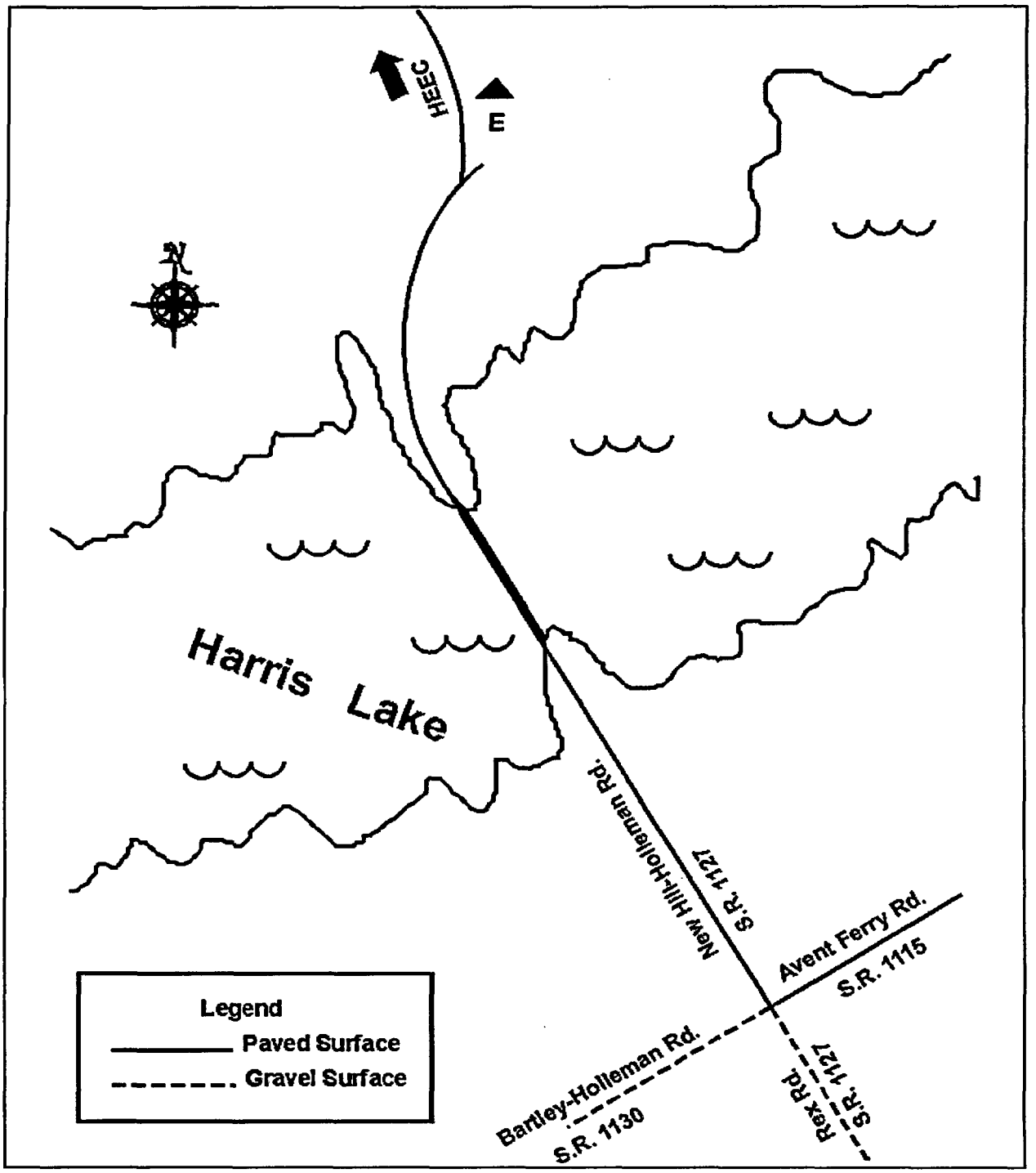
## Emergency Environmental Monitoring Location Map

### Detailed Location: East Northeast

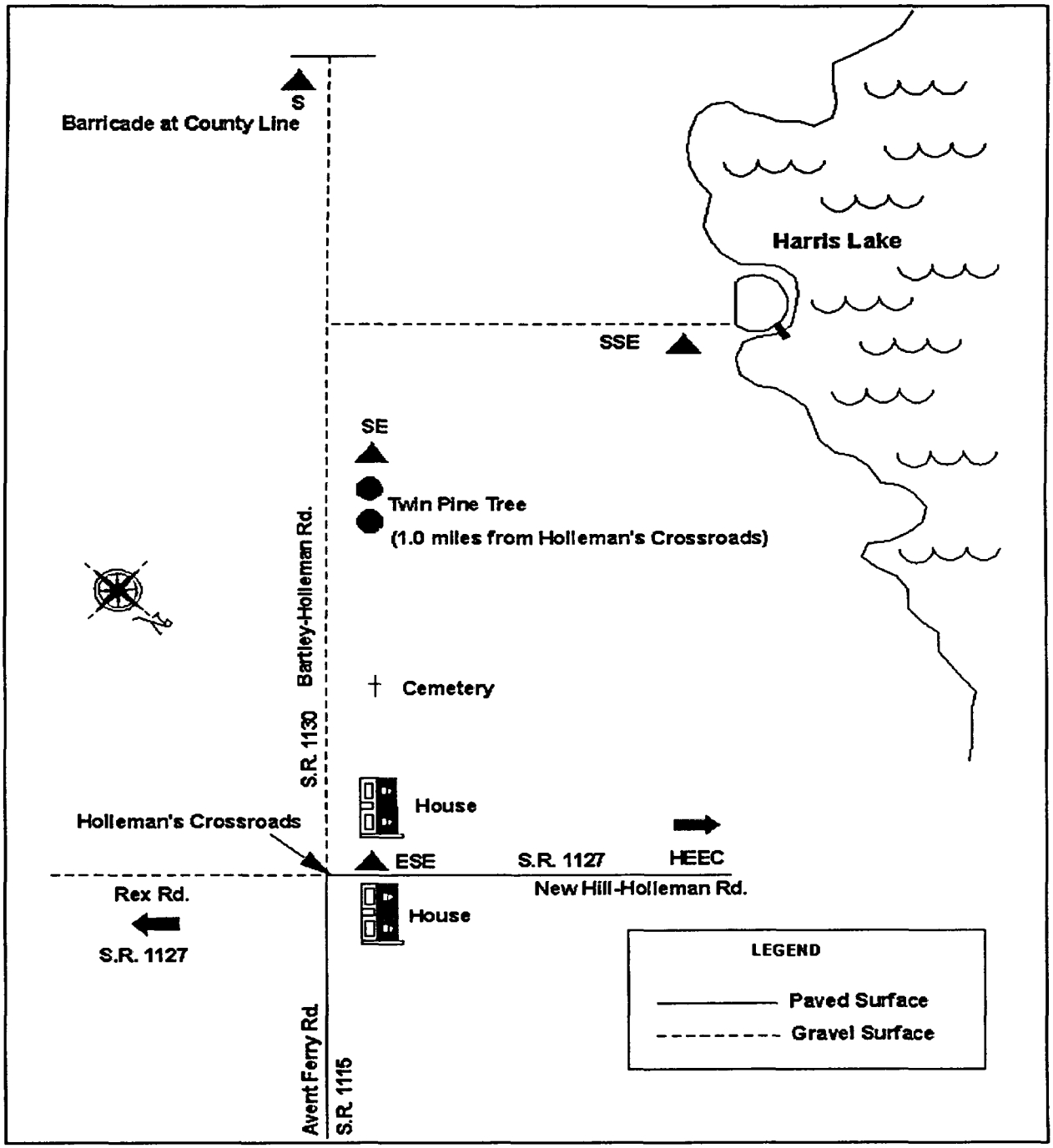


**Emergency Environmental Monitoring Location Map**

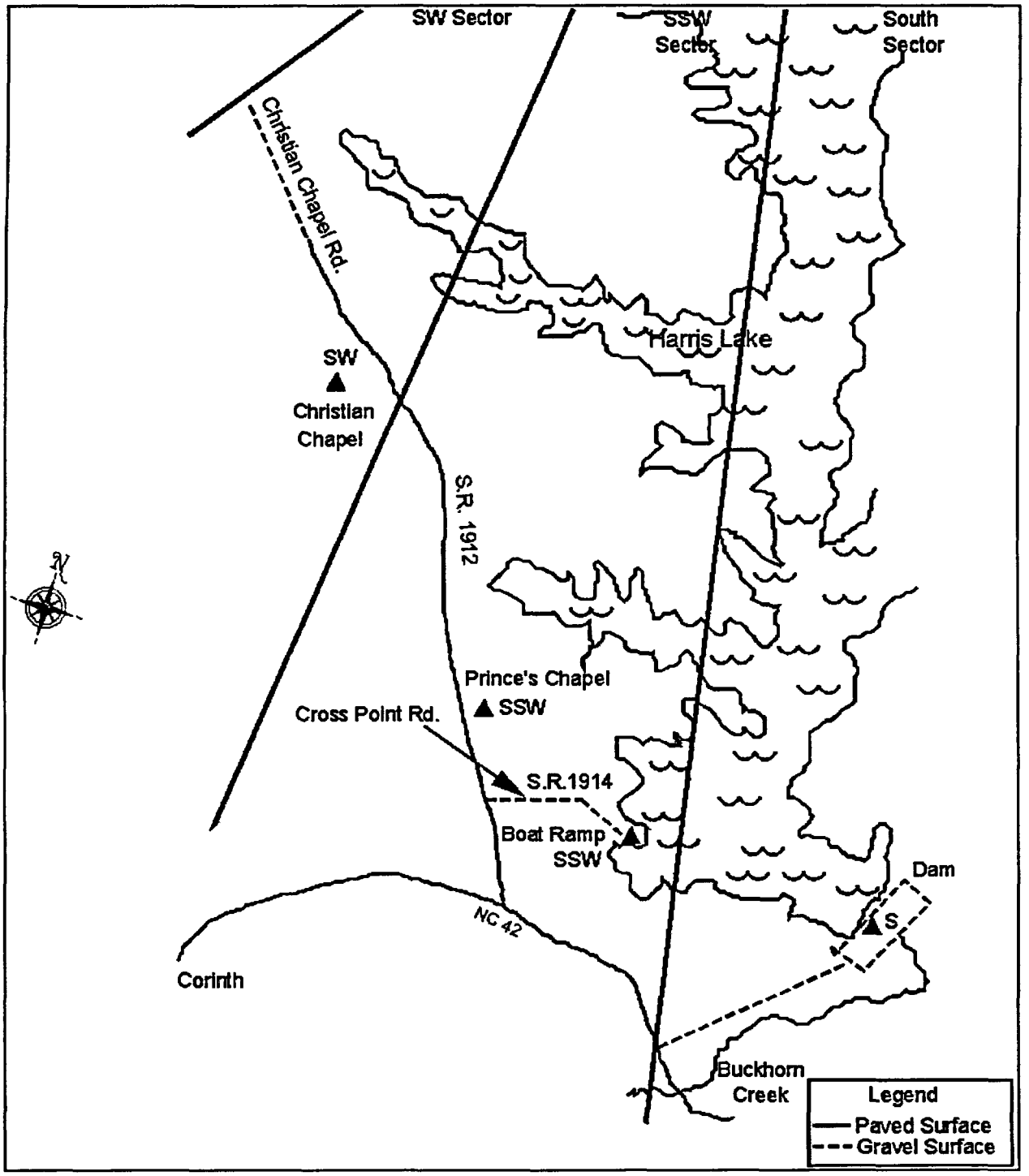
**Detailed Location: East**



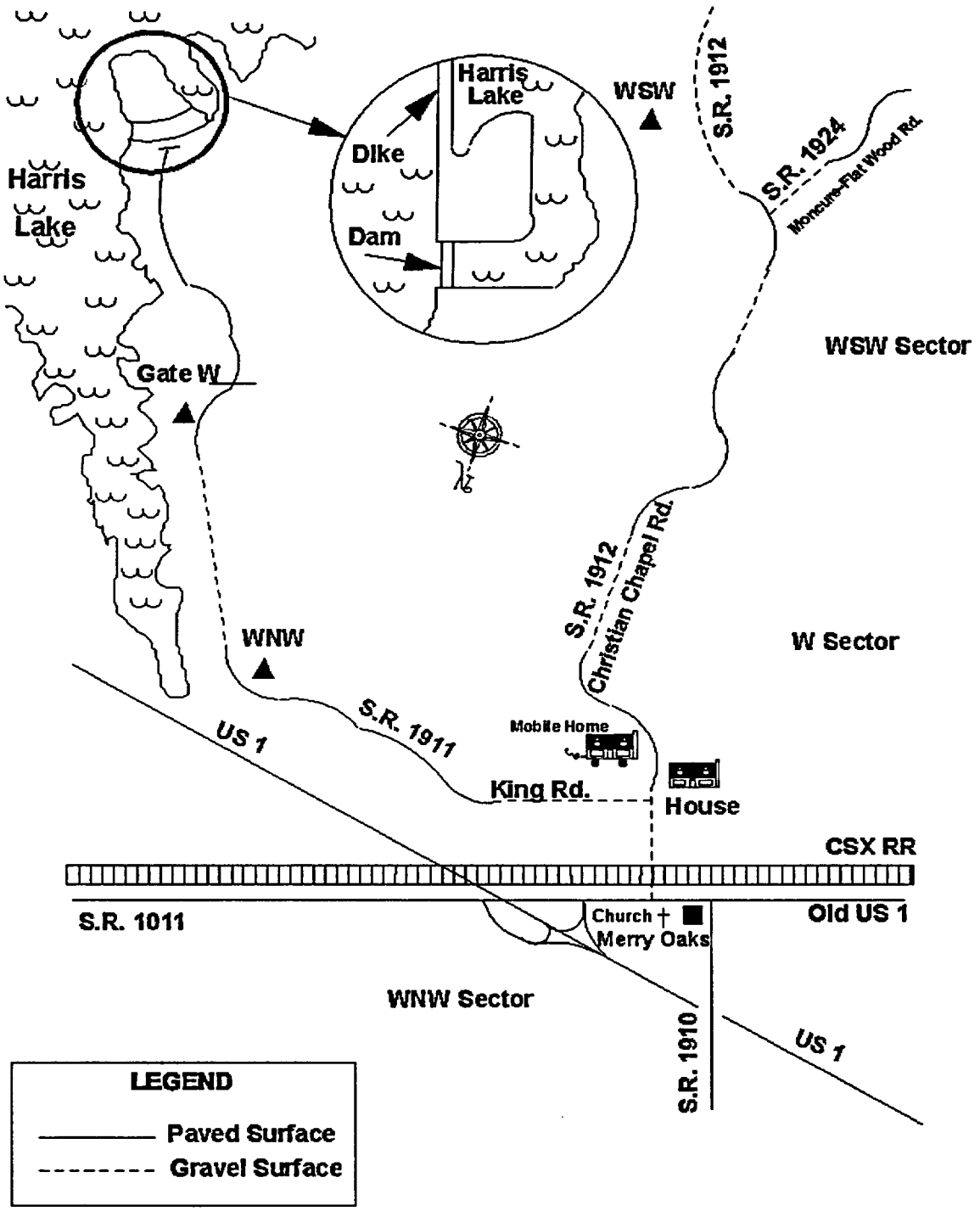
## Emergency Environmental Monitoring Location Map
## Detailed Locations: East Southeast, Southeast, South Southeast, And South



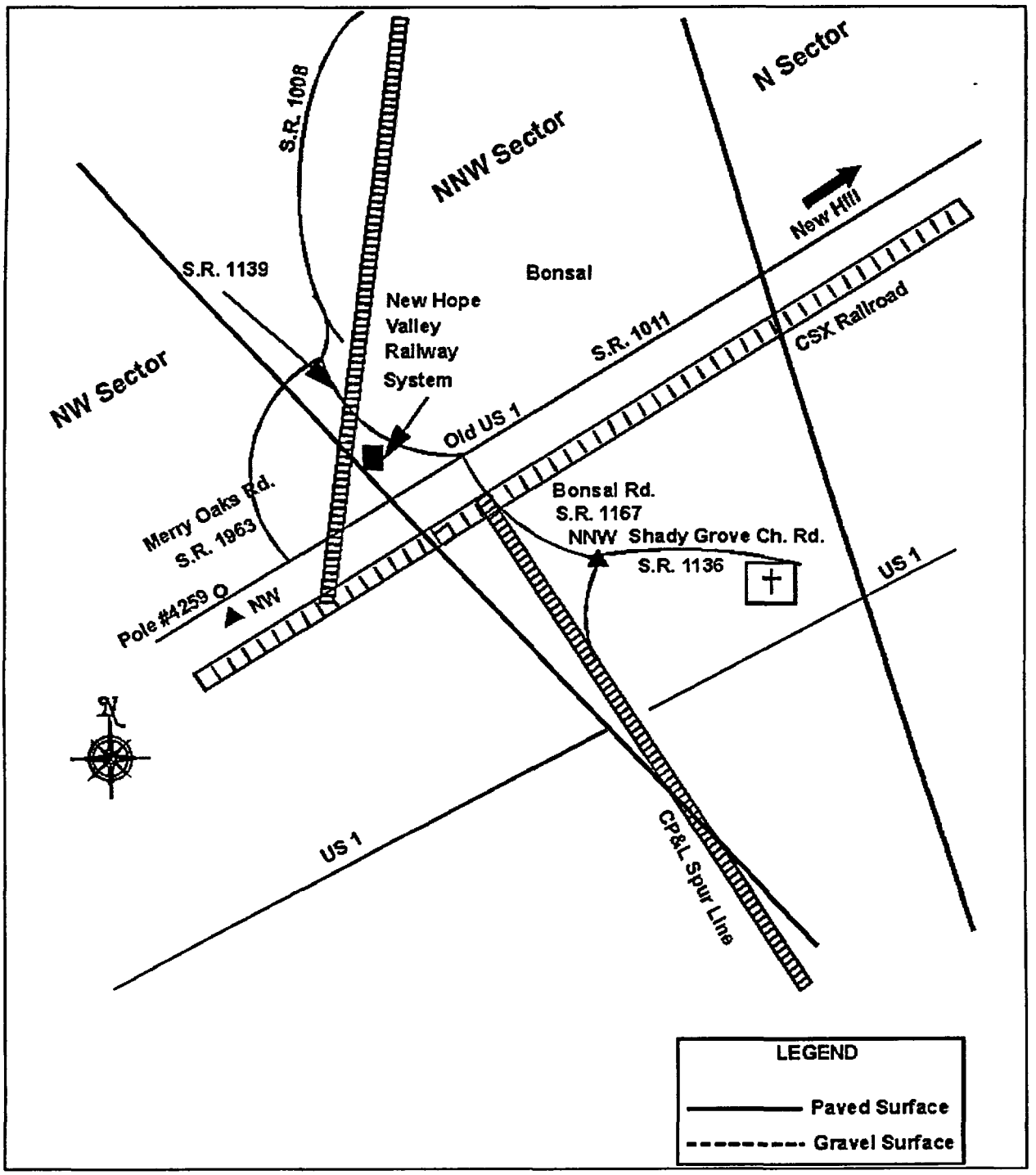
**Emergency Environmental Monitoring Location Map**
**Detailed Locations: South, South Southwest, And Southwest**



**Emergency Environmental Monitoring Location Map**
**Detailed Locations: West Southwest, West, And West Northwest**



**Emergency Environmental Monitoring Location Map**
**Detailed Locations: Northwest And North Northwest**



# Directions To Locations For Initial Near-Site Emergency Environmental Monitoring

| DOWNWIND | LOCATION DESCRIPTION | DESIGNATOR DEGREE/MILES |
|---|---|---|
| N | Near intersection of SR 1134 and SCL R.R. at Dixie Pipeline R/W | 007/02.6 |
| NNE | Approximately 0.15 miles south of US 1 on SR 1134 and intersections of unpaved dead end road | 002/01.9 |
| NE | Turn west at New Hill Service Center on 1135 - proceed to end of road near rest home | 036/02.3 |
| ENE | Parking lot at vehicle maintenance/boat shed at HEEC. | 060/02.0 |
| E | Proceed approximately 1 mile south of HEEC on SR 1127 - There is an open knoll on east side of road | 081/02.2 |
| ESE | Holleman's Crossroads | 117/02.9 |
| SE | Approximately 1.0 mile southwest of Holleman's Crossroads on SR 1130 | 130/02.4 |
| SSE | Boat landing parking lot on SR 1130 | 155/02.0 |
| S | Near barricade (Wake Co. line) on SR 1130 | 173/02.7 |
| S | Near Harris Lake Dam Maintenance lot | 190/04.7 |
| SSW | Near CP&L boat landing - east of SR 1912 | 194/04.3 |
| SSW | Near Prince Chapel on SR 1912 | 202/03.7 |
| SW | Near Christian Church on SR 1912 | 220/02.8 |
| WSW | Near intersection of SR 1912 and SR 1924 | 251/02.8 |
| W | Near gate at end of SR 1911 | 265/01.4 |
| WNW | Proceed approx. 0.8 mile on SR 1911 from SR 1912 at Merry Oaks | 289/02.2 |
| NW | From Bonsal proceed SW on "Old US 1" (SR 1011) 1 mile from railroad overpass. A pull off area is on the railroad side of the road opposite power pole #4259. | 318/02.2 |
| NNW | Near Bonsal, near intersection of SR 1167 and SCL RR | 332/02.1 |

# Emergency Radiation Work Permit

Page _____ of _____

ERWP # _____
Date _____ Time _____ Requested by _____
Task to be performed _____

_____
Location: _____
Estimated Area Dose Rate: _____ Contamination: _____
Estimated Airborne Activity: Particulate: _____uCi/cc
Iodine: _____uCi/cc Gas: _____uCi/cc
Access Route: _____

| Dosimetry | Chest | Head | Thighs | Upper Ext | Lower Ext | Other |
|---|---|---|---|---|---|---|
| 0-500 mR and TLD | | | | | | |
| 0-5 R and TLD | | | | | | |
| ED and TLD | | | | | | |
| Other | | | | | | |

| Protective Clothing | | Comments |
|---|---|---|
| None | | |
| Lab Coat | | |
| Full PCS | | |
| Wet Suit | | |
| Other | | |

| Respirators | |
|---|---|
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| Personnel Performing Task | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Init. * | Name | Badge No. | Exposure YEAR | Exposure LIFE | Allowed Exposure** | Dose Entry | Time Entry | Dose Exit | Time Exit |
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Comments: _____

Radiological Control Coordinator _____

Site Emergency Coordinator** _____

* Initialing beside your name signifies that you have read, understood and will comply with this ERWP.
** SEC may approve entries into radiation fields greater than 25 rem/hr or radiation exposures greater than 5 rem TEDE per telecom.

Form PEP-330-10-0

## Emergency Radiation Work Permit Continuation Sheet

Page ____ of ____

ERWP # _____ Date _____

| Personnel Performing Task | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Init.* | Name | Badge No. | Exposure Year | Exposure Life | Allowed Exposure | Dose Entry | Time Entry | Dose Exit | Time Exit |
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* Initialing beside your name signifies that you have read, understood and will comply with this ERWP.

Form PEP-330-11-0

## Emergency Dosimetry Issue Form

Location: _____

| Name | Badge Number | Date/Time Issued | TLD/SRPD Number | SRPD Dose Out | Date/Time Returned | SRPD Dose In |
|---|---|---|---|---|---|---|
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Form PEP-330-12-0

# The FDA's Approved KI Package Insert

## THYRO-BLOCK® TABLETS

(POTASSIUM IODIDE TABLETS, USP)
(pronounced poe-TASS-e-um EYE-oh-dyed)
(abbreviated: KI)

TAKE POTASSIUM IODIDE ONLY WHEN PUBLIC HEALTH OFFICIALS TELL YOU. IN A RADIATION EMERGENCY, RADIOACTIVE IODINE COULD BE RELEASED INTO THE AIR. POTASSIUM IODIDE (A FORM OF IODINE) CAN HELP PROTECT YOU.

IF YOU ARE TOLD TO TAKE THIS MEDICINE. TAKE IT ONE TIME EVERY 24 HOURS. DO NOT TAKE IT MORE OFTEN. MORE WILL NOT HELP YOU AND MAY INCREASE THE RISK OF SIDE EFFECTS. *DO NOT TAKE THIS DRUG IF YOU KNOW YOU ARE ALLERGIC TO IODIDE.* (SEE SIDE EFFECTS BELOW.)

### INDICATIONS

THYROID BLOCKING IN A RADIATION EMERGENCY ONLY.

### DIRECTIONS FOR USE

Use only as directed by State of local public health authorities in the event of a radiation emergency.

### DOSE

Tablets: ADULTS AND CHILDREN 1 YEAR OF AGE OR OLDER: One (1) tablet once a day. Crush for small children.

BABIES UNDER 1 YEAR OF AGE: One-half (1/2) tablet once a day. Crush first.

Take for 10 days unless directed otherwise by State or local public health authorities.

Store at controlled room temperature 20°-25°C (68°-77°F). Keep container tightly closed and protect from light.

### WARNING

*Potassium iodide should not be used by people allergic to iodide.* Keep out of the reach of children. In case of overdose or allergic reaction, contact a physician or the public health authority.

### DESCRIPTION

Each white, round, scored, monogrammed THYRO-BLOCK® TABLET contains 130 mg of potassium iodide. Other ingredients: magnesium stearate, microcrystalline cellulose, silica gel, sodium thiosulfate.

### HOW POTASSIUM IODIDE WORKS

Certain forms of iodine help your thyroid gland work right. Most people get the iodine they need from foods, like iodized salt or fish. The thyroid can "store" or hold only a certain amount of iodine.

In a radiation emergency, radioactive iodine may be released in the air. This material may be breathed or swallowed. It may enter the thyroid gland and damage it. The damage would probably not show itself for years. Children are most likely to have thyroid damage.

If you take potassium iodide, it will fill up your thyroid gland. This reduces the chance that harmful radioactive iodine will enter the thyroid gland.

### WHO SHOULD NOT TAKE POTASSIUM IODIDE

The only people who should not take potassium iodide are people who know they are allergic to iodide. You may take potassium iodide even if you are taking medicines for a thyroid problem (for example, a thyroid hormone or anti-thyroid drug). Pregnant and nursing women and babies and children may also take this drug.

### HOW AND WHEN TO TAKE POTASSIUM IODIDE

Potassium iodide should be taken as soon as possible after public health officials tell you. You should take one dose every 24 hours. More will not help you because the thyroid can "hold" only limited amounts of iodine. Larger doses will increase the risk of side effects. You will probably be told not to take the drug for more than 10 days.

### SIDE EFFECTS

Usually, side effects of potassium iodide happen when people take higher doses for a long time. You should be careful not to take more than the recommended dose or take it for longer than you are told. Side effects are unlikely because of the low dose and the short time you will be taking the drug.

Possible side effects include skin rashes, swelling of the salivary glands, and "iodism" (metallic taste, burning mouth and throat, sore teeth and gums, symptoms of a head cold, and sometimes stomach upset and diarrhea).

A few people have an allergic reaction with more serious symptoms. These could be fever and joint pains, or swelling of parts of the face and body and at times severe shortness of breath requiring immediate medical attention.

Taking iodide may rarely cause overactivity of the thyroid gland, underactivity of the thyroid gland, or enlargement of the thyroid gland (goiter).

### WHAT TO DO IF SIDE EFFECTS OCCUR

If the side effects are severe or if you have an allergic reaction, stop taking potassium iodide. Then, if possible, call a doctor or public health authority for instructions.

### HOW SUPPLIED

THYRO-BLOCK® TABLETS (Potassium Iodide Tablets, UPS) are white, round tablets, one side scored, the other side debossed 472 WALLACE, each containing 130 mg potassium iodide. Available in bottles of 14 tablets (NDC C0037-0472-20).

WALLACE
PHARMACEUTICALS
medPointe Healthcare Inc.
Somerset, New Jersey 08873

IN-0472-05 Rev. 2/02

Emergency Environmental Monitoring
TLD Placement Form

| TLD Number | Location | Date/Time Placed | Placed by | Date/Time Removed | Removed by | Comments |
|---|---|---|---|---|---|---|
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Form PEP-330-14-0

## Thyroid Dose Worksheet

**Determine the isotopic concentrations and calculate the dose contribution from each isotope and sum the values.**

| Isotope | Conc uCi/cc | | DCF rem/hr µCi/cc | | Dose Rate mrem/hr | | Time in Area hours | | Dose mrem |
|---|---|---|---|---|---|---|---|---|---|
| I-131 | | x | 1.3E+09 | = | | x | | = | |
| I-132 | | x | 7.7E+06 | = | | x | | = | |
| I-133 | | x | 2.2E+08 | = | | x | | = | |
| I-134 | | x | 1.3E+06 | = | | x | | = | |
| I-135 | | x | 3.8E+07 | = | | x | | = | |
| Te-132 | | x | 2.9E+08 | = | | x | | = | |
| | | | | | | | | **Total CDE Thyroid Dose** | |

# Environmental Monitoring Team Startup Checklist

Assembly and Dispatch of environmental Monitoring Teams (Enmon Team) from the Boat Shed Storeroom

| Step # | Description | Remarks | Initials |
|---|---|---|---|
| Vehicle Preparation | | | |
| 1 | Locate one of the vehicles assigned to the Enmon Teams at the HEEC parking lot, if available. | Personal vehicles and other CP&L vehicles are permitted to be used in the absence of the dedictaed field monitoring vehicles. | |
| 2 | Obtain keys to the vehicle from the key cabinet located within the Boat Shed Storeroom. | Use the 'Primary Use' vehicle keys prior to using the 'Emergency Use' keys | |
| 3 | Bring the vehicle to the entrance of the Boat Shed Storeroom for loading. | | |
| Radio Preparation | | | |
| 4 | Remove the radio and install the battery | Radio located in the 'suitcase' style kit. The battery is located on the shelf in the charger. | |
| 5 | Turn the radio on and set the channel to '5' or as directed. | | |
| 6 | Attempt to contact 'Control' as soon as possible. | The Environmental Field Coordinator (Control) may not be available in the beginning of the emergency due to response time. | |
| Instrumentation Preparation | | | |
| 7 | Obtain the following meters or equivalent:<br>• L19 microR<br>• RO2A<br>• L177 'Frisker' | | |
| 8 | Perform the following checks on the instruments:<br>• Calibration dates<br>• Battery checks<br>• Visual checks<br>• Response/operability checks (using available source) | Source is located in the Storeroom tied up with cable or equivalent | |
| 9 | Document results on Form PEP-330-3 as appropriate. | | |

## Environmental Monitoring Team Startup Checklist

| Step # | Description | Remarks | Initials |
|---|---|---|---|
| Dosimetry Preparations<br>Note: If you already have your site thermoluminescent detector (TLD) with you, do not take another one form the storage shield. | | | |
| 10 | Obtain a TLD from the storage shield, install in the TLD holder, and place on the upper front of the body. | TLD located on the floor below the key box. The holder is located in the toll box. | |
| 11 | Obtain a self-reading pocket dosimeter (SRPD) and re-zero, if applicable. Ensure you take both ranges of dosimetry. Wear the SRPD near the TLD. | Ranges include 0-500 mrem and 0-20 rem. | |
| 12 | Obtain extra TLDs and place in the emergency kit. | These can be used for environmental TLDs posted in the field. | |
| Gas Generator Preparations/Air Sampler Checks | | | |
| 13 | Remove generator from the Boat Shed Storeroom and place outside in an open area. | | |
| 14 | Check oil level. | Extra oil can be found in the hazardous material storage locker outside the Storeroom. The key for the locker can be found on the key ring. | |
| 15 | Check gasoline level. | Gas can be found in the hazardous material storage locker outside the Storeroom. The key for the locker can be found on the key ring. **For additional gas, the vehicle key ring has the universal gas pump[ key to allow fuel of vehicle/generator anytime.** | |
| 16 | Start the generator outside per instructions. | | |
| 17 | Plug in the air sampler to the generator and let run for ~ 1 minute under load. | | |
| 18 | Turn off the generator and let cool for ~ 5 minutes if loading the generator inside the vehicle. | | |

## Environmental Monitoring Team Startup Checklist

| Step # | Description | Remarks | Initials |
|---|---|---|---|
| Loading the Emergency Vehicle/Final Preparations for Departure | | | |
| 19 | Load the following equipment inside the emergency vehicle:<br>• 'Suitcase' emergency kit and contents<br>• Large 'equipment' emergency kit and contents<br>• All meters and air sampler<br>• Polar coordinates map<br>• Sample container<br>• Gas can<br>• FFNP respirators (2)<br>• Emergency Dosimetry Issue Forms (PEP-330-12)<br>• Water bucket<br>• Sampling markers with PVC container<br>• Gas generator, if loaded inside vehicle<br>• Radios with batteries<br>• Dosimetry, both TLDs and two ranges of SRPDs<br>• PEP-330 procedure<br>• KI tablets (1 bottle per person)<br>Load the following equipment outside the emergency vehicle:<br>• Vehicle platform, if desired (key for the hitch key can be found in the lock and the key cabinet)<br>• Gas generator, if loaded on platform | KI tablets located in the climate control cooler/warmer | |
| Briefing | | | |
| 20 | Arrive at the EOF and sign-in on the board. | | |
| 21 | Receive briefing prior to departure. | Briefing can be performed by the DPTL, EFC or the RCM | |
| 22 | Verify communications with Control prior to departure. | | |

PEP-330-16-0

## Environmental Monitoring Team Startup Checklist

| Step # | Description | Remarks | Initials |
|---|---|---|---|
| Departure | | | |
| 23 | Proceed to locations as directed, use the polar coordinate maps and attachments 7,8, and 9 to assist with field deployment. Attachment 7 may be useful if working with State Agenices. | | |

Items to be Resolved

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## KI Issuance Form

| Name | Badge Number | Date/Time Issued | KI Lot # | KI Expiration Date (if applicable) | Are you allergic to iodine? Example - shellfish |
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## Revision Summary for PEP-330, Rev.6

This revision includes changes as per the following PRR's: 81095, 83761, 74113, 79958, 84493 and 66192. In addition corrective actions resulting from AR#82169 and AR#81077 are completed in this revision.

| Section | Revision |
|---|---|
| Section 3.a | Added a reference to Attachment 17 for KI administration. (PRR81095) |
| Attachment 17 | Changed social security number to badge number. (PRR81095) |
| Attachment 12 | Changed social security number to badge number. (PRR83761) |
| Section 3.3.2 | Added statement "RC technicians will record initial dosimeter readings on Attachment 12." (PRR83761 and AR82169) |
| Section 3.3.3 | Changed social security number to badge number. (PRR83761 and AR82169) |
| Section 3.2.7 | Deleted RIM's sign out process and replaced with Passport sign out process. (PRR 66192 PRR 84493) |
| Attachment 7 Sheet 2 of 8 | Code C-11, deleted Ramada Inn and replaced with Days Inn. (PRR 66192) |
| Section 3.5.3 | Added clarification to provide KI approval/issue instructions. (AR 81077) |
| Section 3.7 | Added section 3.7 "On-Shift RC Technician duties" (PRR74113&79958) |
| Attachment 13 | Updated storage temperature range for KI and company logo per new packaging labels. (PRR83761) |
| Attachment 5 | Shaded the 20 CFM column as suggested per student feedback |
| Entire procedure | Revision includes conversion from word 95 to word 2000. Organizational changes and typographical errors were corrected, as appropriate. Updated layout and formatting to conform to AP-005 standards. |