

DUKE POWER COMPANY  
CATAWBA NUCLEAR STATION  
IN-PLANT PARTICULATE AND IODINE  
MONITORING UNDER ACCIDENT CONDITIONS

1.0 PURPOSE

To provide a method of particulate and iodine assay in the plant under accident/emergency conditions when normal analysis equipment is not available.

2.0 REFERENCES

- 2.1 HP/O/B/1000/02 - Taking, Counting, and Recording Surveys
- 2.2 HP/O/B/1003/02 - Operating and Calibration Procedure: Low Volume, Portable Air Samplers
- 2.3 HP/O/B/1009/16 - Distribution of Potassium Iodide Tablets in the Event of a Radioiodine Release
- 2.4 Catawba Nuclear Station Emergency Plan - Section I.2
- 2.5 NUREG-0694: TMI - Related Requirements for New Operating Licenses

3.0 LIMITS AND PRECAUTIONS

- 3.1 This procedure is written for use only under abnormal accident/emergency conditions when normal methods of quantifying iodine are not available.
- 3.2 Purging of silver zeolite cartridges should be done under a filtered hood whenever practical. In all cases it should be done in an uncontaminated area.
- 3.3 The activity calculations performed in this procedure are no longer valid once more reliable counting methods, (e.g. MCA, etc.), become available.
- 3.4 If exposure is expected from I-131 in excess of 10 MPC ( $9 \times 10^{-3}$   $\mu\text{Ci/ml}$ ), and directed by the S&C Coordinator, technicians should ingest one tablet of Potassium Iodide as per Reference 2.3.
- 3.5 Respiratory protective equipment should be used where possible to limit uptakes.

#### 4.0 PROCEDURE

##### 4.1 Sample Collection and Preparation

- 4.1.1 Using filter paper and a silver zeolite cartridge, collect a representative sample per references 2.1 and 2.2.
- 4.1.2 Remove and separate the filter and the cartridge. Place each in an individual sample bag and label accordingly.
- 4.1.3 In order to remove unwanted (i.e.; Xenon, etc.) gases from the cartridge, purge as follows:
  - 4.1.3.1 Remove the cartridge from the sample bag and place it in a sample holder with a clean filter.
  - 4.1.3.2 Orient the sample holder such that flow will be in the same direction as during collection.  
  
NOTE: Care should be taken since a high purge flow rate could cause a release of Radioactive Iodine from the cartridge.
  - 4.1.3.3 Crack open the purge valve until a low purge rate is noticed. Purge for about one third the time of sample duration at low purge flow.
  - 4.1.3.4 Remove the cartridge and place in a clean sample bag. Mark the bag with original sample information, and note the purge date and time.
- 4.1.4 Transport samples to an adequate sample counting location, and complete the top portion of the Emergency Particulate/Iodine Assay Form (Enclosure 5.1).

##### 4.2 Iodine Activity Determination

- 4.2.1 With the cartridge still in the bag determine the dose rate at 1/2 inch from the inlet face of the cartridge.
  - 4.2.1.1 For samples reading  $\geq .1$  mrem/hr above background on a low range survey instrument, record the dose rate on Enclosure 5.1.  
  
NOTE: Derivations of formulas used on Enclosure 5.1 are provided on Enclosure 5.2.
  - 4.2.1.2 For samples reading  $< .1$  mrem/hr above background, use an RM-14/HP-260 or equivalent to determine corrected counts per minute (ccpm).

Divide the cpm by 3600 (or other correction factor if available) to determine mrem/hr, and record on Enclosure 5.1.

- 4.2.2 Complete the "Iodine Activity" section of Enclosure 5.1 to determine Iodine Activity.

4.3 Particulate Activity Determination (Gross)

- 4.3.1 Remove the filter paper from bag for counting.
- 4.3.2 If a scaler is available, use it to count the filter paper and record results and other necessary data on Enclosure 5.1.
- 4.3.3 If a scaler is not available, use an RM-14/HP-210 or equivalent and record the average corrected counts per minute. If no efficiency factor is available, use 10.
- 4.3.4 Complete the "Particulate Activity" section of Enclosure 5.1 to determine particulate activity.
- 4.3.5 Return the filter paper to its bag.

4.4 Sample and data handling

- 4.4.1 Attach the samples to a copy of the completed Enclosure 5.1 and hold for possible further analysis.
- 4.4.2 Notify appropriate personnel of results.

5.0 ENCLOSURES

- 5.1 Sample of Emergency Particulate/Iodine Assay
- 5.2 Derivation of Activity Calculation Formulas

EMERGENCY PARTICULATE/IODINE ASSAY

Sample Location \_\_\_\_\_ Date \_\_\_\_\_  
Start Time \_\_\_\_\_ Performed By \_\_\_\_\_  
Stop Time \_\_\_\_\_ Air Sampler Type/No. \_\_\_\_\_ / \_\_\_\_\_  
Sample Duration \_\_\_\_\_ Flow Rate \_\_\_\_\_  
Sample Volume \_\_\_\_\_ ( 1 ft<sup>3</sup> = 2.83E4 cc )

IODINE ACTIVITY

Instrument Type/No. \_\_\_\_\_ / \_\_\_\_\_  
Sample Dose Rate @ 1" = \_\_\_\_\_ mrem/hr  
Iodine Activity = \_\_\_\_\_ (A) x 28.2 = \_\_\_\_\_  $\frac{\mu\text{Ci}}{\text{cc}}$   
\_\_\_\_\_ (B)

Where: A = Sample Dose Rate in mrem/hr  
B = Sample Volume in cc (or ml)

PARTICULATE ACTIVITY

Instrument Type/No. \_\_\_\_\_ / \_\_\_\_\_  
Background \_\_\_\_\_ Efficiency Factor \_\_\_\_\_  
Total Counts \_\_\_\_\_ + Count Time \_\_\_\_\_ = \_\_\_\_\_ cpm  
cpm \_\_\_\_\_ - Background \_\_\_\_\_ = \_\_\_\_\_ ccpm  
Gross Particulate Activity = \_\_\_\_\_ (A) x \_\_\_\_\_ (B) x 4.5E-7 = \_\_\_\_\_  
\_\_\_\_\_ (C)  
\_\_\_\_\_  $\frac{\mu\text{Ci}}{\text{cc}}$

Where: A = ccpm B = Efficiency Factor in dpm/cpm  
C = Sample Volume in cc (or ml)

Remarks: \_\_\_\_\_  
\_\_\_\_\_



DERIVATION OF ACTIVITY CALCULATION FORMULAS

1. Iodine Activity

I-131  $\bar{E}$  = .19 MeV for beta

volume of cartridge,  $v = \pi r^2 h$

$$= \pi (1.13 \text{ in} \times 2.54 \text{ cm/in})^2 \times (1.04 \text{ in} \times 2.54 \text{ cm/in})$$

$$= 67.76 \text{ cm}^3$$

mass of cartridge,  $m = 4 \text{ oz} \times 28.35 \text{ gm/oz} = 113.4 \text{ gm}$

density of cartridge,  $\rho = \frac{m}{v} = \frac{113.4 \text{ gm}}{67.76 \text{ cm}^3} = 1.67 \text{ gm/cm}^3$

thickness of cartridge,  $x = 1.67 \text{ gm/cm}^3 \times (1.04 \text{ in} \times 2.54 \text{ cm/in})$   
 $= 4.41 \text{ gm/cm}^2$

.19 MeV beta particle energy range = 40 mg/cm<sup>2</sup>  
 (p. 123, Rad Health Handbook)

absorption coefficient,  $\mu = \frac{1}{40 \text{ mg/cm}^2} = .025 \text{ cm}^2/\text{mg}$

self absorption correction: (p. 136, Principles of Radioisotope Methodology,  
 Third Ed.)

$$f_s = \frac{1 - e^{-\mu x}}{\mu x}$$

$f_s$  = self absorption coefficient  
 $\mu$  = absorption coefficient, cm<sup>2</sup>/mg  
 $x$  = sample thickness, mg/cm<sup>2</sup>

$$f_s = \frac{1 - e^{-.025 \text{ cm}^2/\text{mg} \times 1000 \text{ mg/gm} \times 4.41 \text{ gm/cm}^2}}{.025 \text{ cm}^2/\text{mg} \times 1000 \text{ mg/gm} \times 4.41 \text{ gm/cm}^2} = .009$$

$$1 \text{ mR/hr} \times \frac{37.8 \text{ erg/gm}}{\text{R}} \times \frac{1 \text{ R}}{1000 \text{ mR}} \times \frac{1 \text{ MeV}}{1.6 \times 10^{-6} \text{ erg}} \times \frac{1 \text{ hr}}{3600 \text{ sec}} \times \frac{1 \text{ uCi}}{3.7 \times 10^4 \text{ dps}}$$

$$\times \frac{d}{.19 \text{ MeV}} \times 113.4 \text{ gm} = .245 \text{ uCi}$$

so,  $\frac{.245 \text{ uCi}}{1 \text{ mR/hr}} = .245 \text{ uCi/mR/hr}$

DERIVATION OF ACTIVITY CALCULATION FORMULAS

$$\frac{.245 \text{ } \mu\text{Ci/mR/hr}}{.009} = 28.2 \text{ } \mu\text{Ci/mR/hr}$$

$$\frac{\text{mR/hr} \times 28.2 \text{ } \mu\text{Ci/mR/hr}}{\text{cc}} = \frac{\mu\text{Ci}}{\text{cc}}$$

assume 1 mR = 1 mRem

2. Particulate Activity

$$\frac{\text{ccpm} \times \text{dpm/cpm} \times 4.5 \times 10^{-7} \text{ } \mu\text{Ci/dpm}}{\text{cc}} = \frac{\mu\text{Ci}}{\text{cc}}$$

DUKE POWER COMPANY  
PROCEDURE PREPARATION  
PROCESS RECORD

(1) ID No: HP/O/B/1009/05  
Change(s) 0 to  
2 Incorporated

- (2) STATION: CATAWBA
- (3) PROCEDURE TITLE: PERSONNEL /VEHICLE MONITORING FOR EMERGENCY CONDITIONS

(4) PREPARED BY: Carole Jones DATE: 4-20-84

(5) REVIEWED BY: Ronald J. Reed DATE: 4-24-84

Cross-Disciplinary Review By: \_\_\_\_\_ N/R: Reed

- (6) TEMPORARY APPROVAL (IF NECESSARY):

By: \_\_\_\_\_ (SRO) Date: \_\_\_\_\_

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

(7) APPROVED BY: Jw. G. Date: 4/26/84

- (8) MISCELLANEOUS:

Reviewed/Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed/Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

DUKE POWER COMPANY  
CATAWBA NUCLEAR STATION  
PERSONNEL/VEHICLE MONITORING  
FOR EMERGENCY CONDITIONS

1.0 PURPOSE

To provide guidance for personnel and vehicle monitoring during a site evacuation resulting from a radiological emergency.

2.0 REFERENCES

- 2.1 HP/O/B/1003/31, Operation and Calibration: Eberline Model E-140N Portable Count Rate Meter
- 2.2 HP/O/B/1004/06, Personnel Decontamination
- 2.3 HP/O/B/1004/21, Equipment Decontamination
- 2.4 HP/O/B/1009/09, Guideline for Accident and Emergency Response
- 2.5 HP/O/B/1009/16, Distribution of Potassium Iodide Tablets in the Event of a Radioiodine Release
- 2.6 RP/O/A/5000/10, Conducting a Site Assembly or Evacuation
- 2.7 Station Directive 3.0.7, Site Assembly/Evacuation
- 2.8 Station Directive 3.8.3, Contamination Prevention, Control, and Decontamination Responsibilities
- 2.9 Catawba Nuclear Station Emergency Plan
- 2.10 System Health Physics Manual

3.0 LIMITS AND PRECAUTIONS

- 3.1 If survey teams are expected to be exposed to I-131 in excess of 10 MPC ( $9 \times 10^{-4}$   $\mu\text{Ci}/\text{ml}$ ), and as directed by S&C Coordinator, each team member should ingest one tablet of Potassium Iodide.
- 3.2 Ensure that the Radiation Monitoring equipment has been battery checked and source response checked as per Reference 2.1.
- 3.3 If emergency vehicle is found to be contaminated as per Reference 2.8, Section 6, and alternative transportation is not available, that vehicle may be released if needed for assistance and be decontaminated to below acceptable limits at the first opportunity as per Reference 2.3.

#### 4.0 PROCEDURE

- 4.1 The Surveillance and Control Coordinator shall designate a supervisor or lead technician to assume the responsibilities of the Reserve Personnel/Personnel Monitoring Leader (RP/PM Leader).
- 4.1.1 The RP/PM Leader shall be responsible for personnel monitoring when an evacuation occurs due to a radiological incident and other responsibilities as outlined in Reference 2.4.
- 4.1.2 The RP/PM Leader shall discuss, per Step 4.4, with the Surveillance and Control Coordinator the practicalities of relocating monitoring stations when the background is above 350 ccpm for friskers.
- 4.1.3 The RP/PM Leader shall also arrange for monitoring of the assembly points and initiate action when dose rates approach 2 mr/hr.
- 4.2 The RP/PM Leader shall dispatch an Emergency Personnel Monitoring Team to the following locations upon initiation of a site assembly resulting from a radiological incident.
- 4.2.1 Personnel Access Portal (PAP)
- 4.2.2 Construction Personnel Exit Area (Brass Gate).
- NOTE: Manpower shall be supplied with respect to the nature of the accident and the availability of Health Physics Personnel.
- 4.2.3 Each survey team shall have a copy of HP/O/B/1009/05 Personnel Monitoring for Emergency Conditions, Catawba Nuclear Station Directive 3.8.3 Contamination and Decontamination Responsibilities and an Personnel Monitoring Kit.
- 4.2.4 Upon reaching their designated locations, the survey teams shall verify their position with the RP/PM Leader.
- 4.2.5 The Construction Personnel Exit Area Team shall insure all personnel receive proper monitoring leaving via this exit during evacuation.
- 4.2.6 The PAP Area Survey Team shall insure that the portal monitors are used properly and provide additional monitoring in order to expedite evacuation.



- 4.2.7 If an individual is found to be contaminated as per Reference 2.8, the survey team shall:
  - 4.2.7.1 Dress the individual in the appropriate protective clothing and when time permits, decontaminate as per Reference 2.2.
  - 4.2.7.2 Notify the RP/PM Leader of all cases of personnel contamination.
- 4.2.8 Survey teams should be supplemented, relieved or secured as directed.
- 4.2.9 Survey teams shall monitor dose rates at exit areas. Should dose rates exceed 2 mr/hr, team shall initiate discussion with RP/PM Leader to expedite any evacuation through that exit point.
- 4.2.10 The RP/PM Leader should notify the Surveillance and Control Coordinator of all actions taken.
- 4.3 The RP/PM Leader shall dispatch a team to monitor sight assembly points as listed in Reference 2.7.
- 4.4 The RP/PM Leader shall assemble another Emergency Monitoring Team upon initiation of a site assembly from a radiological incident for random monitoring of employee vehicle and when site evacuation is initiated, dispatch this team to the Evacuation Facility (site Alpha: Transmission Line Maintenance Warehouse near Hwy SC 274 and SC 161. Site Bravo: Allen Steam Station, Hwy NC 273, South of Belmont).

NOTE: Monitoring equipment for vehicles is located in the Personnel Monitoring Kit located in the PAP area.

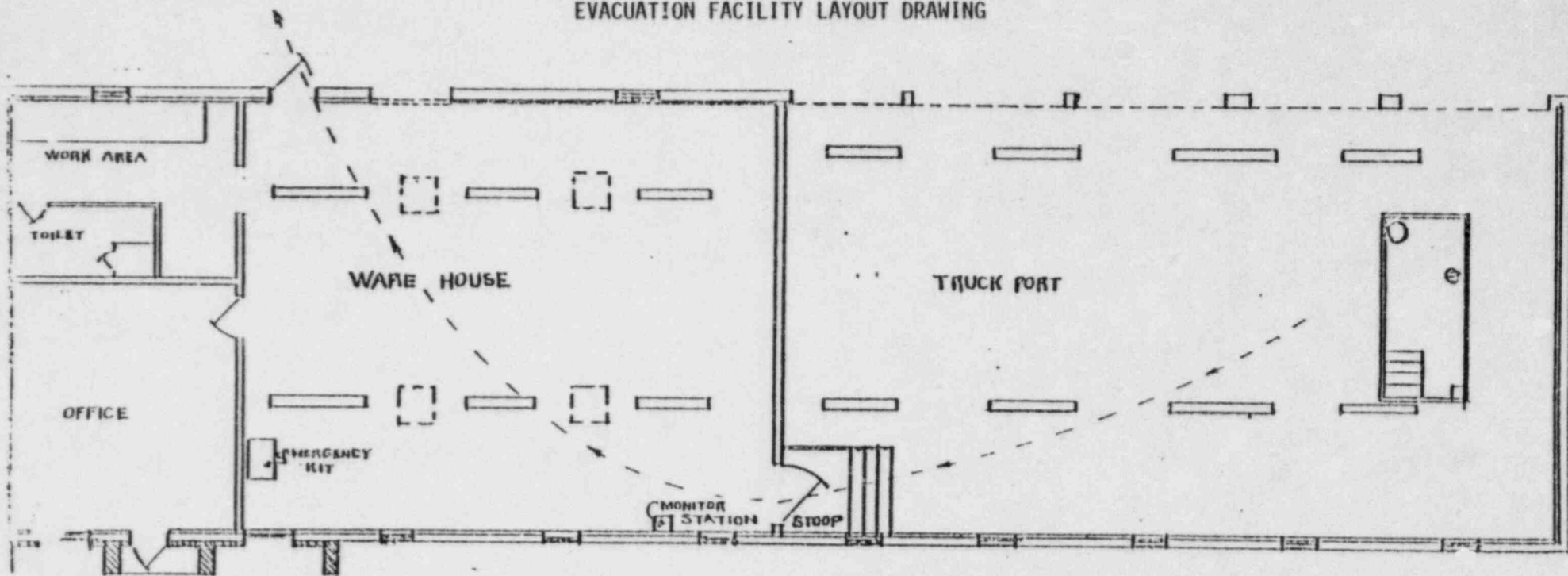
- 4.4.1 If a vehicle is found to be contaminated as per Reference 2.8, the survey team shall:
  - 4.4.1.1 Prevent further movement of the vehicle.
  - 4.4.1.2 Post the vehicle as a contaminated area.
  - 4.4.1.3 Provide general information on contamination surveys to the RP/PM Leader.
  - 4.4.1.4 Monitor all vehicles in the area for contamination.
  - 4.4.1.5 Decontaminate Vehicle using best method(s) available on property owned by Duke Power Company that does not drain to a water system.
- 4.4.2 Upon site evacuation and notification of Evacuation Facility (Alpha or Bravo), the RP/PM Leader shall move the monitoring team to the Evacuation Facility who shall:

- 4.4.2.1 Locate Personnel Survey Kit at evacuation Facility and prepare to monitor incoming personnel. Personnel Survey Kit storage locations are identified on the Evacuation Facility Layout Drawing, (Enclosure 5.1).
  - 4.4.2.2 Supervise the monitoring and release of personnel as described in Steps 4.2.3 through 4.2.10.
  - 4.4.2.3 List all personnel's names, social security number and Health Physics badge number on Evacuation Personnel Dose Record Sheet, (Enclosure 5.2). This form should be used for dose commitment at a later time.
  - 4.4.2.4 Supervise monitoring of employee vehicles and take action as appropriate per Step 4.3.1.
  - 4.4.2.5 Notify RP/PM Leader or S & C Coordinator of all actions taken.
- 4.5 If background radiation readings render frisker and/or portal monitor useless, the RP/PM Leader shall:
- 4.5.1 Discuss with the Surveillance and Control Coordinator relocating the personnel monitoring location to a location of lower background.
  - 4.5.2 Procure from the Temporary Administration Building a 20 watt portamobile radio for communication with the OSC. Check operability of the radio.
  - 4.5.3 Move the monitoring teams to an area of lower background where personnel control can be maintained and prepare to monitor personnel.
  - 4.5.4 Supervise the monitoring and release of personnel as described in Steps 4.2.3 through 4.2.10.
  - 4.5.5 Supervise monitoring of employee vehicles and take actions as appropriate per Step 4.3.1.
  - 4.5.6 Notify Surveillance and Control Coordinator of all actions taken.

## 5.0 ENCLOSURES

- 5.1 Sample of Evacuation Facilities Layout Drawings
- 5.2 Sample of Evacuation Personnel Dose Record

HP/O/B/1009/05  
ENCLOSURE 5.1  
EVACUATION FACILITY LAYOUT DRAWING

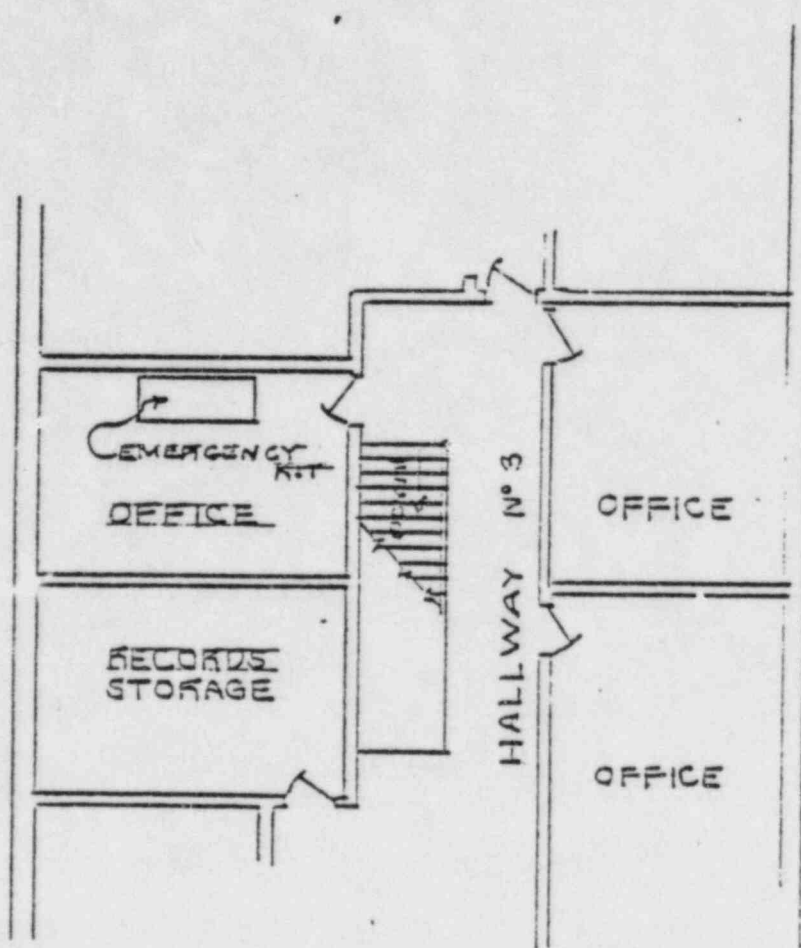


FLOOR PLAN

ROCK HILL MAINTENANCE BLDG.  
DUKE POWER COMPANY.

----- Flow Path

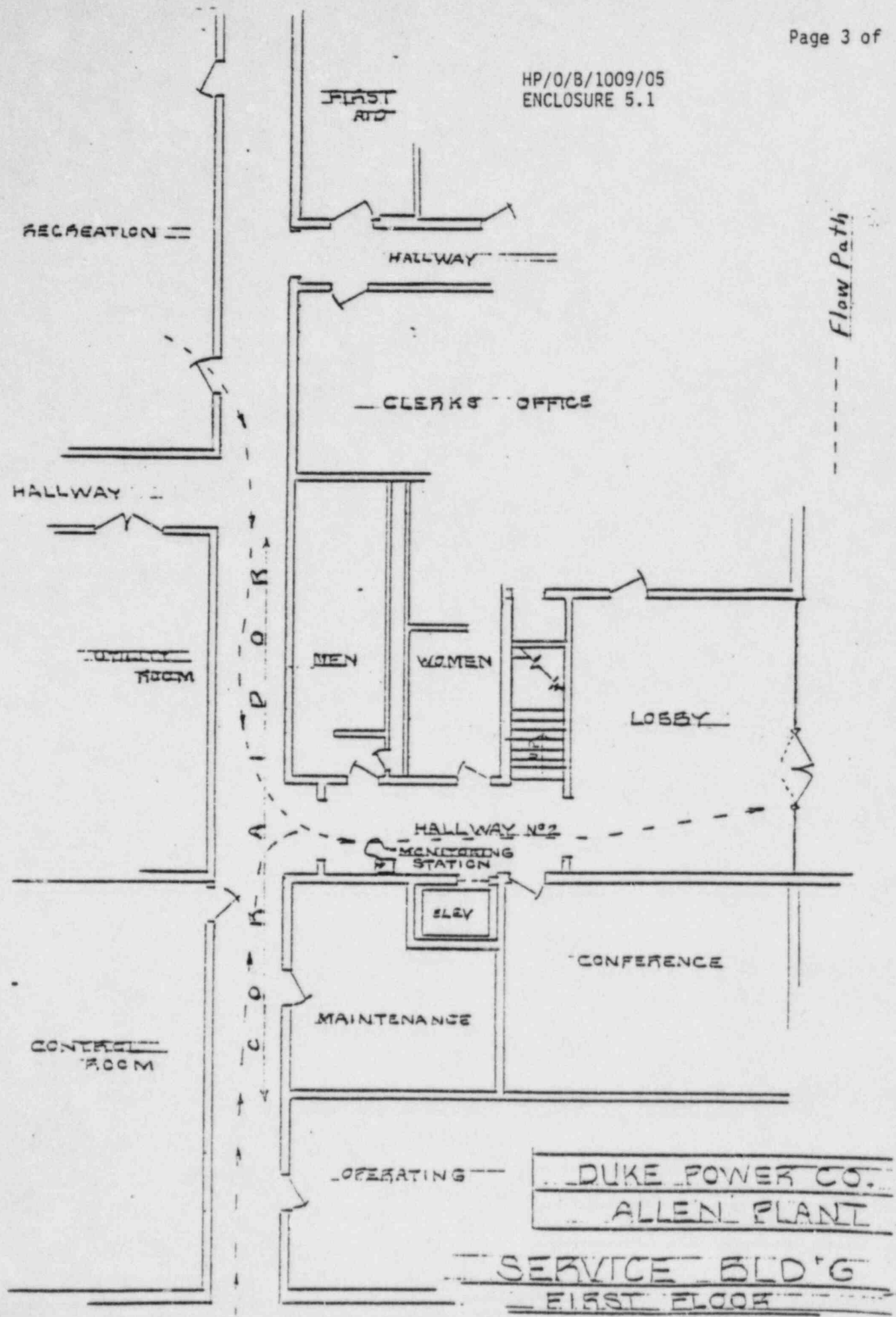
HP/O/B/1009/05  
ENCLOSURE 5.1



SERVICE FIELD'S  
"SECOND" FLOOR

DUKE POWER COMPANY  
ALLEN PLANT

HP/0/B/1009/05  
ENCLOSURE 5.1







DUKE POWER COMPANY  
PROCEDURE PREPARATION  
PROCESS RECORD

(1) ID No: HP/O/B/1009/09  
Change(s) 0 to  
2 Incorporated

- (2) STATION: Catawba
- (3) PROCEDURE TITLE: Guidelines For Accident And Emergency Response
- (4) PREPARED BY: R. D. Lunsford DATE: 7-9-84
- (5) REVIEWED BY: [Signature] DATE: 7/4/84  
Cross-Disciplinary Review By: \_\_\_\_\_ N/R: [Signature]
- (6) TEMPORARY APPROVAL (IF NECESSARY):  
By: \_\_\_\_\_ (SRO) Date: \_\_\_\_\_  
By: \_\_\_\_\_ Date: \_\_\_\_\_
- (7) APPROVED BY: [Signature] Date: 7/12/84
- (8) MISCELLANEOUS:  
Reviewed/Approved By: \_\_\_\_\_ Date: \_\_\_\_\_  
Reviewed/Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

DUKE POWER COMPANY  
CATAWBA NUCLEAR STATION  
GUIDELINES FOR ACCIDENT  
AND EMERGENCY RESPONSE

1.0 PURPOSE

- 1.1 To provide guidance for notification/activation of the Health Physics Organization in the event of an emergency situation.
- 1.2 To assure proper assignment of responsibility.
- 1.3 To give general guidance for initial response of the Health Physics organization.
- 1.4 To give general guidance for continuing response of the Health Physics organization.

2.0 REFERENCES

- 2.1 HP/O/B/1001/12 Technical Specifications Gaseous Waste Sampling and Analysis.
- 2.2 HP/O/B/1009/04, Environmental Monitoring for Emergency Conditions Within the Ten Mile Radius of Catawba Nuclear Station.
- 2.3 HP/O/B/1009/05, Personnel/Vehicle Monitoring for Emergency Conditions.
- 2.4 HP/O/B/1009/06, Alternative Method for Determining Dose Rate Within the Reactor Building.
- 2.5 HP/O/B/1009/07, In-plant Particulate and Iodine Monitoring Under Accident Conditions.
- 2.6 HP/O/B/1009/08, Contamination Control During Transportation of Contaminated Injured Individuals.
- 2.7 HP/O/B/1009/10, Body Burden Analysis Following Suspected Uptakes of Mixed Fission or Activation Products.
- 2.8 HP/O/1009/12, Quantifying Gaseous Releases Through Steam Relief Valves Under Post-Accident Conditions.
- 2.9 HP/O/B/1009/13, Off-Site Dose Projection - Uncontrolled Release of Radioactive Material Through the Unit Vent.
- 2.10 HP/O/B/1009/14, Health Physics Actions Following on Uncontrolled Release of Liquid Radioactive Material.
- 2.11 HP/O/B/1009/15, Off-Site Dose Projection - Uncontrolled Release of Gaseous Radioactive Material Other Than Through the Unit Vent.

- 2.12 HP/O/B/1009/16, Distribution of Potassium Iodide Tablets in the Event of a Radioiodine Release.
- 2.13 HP/O/B/1009/17, Post Accident Containment Air Sampling System.
- 2.14 HP/O/B/1009/19, Emergency Radio System Operations, Maintenance, and Communications.
- 2.15 RP/O/B/5000/12, Control of Assessment and Repair Teams.
- 2.16 Catawba Nuclear Station Emergency Plan.
- 2.17 System Health Physics Manual.
- 2.18 Catawba Nuclear Station, Station Directive 3.8.4, Onsite Emergency Organization.
- 2.19 Catawba Nuclear Station, Station Directive 2.8.1, Reporting Requirements.

### 3.0 LIMITS AND PRECAUTIONS

- 3.1 This procedure shall only be initiated at the direction of Health Physics Supervision.
- 3.2 This procedure may be initiated in part or whole, depending on the type and severity of emergency.
- 3.3 This procedure provides general guidance for initial response. Any particular situation may require actions not addressed in this procedure.
- 3.4 For incidents occurring during backshifts, Health Physics shift personnel shall be responsible for on-site response only until directed otherwise by the Station Health Physicist.

### 4.0 PROCEDURE

- 4.1 Upon notification of an emergency condition, the Station Health Physicist shall activate the Health Physics organization by notifying one or all of the following:
  - 4.1.1 Surveillance and Control Coordinator.
  - 4.1.2 Support Functions Coordinator.
  - 4.1.3 Staff Coordinator.
  - 4.1.4 Shift Technician (To advise, if during back shift).
- 4.2 Individual coordinators will notify alternates and supervisors to be under their direction during the emergency, and will make arrangements through the supervisors for the notification of non-exempt personnel.

- 4.3 If the emergency is classified above the Notification of Unusual Event category, the Station Health Physicist shall proceed to the Technical Support Center (TSC), and coordinate the overall Health Physics response. Enclosures 5.2 and 5.3 provide general guidelines for response.
- 4.4 When notified to respond to an emergency, the Surveillance and Control Coordinator shall assume alternate responsibility for the Station Health Physicist, and shall activate the S&C Coordinator identified in Reference 2.16 who will act according to Enclosures 5.4 and 5.5.
- 4.5 When notified to respond to an emergency, the Support Functions Coordinator shall assume alternate responsibility for the Station Health Physicist and shall activate the Support Functions Coordinator identified in Reference 2.16 who will act according to Enclosures 5.6 and 5.7.
- 4.6 When notified to respond to an emergency, the Staff Coordinator shall act according to Enclosures 5.8 and 5.9.
- 4.7 When notified to respond to an emergency, the Field Monitoring Coordinator shall act according to Enclosures 5.10 and 5.11.
- 4.8 When notified to respond to an emergency, the Operation Support Center (OSC) Supervisor shall act according to Enclosures 5.12 and 5.13.

## 5.0 ENCLOSURES

- 5.1 Guidelines For Planned Emergency Exposures
- 5.2 Station Health Physicist - Initial Response
- 5.3 Station Health Physicist - Continuing Response
- 5.4 Surveillance and Control Coordinator - Initial Response
- 5.5 Surveillance and Control Coordinator - Continuing Response
- 5.6 Support Functions Coordinator - Initial Response
- 5.7 Support Functions Coordinator - Continuing Response
- 5.8 Staff Data Analysis Coordinator - Initial Response
- 5.9 Staff Data Analysis Coordinator - Continuing Response



- 5.10 Field Monitoring Coordinator - Initial Response
- 5.11 Field Monitoring Coordinator - Continuing Response
- 5.12 OSC Supervisor - Initial Response
- 5.13 OSC Supervisor - Continuing Response
- 5.14 Reserve Personnel/Personnel Monitoring Leader Response
- 5.15 OSC Response Personnel Dose Record Form
- 5.16 Procurement of Helicopters for Aerial Environmental Surveillance

HP/O/B/1009/09  
ENCLOSURE 5.1

GUIDELINES FOR PLANNED EMERGENCY EXPOSURES

- 1.0 Obtain the verbal or written approval of the Emergency Coordinator to exceed planned maximum limits.
- 2.0 If it is necessary to remedy a situation immediately hazardous to life and property, an individual (Duke Power personnel, or Outside Services) may receive exposure up to:

Whole Body	5 rems (25 rem)*
Skin of the Whole Body or Thyroid	30 rems (125 rem)*
Extremities	75 rems

\* Doses up to this limit may be authorized by the Recovery Manager.

- 3.0 If it is necessary to save lives or prevent loss of lives and/or extensive damage to property, an individual may volunteer to receive exposure up to:

Whole Body	25 rems (75 rem)*
Skin of the Whole Body or Thyroid	150 rems
Extremities	375 rems

\* Doses up to this limit may be authorized by the Recovery Manager, Station Manager or Emergency Coordinator.

- 4.0 If possible, the individual(s) should be selected by the following conditions:
- 4.1 Personnel should be volunteers or professional rescue personnel.
- 4.2 Personnel should be broadly familiar with the potential consequences of such exposure.
- 4.3 Women capable of reproduction should not take part in these actions.
- 4.4 All factors being equal, volunteers above the age of 45 should be selected.
- 5.0 Exposure shall be maintained ALARA.
- 6.0 Internal exposure should be minimized by the use of the best available respiratory protection, and the contamination should be controlled by the use of available protective clothing.
- 7.0 All exposures (permissible, planned maximum, planned emergency and accidental) shall require documentation and an occupational dose penalty if necessary.

(  
HP/O/B/1009/09  
ENCLOSURE 5.1

- 8.0 Exposures above the guidelines of Section 3.0 should be authorized by the Recovery Manager, Station Manager or Emergency Coordinator and will require a medical decision as to whether the individual may continue in radiological work and should be limited to once in a lifetime.
- 9.0 Reports of planned emergency exposures shall be reported as per Catawba Nuclear Station Directive 2.8.1 (Reporting Requirements).

HP/O/B/1009/09  
ENCLOSURE 5.2  
STATION HEALTH PHYSICIST  
INITIAL RESPONSE

- 5.2.1 Assemble supporting materials and take to TSC.
- 5.2.2 The Station Health Physicist shall as necessary:
  - 5.2.2.1 Establish the exposure limit for blanket dose extension, for Exposure Class 1 to a maximum of 1000 mRem/qtr; for Exposure Class 3 to a maximum of 2500 mRem; for Exposure Class 2 personnel (pregnant females) they shall not be extended above their 500 mRem limit, and should be reassigned to work locations in the Administration Building until radiation levels are evaluated.
  - 5.2.2.2 Govern planned emergency exposures by Enclosure 5.1 (Guidelines For Planned Emergency Exposures).
  - 5.2.2.3 Coordinate the overall Health Physics response.
  - 5.2.2.4 Recommend protective action on-site for assembled personnel and those with work duties.
  - 5.2.2.5 Recommend off-site protective action to the Emergency Coordinator until the CMC (Crisis Management Center) is activated.
  - 5.2.2.6 Initiate, as necessary, HP/O/B/1009/16, Distribution of Potassium Iodide Tablet in the Event of a Radioactive Release.

HP/O/B/1009/09  
ENCLOSURE 5.3  
STATION HEALTH PHYSICIST  
CONTINUING RESPONSE

- 5.3.1 Interface with the CMC when it is activated.
- 5.3.2 Coordinate Health Physics shift rotation and augmentation of personnel and equipment.
- 5.3.3 Should evacuation be required; coordinate the identification of "Non-Essential" personnel with other TSC groups.
  - 5.3.3.1 All females should be given first consideration due to limited use in a radiological exposure situation.
  - 5.3.3.2 Sufficient personnel should be retained to support need for backup personnel.
- 5.3.4 Direct trending of available information to support Health Physics TSC response.
- 5.3.5 When CMC is in place, continue Protective Action assessment and recommendations as a confirming response.



HP/O/B/1009/09  
ENCLOSURE 5.4  
SURVEILLANCE AND CONTROL COORDINATOR  
INITIAL RESPONSE

- 5.4.1 Assemble supporting materials and take to TSC.
- 5.4.2 Establish radiological access controls for the Station and Control Room.
  - 5.4.2.1 Initiate, as necessary, HP/O/B/1009/07, In-Plant Particulate and Iodine Monitoring Under Accident Conditions.
  - 5.4.2.2 Initiate, as necessary, HP/O/B/1009/08, Contamination Control During Transportation of Contaminated Injured Individuals.
  - 5.4.2.3 Initiate discussions by need for Buddy System for radiological conditions.
- 5.4.3 If the emergency is classified above the Notification of Unusual Event category:
  - 5.4.3.1 Send the following personnel as necessary to the Operations Support Center (OSC):
    - 5.4.3.1.1 One Supervisor to coordinate Health Physics support and communicate with the TSC and shall act according to Enclosures 5.12 and 5.13.
    - 5.4.3.1.2 One Technician to provide job coverage (sampling, operation maintenance, etc.).
    - 5.4.3.1.3 Two Technicians to monitor and report plant radiological status.
    - 5.4.3.1.4 Two Technicians to provide fire/medical emergency/rescue team/damage control coverage.
    - 5.4.3.1.5 Direct sufficient personnel to the Administration Building, DRC office, as staging area.
  - 5.4.3.2 Identify a Supervisor or Lead Technician to Reserve Personnel/Personnel Monitoring Leader and he/she shall act according to Enclosure 5.14.
  - 5.4.3.3 Proceed to the TSC and coordinate Surveillance and Control response, with emphasis upon OSC activities.
  - 5.4.3.4 Request TSC Security staff to provide locations of officers remaining on post. Evaluate exposure potential for these officers and recommend protective actions as necessary.

HP/O/B/1009/09  
ENCLOSURE 5.5  
SURVEILLANCE AND CONTROL COORDINATOR  
CONTINUING RESPONSE

- 5.5.1 The S&C Coordinator shall, as necessary:
  - 5.5.1.1 Initiate through RP/PM Leader HP/O/B/1009/05, Personnel/Vehicle Monitoring for Emergency Conditions, when a site assembly occurs due to radiological conditions.
  - 5.5.1.2 Initiate, as necessary, HP/O/B/1009/17, Post Accident Containment Air Sampling System.
- 5.5.2 Provide direction and support to the OSC Health Physics Supervisor:
  - 5.5.2.1 Coordinate in-plant and on-site monitoring in support of TSC needs.
  - 5.5.2.2 Keep OSC Supervisor appraised of TSC events and activities that may require OSC response (planned maintenance, operation, sampling).
  - 5.5.2.3 Coordinate with OSC and TSC groups to ensure adequate pre-planning occurs to limit radiation exposures.
  - 5.5.2.4 Obtain additional emergency kit items and supplies to support OSC if needed.
- 5.5.3 Monitor dose rate in TSC. Initiate discussion with Station Health Physicist on the need to evaluate the TSC should dose rate exceed 5 mR/hr and be expected to continue.

HP/O/B/1009/09  
ENCLOSURE 5.6  
SUPPORT FUNCTIONS COORDINATOR  
INITIAL RESPONSE

- 5.6.1 Assemble supporting materials and take to TSC.
- 5.6.2 Evaluate the need to establish an alternate location for sample analysis.
- 5.6.3 Establish a count room sample priority list if emergency radiological sampling is in progress or is going to begin.
- 5.6.4 Initiate, as necessary, HP/O/B/1009/10, Body Burden Analysis Following Suspected Uptake of Mixed Fission or Activation Products.
- 5.6.5 If the emergency is classified above the Notification of Unusual Event category:
  - 5.6.5.1 Establish alternate dosimetry issue points for personnel and high range dosimetry, as necessary.
  - 5.6.5.2 Issue blanket dose extensions for OSC personnel, to the limit established by the Station Health Physicist.
  - 5.6.5.3 Provide representatives from Dosimetry and Records Control in the OSC to:
    - 5.6.5.3.1 Record the following information on the OSC Response Personnel Dose Record Form (Sample Enclosure 5.14) as emergency response personnel enter the OSC.
      - 5.6.5.3.1.1 Name
      - 5.6.5.3.1.2 Health Physics Badge Numbers
      - 5.6.5.3.1.3 Social Security Number
      - 5.6.5.3.1.4 Birthdate
      - 5.6.5.3.1.5 Age
      - 5.6.5.3.1.6 Exposure Class
      - 5.6.5.3.1.7 Work Group
      - 5.6.5.3.1.8 Quarterly and yearly dose to date
      - 5.6.5.3.1.9 Permissible lifetime dose
      - 5.6.5.3.1.10 Total lifetime dose to date

NOTE: This may be obtained at the first available opportunity.

HP/O/B/1009/09  
ENCLOSURE 5.6  
CONTINUED

5.6.5.3.2 As personnel return to OSC from entering a radiation field, dosimeters shall be checked for rezeroing and the following information recorded on the OSC Response Personnel Dose Record Form (Sample Enclosure 5.14):

5.6.5.3.2.1 Date, Time

5.6.5.3.2.2 Dosimeter Reading

5.6.5.3.2.3 Retotal of quarterly dose.

5.6.5.4 Proceed to the TSC and coordinate Support Function Response.

HP/O/B/1009/09  
ENCLOSURE 5.7  
SUPPORT FUNCTIONS COORDINATOR  
CONTINUING RESPONSE

- 5.7.1 Ensure collection and retention of collected samples is adequate to reconstruct data following the emergency.
- 5.7.2 Acquire additional anti-contamination clothing, dosimetry, respiratory or monitoring equipment from:
- Existing Station Stock
  - CMC Admin and Logistics Groups
- 5.7.3 Direct implementation of HP/O/B/1001/12, Technical Specification Gaseous Waste Sampling and Analysis as necessary to collect containment and unit vent samples.
- All sampling will be coordinated with OSC Health Physics personnel to determine habitability and RWP requirements.
- 5.7.4 Retrieve radiation instrumentation from Instrument Issue area and stage in DRC office.



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HP/O/B/1009/09  
ENCLOSURE 5.8  
STAFF (DATA ANALYSIS) COORDINATOR  
INITIAL RESPONSE

- 5.8.1 Assemble supporting materials and take to TSC.
  - 5.8.1.1 Review any assessments made using RP/O/A/5000/11.
- 5.8.2 Initiate the following procedures as necessary.
  - 5.8.2.1 HP/O/B/1009/13, Off-Site Dose Projection - Uncontrolled Release of Radioactive Material through the Unit Vent.
  - 5.8.2.2 HP/O/B/1009/14, Health Physics Actions Following on Uncontrolled Release of Liquid Radioactive Material.
  - 5.8.2.3 HP/O/B/1009/15, Off-Site Dose Projection - Uncontrolled Release of Gaseous Radioactive Material other than through the Unit Vent.
- 5.8.3 Assume the duties of the Data Analysis Coordinator if the emergency is classified above the Notification of Unusual Event Category and:
  - 5.8.3.1 Proceed to the TSC.
  - 5.8.3.2 Initiate activation of the Field Monitoring Organization by notifying the Field Monitoring Coordinator to respond according to Enclosure 5.10 and 5.11.
  - 5.8.3.3 Initiate the following procedures as necessary:
    - 5.8.3.3.1 HP/O/B/1009/06, Alternative Method for Determining Dose Rates Within the Reactor Building.
    - 5.8.3.3.2 HP/O/B/1009/12, Quantifying Gaseous Release through Steam Relief Valves Under Post-Accident Conditions.
  - 5.8.3.4 Provide special evaluation in areas such as shielding, off-site consequences of a containment loss or steam generator tube rupture, BBA, etc.

HP/O/B/1009/09  
ENCLOSURE 5.9  
STAFF (DATA ANALYSIS) COORDINATOR  
CONTINUING RESPONSE

- 5.9.1 Evaluate the need to recalculate dose projections based upon:
  - 5.9.1.1 Known changes in meteorological status (wind speed, wind direction,  $\Delta T$ , precipitation).
  - 5.9.1.2 Known changes in EMF readings.
  - 5.9.1.3 Projected change in meteorological conditions.
- 5.9.2 Evaluate total effect of dose projections when making multiple releases (containment, vent releases, etc.).
- 5.9.3 Evaluate total effect of dose projections when releases are expected to continue for longer than two hours, or to otherwise be effected by extended evacuation times.

HP/O/B/1009/09  
ENCLOSURE 5.10  
FIELD MONITORING COORDINATOR  
INITIAL RESPONSE

5.10.1 Assemble supporting materials and take to TSC.

5.10.1 Initial Response

5.10.2.1 Activate the field monitoring organization by:

5.10.2.1.1 Notifying the TSC Radio Operator to report to the TSC and initiate HP/O/B/1009/19, Emergency Radio Operations, Maintenance and Communications.

5.10.2.1.2 Selecting nine (9) Catawba Nuclear Station Field Monitoring Team (FMT) members to be organized as follows:

<u>Team Call Sign</u>	<u>Number of Members</u>	<u>Transportation</u>
Alpha	2	Land Vehicle
Bravo	2	Land Vehicle
Charlie	2	Land Vehicle
Delta	2	Land Vehicle
Echo	1	Helicopter

5.10.2.1.3 Instruct FMT's to complete checkout steps from HP/O/E/1009/04, Environmental Monitoring for Emergency Conditions Within the Ten Mile Radius of Catawba Nuclear Station.

5.10.2.2 Obtain plant radiological status and evaluate the potential or existence of an off-site release of radioactive material (liquid or gaseous).

5.10.2.3 Obtain meteorological information and determine initial sample direction.

5.10.2.4 Determine the need for aerial environmental surveillance based on plant radiological status and meteorological information.

5.10.2.4.1 If immediately needed, obtain helicopter support per Enclosure 5.15, Procurement of Helicopters for Aerial Environmental Surveillance.

5.10.2.4.2 If the possibility exist for future need, put helicopter support on standby per Enclosure 5.15.

5.10.2.5 Proceed to the TSC.

HP/O/B/1009/09  
ENCLOSURE 5.11  
FIELD MONITORING COORDINATOR  
CONTINUING RESPONSE

5.11.1 Continuing Response

5.11.1.1 Dispatch FMT's based on plant radiological status and meteorological information to sample locations listed in HP/O/B/1009/04.

5.11.1.1.1 Plume location strategy should be to send FMT's back and forth across sectors to locate the plume. Only after the plume is located should detailed field monitoring begin.

5.11.1.2 Direct and implement field monitoring strategies by:

5.11.1.2.1 Reviewing plant radiological status, field data and meteorological information approximately every 15 minutes for changes which might affect field monitoring strategies.

5.11.1.2.2 Directing FMT's to monitor locations.

5.11.1.2.3 Instructing FMT's to take, as needed, special samples per HP/O/B/1009/04.

5.11.1.3 Advise the Data Analysis Coordinator to field monitoring results.

5.11.1.4 Maintain an up-to-date 10 mile radius map by:

5.11.1.4.1 Posting current FTM locations.

5.11.1.4.2 Posting latest instrument survey results for each monitoring location.

5.11.1.4.3 Illustrating approximate plume shape and location.

5.11.1.5 Maintain an organized file of all sample results/data generated from FMT activities.

5.11.1.6 Maintain FMT equipment and supplies including protective clothing, liquid nitrogen, etc.; and schedule shift coverage.

5.11.2 CMC Turnover

5.11.2.1 Once CMC is established, coordinate turnover of FMT's to CMC control.

5.11.2.2 Turnover of TSC FMT's to CMC Control shall occur at the intersection of SC 274 and SC 49. Should plume location interfere, alternate turnover location may be established.

HP/O/B/1009/09  
ENCLOSURE 5.11  
FIELD MONITORING COORDINATOR  
CONTINUING RESPONSE

- 5.11.2.3 Once CMC has assumed control of FMT's, notify the Data Analysis Coordinator and dissolve TSC field monitoring organization.



HP/O/B/1009/09  
ENCLOSURE 5.12  
OPERATION SUPPORT CENTER  
HEALTH PHYSICS SUPERVISOR - INITIAL RESPONSE

- 5.12.1 Assemble supporting materials and take to OSC.
- 5.12.2 Contact OSC Operation Supervisor and coordinate Health Physics support for OSC activities. Assist in implementation of RP/O/B/5000/12.
- 5.12.3 Provide immediate job coverage as necessary. Give due consideration to the fact that plant conditions may be unstable and radiological conditions unknown.
- 5.12.4 Provide immediate Health Physics coverage as necessary to support Fire Brigade, damage control, medical emergency and other emergency activities.
- 5.12.5 Direct technicians to obtain preliminary radiological information available in Control Room.
  - 5.12.5.1 Emphasis should be placed upon determining the areas of the plant experiencing increasing radiation levels.
- 5.12.6 Based upon initial Control Room indications, direct technicians to monitor and report radiological status which will support OSC activities.
- 5.12.7 Establish control over all OSC personnel radiation exposure and limit to blanket dose extension levels.
  - 5.12.7.1 All activities which cause these levels to be approached or exceeded, require pre-planning and coordination with TSC S&C Coordinator.
- 5.12.8 Direct assignment of additional dosimetry to provide adequate monitoring for the conditions expected.
- 5.12.9 Direct the use of protective clothing to limit the spread of contamination consistent with the conditions expected.
- 5.12.10 Obtain additional instrumentation to support OSC activities (Teletector, neutron instrument alpha instrument, friskers), if necessary.
- 5.2.11 Require each exit from OSC to Auxiliary Building be preceded by a briefing on task to be done and radiological conditions expected when applicable.
- 5.2.12 Coordinate Health Physics activities for assessment and repair teams in accordance with RP/O/B/5000/12.
- 5.2.13 Post blanket dose extension valves.

HP/O/B/1009/09  
ENCLOSURE 5.13  
OPERATION SUPPORT CENTER  
HEALTH PHYSICS SUPERVISOR - CONTINUING RESPONSE

- 5.13.1 Maintain routine contact with TSC S&C Coordinator to provide update on OSC activities and to receive plant status reports.
- 5.13.2 Obtain thru S&C Functions Coordinator additional dosimetry/protective clothing/emergency kit items necessary to support OSC activities.
- 5.13.3 Coordinate OSC activities requiring pre-planning.
- 5.13.3.1 Emphasis should be placed upon:
- Dosimetry (Whole Body & Extremities)
  - Protective Clothing
  - Route to and from task
  - Respiratory equipment
  - Need for Buddy System because of safety hazard (radiological and non-radiological)
  - Establishing dose limits and/or dose rate considerations for high exposure jobs on unknown situations
  - Communications equipment
  - Additional monitoring instrumentation
- 5.13.4 Monitor dose rate in OSC. Should General Area reach 5 mR/hr., initiate discussion with S&C Coordinator on the need to evacuate the OSC, should dose rate be expected to continue.
- 5.13.5 All RE-ENTRY efforts should consider the special problems that may exist:
- High gamma fields
  - Increased Beta fields
  - High Contamination levels
  - High airborne rad levels

HP/O/B/1009/09

ENCLOSURE 5.14

## RESERVE PERSONNEL/PERSONNEL MONITORING LEADER

- 5.14.1 Assemble all Health Physics personnel not initially required for emergency response. Non essential personnel should be evaluated for use in the emergency.
- 5.14.2 Identify personnel and/or personnel monitoring teams for the following locations.
  - 5.14.2.1 All on-site assembly areas are identified in Station Directive 3.0.7.
  - 5.14.2.2 PAP Area.
  - 5.14.2.3 Construction Personnel Exit Area (Brass Gate).
  - 5.14.2.4 Evacuation Facility (Alpha or Bravo). Two monitoring teams if both location are used.
- 5.14.3 Initiate, as necessary, HP/O/B/1009/05, Personnel/Vehicle Monitoring for Emergency Conditions.
- 5.14.4 Initiate random monitoring of vehicles located in the upper and lower parking lots starting with vehicles nearest the affected unit. The monitoring team identified in Step 5.14.2.4 should be used for this purpose.
- 5.14.5 Coordinate with the TSC Surveillance and Control Coordinator on relocating personnel monitoring teams if background radiation renders normal monitoring locations unfit.
- 5.14.6 Supervise Health Physics efforts at the Evacuation Facility(s) as per Reference 2.2.
- 5.14.7 Provide direction to reserve Health Physics personnel:
  - 5.14.7.1 Direct and control personnel in the staging area (DRC office in the Administration Building).
  - 5.14.7.2 Coordinate with Surveillance and Control Coordinator to provide addition manpower, as necessary.
  - 5.14.7.3 Coordinate with Support Functions Coordinator to provide additional manpower, as necessary.
  - 5.14.7.4 Direct activities of Field Monitoring Teams if relieved by CMC personnel.
  - 5.14.7.5 Begin scheduling activities for Health Physics personnel.
  - 5.14.7.6 Support OSC Supervisor with major activities as required.

OSC RESPONSE PERSONNEL DOSE RECORD FORM

Name: \_\_\_\_\_ HP Badge No.: \_\_\_\_\_

Social Security No.: \_\_\_\_\_ Exposure Class: \_\_\_\_\_

Birthdate: \_\_\_\_\_ Age: \_\_\_\_\_ Work Group: \_\_\_\_\_

\*Quarterly Dose to Date: \_\_\_\_\_ mrem

\*\*Yearly Dose to Date: \_\_\_\_\_ mrem

Permissible Lifetime Dose to Date: \_\_\_\_\_ mrem

Total Lifetime Dose to Date: \_\_\_\_\_ mrem

Date/Time	Dosimeter Reading		*Quarterly Dose Total (mrem)	Comments
	Out (mrem)	In		

\*Current Quarter Dose \_\_\_\_\_ mrem Plus Today's Dosimeter Dose \_\_\_\_\_ mrem.

\*\*Current Yearly Dose \_\_\_\_\_ mrem Plus Today's Dosimeter Dose \_\_\_\_\_ mrem.

HP/O/B/1009/09


ENCLOSURE 5.16

PROCUREMENT OF HELICOPTERS FOR AERIAL ENVIRONMENTAL SURVEILLANCE

Inland Airways, Myrtle Beach, S.C., is under contract to Duke Power Company to furnish one helicopter upon request and an additional helicopter within six hours following notification. Once a helicopter is requested, there is a maximum elapsed time of three hours for the helicopter to arrive at Catawba Nuclear Station or other dispatched locations.

Helicopter service is limited to daylight hours and adequate flying weather. The helicopters will hold three people, the pilot and two passengers. To perform surveys, instrumentation may limit the passenger space.

To obtain helicopter(s) for emergency service contact:

	<u>Office</u>	<u>Home</u>
1. B. A. Turpin		
2. L. W. Johnson		
3. L. M. Whisonant		
4. D. M. Staggs		

NOTE: These contacts are in Duke Power Company Transmission Dept., Line Division. The microwave extension for the office numbers is 220.



DUKE POWER COMPANY  
PROCEDURE PREPARATION  
PROCESS RECORD

(1) ID No: HP/0/B/1000/06  
Change(s) 0 to  
7 Incorporated

(2) STATION: Catawba Nuclear

(3) PROCEDURE TITLE: Emergency Equipment Functional Check And Inventory

(4) PREPARED BY: Robin S Williams DATE: 6-22-84

(5) REVIEWED BY: Isid T Hule DATE: 6-24-84

Cross-Disciplinary Review By: \_\_\_\_\_ N/R: Isid T Hule

(6) TEMPORARY APPROVAL (IF NECESSARY):

By: \_\_\_\_\_ (SRO) Date: \_\_\_\_\_

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

(7) APPROVED BY: J. W. King Date: 6/26/84

(8) MISCELLANEOUS:

Reviewed/Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed/Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

DUKE POWER COMPANY  
CATAWBA NUCLEAR STATION  
EMERGENCY EQUIPMENT FUNCTIONAL CHECK AND INVENTORY

1.0 PURPOSE

To provide for the availability and readiness of Emergency Equipment.

2.0 REFERENCES

- 2.1 HP/O/B/1005/03; Respirator Quality Assurance
- 2.2 HP/O/B/1009/19; Emergency Radio System Operations, Maintenance and Communications
- 2.3 Catawba Nuclear Station Directive 2.11.13
- 2.4 Catawba Nuclear Station Directive 3.2.2
- 2.5 Catawba Nuclear Station Directive 3.3.3
- 2.6 Catawba Nuclear Station Emergency Plan
- 2.7 Catawba Nuclear Station Technical Specifications 6.8.1
- 2.8 Duke Power Company Radio Operator's Manual
- 2.9 Maintenance of Silver Zeolite Air Sampling Cartridges Letter; File: CN-768.01
- 2.10 10CFR 50 Appendix E
- 2.11 Technical Manual for Groban Gasoline Generators

3.0 LIMITS AND PRECAUTIONS

- 3.1 Operation of Portable Generators
  - 3.1.1 Avoid operating the unit while hands are wet or while standing in water.
  - 3.1.2 Generators shall not be started while equipment is plugged into generator.
- 3.2 Silver zeolite cartridges shall be discarded if the seal has been broken.

- 3.3 Any radiation monitoring equipment (located in an emergency kit) that must be removed from service for any reason shall be replaced within four hours from the time it is removed from the kit.
- 3.4 Any emergency kit used during training or for drill purposes shall be reinventoried as soon as possible. The individual responsible for the training or drill shall be responsible for inventory and restocking of all on-site kits.
  - 3.4.1 Off-site kits shall be reinventoried as above and a list of deviations shall be given to the Respiratory/Instrument Calibration (R/IC) Supervisor. R/IC shall be responsible for restocking off-site kits as soon as possible.

#### 4.0 PROCEDURE

##### 4.1 Monthly Emergency Equipment Check/Inventory

###### 4.1.1 Portable Generator Check

4.1.1.1 Portable generators shall be considered acceptable for use if:

4.1.1.1 The oil level is at an acceptable level per Reference 2.13.

4.1.1.2 The generator starts and runs for at least 5 minutes.

4.1.1.3 The generator stabilizes after a portable air sampler is plugged into each of the generator outlets.

4.1.1.2 If generator is acceptable, shut off generator and remove any excess gasoline from the gas tank.

4.1.1.3 Document the operability of the generators in the appropriate column on the Monthly/Quarterly Emergency Equipment Check Sheet (Enclosure 5.1).

###### 4.1.2 Two-Way Low Band FM Radios

4.1.2.1 The radios shall be considered acceptable for use if:

4.1.2.1.1 Each radio transmits a message to another radio.

4.1.2.1.2 Each radio receives a message from another radio.

4.1.2.2 Document the operability of the radios in the appropriate area on Enclosure 5.1.

4.1.2.3 Inoperable radios shall be removed from service. Contact Toddville Communication Shop Planner for instructions on disposition for repair.

4.1.3 Batteries

4.1.3.1 All batteries shall be considered acceptable for use if:

4.1.3.1.1 The battery tester needle indicates "good" when the battery is tested.

4.1.3.1.2 The battery appears to be in good physical condition (no dents, corrosion, etc.).

4.1.3.2 Document battery check on Enclosure 5.1.

4.1.4 Portable Survey Instruments

4.1.4.1 Portable Survey Instruments shall be considered acceptable for use if:

4.1.4.1.1 The instrument battery checks.

4.1.4.1.2 The instrument source checks in accordance with the instrument's operation procedure (located in the emergency kit).

4.1.4.1.3 The instrument has no apparent physical damage.

4.1.4.1.4 The instrument's calibration date is current.

4.1.4.2 Document the instrument's operability on Enclosure 5.1.

4.1.5 Portable Air Samplers

4.1.5.1 Air Samplers shall be considered acceptable for use if:

4.1.5.1.1 The sampler operates when plugged into an electrical outlet.

4.1.5.1.2 The calibration date on the sampler is current.

4.1.5.1.3 The sampler has no apparent physical damage.

4.1.5.2 Document the sampler's operability on Enclosure 5.1.

4.1.6 Respiratory Equipment

4.1.6.1 Respiratory equipment shall be considered acceptable for use if:

4.1.6.1.1 The equipment is in accordance with criteria stated in Reference 2.1.

4.1.6.1.2 The Emergency Self-Contained Breathing Apparatus (SCBA) are available at the following locations:

<u>Locations</u>	<u>Minimum Units</u>
Control Room	2
Upper Personnel Hatch	2
Lower Personnel Hatch	2
Health Physics Respiratory Storage Area	8

4.1.6.1.3 Six large cylinders of breathing air (minimum of six hours used for 5 people) are located in the Control Room along with 5 airline respirators and associated airline hoses.

4.1.6.2 Document operability of respiratory equipment in accordance with Reference 2.1.

4.2 Quarterly Emergency Equipment Inventory/Inspection

4.2.1 Emergency equipment kits shall be inventoried quarterly and after each use using the appropriate Emergency Equipment Kit Checklist (Enclosures 5.4 - 5.13)

4.2.1.1 Consult the Emergency Equipment Kit Location Sheet (Enclosure 5.2) for the locations of each kit.

4.2.1.2 Perform monthly checks as in Steps 4.1.1, 4.1.3, 4.1.4, 4.1.5, 4.1.6;

4.2.1.3 The quarterly operability check on two-way low band radios shall be performed as follows:

4.2.1.3.1 Radios shall be checked from a point 10 miles from the plant in accordance with Reference 2.8.



4.2.1.3.2 Contact shall be made from the base station in the TSC to each of the radios.

4.2.1.3.3 Each of the radios shall make contact with the base station.

NOTE: Base Call Sign

Radio Call Signs  
(Alpha, Bravo, Charlie,  
Delta, Echo, Foxtrot)

4.2.1.3.4 Document operability of radios on Enclosure 5.1.

4.2.1.4 Perform a functional check of the dosimeter charger/reader. The charger is acceptable for use if the charger light illuminates.

4.2.1.5 Ensure that the leak and source check dates on the dosimeters are current.

4.2.1.6 Ensure that the TLD's are the appropriate ones for the current quarter.

4.2.1.7 Ensure the Potassium Iodide tablets have not exceeded their expiration date.

4.2.1.8 Ensure the seal on the silver zeolite cartridge packet is not broken and the cartridges are not damaged.

4.2.1.9 Ensure that all procedures are current with the Control Copy.

4.2.1.10 Ensure the flashlight bulb illuminates properly.

4.2.1.11 Check all protective clothing for tears, rips or holes, cracks in rubber, missing snaps, broken zippers, etc.

4.2.1.12 If any deviations are found, they shall be noted in the deviation section of the applicable Emergency Equipment Kit Checklist (Enclosure 5.4 - 5.13).

4.2.1.12.1 Give a brief description of the deviation in this section.

4.2.1.13 Document any deviations on the Emergency Equipment Deviation Authorization Sheet (Enclosure 5.14).

4.2.1.14 The Technician shall sign off Enclosure 5.14 and the appropriate checklists (Enclosures 5.4 - 5.13) and forward to the Respiratory/Instrument Calibration (R/IC) Supervisor.

4.2.2 Weather Information Check

- 4.2.2.1 Quarterly a call shall be placed to the National Weather Service located in Columbia, SC at 803-794-2330 or 803-794-2593. If these numbers cannot be reached, an alternate number in Charlotte (704-399-6000) may be used. Obtain wind direction, wind speed, and cloud cover from one of these sources for the vicinity of Catawba Nuclear Station.
- 4.2.2.2 Obtain the same information from the Control Room.
- 4.2.2.3 Record this information on the Weather Information Form (Enclosure 5.2).
- 4.2.2.4 Compare the information from the Control Room and the Weather Bureau. If differences are found greater than 22° in wind direction and/or 50% in wind speed, the difference shall be documented on Enclosure 5.14.

4.3 Deviation Authorization

- 4.3.1 The Station Health Physicist shall be made aware of any deviation recorded on Enclosure 5.14.
- 4.3.2 The Station Health Physicist shall have evaluated the consequences the deviation may have upon the capability to respond to an emergency situation.
- 4.3.3 Enclosure 5.14 shall be used to state the action taken to remedy the deviation, and to state the justification for taking that action.
- 4.3.4 Sign off the PT printout and forward as per Reference 2.3.

4.4 Upon completion of this procedure all required documentation will be filed in the Emergency Equipment Functional Check and Inventory Log, until the end of the quarter.

- 4.4.1 At the end of the quarter all of the required documentation will be forwarded to the Station Health Physicist (HP) for review.
- 4.4.2 After review by the Station H.P., the documentation shall be forwarded to Master File.

5.0 ENCLOSURES

- 5.1 Sample of Monthly /Quarterly Emergency Equipment Check Sheet
- 5.2 Sample of Emergency Equipment Kit Location Sheet
- 5.3 Sample of Weather Information Form
- 5.4 Sample of Recovery Kit Checklist
- 5.5 Sample of Environmental Survey Kit Checklist
- 5.6 Sample of Environmental Survey Kit Checklist (Helicopter)
- 5.7 Sample of Personnel Survey Kit Checklist
- 5.8 Sample of Personnel Survey Kit Checklist (Evacuation Facility)
- 5.9 Sample of Emergency Medical Kit Checklist (First Aid Room)
- 5.10 Sample of Emergency Medical Kit Checklist (Piedmont Medical Center)
- 5.11 Sample of Operations Support Center Kit Checklist
- 5.12 Sample of Technical Support Center Kit Checklist
- 5.13 Sample of Fuel Transfer Kit Checklist
- 5.14 Sample of Emergency Equipment Deviation Authorization Sheet

CATAWBA NUCLEAR STATION  
 MONTHLY/QUARTERLY EMERGENCY EQUIPMENT CHECK SHEET

	Monthly Pic-51	E140-N	Rm-14	F-520	Air Sampler Batteries	Quarterly Charger Flashlight	Comments/Signature/Date
Environmental Survey Kit-A							
Environmental Survey Kit-B							
Environmental Survey Kit-C							
Environmental Survey Kit-D							
Environmental Survey Kit-E							
Recovery Kit-Allen							
Transmission							
Recovery Kit-Line Maint.							
Security							
Recovery Kit-Pap Area							
Construction							
Recovery Kit-Personnel Area							
Personnel Survey Kit-Allen							
Transmission							
Personnel Survey Kit-Line Maint.							
Security							
Personnel Survey Kit-Pap Area							
Construction							
Personnel Survey Kit-Personnel Area							
First Aid							
Emergency Medical Kit-Room							
Piedmont							
Emergency Medical Kit-Medical Center							
Operations Support Center Kit							
Technical Support Center Kit							
Fuel Transfer Kit							





CATAWBA NUCLEAR STATION  
EMERGENCY EQUIPMENT LOCATION SHEET  
HP/O/B/1000/06  
ENCLOSURE 5.2

KITS

LOCATION

Recovery Kits (4) Evacuation Facilities (2)	Allen Steam Station Transmission Line Maintenance Building Temp. Admin. Building Temp. Admin. Building
Security Pap Area Construction Personnel Access Area	
Environmental Survey Kits (Vehicle) (4) Environmental Survey Kit (Helicopter) (1)	Temp. Admin. Building Temp. Admin. Building
Personnel Survey Kits (4) Evacuation Facilities (2)	Allen Steam Station Transmission Line Maintenance Building Temp. Admin. Building Temp. Admin. Building
Security Pap Area Construction Personnel Access Area	
Emergency Medical Kit (2)	Aux. Building First Aid Room Piedmont Medical Center
Operations Support Center Kit	Operations Support Center
Technical Support Center Kit	Technical Support Center
Fuel Transfer Kit	Temp. Admin. Building

CATAWBA NUCLEAR STATION  
WEATHER INFORMATION  
HP/O/B/1000/06  
ENCLOSURE 5.3

	National Weather Service	Control Room
Wind Direction	_____	_____
Wind Speed	_____	_____
Cloud Cover	_____	_____
Time	_____	_____

Comparison difference: Wind Direction \_\_\_\_\_ degrees  
Wind Speed \_\_\_\_\_ %

\_\_\_\_\_  
Signature/Date

CATAWBA NUCLEAR STATION  
RECOVERY KITS CHECKLIST  
HP/O/B/1000/06  
ENCLOSURE 5.4

ITEM	MINIMUM AMOUNT	DEV.*
List of Contents	1	_____
Eberline E-520 w/HP-270 Probe	1	_____
Exempt Source	1	_____
Low/High Range Dosimeters (0-500 mR), (0-5R)	2 each	_____
Dose Cards	25	_____
TLD Badges	6	_____
Dosimeter Charger	1	_____
Boundary Ribbon or Rope (50 yd. roll)	1	_____
Masking Tape (roll)	1	_____
Rain Suits (set)	2	_____
Protective Clothing (set)	2	_____
Poly Bags (Various)	12	_____
Caution Signs w/inserts	2	_____
Legal Pad	1	_____
Instrument/Smear Survey (pad)	1	_____
Pens	2	_____
Grease Pencil	1	_____
Full Face Respirator With High Efficiency Filters	2	_____
First Aid Kit	1	_____
Potassium Iodide Tablets	275 bottles	_____
	Trans. Line Maint.	_____
	Security PAP	_____
	Temp. Admin. Bldg.	_____
	Allen Steam Station	_____
KI Distribution Data Sheet	100	_____
Smears (box)	1	_____
NuCon Smears	30	_____
Flashlight	1	_____
Batteries (Size D)	10	_____
Scissors	1	_____
Medication Envelopes	100	_____
	Trans. Line Maint.	_____
	Security PAP	_____
	Temp. Admin. Bldg.	_____
	Allen Steam Station	_____
HP/O/B/1003/12	1	_____
HP/O/B/1009/16	1	_____

This Kit has been inventoried and Steps 4.2.1.4 through 4.2.1.14, if applicable, have been completed.

\_\_\_\_\_  
Signature/Date

\*Any Deviations will be documented on the Emergency Equipment Deviation Authorization Sheet (Sample Enclosure 5.14).

CATAWBA NUCLEAR STATION  
 ENVIRONMENTAL SURVEY KITS CHECKLIST  
 HP/O/B/1000/06  
 ENCLOSURE 5.5

ITEM	MINIMUM AMOUNT	DEV.*
List of Contents	1	_____
Eberline E-520 w/HP-270 Probe	1	_____
Eberline E-140N w/HP-210 Probe (or equivalent)	1	_____
Exempt Source	1	_____
Portable MCA**	1	_____
Eberline PIC 6A	1	_____
Emergency Radio Transmitter/Receiver	1	_____
Radeco H809V Air Sampler	1	_____
Gasoline Generator (Gasoline in Safety Cabinet)	1	_____
Low/High Range Pocket Dosimeter (0-500 mR), (0-5R)	2 each	_____
Dose Cards	25	_____
TLD Badge	6	_____
Dosimeter Charger	1	_____
Full Face Respirator With High Efficiency Filter	2	_____
Potassium Iodide Tablets (bottle)	2	_____
Protective Clothing (Full Set)	3	_____
Poly Bags (Various Sizes)	6	_____
Masking Tape (roll)	1	_____
Limnological Sampler	1	_____
Cubitainers	6	_____
1 Liter Wide Mouth Bottles	5	_____
Stopwatch	1	_____
Flashlight	1	_____
Batteries (Size D)	14	_____
Batteries (9 volt)	4	_____
Silver Zeolite (CP-100G or GY-130) Filter Cartridges and Particulate Filters	30	_____
Filter Cartridges Labels & Bags	100	_____
Smears (box)	1	_____
NuCon Smears	30	_____
Instrument/Smear Survey (pad)	1	_____
Map of Ten Mile Zone Sectors	1	_____
Legal Pad	1	_____
Pen	2	_____
Permanent Marker	1	_____
Hand Spade	1	_____
Grease Pencil and refills	1	_____
Dime Roll	1	_____
Scissors	1	_____
Rain Suits	3	_____
Telephone location maps	1	_____
Field Monitoring Data Sheet	20	_____
Field Monitoring Work Sheet	20	_____
KI Tablet Distribution Data Sheet	1	_____
Radio Operator Manual	1	_____
CPD1 Key	1	_____
Cotton Liners (pairs)	5	_____
SLED Badges (Personal - Vehicle)	4	_____
HP/O/B/1009/04	1	_____

CATAWBA NUCLEAR STATION  
 ENVIRONMENTAL SURVEY KITS CHECKLIST  
 HP/O/B/1000/06  
 ENCLOSURE 5.5

ITEM	MINIMUM AMOUNT	DEV.*
HP/O/B/1009/16	1	_____
HP/O/B/1003/02	1	_____
HP/O/B/1003/05	1	_____
HP/O/B/1003/12	1	_____
HP/O/B/1003/17	1	_____
HP/O/B/1009/19	1	_____
HP/O/B/1003/31 or HP/O/B/1003/11	1	_____

This Kit has been inventoried and Steps 4.2.1.4 through 4.2.1.14, if applicable, have been completed.

\_\_\_\_\_  
Signature/Date .

\*Any Deviations will be documented on the Emergency Equipment Deviation Authorization Sheet (Sample Enclosure 5.14).

\*\*This instrument is stored and maintained in the Health Physics Counting Room Area.



CATAWBA NUCLEAR STATION  
 ENVIRONMENTAL SURVEY KITS CHECKLIST (Helicopter)  
 HP/O/B/1000/06  
 ENCLOSURE 5.6

ITEM	MINIMUM AMOUNT	DEV.*
List of Contents	1	_____
Eberline PIC-6A	1	_____
Eberline E-520 w/HP-270 Probe	1	_____
Exempt Source	1	_____
Low/High Range Pocket Dosimeter (0-500 mR), (0-5R)	2 each	_____
Dose Cards	25	_____
Field Monitoring Data Sheet	20	_____
TLD Badge	6	_____
Dosimeter Charger	1	_____
Full Face Respirator with High Efficiency Filter	2	_____
Potassium Iodide Tablets (bottle)	2	_____
KI Distribution Data Sheet	1	_____
Stopwatch	1	_____
Flashlight	1	_____
Batteries (Size D)	10	_____
Batteries (9 volt)	4	_____
Ear Plugs (pairs)	6	_____
Map of Ten Mile Zone Sectors	1	_____
Legal Pad	1	_____
Pen	2	_____
Rain Suits	2	_____
Instrument/Smear Survey (pad)	1	_____
Emergency Radio Transmitter/Receiver	1	_____
HP/O/B/1003/05	1	_____
HP/O/B/1003/12	1	_____
HP/O/B/1009/19	1	_____
HP/O/B/1009/04	1	_____
HP/O/B/1009/16	1	_____

This Kit has been inventoried and Steps 4.2.1.4 through 4.2.1.14, if applicable, have been completed.

\_\_\_\_\_  
 Signature/Date

\*Any Deviation will be documented on the Emergency Equipment Deviation Authorization Sheet (Sample Enclosure 5.14).

CATAWBA NUCLEAR STATION  
PERSONNEL SURVEY KITS CHECKLIST  
HP/O/B/1000/06  
ENCLOSURE 5.7

ITEM	MINIMUM AMOUNT	DEV.*
List of Contents	1	_____
Eberline E-140N w/HP-210 Probe (or equivalent)***	2	_____
Sample Slide Tray***	1	_____
Exempt Source	1	_____
Emergency Radio Transmitter/Receiver**	1	_____
Radio Operator Manual	1	_____
Low/High Range Dosimeters (0-500 mR/hr), (0-5 R/hr)	2 each	_____
Dose Cards	25	_____
TLD Badges	2	_____
Dosimeter Charger	1	_____
Full Face Respirator With High Efficiency Filter	2	_____
Potassium Iodine Tablets (bottle)	2	_____
KI Distribution Data Sheet	1	_____
Protective Clothing (Full set)	6	_____
Boundary Ribbon or Rope (50 yd. roll)	1	_____
Caution Signs w/inserts	4	_____
Masking Tape (roll)	1	_____
Poly Bags (Various)	6	_____
Smears (box)	1	_____
NuCon Smears	25	_____
Instrument/Smear Survey (pad)	1	_____
Pens	2	_____
Grease Pencil & Refills	1	_____
Legal Pad	1	_____
Scissors	1	_____
Rain Suits	3	_____
Decon Kit	1	_____
1) Rad Con		
2) Rad Wash		
3) Paper Towels		
4) Scrub Brush		
5) Cotton Swabs		
6) Fingernail Clippers		
7) PhisoHex (500 ml)		
Batteries (Size D)	10	_____
Station Directive 3.8.3	1	_____
HP/O/B/1003/31 or HP/O/B/1003/11	1	_____
HP/O/B/1004/06	1	_____
HP/O/B/1009/05	1	_____
HP/O/B/1009/16	1	_____
HP/O/B/1009/19**	1	_____

CATAWBA NUCLEAR STATION  
PERSONNEL SURVEY KITS CHECKLIST  
HP/O/B/1000/06  
ENCLOSURE 5.7

This Kit has been inventoried and Steps 4.2.1.4 through 4.2.1.14, if applicable, have been completed.

---

Signature/Date

\*Any Deviation will be documented on the Emergency Equipment Deviation Authorization Sheet (Sample Enclosure 5.14).

\*\*Only the Construction Personnel access area shall have an Emergency Radio and procedure.

\*\*\*The Security PAP Area shall have (3) E-140N w/HP-210 Probe or equivalent and Sample Slide Tray. The Construction Personnel Access Area shall have (2) E-140-N w/HP-210 Probe or equivalent and shall not have a Sample Slide Tray.

CATAWBA NUCLEAR STATION  
 PERSONNEL SURVEY KITS CHECKLIST  
 (EVACUATION FACILITY)  
 HP/O/B/1000/06  
 ENCLOSURE 5.8

ITEM	MINIMUM AMOUNT	DEV.*
List of Contents	1	_____
Eberline E-140N w/HP-210 Probe (or equivalent)	3	_____
Exempt Source	1	_____
Low/High Range Dosimeters (0-500 mR), (0-5R)	4 each	_____
Dose Cards	25	_____
TLD Badges	4	_____
Dosimeter Charger	1	_____
Potassium Iodide Tablets (bottle)	2	_____
KI Tablet Distribution Data Sheet	1	_____
Medication Envelopes	3	_____
Protective Clothing (Full Set)	6	_____
Boundary Ribbon or Rope (50 yd. roll)	1	_____
Caution Signs w/inserts	4	_____
Masking Tape (roll)	1	_____
Poly Bags (Various)	6	_____
Smears (box)	1	_____
Instrument/Smear Survey (pad)	1	_____
Pens	2	_____
Grease Pencil & Refills	1	_____
Legal Pad	1	_____
Decon Kit	1	_____
1) Rad Con		
2) Rad Wash		
3) Paper Towels		
4) Scrub Brush		
5) Cotton Swabs		
6) Fingernail Clippers		
7) Phisohex (500 ml)		
Scissors	1	_____
Disposable Coveralls	40	_____
Station Directive 3.8.3	1	_____
Evacuation Personnel Dose Record	50	_____
Catawba Nuclear Station Telephone Directory	1	_____
Batteries (Size D)	10	_____
HP/O/B/1003/31 or HP/O/B/1003/11	1	_____
HP/O/B/1004/06	1	_____
HP/O/B/1009/05	1	_____
HP/O/B/1009/16	1	_____

This Kit has been inventoried and Steps 4.2.1.4 through 4.2.1.14, if applicable, have been completed.

\_\_\_\_\_  
 Signature/Date

\*Any Deviation will be documented on the Emergency Equipment Deviation Authorization Sheet (Sample Enclosure 5.14).

CATAWBA NUCLEAR STATION  
 EMERGENCY MEDICAL KIT CHECKLIST  
 FIRST AID ROOM  
 HP/O/B/1000/06  
 ENCLOSURE 5.9

ITEM	MINIMUM AMOUNT	DEV.*
List of Contents	1	_____
Eberline E-140N w/HP-210 Probe (or equivalent)	1	_____
Exempt Source	1	_____
Poly Bags (various sizes)	6	_____
Smears (box)	1	_____
NuCon Smears	25	_____
Protective Clothing (Full Set)	4	_____
Rain Suits	2	_____
Tape, Radioactive Material	1	_____
Tape, Masking 2"	1	_____
Tape, Duct 2"	1	_____
Instrument/Smear Survey (pad)	1	_____
Pens	2	_____
Legal Pad	1	_____
Caution Signs w/inserts	3	_____
Radioactive Material Tags	50	_____
Scissors	1	_____
Poly for Ambulances (bundles)	3	_____
Protective Clothing for Ambulance Drivers (Sets)	2	_____
Batteries (Size D)	4	_____
HP/O/B/1003/31 or HP/O/B/1003/11	1	_____
HP/O/B/1004/06	1	_____
HP/O/B/1009/08	1	_____

This Kit has been inventoried and Steps 4.2.1.4 through 4.2.1.14, if applicable, have been completed.

\_\_\_\_\_  
Signature/Date

\*Any Deviation will be documented on the Emergency Equipment Deviation Authorization Sheet (Sample Enclosure S.14).



CATAWBA NUCLEAR STATION  
 E. GENCY MEDICAL KITS CHECKLIST  
 PIEDMONT MEDICAL CENTER  
 HP/O/B/1000/06  
 ENCLOSURE 5.10

ITEM	MINIMUM AMOUNT	DEV.*
List of Contents	1	_____
Eberline E-520 w/HP-270 Probe	1	_____
Eberline E-140N W/210 Probe (or equivalent)	1	_____
Exempt Source	1	_____
Poly Bags (various sizes)	14	_____
Smears (box)	1	_____
NuCon Smears	25	_____
Tape, Radioactive Material	1	_____
Tape, Masking 2"	2	_____
Tape, Duct 2"	2	_____
Instrument/Smear Survey (pad)	1	_____
Caution Signs w/inserts	5	_____
Rad Rope	1	_____
TLD Badges	10	_____
Pocket Dosimeters (0-500mR)	10	_____
Dose Cards	25	_____
Dosimeter Charger	1	_____
Radioactive Material Tags	50	_____
Floor and Vent Covering	1	_____
Disposable Coveralls	25	_____
Disposable Shoe Covers (pairs)	25	_____
Cubitainers	5	_____
Decon Kit	1	_____
1) Rad Con		
2) Rad Wash		
3) Paper Towels		
4) Scrub Brush		
5) Cotton Swabs		
6) Fingernail Clippers		
7) Phisohex (500 ml)		
Cotton Gloves (pairs)	50	_____
Rubber Gloves (pairs)	20	_____
Batteries (Size D)	8	_____
Grease pencils (box)	1	_____
HP/O/B/1003/31 or HP/O/B/1003/11	1	_____
HP/O/B/1003/12	1	_____
HP/O/B/1004/06	1	_____
HP/O/B/1009/08	1	_____

This Kit has been inventoried and Steps 4.2.1.4 through 4.2.1.14, if applicable, have been completed.

\_\_\_\_\_  
Signature/Date

\*Any Deviation will be documented on the Emergency Equipment Deviation Authorization Sheet (Sample Enclosure 5.14).

CATAWBA NUCLEAR STATION  
 OPERATIONS SUPPORT CENTER KITS CHECKLIST  
 HP/O/B/1000/06  
 ENCLOSURE 5.11

ITEM	MINIMUM AMOUNT	DEV.*
List of Contents	1	_____
Protective Clothing (Set)	40	_____
Full Face Respirators with High Efficiency Filters	10	_____
Flashlights	11	_____
Batteries (Size D)	34	_____
Batteries (9 volt)	20	_____
Eberline PIC 6A	5	_____
RM-14 w/HP-210 Probe	1	_____
E-140N w/HP-210 Probe (or equivalent)	1	_____
Exempt Source	1	_____
Camera (Polaroid)	1	_____
Polaroid Film Pacs	2	_____
Masking Tape (Roll)	2	_____
Dosimeters (0-100R), (0-5R)	5	_____
Dose Cards	25	_____
Dosimeter Charger	1	_____
Small Sample Bottles	10	_____
Rain Suits	5	_____
Poly Bags (various sizes)	50	_____
Radeco H809V Air Sampler	3	_____
Silver Zeolite (CP-100G or GY-130) Filter Cartridges and Particulate Filters	30	_____
Filter Cartridge Labels	30	_____
Potassium Iodide Tablets (bottle)	20	_____
KI Distribution Data Sheet	10	_____
HP/O/B/1003/02	1	_____
HP/O/B/1003/05	1	_____
HP/O/B/1003/31 or HP/O/B/1003/11	1	_____
HP/O/B/1004/06	1	_____
OSC Response Personnel Dose Record	25	_____
Decon Kit	1	_____
1) Rad Con		
2) Rad Wash		
3) Paper Towels		
4) Scrub Brush		
5) Cotton Swabs		
6) Fingernail Clippers		
7) PhisoHex (500 ml)		
Instrument/Smear Survey (pad)	1	_____
Telephone	2	_____
Post-Accident Containment Air Sampling Equipment Kit	1	_____
Pen (box)	1	_____
Grease Pencil (and refills) (box)	1	_____
Extension Cord (50 ft.)	2	_____
Extension Cords (25 ft.)	2	_____
Stopwatch	2	_____
Large Battery Lanterns	4	_____
Status Boards (set)	1	_____

CATAWBA NUCLEAR STATION  
OPERATIONS SUPPORT CENTER KITS CHECKLIST  
HP/O/B/1000/06  
ENCLOSURE 5.11

ITEM	MINIMUM AMOUNT	DEV.*
OSC Response Personnel Dose Record Forms	100	_____
Smears (box)	1	_____

This Kit has been inventoried and Steps 4.2.1.4 through 4.2.1.1.4, if applicable, have been completed.

\_\_\_\_\_  
Signature/Date

\*Any Deviation will be documented on the Emergency Equipment Deviation Authorization Sheet (Sample Enclosure 5.14).

CATAWBA NUCLEAR STATION  
 TECHNICAL SUPPORT CENTER KIT CHECKLIST  
 HP/O/B/1000/06  
 ENCLOSURE 5.12

ITEM	MINIMUM AMOUNT	DEV.*
List of Contents	1	_____
Protective Clothing (Set)	20	_____
Full Face Respirators with High Efficiency Filters	6	_____
Eberline E-520 w/HP-270 Probe	1	_____
Eberline PIC-6A	3	_____
E-140N w/HP-210 Probe (or equivalent)	1	_____
Exempt Source	1	_____
Radeco H809V Air Sample	1	_____
Dosimeter (0-100R), (0-5R)	6 each	_____
Dose Cards	25	_____
Silver Zeolite (CF-100G or GY-130) Filter Cartridges and Particulate Filters	30	_____
Filter Cartridge Labels	25	_____
Dosimeter Charger	1	_____
Potassium Iodide Tablets (bottle)	25	_____
Boundary Ribbon or Rope (50 yd. roll)	1	_____
Caution Signs w/inserts	3	_____
Rad Tape	2	_____
Smears (box)	1	_____
Poly Bags	6	_____
Masking Tape (Roll)	1	_____
Pen	2	_____
Legal Pad	1	_____
Grease Pencil (and refills)	1	_____
Flashlights	8	_____
Batteries (Size D)	30	_____
Batteries (9V)	12	_____
Small Sample Bottles	10	_____
Rain Suits	6	_____
Decon Kit	1	_____
1) Rad Con		
2) Rad Wash		
3) Paper Towels		
4) Scrub Brush		
5) Cotton Swabs		
6) Fingernail Clippers		
7) Phisoex (500 ml)		
Instrument/Smear Survey (pad)	1	_____
Request for Exposure Extension Forms	15	_____
Aux. Bldg. Drawings (set)	1	_____
HP/O/B/1003/02	1	_____
HP/O/B/1003/05	1	_____
HP/O/B/1003/12	1	_____
HP/O/B/1009/16	1	_____
HP/O/B/1003/31 or HP/O/B/1003/11	1	_____
HP/O/B/1004/06	1	_____

CATAWBA NUCLEAR STATION  
TECHNICAL SUPPORT CENTER KIT CHECKLIST  
HP/O/B/1000/06  
ENCLOSURE 5.12

This Kit has been inventoried and Steps 4.2.1.4 through 4.2.1.14, if applicable, have been completed.

---

Signature/Date

\*Any Deviation will be documented on the Emergency Equipment Deviation Authorization Sheet (Sample Enclosure 5.14).



CATAWBA NUCLEAR STATION  
 FUEL TRANSFER KIT CHECKLIST  
 HP/O/B/1000/06  
 ENCLOSURE 5.13

ITEM	MINIMUM AMOUNT	DEV.*
Grease Pencils	2	_____
All Purpose Marker	2	_____
Scotch Tape Roll and Dispenser	1	_____
Roll of Dimes	1	_____
Gasoline Generator (Gasoline Stored in Safety Cabinet)	1	_____
Instrument/Smear Survey (pad)	1	_____
HP/O/B/1003/02	1	_____
HP/O/B/1003/05	1	_____
HP/O/B/1003/12	1	_____
HP/O/B/1009/16	1	_____
HP/O/B/1003/31 or HP/O/B/1003/11	1	_____

This Kit has been inventoried and Steps 4.2.1.4 through 4.2.1.14, if applicable, have been completed.

\_\_\_\_\_  
 Signature/Date

\*Any Deviation will be documented on the Emergency Equipment Deviation Authorization Sheet (Sample Enclosure 5.14).

CATAWBA NUCLEAR STATION  
EMERGENCY EQUIPMENT DEVIATION AUTHORIZATION SHEET

DEVIATION DESCRIPTION	KIT	ACTION TAKEN TO REMEDY DEVIATION	ACTION JUSTIFICATION	SIGNATURE	DATE

R/IC Supervisor \_\_\_\_\_ Date \_\_\_\_\_  
Station Health Physicist \_\_\_\_\_ Date \_\_\_\_\_

DUKE POWER COMPANY  
 CATAWBA NUCLEAR STATION  
 EMERGENCY PLAN IMPLEMENTING PROCEDURES  
 INDEX

<u>PROCEDURE #</u>	<u>TITLE</u>
RP/O/A/5000/01	Classification of Emergency
RP/O/A/5000/02	Notification of Unusual Event
RP/O/A/5000/03	Alert
RP/O/A/5000/04	Site Area Emergency
RP/O/A/5000/05	General Emergency
RP/O/A/5000/06	Natural Disaster
RP/O/A/5000/07	Earthquake
RP/O/A/5000/08	Release of Toxic or Flammable Gas
RP/O/A/5000/09	Collision/Explosion
RP/O/A/5000/10	Conducting A Site Assembly or Evacuation
RP/O/A/5000/11	Protective Action Recommendations Without the OAC
RP/O/B/5000/12	Control of Assessment and Repair Teams
RP/O/B/5000/13	NRC Notification Requirements
HP/O/B/1009/01	Health Physics Recovery Plan
HP/O/B/1009/03	Environmental Surveillance Following a Primary to Secondary Leak
HP/O/B/1009/04	Environmental Monitoring for Emergency Conditions Within the Ten-Mile Radius of Catawba Nuclear Station
HP/O/B/1009/05	Personnel/Vehicle Monitoring for Emergency Conditions
HP/O/B/1009/06	Alternative Method for Determining Dose Rate With the Reactor Building
HP/O/B/1009/07	Implant Particulate and Iodine Monitoring Under Accident Conditions
HP/O/B/1009/08	Contamination Control During Transportation of Contaminated Injured Individuals
HP/O/B/1009/09	Guidelines for Accident and Emergency Response
HP/O/B/1009/12	Quantifying Gaseous Releases through Steam Relief Valves Under Post-Accident Conditions
HP/O/B/1009/13	Offsite Dose Projection-Uncontrolled Release of Gaseous Radioactive Material Through the Unit Vent
HP/O/B/1009/14	Health Physics Actions Following An Uncontrolled Release of Liquid Radioactive Material
HP/O/B/1009/15	Offsite Dose Projection-Uncontrolled Release of Gaseous Radioactive Material Other Than Through the Unit Vent
HP/O/B/1009/16	Distribution of Potassium Iodide Tablets in the Event of a Radioiodine Release
HP/O/B/1009/17	Post Accident Containment Air Sampling System
HP/O/B/1009/19	Emergency Radio System Operations, Maintenance and Communication
OP/O/A/6200/21	Operating Procedure for Sampling at the Post Accident Liquid Sample Panel
CNS Directive 3.7.5	Response to Bomb Threat
CNS Directive 3.8.4	Onsite Emergency Organization
CNS Directive 2.0.1	News Release/Rumor Control
CNS Directive 3.0.7	Site Assembly/Evacuation
HP/O/B/1000/06	Emergency Equipment Functional Check and Inventory
PT/O/B/4600/06	Emergency Drills

DUKE POWER COMPANY  
PROCEDURE PREPARATION  
PROCESS RECORD

(1) ID No: HP/O/B/1009/07  
Change(s) 0 to  
2 Incorporated

(2) STATION: CATAWBA

(3) PROCEDURE TITLE: IN-PLANT PARTICULATE AND IODINE MONITORING UNDER  
ACCIDENT CONDITIONS

(4) PREPARED BY: Timothy W. Douchine DATE: 22 June 84

(5) REVIEWED BY: Robert J. Rinal DATE: 6-22-84

Cross-Disciplinary Review By: \_\_\_\_\_ N/R: R. Rinal

(6) TEMPORARY APPROVAL (IF NECESSARY):

By: \_\_\_\_\_ (SRO) Date: \_\_\_\_\_

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

(7) APPROVED BY: Jim G Date: 6/30/84

(8) MISCELLANEOUS:

Reviewed/Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed/Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



DUKE POWER COMPANY  
 CATAWBA NUCLEAR STATION  
 EMERGENCY PLAN IMPLEMENTING PROCEDURES  
 INDEX

<u>PROCEDURE #</u>	<u>TITLE</u>
RP/O/A/5000/01	Classification of Emergency
RP/O/A/5000/02	Notification of Unusual Event
RP/O/A/5000/03	Alert
RP/O/A/5000/04	Site Area Emergency
RP/O/A/5000/05	General Emergency
RP/O/A/5000/06	Natural Disaster
RP/O/A/5000/07	Earthquake
RP/O/A/5000/08	Release of Toxic or Flammable Gas
RP/O/A/5000/09	Collision/Explosion
RP/O/A/5000/10	Conducting A Site Assembly or Evacuation
RP/O/A/5000/11	Protective Action Recommendations Without the OAC
RP/O/B/5000/12	Control of Assessment and Repair Teams
RP/O/B/5000/13	NRC Notification Requirements
HP/O/B/1009/01	Health Physics Recovery Plan
HP/O/B/1009/03	Environmental Surveillance Following a Primary to Secondary Leak
HP/O/B/1009/04	Environmental Monitoring for Emergency Conditions Within the Ten-Mile Radius of Catawba Nuclear Station
HP/O/B/1009/05	Personnel/Vehicle Monitoring for Emergency Conditions
HP/O/B/1009/06	Alternative Method for Determining Dose Rate With the Reactor Building
HP/O/B/1009/07	Implant Particulate and Iodine Monitoring Under Accident Conditions
HP/O/B/1009/08	Contamination Control During Transportation of Contaminated Injured Individuals
HP/O/B/1009/09	Guidelines for Accident and Emergency Response
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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

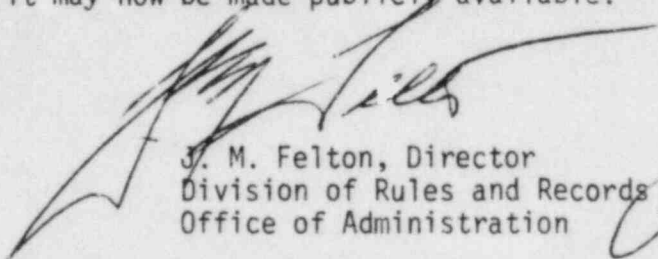
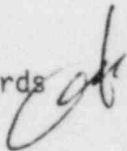
WASHINGTON, D. C. 20555

August 21, 1984

50-413/414 Catawba

MEMORANDUM FOR: Chief, Document Management Branch, TIDC  
FROM: Director, Division of Rules and Records, ADM  
SUBJECT: REVIEW OF UTILITY EMERGENCY PLAN DOCUMENTATION

The Division of Rules and Records has reviewed the attached document and has determined that it may now be made publicly available.

  
J. M. Felton, Director  
Division of Rules and Records  
Office of Administration 

Attachment: As stated