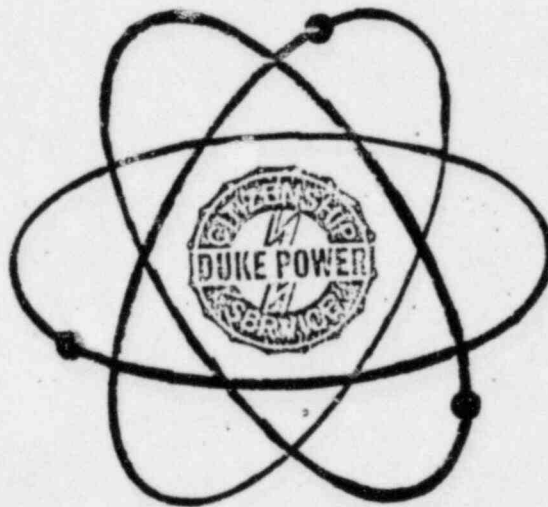


DUKE POWER COMPANY

OCONEE NUCLEAR STATION

IMPLEMENTING PROCEDURES



Revision 83-2
February 21, 1983

8304220340 830415
PDR ADCK 05000269
F PDR

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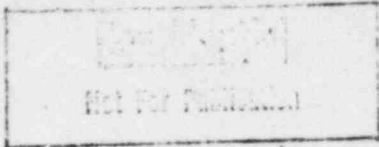
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EMERGENCY TELEPHONE NUMBERS

This enclosure provides a listing of telephone numbers for various personnel and agencies that may have a part in dealing with an emergency situation or providing other assistance as needed at Oconee Nuclear Station.

EMERGENCY TELEPHONE NUMBERS



This directory provides a listing of telephone numbers for various personnel and agencies that may have a part in dealing with an emergency situation or providing other assistance as needed at Oconee Nuclear Station.

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DUKE POWER COMPANY
OCONEE NUCLEAR STATION

NUMBER CODE FOR IDENTIFYING PERSONNEL/ACTIVITIES TO BE NOTIFIED

CODE

- 1. NUCLEAR REGULATORY COMMISSION by Red Phone within one hour.
- 2. UNIT COORDINATOR/OPERATIONS DUTY ENGINEER who will notify:
 - A. Superintendent of Operations
 - B. Station Manager/Emergency Coordinator (or alternate as listed in number 11.)
 - C. Nuclear Production Duty Engineer who will notify:
 - 1. Corporate Communications
 - 2. Crisis Management Organization
- 3. STATION MANAGER
 - J. Ed Smith, Office
 - Home
- 4. BABCOCK AND WILCOX RESIDENT ENGINEER
 - Bill Street, Office
 - Home
 - (If Bill Street cannot be reached, call)
 - L. H. Williams, Office
 - Home
- 5. STATION HEALTH PHYSICIST/DUTY HEALTH PHYSICIST
 - C. T. Yongue, Office
 - Home

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6. SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL,
(Warning Point State of South Carolina)

Bureau of Radiological Health (0800-1700)
Answering Service after hours, weekends, holidays.

*State Emergency Operations Center, Columbia, S.C. . .

*Forward Emergency Operations Center, Clemson, S. C. .
Alternate Number
Alternate Number

*NOTE: These numbers are to be used once the State
has established their Emergency Operations.

7. COUNTY EMERGENCY PREPAREDNESS AGENCIES

Oconee County Emergency Preparedness
Alternate Number - 24 hour, page
Alternate Number - 24 hour, page

Pickens County Emergency Preparedness.
Alternate Number - (0830-1700)
Alternate Number - 24 hour, page

8. COUNTY SHERIFF'S DEPARTMENTS

Oconee County (24 hours)
Alternate Number

Pickens County (24 hours)
Alternate Number
Alternate Number
Alternate Number

9. MEDICAL ASSISTANCE

Oconee Memorial Hospital Ambulance Service
Oconee Memorial Hospital Switchboard/Supervisor or Nursing .

Additional Medical assistance may be provided through the
following institutions:

Pickens County Ambulance Service
Cannon Memorial Hospital/Supervisor of Nursing
Easley Baptist Hospital/Supervisor of Nursing

10. FIRE ASSISTANCE

Oconee County Rural Fire Protection Association
Woods or Forest Fire (Oconee County, Oakway Tower)
Woods or Forest Fire (Pickens County, Woodall Mt. Tower) . . .



11. EMERGENCY COORDINATOR AND ALTERNATES (TSC Activation)

(If the first person cannot be reached, go to the next person down the list until one person is contacted)

Emergency Coordinator/Station Manager

J. E. Smith, Office
Home

Superintendent of Technical Services

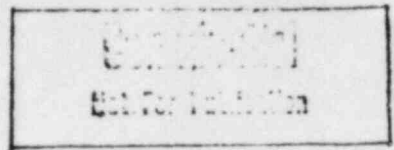
T. B. Owen, Office
Home

Superintendent of Maintenance

J. M. Davis, Office
Home

Superintendent of Operations

J. N. Pope, Office
Home



12. WATER DEPARTMENTS

Should releases of radioactive effluent into Lake Keowee or Lake Hartwell potentially effect municipal water intakes or exceed technical specifications. Contact the appropriate authorities as indicated below:

Lake Keowee

Seneca, H. J. Balding, Office
Home

Lake Hartwell

City of Clemson

Mayor of Clemson, Office
Home

(If the mayor cannot be reached, call one of the following)

Clemson Administrator's Office
Home

Clemson Filter Plant (0700-1700)

Clemson University

President's Office
Home

(If the President cannot be reached, call)
Clemson University Physical Plant (0800-1630)

Anderson Water Works (24 Hr. Number)

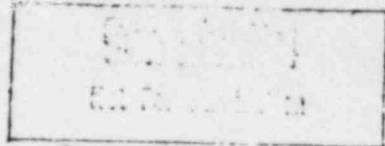
AGENCIES THAT MAY RESPOND TO AN EMERGENCY AT THE OCONEE NUCLEAR STATION

LAW ENFORCEMENT

- S. C. Highway Patrol (Greenville, S.C.)
- S. C. Enforcement Division (Columbia, S.C.)
- FBI (Columbia, S.C.) (24 hours).

BOMB DISPOSAL

Explosives Ordinance Disposal Control
(Fort Jackson, Columbia, S.C.)



RADIATION AND CONTAMINATION

- REACTS, Department of Energy (Oak Ridge, Tennessee) . . .
(24 hr. number - after 1700 ask for Beeper number) . . .
- DOE Emergency Radiological Monitoring Team (Aiken, S.C.) .
- N. C. Division of Emergency Management
(Warning Point - State of North Carolina)
- Georgia Department of Natural Resources
Environmental Radiation Program
(Warning Point - State of Georgia)

NUCLEAR REGULATORY COMMISSION

- NRC Operations Center (via Bethesda Central Office)
- NRC Operations Center (via Silver Spring Central Office) .
- Health Physics Network to NRC Operations Center
- Health Physics Network to NRC, Region II
- NRC Operator (Via Bethesda Central Office)
- US NRC, Region II (Operations Center).
- US NRC, Oconee Resident Inspectors

Home

BUS TRANSPORTATION

- Anderson Retail Office (24 hour number)
(Contact Ken Kernodle, George Wilson)

NATIONAL WEATHER SERVICE - METEOROLOGICAL BACK-UP SOURCE

- Greenville-Spartanburg Weather Service (24 hour) .

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OCONEE NUCLEAR STATION
CRISIS COMMUNICATIONS DIRECTORY

The crisis directory is intended for use should the Oconee Emergency Plan require implementation. Both station and corporate level telephone numbers are provided. The station's emergency organization will operate from the Technical Support Center near the Units 1 and 2 Control Room. The corporate emergency organization will operate from the Crisis Management Center located in the Visitors Center and Oconee Training Center.

EMERGENCY FACILITY LOCATIONS

Technical Support Center - Control Rooms 1 and 2

Operational Support Center - Control Room 3

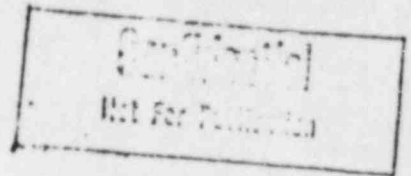
Crisis Management Center - Oconee Training Center

Alternate Location: Liberty Retail Office

Crisis News Center - Keowee-Toxaway Visitors Center

Alternate Location: Liberty Retail Office

OCONEE NUCLEAR STATION
TELEPHONE DIRECTORY



Seneca Lines

Easley Lines

Anderson Line

Six Mile Line

Dial Code
(Micro-Wave)

(Charlotte General Office)

(Catawba)

(McGuire)

(Cherokee)

Attendant (To access
Bell Line)

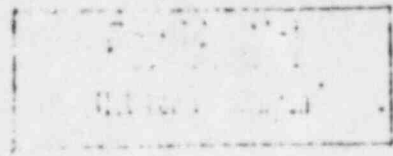
Seneca

Easley

Anderson

Six Mile

OCONEE NUCLEAR STATION
CRISIS PHONE DIRECTORY
TECHNICAL SUPPORT CENTER



<u>POSITION/NAME</u>	<u>Telephone Number</u>	
	<u>Outside Line</u>	<u>Station Number</u>
Emergency Coordinator J. E. Smith		
Supt. of Operations J. N. Pope		
Supt. of Technical Services T. B. Owens		
Supt. of Maintenance J. M. Davis		
Supt. of Administration J. T. McIntosh		
NRC Resident Engineer Jack Bryant		
B&W Resident Engineer B. W. Street L. H. Williams, Alternate		
Station Health Physicist C. T. Yongue		
<u>HEALTH PHYSICS CENTER</u>		
Field Monitoring Coordinator J. J. Sevic		
Data Report Coordinator (Off-Site Dose Projection) C. Harlin		
Surveillance and Control Coordinator M. D. Thorne		
Support Functions Coordinator J. A. Long		
Dosimetry Records B. A. Murphree		

Telephone Number

Outside
Line

Station
Number

TECHNICAL SERVICES GROUP

Performance
T. S. Barr

Licensing and Projects
R. T. Bond

Chemistry
D. P. Rochester

OPERATIONAL SUPPORT CENTER

(Support group consists of Health Physics, Chemistry, Maintenance,
Safety and Operations personnel)

Operational Support Center Coordinator

W. E. Martin

Mechanical Maintenance Engineer

D. Thompson

I & E Engineer

R. Adams

Operations Group

Unit #3 Operations Offices

Nuclear Equipment Operators (Unit 1 & 2 Emergencies)

Nuclear Equipment Operators (Unit 3 Emergencies)

CONTROL ROOM

Unit 1

Unit 2

Unit 3

Shift Supervisor (Unit 1 & 2)

Unit 3

COMMUNICATIONS COORDINATION

Data Transmission Coordinator.

Data Release (Vax Computer Program).

Telecopier (Technical Support Center).

TSC Communicator

Administration Clerical Support.

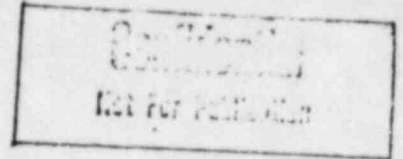
Emergency Response

OCONEE NUCLEAR STATION
CRISIS PHONE DIRECTORY
CRISIS MANAGEMENT CENTER

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<u>POSITION/NAME</u>	<u>PRIVATE LINE</u>	<u>ONS SWITCHBOARD</u>
<u>RECOVERY MANAGER</u>		
<u>SCHEDULING/PLANNING</u>		
<u>RADIOLOGICAL SUPPORT</u>		
 <u>OFFSITE RADIOLOGICAL COORDINATOR</u>		
 <u>TECHNICAL SUPPORT</u>		
 <u>DESIGN AND CONSTRUCTION SUPPORT</u>		
 <u>ADMINISTRATION AND LOGISTICS</u>		
 <u>DATA COORDINATION</u>		
<u>TELECOPIER</u>		
 <u>ADVISORY SUPPORT</u>		
<u>NUCLEAR REGULATORY COMMISSION</u>		
 <u>BABCOCK & WILCOX (NSSS SUPPLIER)</u>		
 <u>CORPORATE HEADQUARTERS</u> (Contact with the Governor)		
A. C. Thies		
W. H. Owen		

OCONEE NUCLEAR STATION
CRISIS PHONE DIRECTORY
GENERAL OFFICE SUPPORT CENTER



WACHOVIA CENTER

RECOVERY MANAGER (Room 1222)

SCHEDULING/PLANNING (Room 1222)

RADIOLOGICAL SUPPORT (Room 2390)

OFFSITE RADIOLOGICAL COORDINATOR (Room 2336)

TECHNICAL SUPPORT (Room 1704)

ADMINISTRATION AND LOGISTICS (Room 1488)

NUCLEAR REGULATORY COMMISSION (Room 1400)

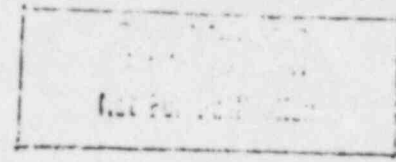
ELECTRIC CENTER

DESIGN AND CONSTRUCTION SUPPORT (Room 32, 3rd Floor)

POWER BUILDING

CRISIS NEWS CENTER (5th Floor)

OCONEE NUCLEAR STATION
CRISIS PHONE DIRECTORY
BACKUP CRISIS MANAGEMENT CENTER
LIBERTY RETAIL OFFICE, LIBERTY, S.C.



AREA CODE -
Telephone Number

RECOVERY MANAGER

SCHEDULING/PLANNING

PUBLIC INFORMATION OFFICERS*

State of South Carolina
Oconee County
Pickens County

DESIGN AND CONSTRUCTION

TECHNICAL SUPPORT

OFFSITE RADIOLOGICAL COORDINATOR

ADMINISTRATION AND LOGISTICS

HEALTH PHYSICS/RADWASTE

GOVERNMENT AGENCIES*

NRC
State of South Carolina
Oconee County
Pickens

*NOTE: Call any one of the numbers listed to reach the desired representative.

OCONEE NUCLEAR STATION

CRISIS PHONE DIRECTORY

CRISIS NEWS CENTER

KEOWEE-TOXAWAY VISITORS' CENTER

Telephone Number

882-5363

ONS

Switchboard

Position/Name

Private
Line

CRISIS NEWS DIRECTOR
Mary Cartwright

COMMERCIAL NEWS MEDIA
(Active Numbers)
For drill purposes only

COMMERCIAL NEWS MEDIA
(Inactive Numbers)
Activated only during an
actual emergency

NRC/STATE/COUNTY PUBLIC
INFORMATION OFFICERS (PIO'S)*

NRC
State of South Carolina
Oconee County
Pickens County

NOTE: Call any of the numbers listed to reach the desired representative.

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NRC HEALTH PHYSICS NETWORK TELEPHONES

The NRC's Health Physics Network (HPN or Black Phone) connects all Nuclear Power Plants and Fuel Facilities to NRC Regional Offices and to NRC Headquarters Operations Center. The phone is intended to support Health Physics Operations in an emergency but can be used for daily voice traffic and facsimile transmittal.

The Station has jacks for the HPN phones in the Performance Office (Control Room 1 & 2)

The phone is used normally with the exception; NO DIAL TONE OR RINGING IS HEARD. In addition, ringing only lasts 30 seconds, so after 30 seconds if the party has not answered, you must hang up and redial.

For convenience, the codes most often used are listed below:

<u>HPN Phone</u>	<u>Code</u>
1. NRC region 2 (Atlanta) office	
2. NRC headquarters (24 hours)	
3. B&W Research Center	
4. Oconee NRC Resident Inspector	
5. Oconee Nuclear Station	
6. <u>All</u> NRC region 2 Resident Inspectors	
7. <u>All</u> region 2 Operating Nuclear Plants	

In addition, the calling party may "conference" any phones during conversation by simply dialing the appropriate code(s). Any number of stations may be added in this manner.

OCONEE NUCLEAR STATION EMERGENCY RADIO

Not For Publication

The call letters identify the Emergency Radio frequency. The following is a listing of radio locations, unit call letters, and identifiers. Use identifiers to begin a transmission and the call letters to close out the radio transmission. (For example: Oconee Nuclear Station Control Room to Pickens County Law Enforcement Center. Close out with off.)

ONS Base Station Remotes

<u>Location</u>	<u>Unit Call Letters</u>	<u>Identifier</u>
1. Unit 1&2 Control Room		Oconee Nuclear Station Control Room
2. Crisis Management Center		Oconee Nuclear Station CMC
3. Technical Support Center		Oconee Nuclear Station TSC

Coded Squelch Radios

<u>Location</u>	<u>Encode</u>	<u>Unit Call Letters</u>	<u>Identifier</u>
4. Pickens Co. LEC Pickens Co. Courthouse			Pickens Co. LEC Pickens Co. Court House
Pickens Co. Civil Defense			Pickens Co. CD
5. Oconee County LEC			Oconee Co. LEC
6. State FEOC - Clemson			State FEOC

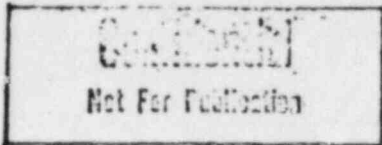
ALL ABOVE RADIOS MAY BE ACTIVATED BY ENCODING NO.

Field Monitoring Teams

<u>Location</u>	<u>Unit Call Letters</u>	<u>Identifier</u>
8. Field Monitor Coordinator		Leader
9. Field Monitor Team		Alpha
10. Field Monitor Team		Bravo
11. Field Monitor Team		Charlie
12. Field Monitor Team		Delta
13. Field Monitor Team		Echo
14. Field Monitor Team		Foxtrot

TO COMMUNICATE BETWEEN BASE STATION REMOTES (1, 2, 3), THE INTERCOM MUST BE USED! The following procedure must be used:

1. Push INTERCOM button and hold
2. Push MIKE button and hold
3. Send message (example, CMC to TSC)
4. Release both buttons to receive a response.



EMERGENCY OPERATION CENTER

Pickens County

Primary Number

EXECUTIVE GROUP*

- Civil Defense
- County Administrator
- County Council
- Legal Officer

OPERATIONS GROUP*

- Law Enforcement
- Rescue Squad
- EMS

- Fire Service
- Medical Service
- Health Service
- Dept. of Public Works

ASSESSMENT*

- Transportation
- Emergency Welfare Service
- Shelter Service
- Red Cross

- Supply and Procurement
- RADEF

- Mental Health
- Damage Assessment
- Public Information

ALTERNATE NUMBER (to any group)

PUBLIC INFORMATION OFFICER

CRISIS NEWS CENTER-ONS*

- State of South Carolina
- Oconee County
- Pickens County
- NRC

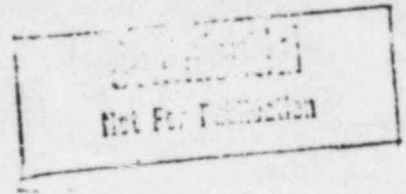
CRISIS NEWS CENTER LIBERTY RETAIL OFFICE*

- State of South Carolina
- Oconee County
- Pickens County
- NRC

*Call any one of the listed numbers to reach group desired.

EMERGENCY OPERATION CENTER

Oconee County



Primary Number (24-hour)

OPERATIONS*

Fire Protection

Police

Public Roads

Emergency Medical Services

Rescue Squads

ASSESSMENT*

Emergency Welfare Services

Radiological Defense

Damage Assessment

EXECUTIVE GROUP*

Supervisor/Chairman County Council

EOC Director

Financial Officer

FNF Representative

PUBLIC INFORMATION OFFICER

CRISIS NEWS CENTER-ONS

State of South Carolina
Oconee County
Pickens County
NRC

CRISIS NEWS CENTER LIBERTY RETAIL OFFICE

State of South Carolina
Oconee County
Pickens County
NRC

*Call any one of the listed numbers to reach group desired.

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: CP/O/B/4003/02
Change(s) n/a to
Incorporated

(2) STATION: Oconee

(3) PROCEDURE TITLE: The Determination of Plume Direction and Sector(s) to be Monitored Following a Large Unplanned Release of Gaseous Radioactivity

(4) PREPARED BY: M. R. Killough DATE: 01-06-83

(5) REVIEWED BY: Jimmy J. Suci DATE: 01-06-83

Cross-Disciplinary Review By: Ray A. Hill N/R: _____

(6) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____

By: _____ Date: _____

(7) APPROVED BY: Doug B. Owen Date: 1/20/83

(8) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____

Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
OCONEE NUCLEAR STATION

THE DETERMINATION OF PLUME DIRECTION AND SECTOR(S)
TO BE MONITORED FOLLOWING A LARGE UNPLANNED RELEASE
OF GASEOUS RADIOACTIVITY

1.0 Discussion

- 1.1 Scope - This procedure covers the methodologies and techniques used in determining the direction of a plume and the sector(s) to be monitored by the Field Monitoring Teams in the event of an accidental release of radioactive gases from ONS.
- 1.2 Principle - The determination of plume direction and, therefore, the sector(s) to be monitored shall be based on site specific meteorological conditions. The Unit 1 Control Room operator(s) shall provide meteorological data (wind speed and direction obtained from the Microwave Meteorological Tower (46 m) and the River Tower located near the S.C. Highway 183 bridge). Sectors to be monitored shall be determined using wind speed and direction. Monitoring shall be accomplished in accordance with Procedure CP/O/B/4003/01.

1.3 Limits and Precautions

1.3.1. The Control Room shall provide meteorological condition updates every 15 minutes once the Technical Support Center has been activated.

1.3.2 In the event site meteorological data is not available, the following meteorological data shall be obtained from the National Weather Service at the Greenville-Spartanburg Airport:

1.3.2.1 Wind speed in mph (mph = knots x 1.15)

1.3.2.2 Wind direction (direction from which wind is blowing in degrees).

1.3.3 A map of the site area (10 mile radius) divided into 12 sectors (A1 thru F1 and A2 thru F2) shall be maintained in both the TSC and CMC for use by the Field Monitoring Coordinator.

2.0 Procedure

- 2.1 Complete the meteorological section of Enclosure 4.1 with data obtained from the Unit 1 Control Room (the vertical board panel displaying weather information is located at the northeast corner of the Control Room).

2.2 To determine the sectors likely to be affected by an unplanned release of radioactivity, use Section 2.2.1 for a day release (1000 to 1600 hours) or Section 2.2.2 for a night release (1600 to 1000 hours).

2.2.1 Day release (1000 to 1600 hours) for both vent and nonvent releases.

2.2.1.1 Obtain the Microwave Tower wind speed (mph) and wind direction (degrees) from Enclosure 4.1. If the Microwave Tower meteorological instrumentation is inoperable, use the River Meteorological Tower data.

2.2.1.2 For wind speeds > 5 mph, use the wind direction and Enclosure 4.2 to determine the primary sectors to be monitored. If only the NWS meteorological data is available, monitor in a 360° pattern by cruising back and forth perpendicular to the expected plume direction. Initiate monitoring by starting with the wind direction determined by one of the Field Monitoring Teams using smoke or chaff and a compass.

2.2.1.3 For wind speeds < 5 mph, assume Sectors A1 thru F1 are affected and monitor accordingly. Initiate monitoring by starting with the Microwave Tower wind direction and monitoring in a 360° pattern until the plume direction and width can be determined and evaluated.

2.2.2 Night release (1600 to 1000 hours)

2.2.2.1 Obtain the River Tower wind speed and direction from Enclosure 4.1.

NOTE: For night releases the River Tower Meteorological data becomes the primary data and the Microwave Tower becomes the secondary.

2.2.2.2 If both the River Tower and Microwave Tower wind directions are between 210° and 070° (for both vent and nonvent releases), monitor sectors as directed by Section 2.2.1.2 or 2.2.1.3.

2.2.2.3 If both the River Tower and Microwave Tower wind direction is between 070° and 210° (for vent and nonvent releases) regardless of wind speed, assume all sectors (A1 thru F1 and A2 thru F2) are

affected and monitor accordingly. Initiate monitoring by starting with the River Tower wind direction and monitor in a 360° pattern at 3 miles and 5 miles until the plume direction and width can be determined and evaluated.

- 2.2.2.4 If the River Tower wind direction is between 070° and 210° (for both vent and nonvent releases) and the Microwave Tower wind direction is between 210° and 070°, assume Sectors A1 thru F1 are affected and monitor accordingly. Use both the River Tower wind direction and the Microwave Tower wind direction to initiate monitoring for the multidirectional plume (gravity air flow condition).

2.3 Update Enclosure 4.1 every 15 minutes and reassess the sectors affected.

3.0 References

Procedure for Environmental Surveillance Following a Large Unplanned Release of Gaseous Radioactivity (CP/O/B/4003/01).

4.0 Enclosures

4.1 Meteorological Data for Determining Possible Plume(s) Direction

4.2 Determination of Sectors to be Monitored for Possible Plume Location when Wind Speed is ≥ 5 mph.

ENCLOSURE 4.1

METEOROLOGICAL DATA FOR DETERMINING POSSIBLE PLUME(S) DIRECTION

(UPDATED EVERY 15 MINUTES)

	(1)	(2)	(3)	(4)
Time	_____	_____	_____	_____
Microwave Tower Wind Direction (in degrees)	_____	_____	_____	_____
Microwave Tower Wind Speed (in mph)	_____	_____	_____	_____
River Wind Direction (in degrees)	_____	_____	_____	_____
River Wind Speed (in mph)	_____	_____	_____	_____
National Weather Service				
Wind Direction (in degrees)	_____	_____	_____	_____
Wind Speed (in mph)	_____	_____	_____	_____

Sectors Affected

- (1) _____
- (2) _____
- (3) _____
- (4) _____

Sheet No. _____

ENCLOSURE 4.2

DETERMINATION OF SECTORS TO BE MONITORED FOR
POSSIBLE PLUME LOCATION WHEN WIND SPEED IS \geq 5 MPH

<u>Wind Direction</u>	<u>Sectors Affected</u>
14°-27°	C1, C2, D1, D2, E1, E2
27°-42°	C1, D1, D2, E1, E2
42°-66°	D1, D2, E1, E2
66°-85°	D1, D2, E1, E2, F2
85°-104°	D1, D2, E1, E2, F1, F2
104°-129°	E1, E2, F1, F2
129°-156°	A1, A2, E1, E2, F1, F2
156°-175°	A1, A2, E1, F1, F2
175°-181°	A1, A2, F1, F2
181°-219°	A1, A2, B1, B2, F1, F2
219°-255°	A1, A2, B1, B2
255°-271°	A1, A2, B1, B2, C1, C2
271°-297°	B1, B2, C1, C2
297°-312°	B1, B2, C1, C2, D2
312°-345°	B1, B2, C1, C2, D1, D2
345°-14°	C1, C2, D1, D2

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DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: HP/O/B/1009/13
Change(s) 3 to
N/A Incorporated

(2) STATION: Oconee

(3) PROCEDURE TITLE: Procedure for Implementation and Verification for the Availability of a Back-Up Source of Meteorological Data

(4) PREPARED BY: Sarah Coy DATE: 2-9-83

(5) REVIEWED BY: Chibi Young DATE: 2-10-83

Cross-Disciplinary Review By: _____ N/R: g

(6) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____

By: _____ Date: _____

(7) APPROVED BY: Pony B Owen Date: 2/12/83

(8) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____

Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
OCONEE NUCLEAR STATION
PROCEDURE FOR IMPLEMENTATION AND VERIFICATION FOR
THE AVAILABILITY OF A BACK-UP SOURCE OF METEORO-
LOGICAL DATA

1.0 Purpose

To provide a procedure for implementation and verification for the availability of a back-up source of meteorological data needed to make an offsite dose projection should the station's meteorological data equipment become unavailable.

2.0 References

- 2.1 NUREG 1.23, Proposed Revision 1* to Regulatory Guide 1.23, Meteorological Programs in Support of Nuclear Power Plants.
- 2.2 NUREG 0654, Annex 1 to Appendix 2, (o), Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.
- 2.3 Oconee Nuclear Station Emergency Plan.

3.0 Limitations and Precautions

- 3.1 Maintain record of notification (Enclosure 5.1) for a minimum of two years. This procedure will be superseded as acceptable backup measures are developed by Oconee Nuclear Station.
- 3.2 Contact the National Weather Service at the Greenville-Spartanburg Airport by telephone using Enclosure 5.1. The telephone number listed on the Enclosure is a 24 hour number.
- 3.3 These contacts shall be made monthly and alternate among shifts.

4.0 Procedure

- 4.1 Record the following meteorological information on Enclosure 5.1.
 - 4.1.1 Wind direction (in terms of degrees).
 - 4.1.2 Wind speed (in knots).
 - 4.1.3 Air temperature.
 - 4.1.4 Weather conditions (clear, partly cloudy, etc.)

- 4.2 Record concurrent on-site meteorological information on Enclosure 5.1.
- 4.3 Make a copy of Enclosure 5.1 containing the collected meteorology data quarterly and forward the copy to:

Environmental Engineer
Environmental Services
Environmental Lab

5.0 Enclosure

- 5.1 Communications Check, Meteorological Data.

Enclosure 5.1
 Communication Check
 Meteorological Data

Back-Up Source: National Weather Service, Greenville - Spartanburg Airport
 Telephone Number: 803-877-6998

Month	Time	Date	Person Calling	Wind Direction (Ten of Degrees)	Wind Speed (Knots)	Air Temperature	Weather Conditions	NWS ONS
Jan.				---	---	---	---	NWS ONS
Feb.				---	---	---	---	NWS ONS
March				---	---	---	---	NWS ONS
April				---	---	---	---	NWS ONS
May				---	---	---	---	NWS ONS
June				---	---	---	---	NWS ONS
July				---	---	---	---	NWS ONS
August				---	---	---	---	NWS ONS
Sept.				---	---	---	---	NWS ONS
Oct.				---	---	---	---	NWS ONS
Nov.				---	---	---	---	NWS ONS
Dec.				---	---	---	---	NWS ONS

INFORMATION ONLY

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Form SPD-1002-1

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: HP/O/B/1009/15
Change(s) 6 to
N/A Incorporated.

- (2) STATION: Oconee
- (3) PROCEDURE TITLE: Procedure for Sampling and Quantifying High Level Gaseous, Radioiodine, and Particulate Radioactivity
- (4) PREPARED BY: E. G. Hirsch DATE: 1/2/83
- (5) REVIEWED BY: Charlie Y. Long DATE: 1-25-83
- Cross-Disciplinary Review By: _____ N/R: cy
- (6) TEMPORARY APPROVAL (IF NECESSARY):
- By: _____ (SRO) Date: _____
- By: _____ Date: _____
- (7) APPROVED BY: Donny B. Owen Date: 1/25/83
- (8) MISCELLANEOUS:
- Reviewed/Approved By: _____ Date: _____
- Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY

OCONEE NUCLEAR STATION

PROCEDURE FOR SAMPLING AND QUANTIFYING HIGH
LEVEL GASEOUS, RADIOIODINE, AND PARTICULATE RADIOACTIVITY

1.0 Purpose

This procedure describes methods for collecting samples to evaluate effluent and containment noble gas, radioiodine, and particulate activities during accident conditions. It also provides effluent emergency action levels for emergency classification determination.

2.0 References

- 2.1 System Health Physics Manual, Section I, M, Radioactive Waste Control Requirements
- 2.2 Technical Specifications Oconee Nuclear Station, Appendix A. Section 3.10 Release of Gaseous Radioactive Waste
- 2.3 HP/O/B/1000/60/A, Procedure for Gaseous Waste Sampling and Analysis
- 2.4 HP/O/B/1000/60/D, Procedure for Unit Vent Sampling and Analysis
- 2.5 HP/O/B/1000/57, Air Sampling, Counting and Calculating Procedure
- 2.6 HP/O/B/1000/60/B, Procedure for Reactor Building Gaseous Purge
- 2.7 HP/O/B/1000/60/H, Procedure for Changeout and Analysis of Reactor Building Iodine Cartridges and Particulate Filters
- 2.8 HP/O/B/1001/14, Procedure for Nuclear Data 6600 System Operation
- 2.9 HP/O/B/1006/07, Procedure for Preparation of Gas Calibration Sources

3.0 Limits and Precautions

- 3.1 This procedure is written for use under abnormal conditions which could involve extremely high radiation levels. Only Health Physics management should authorize the use of this procedure.
- 3.2 Whenever the effluent monitor goes offscale, appropriate grab samples or radiation level measurements should be taken to estimate effluent release rates and the amount of effluent released.

- 3.3 Should the station total effluent release rate exceed the emergency action levels specified in Section 4.9 of this procedure, make the required notifications.

4.0 Procedure

- 4.1 Conduct prejob ALARA planning session. Consider the guidance provided in Enclosure 5.1 in preplanning.
- 4.2 Use an ion chamber to measure the radiation dose rates at the Iodine RIA sample holder and the middle point of the gaseous RIA supply line.
- 4.3 When contact dose rate readings at Iodine RIA sample holder (RIA-44 for Vent/RIA-48 for Containment Building) and middle point of Gaseous RIA supply line (RIA 45/46 for Vent/RIA 49 for Containment Building) are less than 3 R/hr, collect gas and Iodine samples as described in Steps 4.4.1 to 4.4.6.

4.4 Sample Collection

- 4.4.1 Prepare a flow path in the following order:

Supply → particulate filter paper → CP-100G silver zeolite sample cartridge → vacuum pump → flow meter (0-80LPM) → 100 ml Argonne gas bomb → return line.

NOTE: During an accident, the containment building is isolated. Contact Shift Supervisor for manual override to open valves for sampling.

See Enclosure 5.2 for apparatus setup.

- 4.4.2 Collect sample.

NOTE: Minimum sample volume is 5 liters.

- 4.4.3 Upon completion, turn off sample pump, close exhaust valve of gas bomb, close intake valve of gas bomb, close supply valve, then close return valve.

- 4.4.4 Remove filter and cartridge. Monitor sample and place in protective wrapper (poly bag). Identify with

4.4.4.1 Start time

4.4.4.2 Stop time

4.4.4.3 Flow rate

4.4.4.4 Sample location

- 4.4.5 Place samples in shielding container for return to the counting laboratory.
- 4.4.6 If contact reading on sample is greater than .01 R/hr, Count Room personnel will make decision on counting sample.
- 4.5 When the contact dose rate at the gaseous RIA supply line (RIA 45/46 for Vent/RIA 49 for Containment Building) is greater than 3R/hr, obtain gaseous concentration ($\mu\text{Ci/ml}$) corresponding to the radiation dose rate (R/hr) from Enclosure 5.3.
- 4.6 When the contact dose rate at the Iodine RIA sample holder (RIA 44 for Vent/RIA 48 for Containment Building) is between 3 R/hr and 15 R/hr, follow Step 4.6.1 to 4.6.5. If the dose rate exceeds 15 R/hr, no samples will be taken.

NOTE: Contact Shift Supervisor for manual override to open valves for sampling.

- 4.6.1 Remove charcoal cartridge from the Iodine RIA sample holder. Survey removed charcoal cartridge and save to be counted if possible.
- 4.6.2 Collect sample through silver zeolite cartridge for two (2) minutes. Collect data from RIA flow meter for correct volume.
- 4.6.3 Remove cartridge from sample holder, monitor sample and place cartridge in protective wrapper (poly bag). Put bag into a shielded container for transport to a lower background area for a dose rate measurement. Place new cartridge in sample holder for future use if desirable.
- 4.6.4 Take a contact dose rate measurement on the sample cartridge using an ion chamber. Obtain Iodine concentration ($\mu\text{Ci/ml}$) corresponding to the radiation dose rate (R/hr) from Enclosure 5.4.
- 4.6.5 If the contact reading is below .01 R/hr, perform a gamma isotopic analysis of the sample.

4.7 Isotopic Analysis of Sample

- 4.7.1 Iodine + Particulate - Separate filter and cartridge and seal in wrappers. Label cartridge with data. Analyze particulate and iodine cartridge by Reference 2.8.
- 4.7.2 Gaseous - Gas bomb is labeled for desired data and processed for gamma spectroscopy.
- 4.7.2.1 Test gas bomb for excessive dead time by Reference 2.8.

4.7.2.1.1 If the dead time is greater than 15% at the 9cm geometry for gas bombs, dilute the gas sample by Ref. 2.9. Further dilutions may be necessary until the desired dead time value $\leq 15\%$ is achieved.

4.7.3 Review spectral display versus printout to assure correct gamma isotopic analysis report.

4.8 Determine vent noble gas release rate in Ci/sec by the following equation:

$$\text{Ci/sec} = V_F \times \text{Concentration} \times 4.72 \times 10^{-4}$$

where,

V_F = Vent Flow Rate in CFM

Concentration = Sample noble gas concentration in Ci/m³

NOTE: 1 $\mu\text{Ci/ml}$ = 1 Ci/m³

4.72×10^{-4} = conversion, $\frac{\text{m}^3/\text{sec}}{\text{CFM}}$

NOTE: Should any other gaseous waste releases be in process, calculate Ci/sec values for noble gases as above and sum for the station total release rate.

4.9 Compare the noble gas release rate to the emergency action levels given below:

<u>Emergency Action Level</u>	<u>Emergency Classification</u>	<u>Notify</u>
A) Station noble gas release rate $\geq 8.7 \times 10^{-2}$ Ci/sec when averaged over 1 hour	A) Unusual Event (exceeds Tech. Spec. 3.10.3)	A) Shift Supervisor/ Emergency Coordinator
B) Station noble gas release rate $\geq 3.7 \times 10^{-1}$ Ci/sec	B) Alert (10 times Tech. Spec. 3.10.3)	B) HP Center-if TSC is activated Shift Supervisor/ Emergency Coordinator if TSC is not activated

4.10 Should the noble gas release rate exceed the emergency action level release rate, notify those specified of the conditions and the emergency classification based on those conditions.

5.0 Enclosures

- 5.1 Guidelines for Collecting, Transporting, Analyzing, and Disposing of High Level Samples
- 5.2 Apparatus setup for sample collection
- 5.3 Conversion of gaseous RIA supply line dose rate (R/hr) to gaseous effluent concentration ($\mu\text{Ci/ml}$)
- 5.4 Conversion of Iodine sample dose rate (R/hr) to Iodine effluent concentration ($\mu\text{Ci/ml}$)

ENCLOSURE 5.1

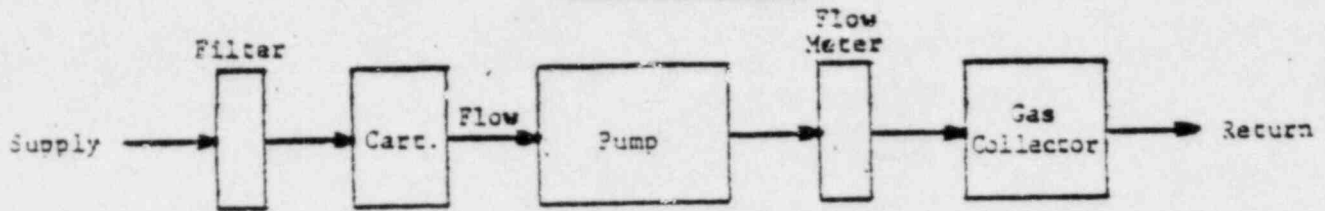
GUIDELINES FOR COLLECTING, TRANSPORTING, ANALYZING,
AND DISPOSING OF HIGH LEVEL SAMPLES

1. Before entering sampling points, be aware and prepare for high radiation levels and possible airborne areas.
2. Preplan and stage sampling apparatus in a low background area.
3. Take samples expeditiously.
4. Handle samples with either the source handling tools available in the H.P. Source Room or with tongs from station supply area.
5. Transport hot samples to counting lab with good ALARA practices.
Examples:
 - A. sample sitting on a cart or hand truck ----- distance.
 - B. Sample surrounded by a lead blanket or lead bricks (all of which are available in the H.P. Lab areas or supply) --- shielding.
6. Contamination control should be maintained by double bagging the sample during transport and analysis.
7. Disposal or storage of the high level samples in the Counting Facility should merit the same controls as sampling, i.e., ALARA transportation, shielded storage, or storage at a remote location.

ENCLOSURE 5.2

HP/O/B/1009/15

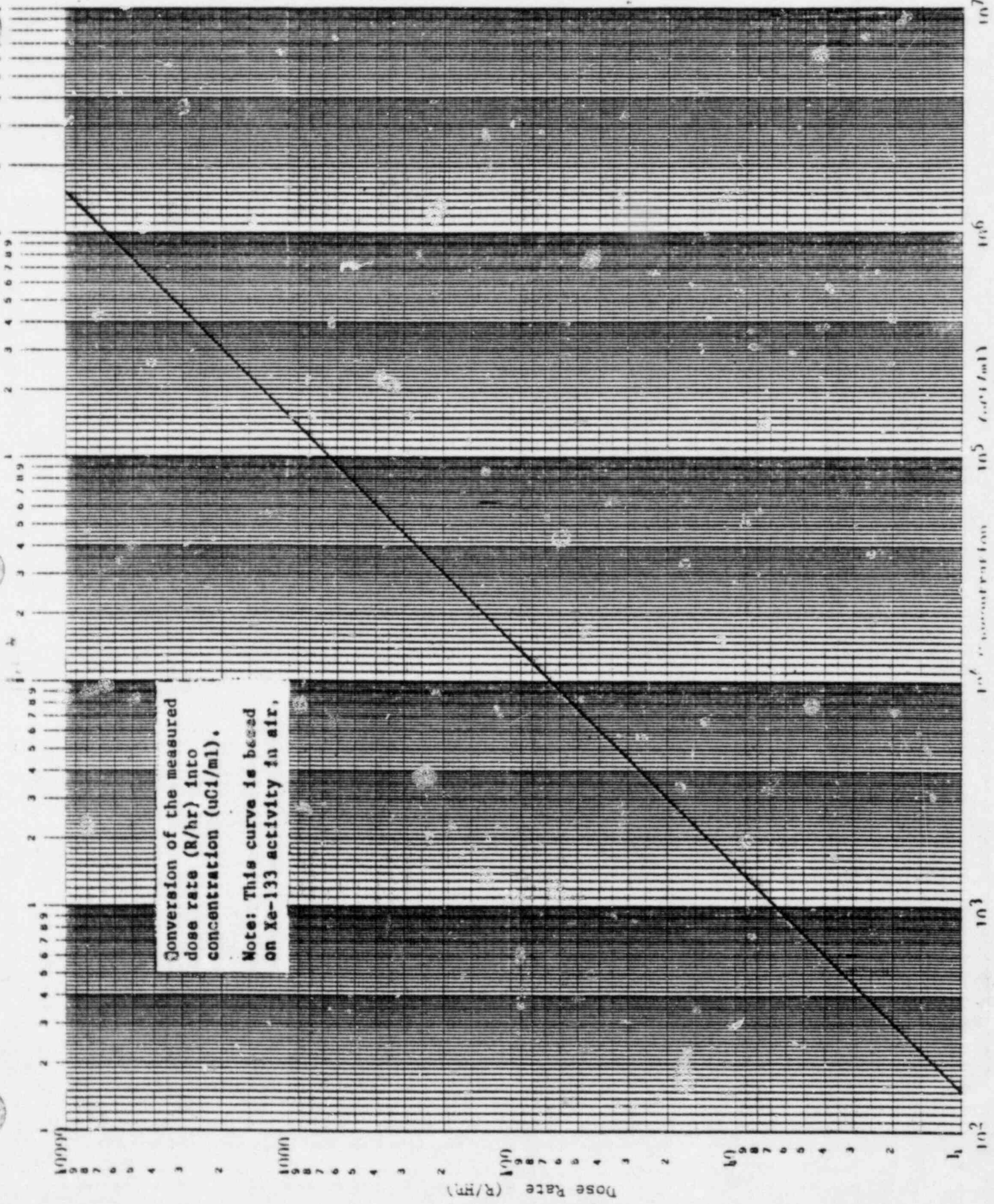
SAMPLE COLLECTION



- A) Set up sample system according to diagram.
- B) Before opening supply and return valves

ENSURE

- 1) Tight hose fittings.
 - 2) Correct valve positions.
 - 3) Open flow rate meter (a couple of full turns).
 - 4) Regulate flow rate with supply valve (when possible).
- C) Turn on sample pump.
 - D) Shut system down if pressure or vacuum meters build up.
 - E) Check gas collector for build up of back pressure.
 - F) Sample time is an important consideration in the validity of the sample results.
 - G) Upon completion of sample:
 - a) Turn off sample pump.
 - b) Close exhaust valve of gas bomb.
 - c) Close intake valve of gas bomb.
 - d) Close supply valve.
 - e) Close return valve.



Conversion of the measured dose rate (R/hr) into concentration (uCi/ml).
Note: This curve is based on Xe-133 activity in air.

10² 10³ 10⁴ 10⁵ 10⁶ 10⁷

