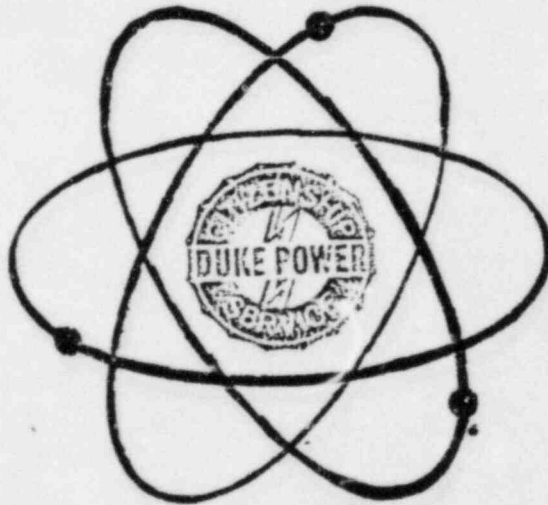


# DUKE POWER COMPANY

## OCONEE NUCLEAR STATION

### EMERGENCY PLAN IMPLEMENTING PROCEDURES



APPROVED:

*J. Ed Smith*  
J. Ed Smith, Station Manager

August 18, 1983  
Date Approved

August 19, 1983  
Effective Date

Revision 83-6

8311040206 831102  
PDR ADOCK 05000269  
F PDR

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**Confidential**  
Not For Publication

#### 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: 704-373-5491
    1. Corporate Communications
    2. Crisis Management Organization
3. STATION MANAGER . . . . .
  - J. Ed Smith, Office . . . . . Ext. 1211
  - Home . . . . . 654-2866
4. BABCOCK AND WILCOX RESIDENT ENGINEER
  - Bill Street, Office . . . . . Ext. 1140
  - Home . . . . . 868-2158

(If Bill Street cannot be reached, call)

  - L. H. Williams, Office . . . . . Ext. 1459
  - Home . . . . . 654-3213
5. STATION HEALTH PHYSICIST/DUTY HEALTH PHYSICIST
  - C. T. Yongue, Office . . . . . Ext. 1234
  - Home . . . . . 868-9411

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

Bureau of Radiological Health (0800-1700) . . . . .	758-5548
Answering Service after hours, weekends, holidays. . . . .	758-5531
*State Emergency Operations Center, Columbia, S.C. . . . .	758-2826
*Forward Emergency Operations Center, Clemson, S. C. . . . .	Duke Ringdown
Alternate Number . . . . .	654-9371

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

7. COUNTY EMERGENCY PREPAREDNESS AGENCIES

Oconee County Emergency Preparedness . . . . .	Duke Ringdown
Alternate Number - 24 hour, page 251 . . . . .	638-3097
Alternate Number - 24 hour, page 251 . . . . .	638-3678
Pickens County Emergency Preparedness. . . . .	Duke Ringdown
Alternate Number - (0830-1700) . . . . .	878-7808
Alternate Number - 24 hour, page 77 . . . . .	878-2421

8. COUNTY SHERIFF'S DEPARTMENTS

Oconee County (24 hours) . . . . .	Duke Ringdown
Alternate Number . . . . .	638-3678
Pickens County (24 hours) . . . . .	Duke Ringdown
Alternate Number . . . . .	878-2421
Alternate Number . . . . .	855-1666
Alternate Number . . . . .	878-3500

9. MEDICAL ASSISTANCE

Oconee Memorial Hospital Ambulance Service . . . . .	882-4611
Oconee Memorial Hospital Switchboard/Supervisor or Nursing . . . . .	882-3351

Additional Medical assistance may be provided through the  
following institutions:

Pickens County Ambulance Service . . . . .	868-2373
Cannon Memorial Hospital/Supervisor of Nursing . . . . .	878-4791
Easley Baptist Hospital/Supervisor of Nursing . . . . .	859-6365

10. FIRE ASSISTANCE

Oconee County Rural Fire Protection Association . . . . .	638-5846
Woods or Forest Fire (Oconee County, Oakway Tower) . . . . .	972-3600
Woods or Forest Fire (Pickens County, Woodall Mt. Tower) . . . . .	868-9056

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 . . . . .	Ext. 1211
Home . . . . .	654-2866

Superintendent of Technical Services

T. B. Owen, Office . . . . .	Ext. 1213
Home . . . . .	882-1499

Superintendent of Maintenance

J. M. Davis, Office . . . . .	Ext. 1227
Home . . . . .	647-9721

Superintendent of Operations

J. N. Pope, Office . . . . .	Ext. 1210
Home . . . . .	882-3866

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 . . . . .	882-8359
Home . . . . .	882-1005

Lake Hartwell

City of Clemson

Mayor of Clemson, Office . . . . .	654-2636
Home . . . . .	654-1785

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

Clemson Administrator's Office . . . . .	654-2636
Home . . . . .	654-6263

Clemson Filter Plant (0700-1700) . . . . .	654-1550
--	----------

Clemson University

President's Office . . . . .	656-3413
	654-2466
Home . . . . .	656-2340

Security - Police (24 hours) . . . . .	656-2222
(If the President cannot be reached, call)	
Clemson University Physical Plant (0800-1630) . . . . .	656-2186

<u>Anderson Water Works</u> (24 Hr. Number) . . . . .	226-9676
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AGENCIES THAT MAY RESPOND TO AN EMERGENCY AT THE OCONEE NUCLEAR STATION

LAW ENFORCEMENT

S. C. Highway Patrol (Greenville, S.C.) . . . . .	235-7471
S. C. Enforcement Division (Columbia, S.C.) . . . . .	758-6000
FBI (Columbia, S.C.) . . . . (24 hours). . . . .	254-3011

BOMB DISPOSAL

Explosives Ordinance Disposal Control . . . . .	751-5126
(Fort Jackson, Columbia, S.C.)	

RADIATION AND CONTAMINATION

REACTS, Department of Energy (Oak Ridge, Tennessee) . . .	615-482-2441
(24 hr. number - after 1700 ask for Beeper number) . . .	241
DOE Emergency Radiological Monitoring Team (Aiken, S.C.) .	725-3333
	(24 hrs.)
N. C. Division of Emergency Management . . . . .	919-733-3861
(Warning Point - State of North Carolina)	(24 hrs)
Georgia Department of Natural Resources	
Environmental Radiation Program . . . . .	404-656-4300
(Warning Point - State of Georgia)	(24 hrs.)

NUCLEAR REGULATORY COMMISSION

NRC Operations Center (via Bethesda Central Office) . . .	202-951-0550
NRC Operations Center (via Silver Spring Central Office) .	301-427-4056
Health Physics Network to NRC Operations Center . . . . .	22
Health Physics Network to NRC, Region II	23
NRC Operator (Via Bethesda Central Office) . . . . .	301-492-7000
US NRC, Region II (Operations Center). . . . .	404-221-4503
US NRC, Oconee Resident Inspectors . . . . .	882-5363
	Ext. 1108
Jack Bryant Home	882-4527
Dolan Falconer Home	654-6693

BUS TRANSPORTATION

Anderson Retail Office (24 hour number) . . . . .	224-6363
(Contact Ken Kernodle, Jerry Whitfield)	

NATIONAL WEATHER SERVICE - METEOROLOGICAL BACK-UP SOURCE

Greenville-Spartanburg Weather Service . . . . (24 hour) .	877-6998
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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	882-5363	
(803)	882-5368	
	882-5369	
	882-5370	
	882-5371	
Easley Lines	859-0108	
(803)	859-0113	
	859-0116	
Anderson Line	224-8376	
(803)		
Six Mile Line	868-2717	
(803)		
Dial Code	80	(Charlotte General Office)
(Micro-Wave)		
	80-188	(Catawba)
	80-212	(McGuire)
	80-115	(Cherokee)
	0	Attendant (To access Bell Line)
	9	Seneca
	60	Easley
	61	Anderson
	63	Six Mile

OCONEE NUCLEAR STATION  
CRISIS PHONE DIRECTORY  
TECHNICAL SUPPORT CENTER

<u>POSITION/NAME</u>	<u>Telephone Number</u>	
	<u>Outside Line</u>	<u>882-5363 Station Number</u>
Emergency Coordinator . . . . .	882-7076	1211
Supt. of Operations . . . . .		1210
Supt. of Technical Services . . . . .		1213
Supt. of Maintenance . . . . .		1227
Supt. of Administration . . . . .		1212
NRC Resident Engineer . . . . . FTS	677-9309	1108
B&W Resident Engineer . . . . .		1140
Station Health Physicist . . . . .		1234
<u>HEALTH PHYSICS CENTER</u>		1276, 1480
Field Monitoring Coordinator . . . . .		1417
Data Report Coordinator (Off-Site Dose Projection)		1138
Dose Coordination to CMC . . . . .		1236
FTS Line to NRC . . . . .	677-9309	
Surveillance and Control Coordinator . . . . .		1519
Support Functions Coordinator . . . . .		1179

	<u>Telephone Number</u>	
	<u>Outside</u>	<u>Station</u>
	<u>Line</u>	<u>Number</u>
<u>TECHNICAL SERVICES GROUP</u> (Located in Computer Room CR 1&2)		
Performance . . . . .		1409
Licensing and Projects . . . . .		1229
Chemistry . . . . .		1220
<u>OPERATIONAL SUPPORT CENTER</u>		1387
(Support group consists of Health Physics, Chemistry, Maintenance, Safety Operations group)		
Dosimetry Records . . . . .		1178
Operational Support Center Coordinator . . . . .		1216
Mechanical Maintenance Engineer . . . . .		1223
Mechanical Maintenance Supervisor . . . . .		1440
I & E Engineer . . . . .		1219
I & E Supervisor . . . . .		1189
Health Physics Support . . . . .		1190
Dose Control . . . . .		1178
S & C Coordinator . . . . .	1365,	1579
Support Function Coordinator. . . . .		1179
Chemistry Support . . . . .		1165
Medical Support . . . . .		1151
Clerical . . . . .		1387
Operations Group		
Unit #3 Operations Offices . . . . .		1277 1214 1221
Nuclear Equipment Operators (Unit 1 & 2 Emergencies)		1333
Nuclear Equipment Operators (Unit 3 Emergencies)		1388

CONTROL ROOM

Unit 1 . . . . .	1261, 1335
Unit 2 . . . . .	1321, 1206
Unit 3 . . . . .	1278, 1357
Shift Supervisor (Unit 1 & 2) . . . . .	1272, 1316
Unit 3 . . . . .	1392

COMMUNICATIONS COORDINATION

Data Transmission Coordinator. . . . .	1409
Data Release (Vax Computer Program). . . . .	1669
	1670
Telecopier (Technical Support Center). . . . .	1314
Offsite Communicator . . . . .	1244
TSC Clerical Support . . . . .	1233
Emergency Response . . . . .	1111

<u>EMERGENCY COUNT ROOM</u> (Located in Visitor's Center). . . . .	1763, 1764
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OCONEE NUCLEAR STATION  
CRISIS PHONE DIRECTORY  
CRISIS MANAGEMENT CENTER

<u>POSITION/NAME</u>	<u>PRIVATE LINE</u>	<u>ONS SWITCHBOARD</u>
<u>RECOVERY MANAGER</u>		
State of S.C. (FEOC Line)	654-9367	1713
(Duke Line)	882-9801	
<u>SCHEDULING/PLANNING</u>		
		1711
		1712
<u>RADIOLOGICAL SUPPORT</u>		
	882-8148	
Bureau of Radiological Health (Duke Line)	882-9598	
(FEOC Line)	654-9371	
OFFSITE RADIOLOGICAL COORDINATOR		1705
		1706
<u>TECHNICAL SUPPORT</u> . . . . .	882-8650	1714
		1715
		1716
		1717
<u>DESIGN AND CONSTRUCTION SUPPORT</u> . . . . .	882-8650	1726
		1727
		1728
<u>ADMINISTRATION AND LOGISTICS</u> . . . . .	882-9208	1707
		1708
		1709
		1710
<u>DATA COORDINATION</u>		
<u>TELECOPIER</u> . . . . .		1718
		1719
		1700
<u>ADVISORY SUPPORT</u>		
<u>NUCLEAR REGULATORY COMMISSION</u> . . . . . FTS 677-9314		1725
		1716
		1717
<u>BABCOCK &amp; WILCOX (NSSS SUPPLIER)</u> . . . . .		1714
		1715
<u>CORPORATE HEADQUARTERS</u>		
(Contact with the Governor)		
A. C. Thies	704-373-4249	
W. H. Owen	704-373-4120	

OCONEE NUCLEAR STATION  
CRISIS PHONE DIRECTORY  
GENERAL OFFICE SUPPORT CENTER

WACHOVIA CENTER

RECOVERY MANAGER (Room 1010) (Speaker Phone) 704-373-7951  
(Dedicated line to State Director) 704-373-5743

SCHEDULING/PLANNING (Room 1010) 704-373-5731  
704-373-7949

RADIOLOGICAL SUPPORT (Room 2390) 704-373-7790  
704-373-5444  
704-373-3003

OFFSITE RADIOLOGICAL COORDINATOR (Room 1222) 704-373-3141  
704-373-6265  
704-373-6150  
NRC FTS LINE 371-6804

TECHNICAL SUPPORT (Room 1704) 704-373-5177  
704-373-5235  
704-373-5236

ADMINISTRATION AND LOGISTICS (Room 0925) 704-373-3121  
704-373-3122  
704-373-3123

NUCLEAR REGULATORY COMMISSION (Room 1488) 704-373-2689  
704-373-7405  
704-373-7406

ELECTRIC CENTER

DESIGN AND CONSTRUCTION SUPPORT (Room 32, 3rd Floor) 704-373-4662  
704-373-5304  
~~704~~-373-5305  
704-373-2825

POWER BUILDING

CRISIS NEWS GROUP - DUKE (Rooms 5010, 5012, 5014) 704-373-4023  
704-373-5584  
704-373-3107  
704-373-2864  
704-373-7303

S.C. PUBLIC INFORMATION OFFICERS (Rooms 5020, 5022) 704-373-7302  
704-372-9818\*  
704-372-9824  
704-372-0970

\*Dedicated line to State Center



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

	<u>AREA CODE - 803</u> <u>Telephone Number</u>
<u>RECOVERY MANAGER</u>	843-2751
<u>SCHEDULING/PLANNING</u>	843-2752
<u>PUBLIC INFORMATION OFFICERS*</u>	843-2753
State of South Carolina	843-2754
Oconee County	843-2755
Pickens County	
<u>DESIGN AND CONSTRUCTION</u>	843-2701
	843-2702
<u>TECHNICAL SUPPORT</u>	843-2703
	843-2704
<u>OFFSITE RADIOLOGICAL COORDINATOR</u>	843-2705
	843-2761
<u>ADMINISTRATION AND LOGISTICS</u>	843-2762
	843-2763
<u>HEALTH PHYSICS/RADWASTE</u>	843-2764
	843-2765
<u>GOVERNMENT AGENCIES*</u>	843-6935
NRC	843-9014
State of South Carolina	
Oconee County	
Pickens County	

\*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

<u>Position/Name</u>	<u>Private Line</u>	<u>Telephone Number</u> 882-5363 ONS <u>Switchboard</u>
<u>CRISIS NEWS DIRECTOR</u>	882-0601	1430
Mary Cartwright	882-5620	1431
		1720
		1721
		1722
		1723
		1724
 <u>COMMERCIAL NEWS MEDIA</u>	882-6514	
(Active Numbers)	882-6515	
For drill purposes only	882-6519	
	882-6520	
	882-6522	
 <u>COMMERCIAL NEWS MEDIA</u>	882-6529	
(Inactive Numbers)	882-6530	
Activated only during an	882-6533	
actual emergency	882-6535	
	882-6536	
	882-6538	
	882-6540	
	882-6541	
	882-6543	
	882-6544	
 <u>NRC/STATE/COUNTY PUBLIC</u>		
<u>INFORMATION OFFICERS (PIO'S)</u>		
NRC	882-8094*	
Oconee County	882-4505*	
Pickens County	882-6744*	
	882-5537*	
State of S.C. (FECO Line)	654-9363	
(Duke Line)	882-6746	

\*Note: NRC, Oconee County or Pickens County may be reached on any one of these phones.

### 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) and in the Oconee Training Center.

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	23
2. NRC headquarters (24 hours)	22
3. B&W Research Center	83
4. Oconee NRC Resident Inspector	72
5. Oconee Nuclear Station	73
6. <u>All</u> NRC region 2 Resident Inspectors	26
7. <u>All</u> region 2 Operating Nuclear Plants	25

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

The call letters WQC699 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 WQC699 off.)

#### ONS Base Station Remotes

<u>Location</u>	<u>Unit Call Letters</u>	<u>Identifier</u>
1. Unit 1&2 Control Room	WQC699	Oconee Control Room
2. Crisis Management Center	WQC699	Oconee CMC
3. Technical Support Center	WQC699	Oconee TSC

#### Coded Squelch Radios

<u>Location</u>	<u>Encode</u>	<u>Unit Call Letters</u>	<u>Identifier</u>
4. Pickens LEC	35	KNBZ-965	Pickens LEC
Pickens EOC	31	KNBE-487	Pickens EOC
Pickens EPD	31	KNBE-480	Pickens EPD
5. Oconee LEC	32	KNBE-488	Oconee LEC
6. State FEOC - (Clemson)	34	KA-82139	State FEOC

ALL ABOVE RADIOS MAY BE ACTIVATED BY ENCODING NO. 30

#### Field Monitoring Teams

<u>Location</u>	<u>Unit Call Letters</u>	<u>Identifier</u>
8. Field Monitor Coordinator	KA82139	Leader
9. Field Monitor Team	KA82139	Alpha
10. Field Monitor Team	KA82139	Bravo
11. Field Monitor Team	KA82139	Charlie
12. Field Monitor Team	KA82139	Delta
13. Field Monitor Team	KA82139	Echo
14. Field Monitor Team	KA82139	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 878-7808

EXECUTIVE GROUP\*

Emergency Preparedness 878-7527  
County Administrator  
County Council  
Legal Officer

OPERATIONS GROUP\*

Law Enforcement 878-7494  
Rescue Squad  
EMS  
  
Fire Service 878-7409  
Medical Service  
Health Service  
Dept. of Public Works

ASSESSMENT\*

Transportation 855-1020  
Emergency Welfare Service  
Shelter Service  
Red Cross  
  
Public Information 878-4886  
RADEF  
  
Mental Health 878-7499  
Damage Assessment  
Supply and Procurement

ALTERNATE NUMBER (to any group) 868-9207

PUBLIC INFORMATION OFFICER

CRISIS NEWS CENTER-ONS\*

State of South Carolina 882-8094  
Oconee County 882-4505  
Pickens County 882-5537  
NRC 882-6744

CRISIS NEWS CENTER LIBERTY RETAIL OFFICE\*

State of South Carolina 843-2753  
Oconee County 843-2754  
Pickens County 843-2755  
NRC

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

EMERGENCY OPERATION CENTER

Oconee County

Primary Number (24-hour) . . . . . 638-3097

OPERATIONS\*

Fire Protection . . . . . 638-2633

Police . . . . . 638-2864  
638-3002

Public Roads . . . . .

Emergency Medical Services . . . . .

Rescue Squads . . . . .

ASSESSMENT\*

Emergency Welfare Services . . . . . 638-2177  
638-2482

Radiological Defense . . . . .

Damage Assessment . . . . .

EXECUTIVE GROUP\*

Supervisor/Chairman County Council . . . . . 638-2540

EOC Director . . . . .

Financial Officer . . . . .

FNF Representative . . . . .

PUBLIC INFORMATION OFFICER

CRISIS NEWS CENTER-ONS

State of South Carolina 882-8094  
Oconee County 882-4505  
Pickens County 882-5537  
NRC 882-6744

CRISIS NEWS CENTER LIBERTY RETAIL OFFICE

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Form SPD-1002-1

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INFORMATION ONLY

DUKE POWER COMPANY  
PROCEDURE PREPARATION  
PROCESS RECORD

(1) ID No: AP/O/B/1000/02  
Change(s) 2 to  
2 Incorporated

- (2) STATION: Oconee
- (3) PROCEDURE TITLE: Notification Procedure - Notification of Unusual Events

(4) PREPARED BY: William B. Graving DATE: 7/21/83

(5) REVIEWED BY: HE Woodell DATE: 7/25/83

Cross-Disciplinary Review By: James J. Flynn N/R

- (6) TEMPORARY APPROVAL (IF NECESSARY):

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

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

(7) APPROVED BY: J B Owen / JBB Date: 8/10/83

- (8) MISCELLANEOUS:

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

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

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION  
NOTIFICATION OF UNUSUAL EVENTS

1.0 Symptoms

Symptoms of the initiating condition determined from Enclosure 4.1, Unusual Event Initiating Conditions.

2.0 Immediate Action

2.1 Automatic - not applicable

2.2 Manual actions are not required to be followed in any particular sequence

Date/Name  
Time

2.2.1 The Shift Supervisor/Emergency Coordinator shall:

\_\_\_\_ 2.2.1.1 Appoint On-Shift Communicator(s).

\_\_\_\_ 2.2.1.2 Appoint individual(s) to be responsible for maintaining logs of the emergency noting problems and actions taken.

\_\_\_\_ 2.2.1.3 Augment support as needed.

2.2.2 The On-Shift Communicator(s) shall determine notification requirements by referring to Enclosure 4.1:

\_\_\_\_ 2.2.2.1 Notify the NRC by using the ENS Phone. Emergency Plan activation requires open channel communication.

\_\_\_\_ 2.2.2.2 Notify State/County government warning points by using the Message Sheet located in the Emergency Procedures Cart in the Shift Supervisor's office, Control Room 1 & 2.

\_\_\_\_ 2.2.2.3 Complete Part I of the Message Sheet. Establish the approval process prior to releasing information offsite.

NOTE: The Emergency Coordinator must approve the contents of the message sheet prior to the information being released offsite.

\_\_\_\_ 2.2.2.4 Establish authentication process.

Date/Name  
Time

- \_\_\_\_ 2.2.2.5 Use the most expeditious communication system available. Consult the Emergency Telephone Directory.
- \_\_\_\_ 2.2.2.6 Provide updates as information becomes available (Part I and II - Message Sheet to the State/County agencies in a time frame established during the initial contact).

NOTE: Initial notification to the NRC/State of South Carolina must be made within 15 minutes of the time the Emergency Coordinator/Shift Supervisor determined the initiating condition for activation, escalation or de-escalation of the Emergency Plan.

- \_\_\_\_ 2.2.2.7 Contact the Unit Operating Engineer/Operations Duty Engineer to:
  - 2.2.2.7.1 Notify the Superintendent of Operations.
  - 2.2.2.7.2 Notify the Station Manager.
  - 2.2.2.7.3 Provide the Nuclear Production Duty Engineer with the information required by Enclosure 4.2, Emergency Plan Information.
  - 2.2.2.7.4 Provide assistance to the Shift Supervisor and serve as the Superintendent of Operations should he not be available.

### 3.0 Subsequent Action

- \_\_\_\_ 3.1 Should plant conditions warrant, the Unusual Event emergency must be accelerated to a higher emergency classification. Use AP/O/B/1000/01, Determination of Emergency Classification, to identify the initiating condition, emergency classification and the appropriate procedure to implement the response required by the ONS Emergency Plan.
- 3.2 When plant conditions warrant, the Unusual Event emergency will be closed out.
  - \_\_\_\_ 3.2.1 The On-Shift Communicator(s) will give a verbal summary closing out the emergency to the State and County agencies and the NRC.
  - \_\_\_\_ 3.2.2 The Shift Supervisor shall complete the Unusual Event procedure and forward the procedure and all copies of the Message Sheet to the Station Emergency Preparedness Coordinator.

Date/Name  
Time

\_\_\_\_ 3.2.3 The Emergency Preparedness Coordinator shall prepare a written summary (for the Station Manager's signature) which will be forwarded to offsite agencies within 24 hours of the time close-out was determined by the Emergency Coordinator.

4.0 Enclosures

4.1 Unusual Event Initiating Conditions

4.2 Emergency Plan Information

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: Unusual Event

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
1. Emergency Core Cooling System (ECCS) initiated and discharged to the vessel.	One or more ES channels actuated with flow indicated in A or B injection header (LPI or HPI) on valid RCS low pressure or RB high pressure signal.	NOTIFY: 1,2,4,6,7	TS 3.3, TS 3.5.3 EP/0/A/1800/04 AP/0/B/1000/02
2. Radiological effluent TS limits exceeded:			AP/0/B/1000/02
(a) Gaseous effluent TS limits exceeded:	(a) 1. RIA-45 in valid alarm mode for more than one (1) hour AND  2. RIA-46 in valid alarm mode AND  3. Release rate calculations using vent sample analysis and flow rate data are in excess of TS limits established by HP/0/B/1009/15	NOTIFY: 1,2,4,5,6,7	TS 3.10.2 HP/0/B/1009/15 PT/0/A/230/01 10CFR20, Appd. B., Table II, Col. 1.
NOTE: TS for OMS gaseous release is for a shared 3-Unit System.			
(b) Liquid effluent TS Limits exceeded:	(b) 1. RIA-33/34 alarm setpoint estab- lished in discharge permit exceeded AND flow not terminated.  2. Samples at restricted area boundary exceed limits per 10 CFR 10, Appd. B and TS 3.9	NOTIFY: 1,2,4,5,6,7,12	TS 3.9 PT/0/B/230/01 HP/0/B/1000/62/Q

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: Unusual Event

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
3. Fuel Damage Indication		NOTIFY: 1,2,4,6,7	AP/0/B/1000/02
(a) High coolant activity sample	(a) Sample results indicate the total activity of the RCS due to nuclides with half lives longer than 30 min exceeds 224 / $\bar{E}$ $\mu$ Ci/ml when reactor is critical  I-131 activity in the secondary side of steam generator exceeds 1.4 $\mu$ Ci/ml		TS 3.1.4 EP/0/A/1800/24 EP/0/A/1800/04 EP/0/A/1800/27
(b) Total failed fuel exceeds 1%	(b) Chemistry sample results indicate I-131 concentration in the RCS is in the range of 70 $\mu$ Ci/ml to 350 $\mu$ Ci/ml.		TS 3.13  CP/0/B/2003/02
4. Abnormal coolant temperature and/or pressure OR abnormal fuel temperatures outside TS limits.	(1) Exceeding interim brittle fracture limit curve <u>WITHOUT</u> RC pumps on  OR (2) Exceeding NDT limit <u>WITH</u> RC pumps on  AND (3) Shift Supervisor's judgment.	NOTIFY: 1,2,4,6,7	AP/0/B/1000/02 EP/0/A/1800/04 EP/0/A/1800/06 TS 3.1.2



DUKE POWER COMPANY  
OCOKEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: Unusual Event

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
5. Exceeding either primary to secondary leak rate TS <u>OR</u> primary leak rate TS.	<ul style="list-style-type: none"> <li>(1) Unidentified leakage exceeds 1 GPM</li> <li>(2) Total primary Coolant leakage rate (identified) exceeds 10 GPM</li> <li>(3) Any leakage exists through RCS strength boundary (except S/C tubes)</li> <li>(4) OTSG tube leakage exceeds .3 GPM (Unit #1)</li> </ul>	NOTIFY: 1,2,4,6,7	AP/0/B/1000/02 EP/0/A/1800/04 EP/0/A/1800/17 PT/1/2/3/A/600/10 TS 3.1.6
6. Failure of a relief valve in a safety related system to close following reduction of applicable pressure.	<ul style="list-style-type: none"> <li>(1) A stuck open Pressurizer relief valve will be identified by one or more of the following:               <ul style="list-style-type: none"> <li>(a) Acoustical monitor indication</li> <li>(b) Pressurizer level increasing with decreasing RCS pressure</li> <li>(c) Quench tank temp and pressure alarms</li> </ul> </li> <li>(2) A stuck open MS relief valve will be identified by the following:               <ul style="list-style-type: none"> <li>(a) Visual observation</li> </ul> </li> </ul>	NOTIFY: 1,2,4,6,7	AP/0/B/1000/02 EP/0/A/1800/04 EP/0/A/1800/06 EP/0/A/1800/08 T.S. 2.2

NOTE: This pertains to Pressurizer  
relief valve and Main Steam  
relief valve.

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: Unusual Event

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
7. Loss of offsite power <u>OR</u> loss of onsite power capability	(1) Switchyard isolation <u>OR</u> (2) Underfrequency-undervoltage on MFB 1 & 2.	NOTIFY: 1,2,4,6,7	AP/0/B/1000/02 EP/0/A/1800/16 EP/0/A/1800/25 TS 3.7
8. Loss of containment integrity requiring shutdown by TS.	Penetration(s) fail leak test as specified in TS 4.4.1  <u>OR</u> Limits as established in TS 3.6 exceeded	NOTIFY: 1,2,4,6,7	AP/0/B/1000/02 EP/0/A/1800/23 TS 3.6 TS 1.7 TS 4.4.1
9. Loss of engineered safety feature or fire protection system function requiring shutdown by TS  EX: Because of malfunction, personnel error or procedural inadequacy.	(1) Engineered Safety Features System found inoperable <u>OR</u> (TS 3.5.1, 3.5.3) (2) Fire suppression water system found inoperable (include Keowee Hydro) (TS 3.17)	NOTIFY: 1,2,4,6,7	AP/0/B/1000/02 EP/0/A/1800/17 EP/0/A/1800/25 TS 3.5.3 TS 3.5.1, Table 1 TS 3.17

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: Unusual Event

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
<p>10. Fire within the plant lasting more than 10 minutes.</p> <p>NOTE: Within the plant means: Auxiliary Building, Turbine Building, Administration Building, Reactor Building, Keowee Hydro</p>	<p>Efforts to extinguish a fire within the plant lasts longer than 10 minutes.</p>	<p>NOTIFY: 1,2,4,6,7</p>	<p>AP/0/B/1000/02 EP/0/A/1800/12 Pre-Fire Plan</p>
<p>11. (a) Indications or alarms on process or effluent parameters not functional in control room to an extent requiring plant shutdown.</p> <p>(b) Other significant loss of assessment or communication capability which does not require shutdown.</p>	<p>(a) 1. Loss of radiation monitoring system per TS 3.1.6.8 2. Loss of computer per TS 3.1.12</p> <p>(b) 1. Loss of <u>all</u> meteorological assessment for more than 48 hours. 2. Loss of <u>all</u> telephone communication <u>offsite</u>.</p>	<p>NOTIFY: 1,2,4,5,6,7</p>	<p>AP/0/B/1000/02 EP/0/A/1800/16 EP/0/A/1800/25 EP/0/A/1800/29 OP/0/A/1103/20</p>
<p>12. Security threat or attempted entry or attempted sabotage.</p>	<p>Shift Supervisor is made aware that the Safeguards Contingency Plan has been initiated.</p>	<p>NOTIFY: 1,2,4,6,7</p>	<p>AP/0/B/1000/02 Safeguards Contingency Plan</p>

DUKE POWER COMPANY  
OCOONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: Unusual Event

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
13. Natural phenomena being experienced or projected beyond usual levels.		NOTIFY: 1, 2, 4, 6, 7	AP/0/B/1000/02 EP/0/A/1800/09 EP/0/A/1800/10 EP/0/A/1800/15 EP/0/A/1800/19 ONS Fire-Fire Plan
(a) Any earthquake felt in-plant.	(a) Same as initiating condition.		
(b) 50 year flood or low water or lake seiche	(b) Observation		
(c) Any tornado within exclusion area.	(c) Observation AND Shift Supervisor's judgement		
14. Other hazards being experienced or projected.		NOTIFY: 1, 2, 4, 6, 7	AP/0/B/1000/02 - EP/0/A/1800/02 EP/0/A/1800/07 ONS Fire-Fire Plan
(a) Air craft crash onsite or unusual aircraft activity over facility.	(a) Observation		
(b) Rear or onsite explosion	(b) Observation of explosion or warning from offsite.		
(c) Rear or onsite toxic or flammable gas release	(c) Observation of release or warning from offsite.		
(d) Turbine rotating component failure causing rapid plant shutdown.	(d) Turbine trip and observation of turbine malfunction or failure		

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: Unusual Event

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
15. (a) Other plant conditions exist that warrant increased awareness on the part of State/Local offsite authorities.  (b) Other plant conditions exist that require plant shutdown and involves other than normal controlled shutdown.	(a) and (b) Shift Supervisor/Station Manager discretion.	NOTIFY: 1,2,4,6,7	Dictated by plant conditions.
16. Transportation of an externally contaminated injured individual from site to offsite hospital	Same as initiating condition.	NOTIFY: 1,2,5,6,7	AP/0/B/1000/02 Station Directive 5.1.3 AP/0/B/1000/08
17. Rapid depressurization of secondary side.	(a) Rapid pressure decrease below relief valve and/or bypass valve setpoints OR (b) Excessive FWM flow to one or both OTSG with rapidly increasing level or decreasing level OR (c) Observation of steam line break, open relief or other uncontrollable steam loss	NOTIFY: 1,2,4,6,7	AP/0/B/1000/02 EP/0/A/1800/08 EP/0/A/1800/16 EP/0/A/1800/02

## DUKE POWER COMPANY

Enclosure 4.2

OPERATING UNIT ENGINEER

OCONEE NUCLEAR STATION

AP/0/8/1000/02

OR

EMERGENCY PLAN INFORMATION

Page 1 of 1

OPERATIONS DUTY ENGINEER SHALL CONTACT:

WE \_\_\_\_\_ PHONE: \_\_\_\_\_  
(SUPERINTENDENT OF OPERATIONS)NAME \_\_\_\_\_ PHONE: \_\_\_\_\_  
(STATION MANAGER)NAME \_\_\_\_\_ PHONE: 704-373-5101, 366663 6675  
(NUCLEAR PRODUCTION DUTY ENGINEER)

\* STATION MANAGER ONLY \*\*NUCLEAR PRODUCTION DUTY ENGINEER ONLY

1. THIS IS \_\_\_\_\_ AT \_\_\_\_\_ NUCLEAR STATION.  
(NAME AND TITLE)2. THIS \_\_\_\_\_ IS \_\_\_\_\_ IS NOT A DRILL. AN \_\_\_\_\_ UNUSUAL EVENT \_\_\_\_\_ ALERT \_\_\_\_\_ SITE AREA EMERGENCY  
\_\_\_\_\_ GENERAL EMERGENCY WAS DECLARED BY THE EMERGENCY COORDINATOR AT \_\_\_\_\_  
ON UNIT NUMBER \_\_\_\_\_.3. INITIATING CONDITION: (GIVE AS CLOSE TO THE EMERGENCY PLAN DESCRIPTION AS POSSIBLE  
TOGETHER WITH STATION PARAMETERS USED TO DETERMINE EMERGENCY STATUS.)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_4. CORRECTIVE MEASURES BEING TAKEN: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. THERE \_\_\_\_\_ HAVE \_\_\_\_\_ HAVE NOT BEEN ANY INJURIES TO PLANT PERSONNEL.

6. RELEASE OF RADIOACTIVITY \_\_\_\_\_ IS TAKING PLACE \_\_\_\_\_ IS \_\_\_\_\_ IS NOT AFFECTING CMC.  
RELEASE OF RADIOACTIVITY IS NOT TAKING PLACE.

7. NOTIFICATIONS MADE: (NRC \_\_\_\_\_ YES \_\_\_\_\_ NO) (STATE \_\_\_\_\_ YES \_\_\_\_\_ NO) (COUNTIES \_\_\_\_\_ YES \_\_\_\_\_ NO)

8. TEC ACTIVATION \_\_\_\_\_ YES \_\_\_\_\_ NO. IF YES, REQUEST STATION MANAGER TO INITIATE EMERGENCY  
RESPONSE.

9. REQUEST NPDE TO CONTACT COMPANY MANAGEMENT AND CORPORATE COMMUNICATIONS.

10. I CAN BE REACHED AT \_\_\_\_\_ FOR FOLLOWUP INFORMATION.  
(TELEPHONE NUMBER)11. ADDITIONAL COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_12. OPERATING UNIT ENGINEER/DUTY ENGINEER SHALL PROVIDE UPDATE TO THE GENERAL OFFICE  
UNTIL RELIEVED BY THE TEC COMMUNICATOR IN THE TECHNICAL SUPPORT CENTER.



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Form SPD-1002-1

DUKE POWER COMPANY  
PROCEDURE PREPARATION  
PROCESS RECORD

(1) ID No: AP/O/B/1000/03  
Change(s) 2 to  
2 Incorporated

- (2) STATION: Oconee
- (3) PROCEDURE TITLE: Notification Procedure - Alert
- (4) PREPARED BY: Colman B. Janney DATE: 7/21/83
- (5) REVIEWED BY: HE Woodall DATE: 7/25/83
- Cross-Disciplinary Review By: James J. Hyman N/R: \_\_\_\_\_
- (6) TEMPORARY APPROVAL (IF NECESSARY):
- By: \_\_\_\_\_ (SRO) Date: \_\_\_\_\_
- By: \_\_\_\_\_ Date: \_\_\_\_\_
- (7) APPROVED BY: JBO / 248 Date: 8/10/83
- (8) MISCELLANEOUS:
- Reviewed/Approved By: \_\_\_\_\_ Date: \_\_\_\_\_
- Reviewed/Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

ALERT

1.0 Symptoms

Symptoms of the initiating condition determined from Enclosure 4.1, Alert Initiating Conditions.

2.0 Immediate Action

2.1 Automatic - N/A

2.2 Manual actions are not required to be followed in any particular sequence.

Date/Name  
Time

2.2.1 The Emergency Coordinator/Shift Supervisor shall:

\_\_\_\_ 2.2.1.1 Appoint On-Shift Communicator(s).

\_\_\_\_ 2.2.1.2 Appoint individual(s) to be responsible for maintaining logs of the emergency noting problems and actions taken.

\_\_\_\_ 2.2.1.3 Activate the Technical Support Center (Emergency Organization Recall, Enclosure 4.3 or 4.4).

\_\_\_\_ 2.2.1.4 Initiate a Site Assembly in accordance with S.D. 2.9.1. Use Station Personnel Accountability form (located in Emergency Procedures Cart in Unit 1 & 2).

\_\_\_\_ 2.2.1.5 Dispatch onsite monitoring teams to assess radiation and contamination.

2.2.2 The On-Shift Communicator(s) shall determine notification requirements by referring to Enclosure 4.1:

\_\_\_\_ 2.2.2.1 Notify the NRC by using the ENS Phone. Emergency Plan activation requires open channel communication.

\_\_\_\_ 2.2.2.2 Notify State/County government warning points by using the Message Sheet located in the Emergency Procedures Cart in the Shift Supervisor's office, Control Room 1 & 2.

Date/Name  
Time

- \_\_\_\_ 2.2.2.3 Complete Part I of the Message Sheet. Establish the approval process prior to releasing information offsite.

NOTE: The Emergency Coordinator must approve the contents of the message sheet prior to the information being released offsite.

- \_\_\_\_ 2.2.2.4 Establish authentication process.

- \_\_\_\_ 2.2.2.5 Use the most expeditious communication system available. Consult the Emergency Telephone Directory.

- \_\_\_\_ 2.2.2.6 Provide updates as information becomes available (Part I and II - Message Sheet to the State/County agencies in a time frame established during the initial contact).

NOTE: Initial notification to the NRC/State of South Carolina must be made within 15 minutes of the time the Emergency Coordinator/Shift Supervisor determined the initiating condition for activation, escalation or de-escalation of the Emergency Plan.

- \_\_\_\_ 2.2.2.7 Contact the Unit Operating/Operations Duty Engineer to:

2.2.2.7.1 Notify the Superintendent of Operations.

2.2.2.7.2 Notify the Station Manager. (Request Station Manager to establish the TSC according to Enclosure 4.3, Emergency Organization Recall-Normal Working Hours, if applicable.)

2.2.2.7.3 Provide the Nuclear Production Duty Engineer with the information required by Enclosure 4.2, Emergency Plan Information.

2.2.2.7.4 Provide assistance to the Shift Supervisor and serve as the Superintendent of Operations should he not be available.

Date/Name  
Time

\_\_\_\_ 2.2.2.8 Contact Security to:

2.2.2.8.1 Recall Duty Personnel per Enclosure 4.4, Emergency Organization Recall-Backshifts, Holidays, Weekends, if applicable.

2.2.2.8.2 Provide access control to Control Rooms 1 & 2, 3 -- TSC and OSC.

2.2.3 Personnel arriving in the Technical Support Center shall relieve Operations personnel of peripheral duties ordinarily assigned to their section. These persons will be provided direction from the Emergency Coordinator/Shift Supervisor until he is relieved by the Station Manager/alternate once the Technical Support Center is operational.

NOTE: FACE-TO-FACE TURNOVER IS REQUIRED.

\_\_\_\_ 2.2.3.1 Health Physics - provide radiological assessment and evaluation, provide offsite dose evaluations, onsite and offsite monitoring, sampling and analysis of gaseous effluents.

\_\_\_\_ 2.2.3.2 Performance - provide nuclear/thermal assessment and release plant status data to General Office via computer.

\_\_\_\_ 2.2.3.3 Operational Support Center Coordinator - provide manpower to augment support as required by ONS Emergency Plan.

\_\_\_\_ 2.2.3.4 Chemistry - provide sampling and analysis of liquid effluents.

\_\_\_\_ 2.2.3.5 Maintenance - provide I&E and Mechanical support.

2.2.3.6 Communications:

\_\_\_\_ NRC - Licensing

\_\_\_\_ State of South Carolina - Offsite Communicator

\_\_\_\_ County Agencies - Offsite Communicator

\_\_\_\_ Crisis Management Center - Data Coordinator

\_\_\_\_ 2.2.3.7 Administration - provide medical, security, and clerical support. Assume responsibility for establishment of the Technical Support Center per Procedure PT/O/B/2000/04. Assume responsibility for Personnel Accountability per S.D. 2.9.1.

Date/Name  
Time

3.0 Subsequent Action

\_\_\_\_ 3.1 Technical Support Center operational.

\_\_\_\_ 3.2 The Emergency Coordinator/Station Manager (alternate) shall assume "overall control" of the emergency and take the following actions:

\_\_\_\_ 3.2.1 Provide for continuous staffing of the Technical Support Center and Operational Support Center should it become necessary to man the emergency facilities longer than 12 hours.

3.2.1.1 Maintain station accountability and dose control for all emergency response personnel through the Operational Support Center.

\_\_\_\_ 3.2.2 Implement the approval process for release of information to offsite county and state agencies.

3.2.3 Determine emergency classification.

\_\_\_\_ 3.2.3.1 When plant conditions warrant, accelerate to a higher classification. Use AP/O/B/1000/01, Determination of Emergency Classification, to identify the appropriate initiating condition, the emergency classification, and procedure to implement the response required by the ONS Emergency Plan.

\_\_\_\_ 3.2.3.1.1 Provide a verbal summary to the State and County agencies and a written summary within eight (8) hours of the Alert Emergency.

\_\_\_\_ 3.2.3.2 When plant conditions warrant, the Alert Emergency classification may be de-escalated to a lower classification or closed out.

\_\_\_\_ 3.2.3.1.1 Recommend reduction in emergency class or close-out during the verbal summary to offsite agencies followed by a written summary within eight (8) hours of the class reduction or close-out.

Date/Name  
Time

- 3.2.4 Provide update of emergency status to include the following:
  - \_\_\_\_\_ Briefing at least every half-hour. Request OSC Coordinator to provide information from briefing to OSC personnel.
  - \_\_\_\_\_ Provide sequence of events information to emergency personnel.
  - \_\_\_\_\_ Assess flow of information (i.e., timely, accurate, concise, pertinent).
  - \_\_\_\_\_ Plant data system information - trending available.
  - \_\_\_\_\_ Make available news releases from the Crisis News Center.
- \_\_\_\_\_ 3.3 The Emergency Preparedness Coordinator shall be responsible for the Completed Procedure Process Record of notification procedures initiated by the Control Room and/or Technical Support Center.
- \_\_\_\_\_ 3.4 The Emergency Preparedness Coordinator shall prepare a written summary (for the Station Manager's signature) which will be forwarded to offsite agencies should de-escalation be determined by the Emergency Coordinator.
- \_\_\_\_\_ 3.5 Crisis Management Center operational.
  - \_\_\_\_\_ 3.5.1 Recovery Manager relieves Emergency Coordinator of the responsibility for making protective action recommendations and notifications to offsite authorities, including NRC.
  - 3.5.2 Recovery Manager relieves Emergency Coordinator of the responsibility of Emergency Management which includes:
    - \_\_\_\_\_ 3.5.2.1 Emergency Classification - escalation/de-escalation
    - \_\_\_\_\_ 3.5.2.2 Long-range planning
    - \_\_\_\_\_ 3.5.2.3 Recovery
- 4.0 Enclosures
  - 4.1 Alert Initiating Conditions
  - 4.2 Emergency Plan Information
  - 4.3 Emergency Organization Recall - Normal Working Hours
  - 4.4 Emergency Organization Recall - Backshifts, Weekends, Holidays



DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: ALERT

Enclosure 4.1  
AP/O/B/1000/03  
Page 1 of 6

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
<p>1. Severe loss of fuel cladding:</p> <p>(a) Very high coolant activity sample</p> <p>1. Total failed fuel exceeds 5%</p> <p>2. Failed fuel percentage increases by 1% in 30 min.</p> <p>NOTE: Fuel damage mechanism is mechanical clad failure or a flow-induced failure.</p> <p>Example: Coolant pump seizure leading to fuel failure.</p>	<p>1. Iodine I-131 concentration is between 350 <math>\mu</math>Ci/ml and 1770 <math>\mu</math>Ci/ml</p> <p>2. Chemistry laboratory analysis shows an increase in I-131 concentration in the primary coolant of 70 <math>\mu</math>Ci/ml in a 30 min. period of time.</p>	<p>NOTIFY: 1, 2, 6, 7</p>	<p>AP/O/B/1000/03 EP/O/A/1800/24 EP/O/A/1800/27 EP/O/A/1800/11 CP/O/B/2003/02</p>
<p>2. Rapid gross failure of one OTSG tube <u>WITH</u> loss of offsite power.</p> <p>(NOTE: Leak greater than 10 gpm and less than 200 gpm)</p>	<p>1. RIA 16, 17, 40 high alarm; <u>AND</u></p> <p>2. LDST level decreasing; <u>AND</u></p> <p>3. Undervoltage - underfrequency on HFB 1 and HFB 2, <u>AND</u></p> <p>4. RCS Leak Rate calculation</p>	<p>NOTIFY: 1, 2, 6, 7</p>	<p>AP/O/B/1000/03 EP/O/A/1800/04 EP/O/A/1800/17 EP/O/A/1800/16</p>
<p>3. Rapid failure of steam generator tube(s)</p> <p>NOTE: Leak greater than 50 gpm but less than 200 gpm primary to secondary.</p>	<p>1. RIA 16, 17, 40 high alarm; <u>AND</u></p> <p>2. Increasing RB sump level <u>AND</u></p> <p>3. Rapidly decreasing pressurizer level <u>AND</u></p> <p>4. Rapid depressurization of RCS</p>	<p>NOTIFY: 1, 2, 6, 7</p>	<p>AP/O/B/1000/03 EP/O/A/1800/04 EP/O/A/1800/17</p>

DUKE POWER COMPANY  
OCOONEE NUCLEAR STATION

Enclosure 4.1  
AP/0/B/1000/03  
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EMERGENCY CLASSIFICATION LEVEL: ALERT

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
4. Steam line break with greater than 10 but less than 50 gpm primary to secondary leak rate.	1. Unexpected increase in Reactor power AND 2. Rapid decrease in $T_{AV}$ , Pressurizer level, RCS pressure, steam pressure	NOTIFY: 1, 2, 6, 7	AP/0/B/1000/03 EP/0/A/1800/08 EP/0/A/1800/04
	AND		
a. Steam line break inside containment	a. Increased RB pressure and temperature		
	or		
b. Steam line break outside containment	b. Increased Penetration Room pressure and temperature		
5. Primary coolant leak rate greater than 50 gpm	1. Mismatch between makeup and total letdown (letdown pin controlled leakage greater than 50 gpm with pressurizer not increasing.)	NOTIFY: 1, 2, 6, 7	AP/0/B/1000/03 EP/0/A/1800/04
6. Radiation levels or airborne contamination which indicate a severe degradation in the control of radioactive materials.	1. Any of the following monitors reading 1000 times normal setpoint. RIA 32, 40, 35, 31, 41, 51, 53	NOTIFY: 1, 2, 6, 7	AP/0/B/1000/03 PT/0/A/230/01
7. Loss of offsite power AND loss of all onsite AC power.	1. Load rejection and reactor trip AND 2. Switchyard isolation on undervoltage underfrequency AND 3. Loss of voltage on HFB 1 & 2 AND 4. Reactor emergency start with transfer of auxiliaries to standby buses.	NOTIFY: 1, 2, 6, 7	AP/0/B/1000/03 EP/0/A/1800/14 EP/0/A/1800/16 EP/0/A/1800/25 EP/0/A/1800/29

NOTE: An alert shall be declared as soon as a power outage occurs. A SAE shall be declared if the blackout lasts for more than 15 minutes.

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

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EMERGENCY CLASSIFICATION LEVEL: ALERT

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
8. Loss of all onsite DC power.  NOTE: An alert shall be declared as soon as a loss of DC power occurs. A SAE shall be declared if the loss lasts for more than 15 minutes.	1. Low voltage on all DC buses <u>OR</u>  2. DC buses unavailable to be closed.	NOTIFY: 1, 2, 6, 7	AP/O/B/1000/03 EP/O/A/1800/16 EP/O/A/1800/31
9. Coolant pump seizure leading to fuel failure (included in Alert #1)		NOTIFY: 1, 2, 6, 7	
10. Complete loss of any function needed for plant cold shutdown.	1. Residual heat removal system no. functional; <u>OR</u>  2. Inability to sustain either natural or forced circulation.	NOTIFY: 1, 2, 6, 7	AP/O/B/1000/03 EP/O/A/1800/16 EP/O/A/1800/14 EP/O/A/1800/29 EP/O/A/1800/31 EP/O/A/1800/06 EP/O/A/1800/08
11. Failure of the reactor protection system to initiate and complete a scram which brings the reactor subcritical.	1. Reactor remains critical after trip <u>AND</u>  2. Rods remain out.	NOTIFY: 1, 2, 6, 7	AP/O/B/1000/03 EP/O/A/1800/23 EP/O/A/1800/21
12. Fuel damage accident with release of radioactivity to:  (a) Containment  (b) Spent-fuel pool	(a) RIA-4, High alarm  (b) RIA-4I, Alert alarm	NOTIFY: 1, 2, 6, 7	AP/O/B/1000/03 EP/O/A/1800/13 EP/O/A/1800/24 PT/O/A/230/01

DUKE POWER COMPANY  
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EMERGENCY CLASSIFICATION LEVEL: ALERT

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
13. Fire potentially affecting safety systems.	1. Fire alarm in vital areas and visual observation of fires affecting safety related systems AND 2. Shift Supervisor's judgment.	NOTIFY: 1, 2, 6, 7	AP/O/B/1000/03 ONS Pre-Fire Plan
14. Most or all alarms (annunciators) lost in the Control Room	1. Visual observation by the Control Room Operator	NOTIFY: 1, 2, 6, 7	AP/O/B/1000/03 EP/O/A/1800/16 EP/O/A/1800/29 EP/O/A/1800/31 EP/O/A/1800/14
15. Radiological effluents exceeding ten (10) times TS		NOTIFY: 1, 2, 6, 7	
(a) Gaseous effluents	(a)1. RIA-46 in valid alarm mode verified by RIA-45. 2. Release rate calculations using vent sample analysis and flow rate data are in excess of limits established by HP/O/B/1009/15		AP/O/B/1000/03 EP/O/A/1800/24 PT/O/A/230/01 TS 3.10.3 HP/O/B/1009/15
(b) Liquid effluents	(b)1. 10 x RIA-33/34 alarm setpoint established in discharge permit  <u>AND</u> 2. Isolation valve fails to close and flow is not terminated 3. Samples at restricted area boundary exceed 20 x limits per 10CFR20, Appd. B and TS 3.9.	NOTIFY: 1, 2, 6, 7, 12	HP/O/B/1000/62/Q TS 3.9

DUKE POWER COMPANY  
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AP/0/B/1000/03  
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EMERGENCY CLASSIFICATION LEVEL: ALERT

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
16. Ongoing security compromise.	Security safeguards contingency event that results in adversaries commandeering an area of the plant, but not control over the shutdown capability or of any vital areas as defined in the Safeguards Contingency Plan	NOTIFY: 1, 2, 6, 7	AP/0/B/1000/03 Safeguards Contingency Plan
17. Severe natural phenomena being experienced or projected.	(a) Design Basic Earthquake (b) Flooding, low water, lake seiche (c) Any tornado on site	NOTIFY: 1, 2, 6, 7	AP/0/B/1000/03 EP/0/A/1800/09 EP/0/A/1800/15 EP/0/A/1800/25 EP/0/A/1800/19 EP/0/A/1800/10
18. Other hazards being experienced or projected:	(a) Aircraft crash on facility (b) Missile impacts from whatever source (c) Known explosion damage to facility affecting plant operations (d) Entry into facility environs of toxic or flammable gases (e) Turbine failure causing penetration	NOTIFY: 1, 2, 6, 7	As dictated by plant conditions.

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

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EMERGENCY CLASSIFICATION LEVEL: ALERT

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
19. Other plant conditions that warrant precautionary activation of the TSC and placing the CHC and other key emergency personnel on standby.	1. Determined by the Shift Supervisor/ Station Manager.	NOTIFY: 1, 2, 6, 7	As dictated by plant conditions.
20. Evacuation of control room anticipated or required with control of shutdown systems established from local stations.	1. Same as initiating condition.  2. Evacuation of Control Room 1 & 2 would necessitate relocating the TSC to the nearsite CHC.	NOTIFY: 1, 2, 6, 7	AP/O/B/1000/03 ONS Pre-Fire Plan



OPERATING UNIT ENGINEER

OR

OPERATIONS DUTY ENGINEER SHALL CONTACT:

DUKE POWER COMPANY

OCONEE NUCLEAR STATION

EMERGENCY PLAN INFORMATION

Enclosure 42

AP/O/B/1000/03

Page 1 of 1

NAME \_\_\_\_\_ PHONE: \_\_\_\_\_  
(SUPERINTENDENT OF OPERATIONS)

NAME \_\_\_\_\_ PHONE: \_\_\_\_\_  
(STATION MANAGER)

NAME \_\_\_\_\_ PHONE: 704-373-5491, BESSON #575  
(NUCLEAR PRODUCTION DUTY ENGINEER)

\* STATION MANAGER ONLY \*\*NUCLEAR PRODUCTION DUTY ENGINEER ONLY

1. THIS IS \_\_\_\_\_ AT \_\_\_\_\_ NUCLEAR STATION.  
(NAME AND TITLE)

2. THIS \_\_\_\_\_ IS \_\_\_\_\_ IS NOT A DRILL. AN \_\_\_\_\_ UNUSUAL EVENT \_\_\_\_\_ ALERT \_\_\_\_\_ SITE AREA EMERGENCY  
\_\_\_\_\_ GENERAL EMERGENCY WAS DECLARED BY THE EMERGENCY COORDINATOR AT \_\_\_\_\_  
ON UNIT NUMBER \_\_\_\_\_.

3. INITIATING CONDITION: (GIVE AS CLOSE TO THE EMERGENCY PLAN DESCRIPTION AS POSSIBLE  
TOGETHER WITH STATION PARAMETERS USED TO DETERMINE EMERGENCY STATUS.)

4. CORRECTIVE MEASURES BEING TAKEN: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. THERE \_\_\_\_\_ HAVE \_\_\_\_\_ HAVE NOT BEEN ANY INJURIES TO PLANT PERSONNEL.

6. RELEASE OF RADIOACTIVITY \_\_\_\_\_ IS TAKING PLACE \_\_\_\_\_ IS \_\_\_\_\_ IS NOT AFFECTING CMC.  
RELEASE OF RADIOACTIVITY IS NOT TAKING PLACE.

7. NOTIFICATIONS MADE: (NRC \_\_\_\_\_ YES \_\_\_\_\_ NO) (STATE \_\_\_\_\_ YES \_\_\_\_\_ NO) (COUNTIES \_\_\_\_\_ YES \_\_\_\_\_ NO)

8. TSC ACTIVATION \_\_\_\_\_ YES \_\_\_\_\_ NO. IF YES, REQUEST STATION MANAGER TO INITIATE EMERGENCY  
RESPONSE.

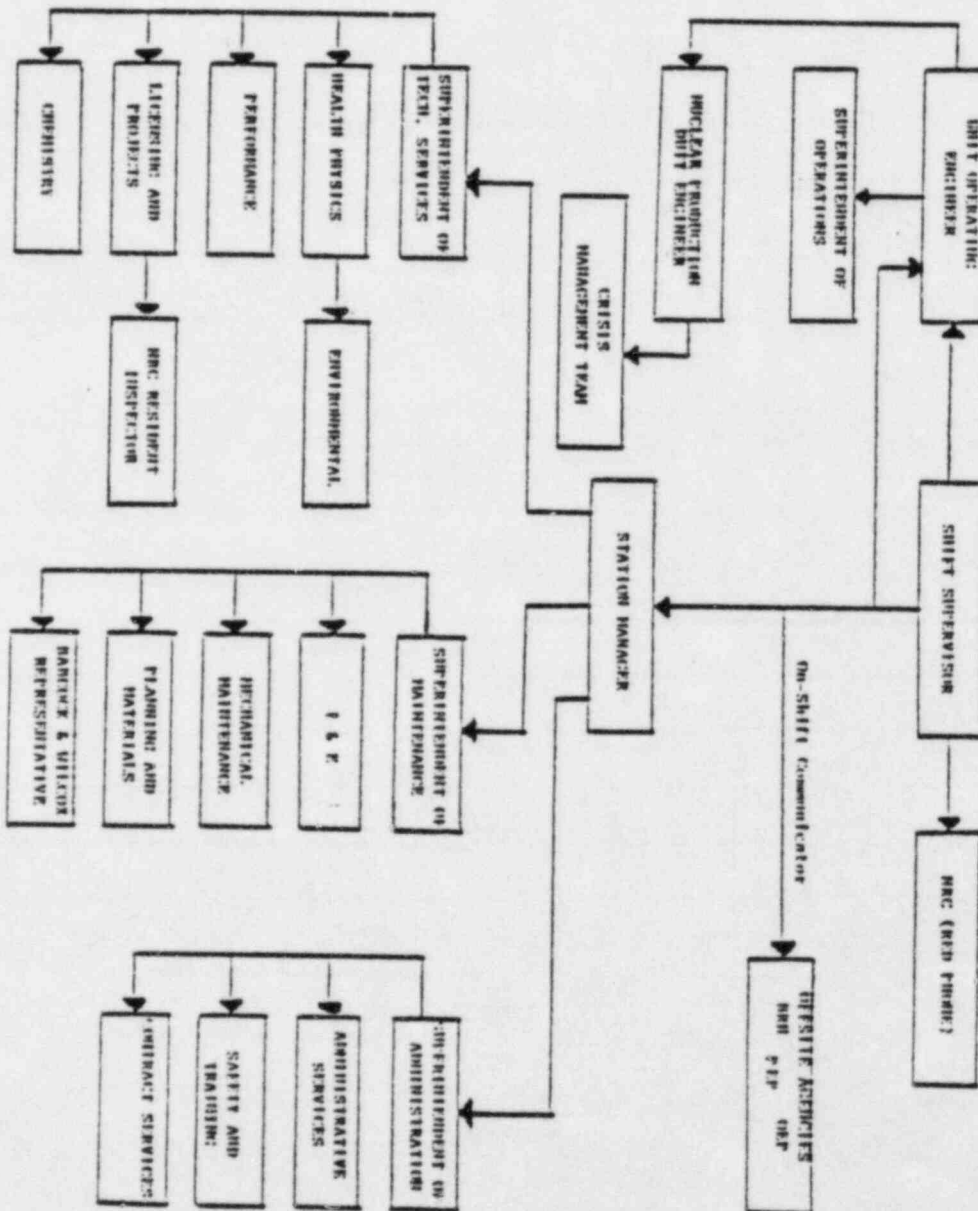
9. REQUEST NPDE TO CONTACT COMPANY MANAGEMENT AND CORPORATE COMMUNICATIONS.

10. I CAN BE REACHED AT \_\_\_\_\_ FOR FOLLOWUP INFORMATION.  
(TELEPHONE NUMBER)

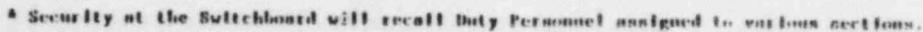
11. ADDITIONAL COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12. OPERATING UNIT ENGINEER/DUTY ENGINEER SHALL PROVIDE UPDATE TO THE GENERAL OFFICE  
UNTIL RELIEVED BY THE TSC COMMUNICATOR IN THE TECHNICAL SUPPORT CENTER.

DUKE POWER COMPANY  
DOONEE NUCLEAR STATION  
EMERGENCY ORGANIZATION/RECALL PROCEDURE  
(NORMAL WORKING HOURS)



DUKE POWER COMPANY  
OCONEE NUCLEAR STATION



INFORMATION ONLY

CONTROL COPY

Form SPD-1002-1

DUKE POWER COMPANY  
PROCEDURE PREPARATION  
PROCESS RECORD

(1) ID No: AP/O/B/1000/04  
Change(s) 2 to  
2 Incorporated

- (2) STATION: Oconee
- (3) PROCEDURE TITLE: Notification Procedure - Site Area Emergency
- (4) PREPARED BY: William C. Jones DATE: 7/21/83
- (5) REVIEWED BY: HE Woodell DATE: 7/25/83
- Cross-Disciplinary Review By: James J. Flynn N/R: \_\_\_\_\_
- (6) TEMPORARY APPROVAL (IF NECESSARY):
- By: \_\_\_\_\_ (SRO) Date: \_\_\_\_\_
- By: \_\_\_\_\_ Date: \_\_\_\_\_
- (7) APPROVED BY: JB Owen / 285 Date: 8/10/83
- (8) MISCELLANEOUS:
- Reviewed/Approved By: \_\_\_\_\_ Date: \_\_\_\_\_
- Reviewed/Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

DUKE POWER COMPANY  
OCONFE NUCLEAR STATION  
SITE AREA EMERGENCY

1.0 Symptoms

Symptoms of the initiating condition determined from Enclosure 4.1,  
Site Area Emergency Initiating Conditions.

2.0 Immediate Action

2.1 Automatic - N/A

2.2 Manual actions are not required to be followed in any particular  
sequence.

Date/Name  
Time

2.2.1 The Emergency Coordinator/Shift Supervisor shall:

- \_\_\_\_ 2.2.1.1 Appoint On-Shift Communicator(s).
- \_\_\_\_ 2.2.1.2 Appoint individual(s) to be responsible for  
maintaining logs of the emergency noting problems  
and actions taken.
- \_\_\_\_ 2.2.1.3 Activate the Technical Support Center (Emergency  
Organization Recall, Enclosure 4.3 or 4.4).
- \_\_\_\_ 2.2.1.4 Initiate a Site Assembly in accordance with  
S.D. 2.9.1. Use Station Personnel Accountability  
form (located in Emergency Procedures Cart in  
Unit 1 & 2). The Shift Supervisor shall have  
the discretion to determine if a Site Evacuation  
will take place prior to the complete establishment  
of the Technical Support Center.
- \_\_\_\_ 2.2.1.5 Dispatch onsite and offsite monitoring teams to  
assess radiation and contamination.
- \_\_\_\_ 2.2.1.6 Provide protective action recommendations to offsite  
agencies within 15 minutes of the classification  
of a Site Area Emergency according to Procedure  
AP/0/B/1000/06. Recommend immediately:

NOTE: Protective Action recommendations are the sole  
responsibility of the Emergency Coordinator (Shift  
Supervisor or Station Manager).

Date/Name  
Time

- \_\_\_\_\_ 2.2.1.6.1 Activate the Alert & Notification System
- \_\_\_\_\_ 2.2.1.6.2 Broadcast an Emergency Broadcast System  
Message alerting area residents of the  
problems at the station and ask that  
they monitor EBS for further information.
- 2.2.2 The On-Shift Communicator(s) shall determine notification  
requirements by referring to Enclosure 4.1:
  - \_\_\_\_\_ 2.2.2.1 Notify the NRC by using the ENS Phone. Emergency  
Plan activation requires open channel communication.
  - \_\_\_\_\_ 2.2.2.2 Notify State/County government warning points  
by using the Message Sheet located in the  
Emergency Procedures Cart in the Shift Supervisor's  
office, Control Room 1 & 2.
  - \_\_\_\_\_ 2.2.2.3 Complete Parts I & II of the Message Sheet as  
information becomes available. Establish the  
approval process prior to releasing information  
offsite.  
  
NOTE: The Emergency Coordinator must approve the  
contents of the message sheet prior to the  
information being released offsite.
  - \_\_\_\_\_ 2.2.2.4 Establish authentication process.
  - \_\_\_\_\_ 2.2.2.5 Use the most expeditious communication system  
available. Consult the Emergency Telephone  
Directory.
  - \_\_\_\_\_ 2.2.2.6 Provide updates (Part I and II - Message Sheet to  
the State/County agencies in a time frame established  
during the initial contact).  
  
NOTE: Initial notification to the NRC/State of South Carolina  
must be made within 15 minutes of the time the  
Emergency Coordinator/Shift Supervisor determined  
the initiating condition for activation, escalation  
or de-escalation of the Emergency Plan.
  - \_\_\_\_\_ 2.2.2.7 Contact the Unit Operating/Operations Duty Engineer  
to:
    - 2.2.2.7.1 Notify the Superintendent of Operations.
    - 2.2.2.7.2 Notify the Station Manager. (Request  
Station Manager to establish the TSC  
according to Enclosure 4.3, Emergency  
Organization Recall-Normal Working Hours,  
if applicable.)



Date/Name  
Time

2.2.2.7.3 Provide the Nuclear Production Duty Engineer with the information required by Enclosure 4.2, Emergency Plan Information.

2.2.2.7.4 Provide assistance to the Shift Supervisor and serve as the Superintendent of Operations should he not be available.

\_\_\_\_ 2.2.2.8 Contact Security to:

2.2.2.8.1 Recall Duty Personnel per Enclosure 4.4, Emergency Organization Recall-Backshifts, Holidays, Weekends, if applicable.

2.2.2.8.2 Provide access control to Control Rooms 1 & 2, 3 -- TSC and OSC.

2.2.3 Personnel arriving in the Technical Support Center shall relieve Operations personnel of peripheral duties ordinarily assigned to their section. These persons will be provided direction from the Emergency Coordinator/Shift Supervisor until he is relieved by the Station Manager/alternate once the Technical Support Center is operational.

NOTE: FACE-TO-FACE TURNOVER IS REQUIRED.

\_\_\_\_ 2.2.3.1 Health Physics - provide radiological assessment and evaluation, provide offsite dose evaluations, onsite monitoring, sampling and analysis of gaseous effluents.

\_\_\_\_ 2.2.3.2 Performance - provide nuclear/thermal assessment and release plant status data to General Office via computer.

\_\_\_\_ 2.2.3.3 Operational Support Center Coordinator - provide manpower to augment support as required by ONS Emergency Plan.

\_\_\_\_ 2.2.3.4 Chemistry - provide sampling and analysis of liquid effluents.

\_\_\_\_ 2.2.3.5 Maintenance - provide I&E and Mechanical support.

2.2.3.6 Communications:

\_\_\_\_ NRC - Licensing

\_\_\_\_ State of South Carolina - Offsite Communicator

\_\_\_\_ County Agencies - Offsite Communicator

\_\_\_\_ Crisis Management Center - Data Coordinator

Date/Name  
Time

- \_\_\_\_\_ 2.2.3.7 Administration - provide medical, security, and clerical support. Assume responsibility for establishment of the Technical Support Center per Procedure PT/O/B/2000/04. Assume responsibility for Personnel Accountability per S.D. 2.9.1.

### 3.0 Subsequent Action

- \_\_\_\_\_ 3.1 Technical Support Center operational.
- \_\_\_\_\_ 3.2 The Emergency Coordinator/Station Manager (alternate) shall assume "overall control" of the emergency and take the following actions:
  - \_\_\_\_\_ 3.2.1 Evacuate non-essential personnel as shown in S.D. 2.9.1. Provide for continuous staffing of the Technical Support Center and Operational Support Center should it become necessary to man the emergency facilities longer than 12 hours.
    - \_\_\_\_\_ 3.2.1.1 If necessary, secure bus transportation from the Duke Retail Office, Anderson. (Consult Emergency Telephone Directory)
    - \_\_\_\_\_ 3.2.1.2 Follow Procedures outlined in SD 2.9.1, AP/O/B/1000/10, and HP/O/B/1009/16.
    - \_\_\_\_\_ 3.2.1.3 Maintain station accountability and dose control for all emergency response personnel through the Operational Support Center.
  - \_\_\_\_\_ 3.2.2 Provide protective action recommendations to offsite agencies per Procedure AP/O/B/1000/06. This responsibility may not be delegated.
    - \_\_\_\_\_ 3.2.2.1 Implement the approval process for release of information to offsite county and state agencies.
  - 3.2.3 Determine emergency classification.
    - \_\_\_\_\_ 3.2.3.1 Should plant conditions warrant, accelerate to a higher classification. Use AP/O/B/1000/01, Determination of Emergency Classification, to identify the appropriate initiating condition, the emergency classification, and procedure to implement the response required by the ONS Emergency Plan.
      - \_\_\_\_\_ 3.2.3.1.1 Provide a verbal summary to the State and County agencies and a written summary within eight (8) hours of the Site Area Emergency.

Date/Name  
Time

- ☐ 3.2.3.2 When plant conditions warrant, the Site Area Emergency classification may be de-escalated to a lower classification or closed out.
  - ☐ 3.2.3.2.1 Recommend reduction in emergency class or close-out during the verbal summary to offsite agencies followed by a written summary within eight (8) hours of the class reduction or close-out.
- ☐ 3.2.4 Provide update of emergency status to include the following:
  - ☐ Briefing at least every half-hour. Request OSC Coordinator to provide information from briefing to OSC Personnel.
  - ☐ Provide sequence of events information to emergency personnel.
  - ☐ Assess flow of information (i.e., timely, accurate, concise, pertinent).
  - ☐ Plant data system information - trending available.
  - ☐ Make available news releases from the Crisis News Center.
- ☐ 3.3 The Emergency Preparedness Coordinator shall be responsible for Completed Procedure Process Record of notification procedures established by the Control Room and/or Technical Support Center.
- ☐ 3.4 The Emergency Preparedness Coordinator shall prepare a written summary (for the Station Manager's signature) which will be forwarded to offsite agencies should de-escalation be determined by the Emergency Coordinator.
- ☐ 3.5 Crisis Management Center operational.
  - ☐ 3.5.1 Recovery Manager relieves Emergency Coordinator of the responsibility for making protective action recommendations and notifications to offsite authorities, including NRC.
  - ☐ 3.5.2 Recovery Manager relieves Emergency Coordinator of the responsibility of Emergency Management which includes:
    - ☐ 3.5.2.1 Emergency Classification - escalation/de-escalation including written summaries.
    - ☐ 3.5.2.2 Long-range planning
    - ☐ 3.5.2.3 Recovery

Date/Name  
Time

4.0 Enclosures

- 4.1 Site Area Emergency Initiating Conditions
- 4.2 Emergency Plan Information
- 4.3 Emergency Organization Recall - Normal Working Hours
- 4.4 Emergency Organization Recall - Backshifts, Weekends, Holidays

ENCLOSURE 4.1  
DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: Site Area Emergency

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
1. Known Loss of Coolant Accident greater than makeup pump capacity	1. High RB pressure, high RB sump level, RIA 4 High alarm, OR 2. Decrease in RCS pressure <u>AND</u> 3. Loss of subcooling margin. 4. Full HPI and pressurizer level decreasing.	NOTIFY: 1,2,6,7	AP/O/B/1000/04 EP/O/A/1800/04 EP/O/A/1800/06 AP/O/B/1000/07* AP/O/B/1000/06
2. Degraded core with possible loss of coolable geometry.		NOTIFY: 1,2,6,7	AP/O/B/1000/04 HP/O/B/1009/15 CP/O/B/2003/02 AP/O/B/1000/07* AP/O/B/1000/06
(a) Flow-induced	(a) 1. Sample results indicate gap activity in the primary coolant		
(b) Fuel over-temperature	(b) 1. Incore thermocouple readings greater than 700°F and 2. Excess hydrogen in containment or RC sample and 3. Sample results indicate I-131 concentration is between 1300 µCi/ml to 3000 µCi/ml.		
(c) Fuel melt conditions	(c) 1. Incore thermocouple readings are above 2300°F 2. Samples results indicate I-131 concentration is between 1180 µCi/ml to 11,800 µCi/ml.		

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: Site Area Emergency

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
3. Rapid failure of steam generator tube leak (greater than 200 gpm) <u>WITH</u> loss of offsite power.	1. Reactor trip on low RCS pressure <u>AND</u> 2. Reactor pressure decreasing uncontrollably with $T_{AVG}$ constant <u>AND</u> 3. RIA 16/17 and 40 High alarm <u>AND</u> 4. No significant increase in RB pressure and sump level <u>AND</u> 5. RIA 4 High alarm <u>AND</u> 6. Undervoltage-underfrequency alarms in the 230 KV switchyard.	NOTIFY: 1,2,6,7	AP/O/B/1000/04 EP/O/A/1800/04 EP/O/A/1800/14 EP/O/A/1800/16 EP/O/A/1800/17 EP/O/A/1800/29 EP/O/A/1800/28 AP/O/A/1000/07 <sup>2</sup> AP/O/B/1000/06
4. Not applicable to PWR system			
5. Steam line break with greater than 50 gpm primary to secondary leakage and indication of fuel damage.	1. Reactor trip on low RCS pressure <u>AND</u> 2. RCS pressure and $T_{AVG}$ decreasing uncontrollably <u>AND</u> 3. RIA 16/17 and 40 High alarm and 4. Chemistry sample analysis indicates fuel damage - I-131 concentration between 70 pCi/ml to 350 pCi/ml	NOTIFY: 1,2,6,7	AP/O/B/1000/04 EP/O/A/1800/04 EP/O/A/1800/08 EP/O/A/1800/17 CP/O/B/2001/02 AP/O/B/1000/07 <sup>2</sup> AP/O/B/1000/06



DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: Site Area Emergency

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
6. Loss of offsite power <u>AND</u> loss of onsite AC power for more than 15 minutes.	1. Undervoltage on main feeder buses-- HFB1 and HFB2 <u>AND</u>  2. Keowee Hydro fails to start either manual or automatic	NOTIFY: 1,2,6,7	AP/0/B/1000/04 EP/0/A/1800/14 EP/0/A/1800/16 EP/0/A/1800/24 EP/0/A/1800/29 AP/0/B/1000/07* AP/0/B/1000/06
7. Loss of all vital onsite DC power for more than 15 minutes	1. DC bus undervoltage alarms (all buses) <u>AND</u>  2. DC alarm on Emergency Power Switching Logic.	NOTIFY: 1,2,6,7	AP/0/B/1000/04 EP/0/A/1800/16 EP/0/A/1800/31 AP/0/B/1000/07* AP/0/B/1000/06
8. Complete loss of any function needed for plant hot shutdown	1. Inadequate high pressure injection flow <u>OR</u>  2. Condenser not available and steam generator bypass valves not operable <u>OR</u>  3. No feedwater flow and no emergency feedwater flow.	NOTIFY: 1,2,6,7	AP/0/B/1800/04 EP/0/A/1800/07 EP/0/A/1800/14 EP/0/A/1800/20 EP/0/A/1800/28 EP/0/A/1800/30 AP/0/B/1000/07* AP/0/B/1000/06

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: Site Area Emergency

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
<p>9. Transient requiring operation of shutdown systems with failure to scram. ASSUMPTION: Continued power generation and no core damage immediately evident.</p>	<p>1. Two or more RPS channels trip <u>AND</u> 2. Control rods do not drop into core <u>AND</u> 3. Chemistry sample analysis indicates I-131 concentration less than 70 µCi/ml. <u>AND</u> 4. Shift Supervisor's opinion that a transient is in progress.</p>	<p>NOTIFY: 1,2,6,7</p>	<p>AP/O/B/1000/04 AP/O/B/1800/04 EP/O/A/1800/21 AP/O/B/1000/07<sup>2</sup> AP/O/B/1000/06</p>
<p>10. Major damage to spent fuel:</p> <p>(a) Containment</p> <p>(b) Fuel Handling Building</p> <p>NOTE: Large object damages fuel or water loss below fuel level in either A or B.</p>	<p>(a) RIA 2, 3, 4, 49 High Alarm with gaseous sample results indicating offsite dose comparable to EAL's shown in SAE #13.  (b) RIA 6 High Alarm in Spent Fuel Pool <u>OR</u> RIA 41 High Alarm with gaseous effluent sample results indicating offsite dose comparable to EAL's shown in SAE #13. <u>OR</u> Shift Supervisor's judgment.</p>	<p>NOTIFY: 1,2,6,7</p>	<p>AP/O/B/1000/04  EP/O/A/1800/13 EP/O/A/1800/24 EP/O/A/1800/23 HP/O/B/1009/15 AP/O/B/1000/07<sup>2</sup> AP/O/B/1000/06</p>

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: Site Area Emergency

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
11. Fire compromising the functions of safety systems.	1. Observation of a fire that has caused the loss of redundant safety system trains or functions.	NOTIFY: 1,2,6,7	AP/0/R/1000/04 ONS Pre-Fire Plan AP/0/R/1000/07 <sup>5</sup> AP/0/R/1000/06
12. Most or all alarms (annunciations) lost and plant transient initiated or in progress.	1. All alarms lost for 15 minutes AND 2. Shift Supervisor's judgment that a transient has occurred or is in progress	NOTIFY: 1,2,6,7	AP/0/R/1000/04 EP/0/A/1800/14 EP/0/A/1800/16 EP/0/A/1800/29 EP/0/A/1800/31 AP/0/R/1000/07 <sup>6</sup> AP/0/R/1000/06
13. Accidental release of gases  (a) Effluent monitors detect levels corresponding to greater than 50 mR/Hr for 30 min. or greater than 500 mR/Hr WB for two minutes (or five times these levels to the thyroid) at the site boundary for adverse meteorology (Continued)	(a) RIA 45 and 46 in valid alarm mode AND Gaseous effluent sample analysis shows I-131 equivalent concentra- tion and noble gases (Xe-133, etc) being released results in 50 mR/hr WB for 30 min or 500 mR/Hr for 2 min.	NOTIFY: 1,2,6,7	AP/0/R/1000/04  HP/0/n/1009/15 HP/0/R/1009/11 AP/0/B/1000/07 <sup>2</sup> AP/0/B/1000/06

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: Site Area Emergency

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
13. Accidental release of gases (Cont'd)			
(b) These dose rates are projected based on other plant parameters or are measured in the environs	(b) Reading or dose rate outside RB coupled with RB leak rate results in calculated dose rate at exclusion area boundary greater than 50 mR/Hr WB for 30 minutes or 500 mR/Hr WB for 2 min. OR		HP/O/B/1009/14
EXAMPLE: Radiation level in containment with leak rate appropriate for existing containment pressure.	Radiation Monitoring Teams measure thyroid dose rates (I-131 equiv) greater than: 250 mR/Hr ( $9 \times 10^{-8}$ $\mu$ Ci/ml for 30 min. OR 2500 mR/Hr ( $9 \times 10^{-7}$ $\mu$ Ci/ml for 2 min. at the exclusion area boundary.		CP/O/B/4003/01 AP/O/B/1000/07 <sup>2</sup> AP/O/B/1000/06
14. Imminent loss of physical control of the plant.	1. Physical attack on the plant involving imminent occupancy of the control room, auxiliary shutdown panels, or other vital areas as defined by the ONS Safeguards Contingency Plan.	NOTIFY: 1,2,6,7	AP/O/B/1000/04 Safeguards Contingency Plan AP/O/B/1000/07 <sup>2</sup> AP/O/B/1000/06

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: Site Area Emergency

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
15. Severe natural phenomena being experienced or projected with plant not in cold shutdown.		NOTIFY: 1,2,6,7	AP/0/B/1000/04
(a) Maximum Hypothetical Earthquake	(a) Greater than .10 g as determined by monitoring seismic instrumentation recording devices.		EP/0/A/1800/09
(b) Flood/low water/lake seiche creating failure of protection of vital equipment.	(b) Shift Supervisor's judgment and observation.		EP/0/A/1800/15
(c) Tornado or sustained winds in excess of design levels	(c) Winds in excess of 95 mph as determined from the NWS.		EP/0/A/1800/10 AP/0/B/1000/07*
16. Other hazards being experienced or projected with plant not in cold shutdown.		NOTIFY: 1,2,6,7	AP/0/B/1000/04 EP/0/A/1800/02 EP/0/A/1800/23 EP/0/A/1800/25 EP/0/A/1800/16 AP/0/B/1000/07* AP/0/B/1000/06
(a) Aircraft crash affecting vital structures by impact or fire	(a) Aircraft crash causing damage or fire in: RB or CR, Aux. Bldg., Fuel Handling Bldg., TB, Intake Structures, or Switchyard.		
(b) Severe damage to safe shutdown equipment from missiles or explosion.	(b) Loss of functions needed for hot shutdown (SAE No. 8)		

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: Site Area Emergency

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
16. (Continued)			
(c) Entry of uncontrolled flammable gases into vital areas where lack of access to the area constitutes a safety problem	(c) Entry of toxic or flammable gases into: CR or cable spreading rooms or RB or switchgear room or safe shutdown panels.		
17. Other plant conditions exist that warrant activation of the TSC and CHC. Offsite monitoring and public notification initiated.	1. As determined by the Shift Supervisor/Station Manager	NOTIFY 1,2,6,7	Dictated by plant conditions.
18. Evacuation of control room and control of shutdown systems not established from local stations in 15 mins.	1. As determined by the Shift Supervisor/Station Manager. 2. TSC would relocate to the CHC if Control Room 1 & 2 were evacuated.	NOTIFY 1,2,6,7	AP/0/B/1000/04 EP/0/A/1000/12 AP/0/B/1000/07 <sup>a</sup> AP/0/B/1000/06

<sup>a</sup>Initiating condition only



OPERATING UNIT ENGINEER

OR

EMERGENCY PLAN INFORMATION

Page 1 of 1

OPERATIONS DUTY ENGINEER SHALL CONTACT:

NAME \_\_\_\_\_ PHONE: \_\_\_\_\_  
(SUPERINTENDENT OF OPERATIONS)NAME \_\_\_\_\_ PHONE: \_\_\_\_\_  
(STATION MANAGER)NAME \_\_\_\_\_ PHONE: 704-373-5201, 366663 3675  
(NUCLEAR PRODUCTION DUTY ENGINEER)

\* STATION MANAGER ONLY

\* NUCLEAR PRODUCTION DUTY ENGINEER ONLY

1. THIS IS \_\_\_\_\_ AT \_\_\_\_\_ NUCLEAR STATION.  
(NAME AND TITLE)2. THIS \_\_\_\_\_ IS \_\_\_\_\_ IS NOT A DRILL. AN \_\_\_\_\_ UNUSUAL EVENT \_\_\_\_\_ ALERT \_\_\_\_\_ SITE AREA EMERGENCY  
\_\_\_\_\_ GENERAL EMERGENCY WAS DECLARED BY THE EMERGENCY COORDINATOR AT \_\_\_\_\_  
ON UNIT NUMBER \_\_\_\_\_.3. INITIATING CONDITION: (GIVE AS CLOSE TO THE EMERGENCY PLAN DESCRIPTION AS POSSIBLE  
TOGETHER WITH STATION PARAMETERS USED TO DETERMINE EMERGENCY STATUS.)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_4. CORRECTIVE MEASURES BEING TAKEN: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. THERE \_\_\_\_\_ HAVE \_\_\_\_\_ HAVE NOT BEEN ANY INJURIES TO PLANT PERSONNEL.

6. RELEASE OF RADIOACTIVITY \_\_\_\_\_ IS TAKING PLACE \_\_\_\_\_ IS \_\_\_\_\_ IS NOT AFFECTING CMC.  
RELEASE OF RADIOACTIVITY IS NOT TAKING PLACE.

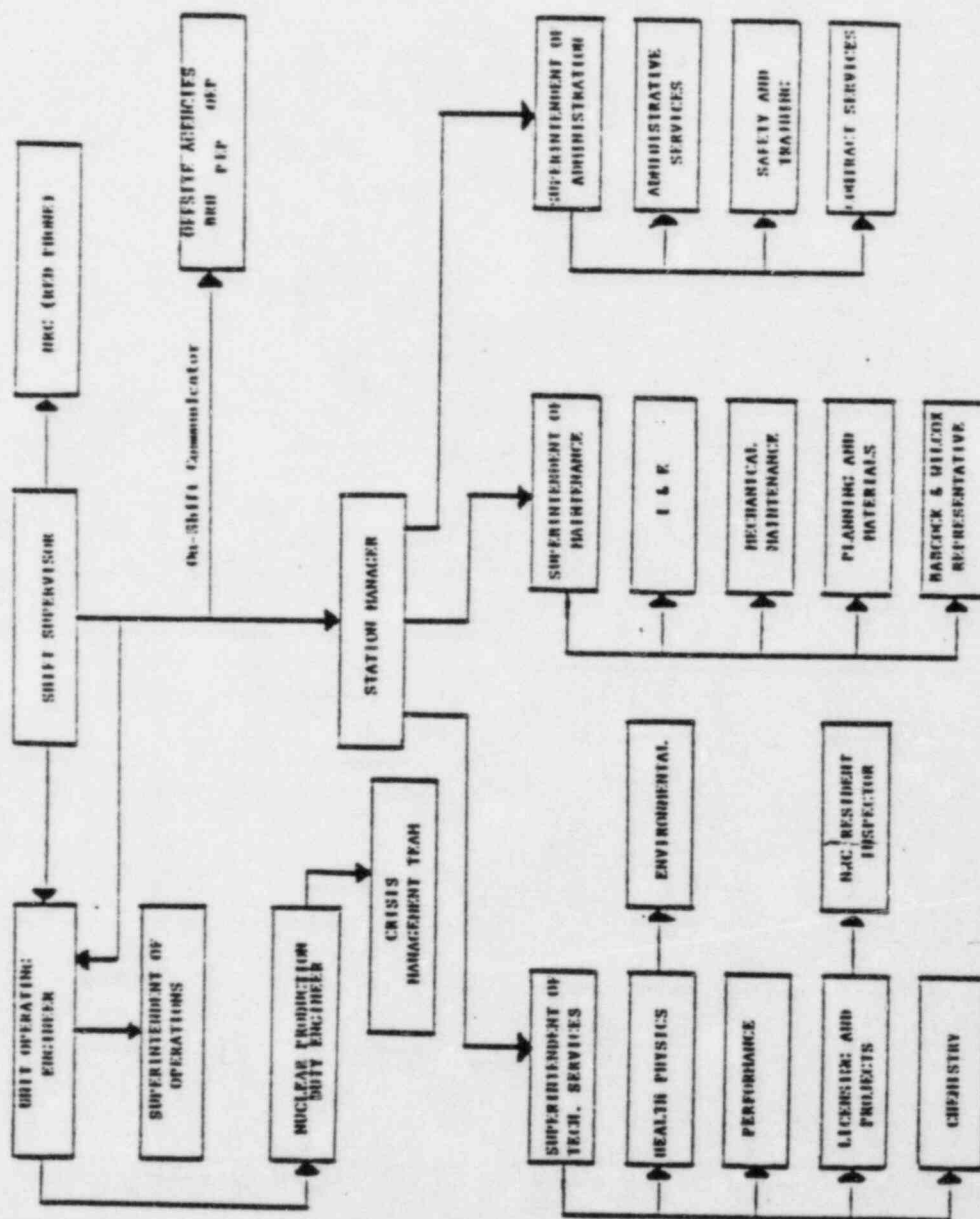
7. NOTIFICATIONS MADE: (NRC \_\_\_\_\_ YES \_\_\_\_\_ NO) (STATE \_\_\_\_\_ YES \_\_\_\_\_ NO) (COUNTIES \_\_\_\_\_ YES \_\_\_\_\_ NO)

8. TEC ACTIVATION \_\_\_\_\_ YES \_\_\_\_\_ NO. IF YES, REQUEST STATION MANAGER TO INITIATE EMERGENCY  
RESPONSE.

9. REQUEST NPDE TO CONTACT COMPANY MANAGEMENT AND CORPORATE COMMUNICATIONS.

10. I CAN BE REACHED AT \_\_\_\_\_ FOR FOLLOWUP INFORMATION.  
(TELEPHONE NUMBER )11. ADDITIONAL COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_12. OPERATING UNIT ENGINEER/DUTY ENGINEER SHALL PROVIDE UPDATE TO THE GENERAL OFFICE  
UNTIL RELIEVED BY THE TEC COMMUNICATOR IN THE TECHNICAL SUPPORT CENTER.

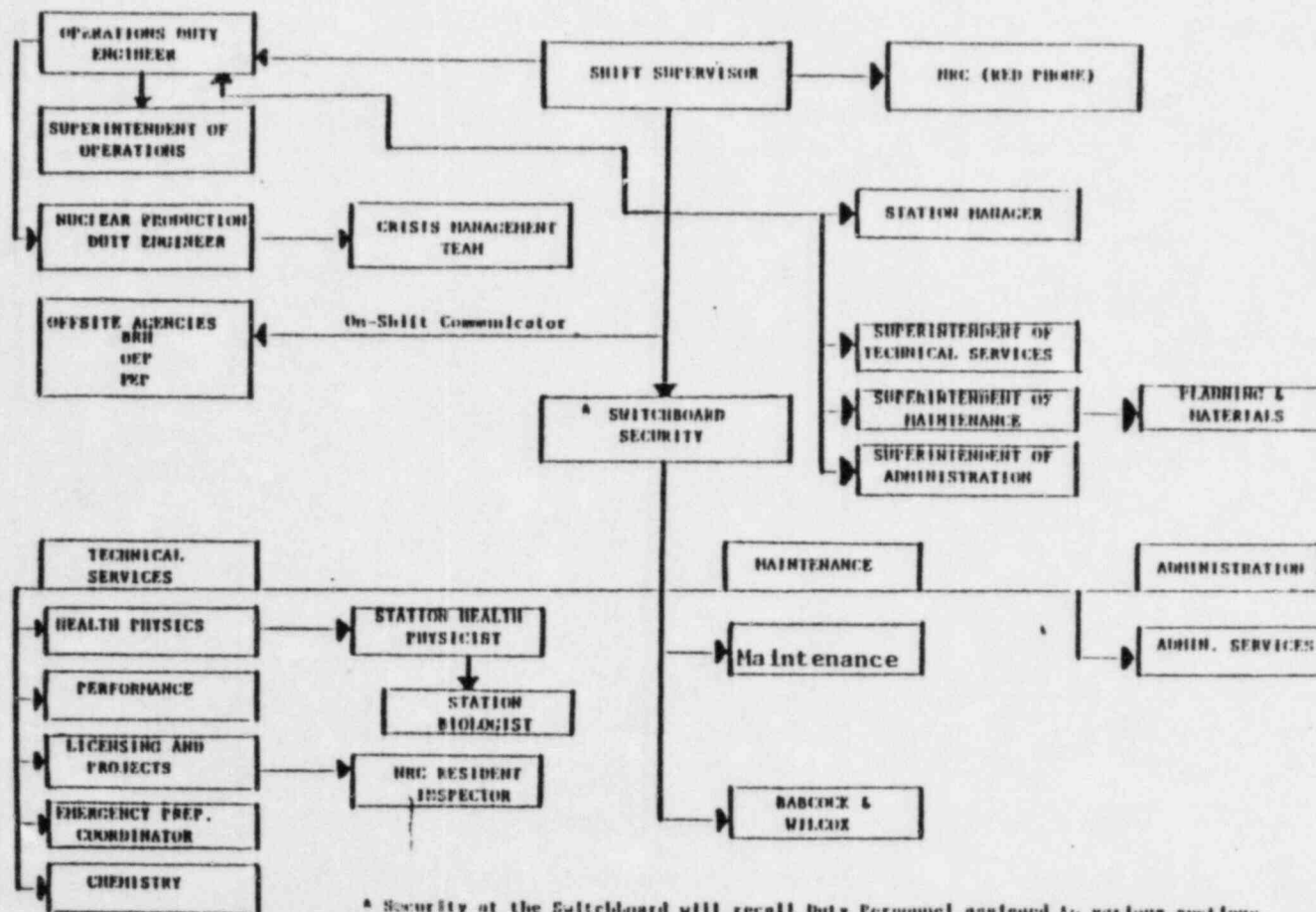
DUKE POWER COMPANY  
OCONEE NUCLEAR STATION  
EMERGENCY ORGANIZATION RECALL PROCEDURE  
(NORMAL WORKING HOURS)



DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY ORGANIZATION RECALL PROCEDURE

(BACKSHIFT, HOLIDAYS, WEEKENDS)



CONTROL COPY

(1) ID No: AP/O/B/1000/05  
Change(s) 2 to  
2 Incorporated

- (2) STATION: Oconee
- (3) PROCEDURE TITLE: Notification Procedure - General Emergency
- (4) PREPARED BY: Colman G. Spriggs DATE: 7/21/83
- (5) REVIEWED BY: HE Woodall DATE: 7/25/83
- Cross-Disciplinary Review By: James J. Lynn N/R: \_\_\_\_\_
- (6) TEMPORARY APPROVAL (IF NECESSARY):
- By: \_\_\_\_\_ (SRO) Date: \_\_\_\_\_
- By: \_\_\_\_\_ Date: \_\_\_\_\_
- (7) APPROVED BY: J B Owen / JBB Date: 8/10/83
- (8) MISCELLANEOUS:
- Reviewed/Approved By: \_\_\_\_\_ Date: \_\_\_\_\_
- Reviewed/Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION  
GENERAL EMERGENCY

1.0 Symptoms

Symptoms of the initiating condition determined from Enclosure 4.1, General Emergency Initiating Conditions.

2.0 Immediate Action

2.1 Automatic - N/A

2.2 Manual actions are not required to be followed in any particular sequence.

Date/Name  
Time

2.2.1 The Emergency Coordinator/Shift Supervisor shall:

\_\_\_\_\_ 2.2.1.1 Appoint On-Shift Communicator(s).

\_\_\_\_\_ 2.2.1.2 Appoint individual(s) to be responsible for maintaining logs of the emergency noting problems and actions taken.

\_\_\_\_\_ 2.2.1.3 Activate the Technical Support Center (Emergency Organization Recall, Enclosure 4.3 or 4.4).

\_\_\_\_\_ 2.2.1.4 Initiate a Site Assembly in accordance with S.D. 2.9.1. Use Station Personnel Accountability form (located in Emergency Procedures cart in Unit 1 & 2). The Shift Supervisor shall have the discretion to determine if a Site Evacuation will take place prior to the complete establishment of the Technical Support Center.

\_\_\_\_\_ 2.2.1.5 Dispatch onsite and offsite monitoring teams to assess radiation and contamination.

\_\_\_\_\_ 2.2.1.6 Provide protective action recommendations to offsite agencies within 15 minutes of the classification of a General Emergency according to Procedure AP/O/B/1000/06. Recommend immediately:

NOTE: Protective Action recommendations are the sole responsibility of the Emergency Coordinator (Shift Supervisor or Station Manager).

Date/Name  
Time

\_\_\_\_\_ 2.2.1.6.1 Activate the Alert & Notification System

\_\_\_\_\_ 2.2.1.6.2 Broadcast Emergency Broadcast System  
Message

\_\_\_\_\_ 2.2.1.6.3 Shelter the two-mile sector surrounding  
the Oconee Nuclear Station and,

\_\_\_\_\_ 2.2.1.6.4 Depending on time of day, shelter as  
follows:

\_\_\_\_\_ 10 am - 4 pm = 5 mile downwind in a 90° plume

\_\_\_\_\_ 4 pm - 10 am = 5 mile out in a 360° plume

2.2.2 The On-Shift Communicator(s) shall determine notification  
requirements by referring to Enclosure 4.1:

\_\_\_\_\_ 2.2.2.1 Notify the NRC by using the ENS Phone. Emergency  
Plan activation requires open channel communication.

\_\_\_\_\_ 2.2.2.2 Notify State/County government warning points  
by using the Message Sheet located in the  
Emergency Procedures Cart (located in the Shift  
Supervisor's office, Control Room 1 & 2).

\_\_\_\_\_ 2.2.2.3 Complete Parts I & II of the Message Sheet.  
Establish the approval process prior to releasing  
information offsite.

NOTE: The Emergency Coordinator must approve  
the contents of the message sheet prior  
to the information being released offsite.

\_\_\_\_\_ 2.2.2.4 Establish authentication process.

\_\_\_\_\_ 2.2.2.5 Use the most expeditious communication system  
available. Consult the Emergency Telephone  
Directory.

\_\_\_\_\_ 2.2.2.6 Provide updates (Part I and II - Message Sheet to  
the State/County agencies in a time frame established  
during the initial contact).

NOTE: Initial notification to the NRC/State of South Carolina  
must be made within 15 minutes of the time the  
Emergency Coordinator/Shift Supervisor determined  
the initiating condition for activation, escalation  
or de-escalation of the Emergency Plan.



Date/Name  
Time

\_\_\_\_ 2.2.2.7 Contact the Unit Operating/Operations Duty Engineer to:

2.2.2.7.1 Notify the Superintendent of Operations.

2.2.2.7.2 Notify the Station Manager. (Request Station Manager to establish the TSC according to Enclosure 4.3, Emergency Organization Recall-Normal Working Hours, if applicable.)

2.2.2.7.3 Provide the Nuclear Production Duty Engineer with the information required by Enclosure 4.2, Emergency Plan Information.

2.2.2.7.4 Provide assistance to the Shift Supervisor and serve as the Superintendent of Operations should he not be available.

\_\_\_\_ 2.2.2.8 Contact Security to:

2.2.2.8.1 Recall Duty Personnel per Enclosure 4.4, Emergency Organization Recall-Backshifts, Holidays, Weekends, if applicable.

2.2.2.8.2 Provide access control to Control Rooms 1 & 2, 3 -- TSC and OSC.

2.2.3 Personnel arriving in the Technical Support Center shall relieve Operations personnel of peripheral duties ordinarily assigned to their section. These persons will be provided direction from the Emergency Coordinator/Shift Supervisor until he is relieved by the Station Manager/alternate once the Technical Support Center is operational.

NOTE: FACE-TO-FACE TURNOVER IS REQUIRED.

\_\_\_\_ 2.2.3.1 Health Physics - provide radiological assessment and evaluation, provide offsite dose evaluations, onsite monitoring, sampling and analysis of gaseous effluents.

\_\_\_\_ 2.2.3.2 Performance - provide nuclear/thermal assessment and release plant status data to General Office via computer.

\_\_\_\_ 2.2.3.3 Operational Support Center Coordinator - provide manpower to augment support as required by ONS Emergency Plan.

Date/Name  
Time

- \_\_\_\_ 2.2.3.4 Chemistry - provide sampling and analysis of liquid effluents.
- \_\_\_\_ 2.2.3.5 Maintenance - provide I&E and Mechanical support.
- \_\_\_\_ 2.2.3.6 Communications:
  - \_\_\_\_ NRC - Licensing
  - \_\_\_\_ State of South Carolina - Offsite Communicator
  - \_\_\_\_ County Agencies - Offsite Communicator
  - \_\_\_\_ Crisis Management Center - Data Coordinator
- \_\_\_\_ 2.2.3.7 Administration - provide medical, security, and clerical support. Assume responsibility for establishment of the Technical Support Center per Procedure PT/O/B/2000/04. Assume responsibility for Personnel Accountability per S.D. 2.9.1.

3.0 Subsequent Action

- \_\_\_\_ 3.1 Technical Support Center operational.
- \_\_\_\_ 3.2 The Emergency Coordinator/Station Manger (alternate) shall assume "overall control" of the emergency and take the following actions:
  - \_\_\_\_ 3.2.1 Evacuate any personnel not directly involved in the control of the emergency. Provide for continuous staffing of the Technical Support Center and Operational Support Center should it become necessary to man the emergency facilities longer than 12 hours.
    - \_\_\_\_ 3.2.1.1 If necessary, secure bus transportation from the Duke Retail Office, Anderson.
    - \_\_\_\_ 3.2.1.2 Follow Procedures outlined in SD 2.9.1, AP/O/B/1000/10, and HP/O/B/1009/16.
    - \_\_\_\_ 3.2.1.3 Maintain station accountability and dose control for all emergency response personnel through the Operational Support Center.
  - \_\_\_\_ 3.2.2 Provide protective action recommendations to offsite agencies per Procedure AP/O/B/1000/06. This responsibility may not be delegated.
    - \_\_\_\_ 3.2.2.1 Implement the approval process for release of information to offsite county and state agencies.

Date/Name  
Time

- ☐ 3.2.3 Determine emergency classification.
  - 3.2.3.1 When plant conditions warrant, the General Emergency classification may be de-escalated to a lower classification or closed out.
    - ☐ 3.2.3.1.1 Recommend reduction in emergency class or close-out during the verbal summary to offsite agencies followed by a written summary within eight (8) hours of the class reduction or close-out.
- ☐ 3.2.4 Provide update of emergency status to include the following:
  - ☐ Briefing at least every half-hour. Request OSC Coordinator to provide information from briefing to OSC Personnel.
  - ☐ Provide sequence of events information to emergency personnel.
  - ☐ Assess flow of information (i.e., timely, accurate, concise, pertinent).
  - ☐ Plant data system information - trending available.
  - ☐ Make available news releases from the Crisis News Center.
- ☐ 3.3 The Emergency Preparedness Coordinator shall be responsible for Completed Procedure Process Record of notification procedures established by the Control Room and/or Technical Support Center.
- ☐ 3.4 The Emergency Preparedness Coordinator shall prepare a written summary (for the Station Manager's signature) which will be forwarded to offsite agencies should de-escalation be determined by the Emergency Coordinator.
- ☐ 3.5 Crisis Management Center operational.
  - ☐ 3.5.1 Recovery Manager relieves Emergency Coordinator of the responsibility for making protective action recommendations and notifications to offsite authorities, including NRC.
  - ☐ 3.5.2 Recovery Manager relieves Emergency Coordinator of the responsibility of Emergency Management which includes:
    - ☐ 3.5.2.1 Emergency Classification - escalation/de-escalation including written summaries.
    - ☐ 3.5.2.2 Long-range planning
    - ☐ 3.5.2.3 Recovery

4.0 Enclosures

4.1 General Emergency Initiating Conditions

4.2 Emergency Plan Information

4.3 Emergency Organization Recall - Normal Working Hours

4.4 Emergency Organization Recall - Backshifts, Weekends, Holidays

ENCLOSURE 4.1  
DUKE POWER COMPANY  
OCOKEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: GENERAL EMERGENCY

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
1. Accidental Release:			
(a) Effluent monitors detect levels corresponding to 1 R/hr WB or 5 R/hr Thyroid at the site boundary under ACTUAL METEOROLOGICAL CONDITIONS.	(a) RIA 45 and 46 in valid alarm mode AND Sample results together with calculated Offsite Dose indicates levels exceeding 1R/3r WB or 5 R/hr thyroid at the site boundary.	NOTIFY: 1, 2, 6, 7	AP/0/0/1000/05 HP/0/0/1009/15 HP/0/0/1009/11 AP/0/0/1000/07 <sup>2</sup> AP/0/0/1000/06
(b) These dose rates are projected based on other plant parameters or are measured in the environs.  EXAMPLE: Radiation levels in containment with leak rate appropriate for existing containment pressure with some confirmation from effluent monitors.	(b) Reading or dose rate outside RB coupled with RB leak rate results in calculated dose rate at the site boundary to be exceeding 1 R/hr WB or 5 R/hr thyroid. AND Offsite monitoring teams are used to verify readings off-site past the site boundary.		HP/0/0/1009/14  CP/0/0/4003/01
2. Loss of two of three fission product barriers with a potential loss of the third barrier			
Examples: (a) Failure of cladding and primary coolant boundary with potential loss of containment.	Any one of the following are indicators of the specific barrier lost:  3. CLADDING FAILURE Sample results indicate gap activity in the primary coolant.	NOTIFY: 1, 2, 6, 7	AP/0/0/1000/05 EP/0/0/1800/04 EP/0/0/1800/17 AP/0/0/1000/07 <sup>2</sup> AP/0/0/1000/06 CP/0/0/2003/02

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: GENERAL EMERGENCY

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
2. Loss of two of three fission product barriers with a potential loss of the third barrier.	<u>LOSS OF CONTAINMENT</u>		
(b) Failure of cladding and containment with potential loss of primary coolant boundary.	1. Status indicates that all containment penetrations are not valved off or closed.		
(c) Failure of containment and primary coolant boundary with potential loss of cladding.	2. Steamline break upstream from main steam stop valve and HSSV malfunction.		
	3. Steamline break or stop valve failure with steam generator tube leak.		
NOTE: Because of the complexity of this initiating condition, the judgment of the Shift Supervisor will always serve as an EAL.	<u>LOSS OF PRIMARY COOLANT BOUNDARY</u>		
	1. High RB pressure		
	2. High RB building sump level		
	3. Loss of subcooling margin		
	4. R3A 16/17 or 40 High Alarm		
	5. RB pressure increases and approaches 59 psig and loss of RB spray or cooling units.		
	6. Reactor coolant system pressure decreasing uncontrollably with T <sub>AVG</sub> constant.		



DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: GENERAL EMERGENCY

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
<p>3. Loss of physical control of the facility.</p> <p>NOTE: Consider 2-mile precautionary evacuation.</p>	Physical attack on the plant has resulted in unauthorized personnel occupying the control room or any other vital areas as described in the Safeguards Contingency Plan.	NOTIFY: 1, 2, 6, 7	AP/0/B/1000/05 Safeguards Contingency Plan AP/0/B/1000/06
<p>4. Other plant conditions exist from whatever source that make release of large amounts of radioactivity in a short time period possible.</p> <p>EXAMPLE: Any core melt situation.</p>	Shift Supervisor's/Emergency Coordinator judgment	NOTIFY: 1, 2, 6, 7	AP/0/B/1000/05 AP/0/B/1000/06 AP/0/B/1000/07 <sup>2</sup> As dictated by emergency
<p>5. Core Melt and dispersal of significant radioactivity.</p> <p>(a) Small and large LOCA's with failure of ECCS to perform leading to severe core degradation or melt in from minutes to hours. Ultimate failure of containment likely for melt sequences.</p> <p>NOTE: Several hours likely to be available to complete protective action unless containment is not isolated.</p>	<p>(a) 1. LOCA EAL's established in SAE #1 AND 2. Failure of the HPI system AND 3. Failure of the LPI system.</p>	NOTIFY: 1, 2, 6, 7	AP/0/B/1000/05 As dictated by the emergency AP/0/B/1000/07 <sup>2</sup> AP/0/B/1000/06

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: GENERAL EMERGENCY

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
5. Core melt and dispersal of significant radioactivity.	(b) 1. Loss of main condenser <u>AND</u>		
	2. No emergency feedwater <u>AND</u>		
(b) Transient initiated by loss of feedwater and condensate systems followed by failure of emergency feedwater system for an extended period. Core melting possible in several hours.	3. No HPI <u>OR</u>		
	1. Loss of main condenser <u>AND</u>		
	2. No emergency feedwater <u>AND</u>		
	3. Successful HPI <u>AND</u>		
	4. 30 minutes has elapsed <u>OR</u>		
	1. 30 minutes has elapsed		
	2. No LPI <u>AND/OR</u>		
	3. No emergency feedwater.		
(c) Transient requiring operation of shutdown systems with failure to scram which results in core damage or additional failure of core cooling and makeup systems.	1. RCS pressure greater than safety valve setpoint <u>OR</u>		
	2. Rapidly increasing containment pressure <u>OR</u>		
	3. Rapidly increasing containment <u>AND</u>		
NOTE: Would lead to core melt	4. Reactor remains critical		

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION

EMERGENCY CLASSIFICATION LEVEL: GENERAL EMERGENCY

INITIATING CONDITION	EMERGENCY ACTION LEVELS (EAL'S)	NOTIFICATION CODE (REFER TO EMERGENCY TELEPHONE DIRECTORY)	TECHNICAL SPECIFICATIONS AND IMPLEMENTING PROCEDURES
<p>(d) Failure of offsite and onsite power along with total loss of emergency feedwater make capability for several hours.</p> <p>NOTE: Would lead to eventual core melt and likely failure of containment</p>	<p>(d) 1. Undervoltage on HFBI and HFB 2 alarms for greater than 2 hours AND</p> <p>2. Keowee Hydro fails to start (either manual or automatic) AND</p> <p>3. EFW pump(s) fail to start</p>		
<p>(e) Small LOCA and initially successful ECCS. Subsequent failure of containment heat removal systems over several hours could lead to core melt and likely failure of containment.</p>	<p>1. A small or large LOCA has occurred AND</p> <p>2. Containment temperature is excessive and is rising OR</p> <p>3. Containment cooling is inadequate and has been for more than 30 min. AND</p> <p>4. Shift Supervisor's judgment.</p>		
6. Not applicable to PWR plants			
7. Any major internal or external events which could cause massive common damage to plant systems.		NOTIFY: 1, 2, 6, 7	AP/0/B/1000/05 As dictated by emergency conditions
(a) Fires	(a) Visual observation and Shift Supervisor's judgment.		AP/0/B/1000/07* AP/0/B/1000/06
(b) Earthquake (NHE)	(b) Statalarm and recording devices - .15g (structures constructed on overburden)		

\* Initiating condition only.

## DUKE POWER COMPANY

Enclosure 4.2

OCONEE NUCLEAR STATION

AP/O/B/1000/05

OPERATING UNIT ENGINEER

OR

EMERGENCY PLAN INFORMATION

Page 1 of 1

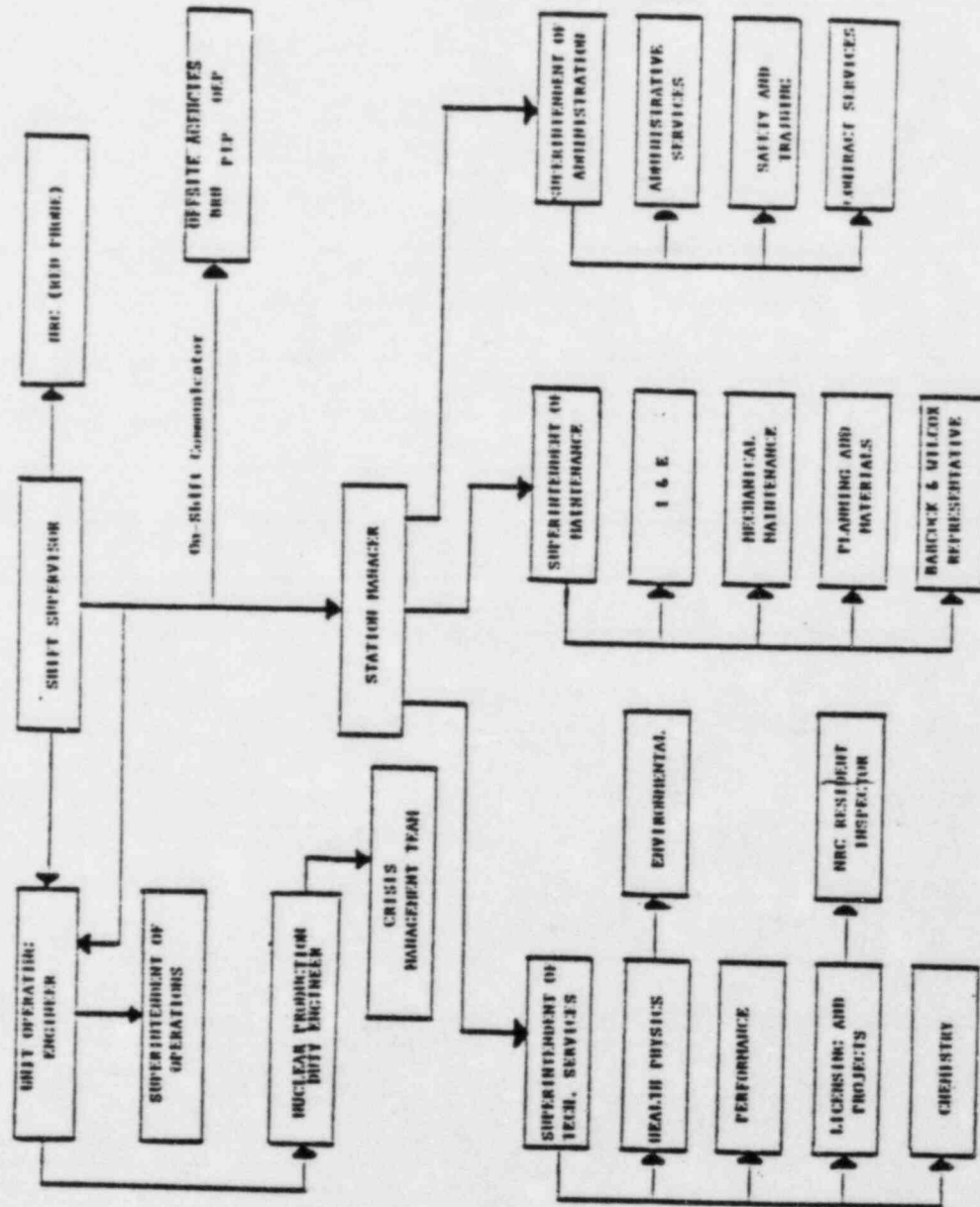
OPERATIONS DUTY ENGINEER SHALL CONTACT:

NAME \_\_\_\_\_ PHONE: \_\_\_\_\_  
(SUPERINTENDENT OF OPERATIONS)NAME \_\_\_\_\_ PHONE: \_\_\_\_\_  
(STATION MANAGER)NAME \_\_\_\_\_ PHONE: 714-375-5101 BEEDER #575  
(NUCLEAR PRODUCTION DUTY ENGINEER)

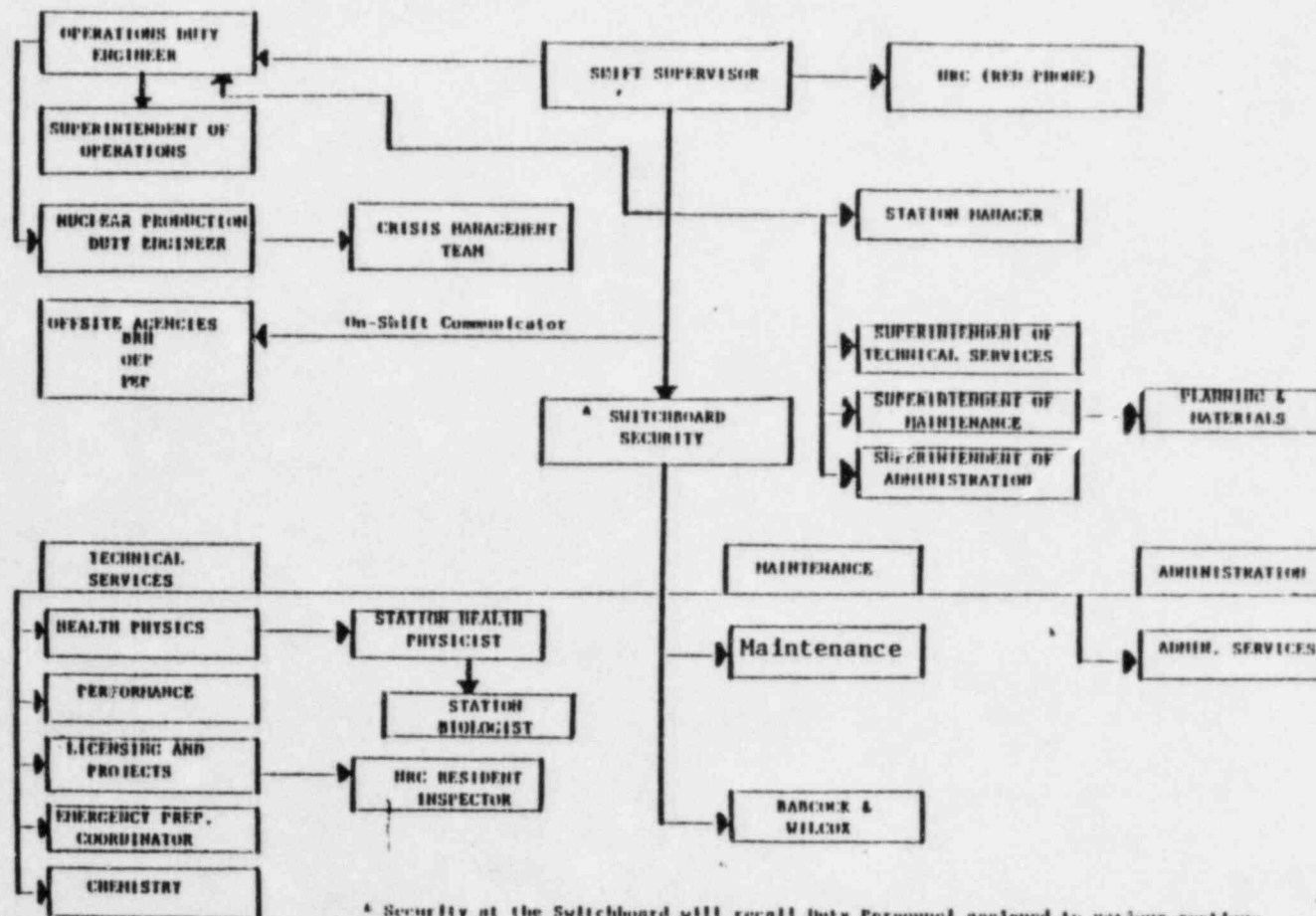
\* STATION MANAGER ONLY \*\*NUCLEAR PRODUCTION DUTY ENGINEER ONLY

1. THIS IS \_\_\_\_\_ AT \_\_\_\_\_ NUCLEAR STATION.  
(NAME AND TITLE)
2. THIS \_\_\_\_\_ IS \_\_\_\_\_ IS NOT A DRILL. AN \_\_\_\_\_ UNUSUAL EVENT \_\_\_\_\_ ALERT \_\_\_\_\_ SITE AREA EMERGENCY  
\_\_\_\_\_ GENERAL EMERGENCY WAS DECLARED BY THE EMERGENCY COORDINATOR AT \_\_\_\_\_  
ON UNIT NUMBER \_\_\_\_\_.
3. INITIATING CONDITION: (GIVE AS CLOSE TO THE EMERGENCY PLAN DESCRIPTION AS POSSIBLE  
TOGETHER WITH STATION PARAMETERS USED TO DETERMINE EMERGENCY STATUS.)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. CORRECTIVE MEASURES BEING TAKEN: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. THERE \_\_\_\_\_ HAVE \_\_\_\_\_ HAVE NOT BEEN ANY INJURIES TO PLANT PERSONNEL.
6. RELEASE OF RADIOACTIVITY \_\_\_\_\_ IS TAKING PLACE \_\_\_\_\_ IS \_\_\_\_\_ IS NOT AFFECTING CMC.  
RELEASE OF RADIOACTIVITY IS NOT TAKING PLACE.
7. NOTIFICATIONS MADE: (NRC \_\_\_\_\_ YES \_\_\_\_\_ NO) (STATE \_\_\_\_\_ YES \_\_\_\_\_ NO) (COUNTIES \_\_\_\_\_ YES \_\_\_\_\_ NO)
8. TSC ACTIVATION \_\_\_\_\_ YES \_\_\_\_\_ NO. IF YES, REQUEST STATION MANAGER TO INITIATE EMERGENCY  
RESPONSE.
9. REQUEST NPDE TO CONTACT COMPANY MANAGEMENT AND CORPORATE COMMUNICATIONS.
10. I CAN BE REACHED AT \_\_\_\_\_ FOR FOLLOWUP INFORMATION.  
(TELEPHONE NUMBER )
11. ADDITIONAL COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
12. OPERATING UNIT ENGINEER/DUTY ENGINEER SHALL PROVIDE UPDATE TO THE GENERAL OFFICE  
UNTIL RELIEVED BY THE TSC COMMUNICATOR IN THE TECHNICAL SUPPORT CENTER.

DUKE POWER COMPANY  
 OCONEE NUCLEAR STATION  
 EMERGENCY ORGANIZATION RECALL PROCEDURE  
 (NORMAL WORKING HOURS)



DUKE POWER COMPANY  
OCONEE NUCLEAR STATION  
EMERGENCY ORGANIZATION RECALL PROCEDURE  
(BACKSHIFT, HOLIDAYS, WEEKENDS)





INFORMATION ONLY

Form SPD-1002-1

INFORMATION ONLY

CONTROL COPY

DUKE POWER COMPANY  
PROCEDURE PREPARATION  
PROCESS RECORD

(1) ID No: AP/O/B/1000/06  
Change(s) 2 to  
2 Incorporated

- (2) STATION: Oconee
- (3) PROCEDURE TITLE: Procedure for Initiating Protective Action Guides for the General Public in the Emergency Planning Zone
- (4) PREPARED BY: Colman D. Davis DATE: 7/21/83
- (5) REVIEWED BY: HE Woodfill DATE: 7/22/83
- Cross-Disciplinary Review By: James J. Ghyman N/R: \_\_\_\_\_
- (6) TEMPORARY APPROVAL (IF NECESSARY):
- By: \_\_\_\_\_ (SRO) Date: \_\_\_\_\_
- By: \_\_\_\_\_ Date: \_\_\_\_\_
- (7) APPROVED BY: J B Owen / 286 Date: 8/10/83
- (8) MISCELLANEOUS:
- Reviewed/Approved By: \_\_\_\_\_ Date: \_\_\_\_\_
- Reviewed/Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

OCONEE NUCLEAR STATION  
PROCEDURE FOR INITIATING PROTECTIVE  
ACTION GUIDES FOR THE GENERAL  
PUBLIC IN THE EMERGENCY PLANNING  
ZONE

1.0 Symptoms

- 1.1 Should radioactive releases (or potential for release) produce exposures in excess of the Protective Action Guides in Enclosure 4.1 beyond the station boundaries, it will be necessary to provide protective action recommendations to the affected sectors of the Emergency Planning Zone.

2.0 Immediate Actions

2.1 Automatic

- 2.1.1 Not applicable

2.2 Manual

- 2.2.1 Site Area or General Emergency class emergencies have the potential for requiring Protective Actions in the Emergency Planning Zone.

3.0 Subsequent Actions

- 3.1 Emergency Response Organizations Not In Operation -- Should the situation arise when a release (or a potential for a release exists) of radioactivity will generate doses in excess of Protective Action Guides (Enclosure 4.1) and the various offsite emergency response facilities are not established, the Shift Supervisor or Station Manager (Emergency Coordinator) would proceed as follows:

- 3.1.1 Consult Enclosure 4.2 (Protective Action Recommendations Flow Chart).

- 3.1.2 Determine the present Emergency Classification.

- 3.1.3 Follow recommendations as recommended by Flow Chart for people living in the two mile and five mile area surrounding the Oconee Nuclear Station.

- 3.1.4 Provide protective action recommendations to Oconee County and Pickens County Emergency Preparedness Agencies. The County agencies have the responsibility for the protection of the general public in their county. Notify the S. C. warning point of the recommended protective action.

3.1.5 Begin to project actual exposure levels to the general public and determine action required by dose calculation:

3.1.5.1 Control Room - Procedure AP/0/B/1000/07

3.1.5.2 Technical Support Center - Health Physics procedures for calculating offsite dose.

3.1.6 Re-evaluate earlier protective action recommendations using offsite monitoring measurements (if available), current meteorology, and core/reactor coolant system/containment status.

3.1.7 Contact Oconee County and Pickens County Emergency Operation Centers to update them on the revised recommendation. Notify the S. C. warning point.

3.2 Emergency Response Organizations in Operation -- It is anticipated that a deterioration of an emergency situation classified as a Site Area or General Emergency would generate the need for Protective Actions for portions of the Emergency Planning Zone.

3.2.1 The emergency response organizations (Technical Support Center, Crisis Management Center, State Forward Emergency Operations Center and the County Emergency Operations Centers) would be in operation.

3.2.2 The Crisis Management Center through the Recovery Manager will make recommendations to the State Forward Emergency Operations Center for the areas requiring Protective Actions. The Recovery Manager will use Enclosures 4.1 (Protective Action Guides) and 4.2 (Protective Action Recommendation Flow Chart) to immediately assess the actions needed to protect the public.

3.2.3 Based upon Duke Power's recommendations and direction from the Bureau of Radiological Health of the S.C. Department of Health and Environmental Control, the State (through the Governor's office) would initiate protective action recommendations to the public.

#### 4.0 Enclosures

4.1 Protective Action Guide

4.2 Protective Action Recommendation Flow Chart

ENCLOSURE 4.1  
PROTECTIVE ACTION GUIDES

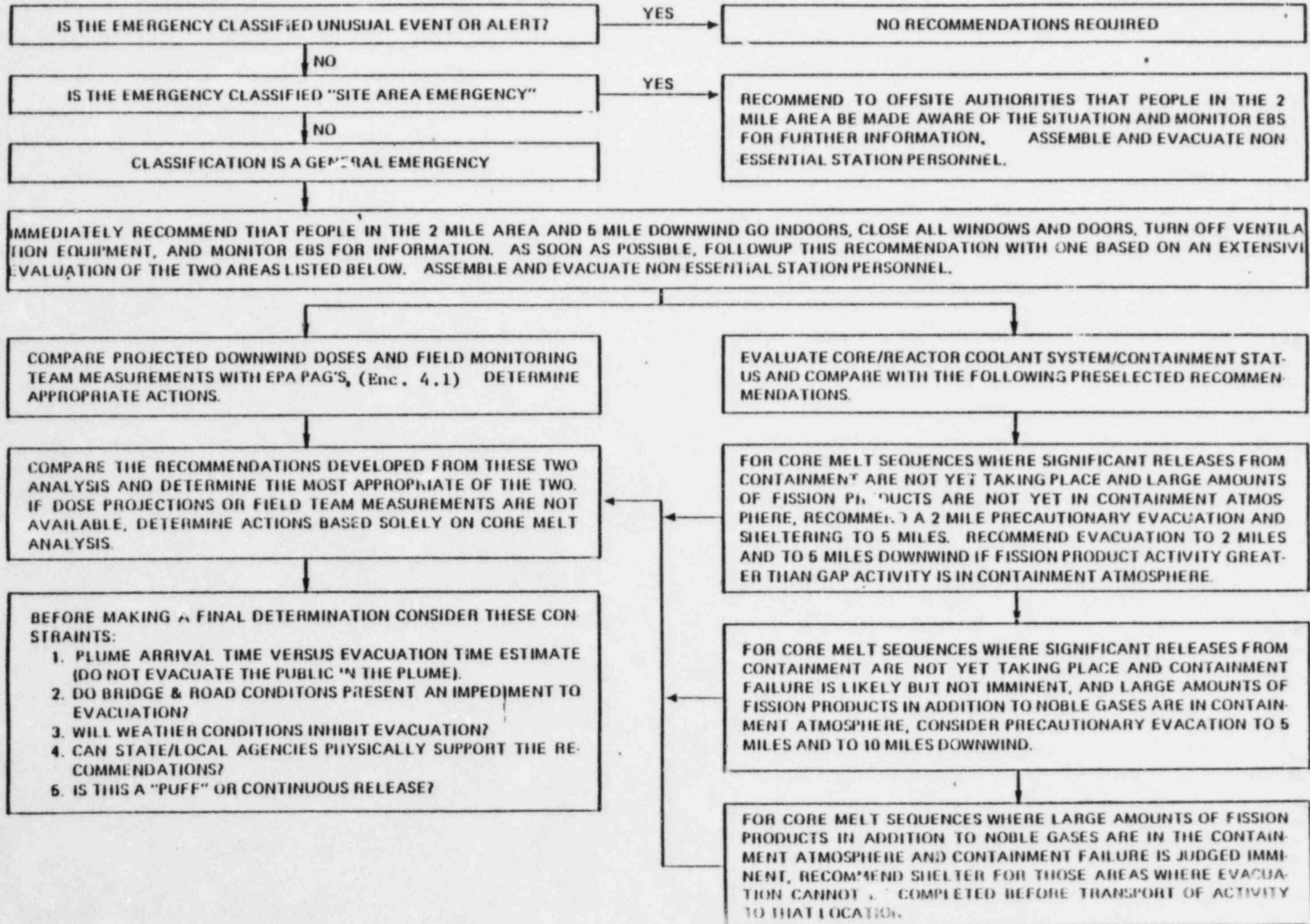
AP/O/R/1000/06

Recommended protective actions to avoid whole body and thyroid dose from exposure to a gaseous plume.

Projected Dose (Rem) to the Population	Recommended Actions (a)	Comments
Whole body <1 Thyroid <5	<ul style="list-style-type: none"> <li>No protective action required.</li> <li>State may issue an advisory to seek shelter and await further instructions or to voluntarily evacuate.</li> <li>Monitor environmental radiation levels.</li> </ul>	Previously recommended protective actions may be reconsidered or terminated.
Whole body 1 to <5 Thyroid 5 to <25	<ul style="list-style-type: none"> <li>Seek shelter and await further instructions.</li> <li>Consider evacuation particularly for children and pregnant women.</li> <li>Monitor environmental radiation levels.</li> <li>Control access.</li> </ul>	
Whole body 5 and above Thyroid 25 and above	<ul style="list-style-type: none"> <li>Conduct mandatory evacuation of populations in the predetermined area.</li> <li>Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels.</li> <li>Control access.</li> </ul>	Seeking shelter would be an alternative if evacuation were not immediately possible.
Projected Dose (Rem) to Emergency Team Workers		
Whole body 5 Skin of Whole Body or Thyroid 30 Extremities 75	<ul style="list-style-type: none"> <li>Control exposure of emergency team members to these levels except for lifesaving missions. (Appropriate controls for emergency workers, include time limitations, respirators, and stable iodine.)</li> </ul>	Although respirators and stable iodine should be used where effective to emergency team workers, thyroid dose may not be a limiting factor for lifesaving missions.
Whole body 25 Skin of Whole Body or Thyroid 150 Extremities 375	<ul style="list-style-type: none"> <li>Control exposure of emergency team members performing lifesaving missions to this level. (Control of time of exposure will be most effective.)</li> </ul> <p style="text-align: center;">VOLUNTARY BASIS ONLY</p>	

(a) These actions are recommended for planning purposes. Protective action decisions at the time of the incident must take existing conditions into consideration.

ENCLOSURE 4.2  
 PROTECTIVE ACTION RECOMMENDATION FLOW CHART  
 OCONEE NUCLEAR STATION





# CONTROL COPY

INFORMATION ONLY

Form 34731 (10-81)  
(Formerly SPD-1002-1)

DUKE POWER COMPANY  
PROCEDURE PREPARATION  
PROCESS RECORD

(1) ID No: AP/0/B/1000/07  
Change(s) — to  
— Incorporated

- (2) STATION: OCONEE NUCLEAR STATION
- (3) PROCEDURE TITLE: Procedure for Offsite Dose Calculation by Control Room Personnel or Emergency Coordinator During a Radiological Accident
- (4) PREPARED BY: Sarah A. Cox DATE: 5-19-83
- (5) REVIEWED BY: James J. [Signature] DATE: 6-7-83  
Cross-Disciplinary Review By: [Signature] N/R: —
- (6) TEMPORARY APPROVAL (IF NECESSARY):  
By: — (SRO) Date: —  
By: — Date: —
- (7) APPROVED BY: JN Pope Date: 6-9-83
- (8) MISCELLANEOUS:  
Reviewed/Approved By: R L Swing Date: 6-8-83  
Reviewed/Approved By: [Signature] Date: 6-8-83



AP/0/B/1000/07

PROCEDURE FOR OFFSITE DOSE CALCULATIONS  
BY CONTROL ROOM PERSONNEL OR EMERGENCY  
COORDINATOR DURING A RADIOLOGICAL ACCIDENT

1.0 Symptoms

1.1 RIA-4 reading increasing with indications of a loss of coolant accident.

1.1.1 RIA-4 reading < 30R/hr (Case A)

1.1.2 RIA-4 reading > 30R/hr (Case B)

1.2 RIAs-44, 45 and 46 increasing with indications of a radiological accident. (Case B).

2.0 Immediate Action

CASE A

2.1 Automatic

2.1.1 None

2.2 Manual

2.2.1 None

3.0 Subsequent Action

3.1 Deploy monitoring teams

CASE B

2.0 Immediate Action

2.1 Automatic

2.1.1 RIA-45 high alarm will secure a Reactor Building Purge if in progress.

2.2 Manual

2.2.1 This procedure is intended to provide on-shift personnel and members of the Technical Support Center a means of projecting offsite exposure levels for radiological accidents at Oconee Nuclear Station. These dose projections can be made based upon the source of the release to the unit vent, Reactor Building atmosphere and available meteorological data. It is intended that projections made by this procedure would be conservative and precede information available from field monitoring teams and the assumption of offsite dose projection responsibility by the Crisis Management Center. Recommendations for evacuation of offsite areas are to be made based on the calculations completed in this procedure.

NOTE: Health Physics personnel in both the Technical Support Center and the Crisis Management Center may use alternate means for projecting offsite dose when their organizations are operational.

2.2.2 The meteorology data needed to calculate offsite dose should be obtained from the tower. Data not available from this primary source should be obtained from its back up source. These back up sources are the river and National Weather Service. All meteorology data obtained from the tower or river must be a 15 minute average. National Weather Service data is a standard observation and is not a 15 minute average.

2.2.2.1 The following are conversion formulas for the meteorological data obtained from the National Weather Service Office at the Greenville-Spartanburg Airport. (Number is listed in the Emergency Telephone Directory).

$$\text{mph} = 1.15 \text{ (Knots)}$$

$$^{\circ}\text{F} = (9/5^{\circ}\text{C}) + 32$$

2.2.3 The need for protective action should be reassessed every hour. The Control Room will complete the Offsite Dose Calculation every hour until the Technical Support Center is operational and are relieved by the Health Physics Center. Wind direction and speed will be rechecked every 15 minutes to ensure additional sectors have not been affected during daytime (1000-1600 hrs.).

NOTE: Once a sector has been determined to be affected, then it cannot be removed from the list of affected sectors.

2.2.4 Complete the proper enclosure for the existing conditions.

1. Enclosure 4.1 - LOCA With Vent Release
2. Enclosure 4.2 - LOCA; No Vent Release
3. Enclosure 4.3 - Vent Release; No LOCA
4. Enclosure 4.6 - Computer Dose Assessment Program

2.2.5 Complete Enclosure 4.5 (Stability Class). This information is used in the "warning message" to offsite agencies.

### 3.0 Subsequent Actions

3.1 Notify the proper agencies per AP/0/B/1000/05 (Notification Procedure - General Emergency).

3.2 Deploy onsite and offsite monitoring teams per AP/O/B/1000/05  
(Notification Procedure - General Emergency).

4.0 Enclosures

- 4.1 Offsite Dose Calculation - LOCA Vent Release
- 4.2 Offsite Dose Calculation - LOCA; No Vent Release
- 4.3 Offsite Dose Calculation - Vent Release; No LOCA
- 4.4 Survey Instrument Correlation
- 4.5 Stability Class
- 4.6 Offsite Dose Calculation - Using Computer

Time/Date \_\_\_\_\_

## ENCLOSURE 4.1

OCONEE NUCLEAR STATION  
OFFSITE DOSE CALCULATION  
LOCA WITH VENT RELEASE

- - AP/0/B/1000/07

Unit \_\_\_\_\_

Calculation performed by \_\_\_\_\_

## TIME DATE

- 1) A) Now \_\_\_\_/\_\_\_\_  
B) Incident \_\_\_\_/\_\_\_\_  
C) Hours Since Incident \_\_\_\_
- 2) Meteorology Data - 15 minute average.

NOTE: Sources of data are listed in order of preference. If the first choice is unavailable, use the second choice, etc. Fill in only one blank for each data point.

- (A)  $\Delta T(^{\circ}\text{F})$  1) Tower \_\_\_\_ $^{\circ}\text{F}$   
2) Use a  $\Delta T$  of  $0.4^{\circ}\text{F}$  if tower  $\Delta T$  is not available.
- (B) Wind Direction 1) Tower \_\_\_\_ $^{\circ}$   
2) River \_\_\_\_ $^{\circ}$   
3) National Weather Service \_\_\_\_ $^{\circ}$
- (C) Wind Speed 1) Tower \_\_\_\_mph  
2) River \_\_\_\_mph  
3) National Weather Service \_\_\_\_mph

NOTE: National Weather Service data is a standard observation, not a 15 minute average and is updated only once per hour.

## ENCLOSURE 4.1

AP/O/B/1000/07

- 3) Calculate TF (time factor) based upon time (hours) since incident from the table below and record value.

Time Since Incident In Hours	Time Factor (TF)
0-1.0	0.28
1.1-2.0	0.36
2.1-5.0	0.60
5.1-10.0	0.94
10.1-20.0	1.50

TF = \_\_\_\_\_

- 4) Reactor Building DR (dose rate) by either a) or b).

a) Containment high range radiation monitor (RIA-57 or RIA-58)

\_\_\_\_\_ R/hr.

b) PIC-6-A (or similar hand held survey instrument) reading x correlation value (Encl. 4.4).

Survey Inst. \_\_\_\_\_ x Corr. value \_\_\_\_\_ = DR \_\_\_\_\_ R/hr.

NOTE: A reading on the survey instrument < 0.3 R/hr would indicate that the release source term used for the "warning message" to offsite agencies is a gap activity release.

NOTE: A reading on the survey instrument > 0.3 R/hr would indicate that the release source term used for the "warning message" to offsite agencies is a design basis accident.

- 5) Determine through which unit vent(s) (if any) activity is being released.

Vent releases may occur on all three units' vents simultaneously since the Oconee Auxiliary Building is one enclosure with three vents.

Vent release on Unit(s) \_\_\_\_\_.



## ENCLOSURE 4.1

AP/0/B/1000/07

- 6) Record the following information for the affected unit(s) vent monitors identified in Step 5. \_ \_

	Unit 1	Unit 2	Unit 3
Unit Vent Flow (Fv) (A0946)	____ cfm	____ cfm	____ cfm
RIA-45 (A1679)	____ cpm	____ cpm	____ cpm
RIA-46 (if > 10 cpm) (A1680)	____ cpm	____ cpm	____ cpm
RIA-44* (R-1678)			
a) -Start of time period			
-count rate	____ cpm	____ cpm	____ cpm
b) -end of time period			
-count rate	____ cpm	____ cpm	____ cpm
c) -Δ time	____ min	____ min	____ min
-Δ cpm	____	____	____

NOTE: If the RIA Chart is used as a reference, use the 15 minute interval during the last hour that had the greatest increase in RIA-44 counts.

RIA-44 rate of increase may be read directly from the plant computer. (R-1678)

- 7) Multiply unit vent flow times the RIA readings and add to the results as follows for the affected units' vents.

- a) Noble Gas (NG)

RIA-45

Fv x RIA-45 (cpm)

U-1    \_\_\_\_ x \_\_\_\_ = \_\_\_\_  
 U-2    \_\_\_\_ x \_\_\_\_ = \_\_\_\_  
 U-3    \_\_\_\_ x \_\_\_\_ = \_\_\_\_  
 total RIA-45 = \_\_\_\_

## ENCLOSURE 4.1

AP/0/B/1000/07

RIA-46

$$F_v \times \text{RIA-46 (cpm)}$$

$$\text{U-1} \quad \underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\text{U-2} \quad \underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\text{U-3} \quad \underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\text{total RIA-46} = \underline{\quad}$$

$$\text{NG} = [\text{total RIA-45} \times 1.71 \text{ F-d}] + [\text{total RIA-46} \times 6.82\text{E-4}]$$

$$\text{NG} = \underline{\quad} \quad (\text{record this value on Step 8c})$$

b) Iodine Vent (Iv)RIA-44

$$F_v \times \frac{\Delta \text{RIA-44 (cpm)}}{\Delta \text{time (min)}}$$

$$\text{U-1} \quad \underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\text{U-2} \quad \underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\text{U-3} \quad \underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\text{total RIA-44} = \underline{\quad}$$

$$\text{Iv} = \text{total RIA-44} \times 2.76\text{E-7}$$

$$\text{Iv} = \underline{\quad}$$

## 8) Calculate DT by completing Step A through C.

a) Building Iodine (I<sub>RB</sub>)

$$I_{RB} = \text{DR (Step 4)} \times \text{TF (Step 3)}$$

$$I_{RB} = \underline{\quad}$$

b) Total Iodine (I<sub>T</sub>)

$$I_T = I_{RB} \text{ (Step 8a)} + I_V \text{ (Step 7b)}$$

$$I_T = \underline{\quad}$$

## ENCLOSURE 4.1

AP/0/B/1000/07

c) Total Iodine ( $I_T$ ) vs Noble Gas (NG)
 $I_T$  (Step 8b) = \_\_\_\_\_ NG (Step 7a) = \_\_\_\_\_

$$DT = \begin{cases} I_T & \text{if } I_T > NG \\ NG & \text{if } I_T < NG \end{cases}$$

DT = \_\_\_\_\_

- 9) Is time of day between 1000 hrs and 1600 hrs (10:00 am and 4:00 pm)?

If yes, go to Step 10.

If no, go to Step 14.

- 10) Calculate DW (wind determined dose) based upon DT (Step 8c) and WS (wind speed).

$$DW = \frac{DT}{WS}$$

- 11) Determine distances and level of protective actions based upon DW (Step 10) and  $\Delta T^\circ F$  from table below:

- Number suffix of areas on evacuation map to be evacuated:

Children and pregnant women \_\_\_\_\_

Everyone \_\_\_\_\_

Find the horizontal row corresponding to the  $\Delta T^\circ F$ . Follow across the row from left to right until the box containing the calculated DW value is reached. Read down the vertical column to find the appropriate actions and the corresponding distances from the plant.

## ENCLOSURE 4.1

AP/0/B/1000/07

	$\Delta T^{\circ}F$	DW	DW	DW	DW
A)	$\infty$ to -1.3	$<2.09E5$	2.09E5 to 7.8E5	7.8E5 to 3.9E6	$>3.9E6$
B)	-1.2 to -1.0	$<5.4E3$	5.4E3 to 2.70E4	2.7E4 to 3.2E5	$>3.2E5$
C)	-0.9 to -0.4	$<2.09E3$	2.09E3 to 1.04E4	1.04E4 to 7.4E4	$>7.4E4$
D)	-0.3 to +10.0	$<1.08E3$	1.08E3 to 5.4E3	5.4E3 to 3.2E4	$>3.2E4$
		No action procedure is com- pleted	Evacuate children and pregnant wom- en 0-4 miles (Downwind areas with suffix 1)	Evacuate every- one 0-4 miles (Downwind areas with suffix 1)	Evacuate everyone 0-4 miles (Downwind area with suffix 1)
			No action for 4-10 miles	Evacuate chil- dren and preg- nant women 4-10 miles (Downwind areas with suffix 2)	Evacuate everyone 4-10 miles (Downwind areas with suffix 2)

Example: If  $\Delta T^{\circ}F$  is -1.1 and DW is 2.9E4, evacuate everyone from 0-4 miles and children and pregnant women from 4-10 miles.

12) a) Is wind speed  $\geq 5$  mph?

☐ If yes, use table in Step 12 b.

☐ If no, assume Sectors A1, B1, C1, D1, E1, and F1 are affected. Then use Table 12b to determine additional areas to be evacuated out beyond 4 miles.

b) Wind direction (from) and wind speed - 15 minute average.

Reverify every 15 minutes.

1st 15 min. average \_\_\_\_\_ $^{\circ}$ ; \_\_\_\_\_ mph

2nd 15 min. average \_\_\_\_\_ $^{\circ}$ ; \_\_\_\_\_ mph

3rd 15 min. average \_\_\_\_\_ $^{\circ}$ ; \_\_\_\_\_ mph

## ENCLOSURE 4.1

AP/O/B/1000/07

4th 15 min. average \_\_\_\_°; \_\_\_\_ mph

Find the wind direction and follow across the row to find the letter prefixes of the areas on the evacuation map to be evacuated and record.

Wind Direction (From)	Letter Prefixes of Areas to be Evacuated
15° - 41°	C, D, E
41° - 67°	D, E
67° - 103°	D, E, F
103° - 127°	E, F
127° - 174°	A, E, F
174° - 182°	A, F
182° - 215°	A, B, F
215° - 256°	A, B
256° - 270°	A, B, C
270° - 298°	B, C
298° - 344°	B, C, D
344° - 15°	C, D

c) Letter prefixes of areas on evacuation map to be evacuated \_\_\_\_\_.

- 13) Combine the numbers determined in Step 11 with the letters from Step 12 to determine which sectors of evacuation map to evacuate.

Children and pregnant women \_\_\_\_\_

Everyone \_\_\_\_\_

NOTE: The 2 mile Emergency Planning Zone on the evacuation map will always be evacuated if evacuation of any area is required.



## ENCLOSURE 4.1

AP/O/B/1000/07

- 14) Use the table below if time of day is not between 1000 hrs and 1600 hrs. Apply the DT value from Step 8 on the table below. Read the corresponding action in the column to the right and record.

DT	PROTECTIVE ACTION
$\leq 610$	No protective action is necessary
610 to 3100	Evacuate children and pregnant women 0 to 4 miles in all directions (all areas with number suffix 1)
3100 to 15600	Evacuate everyone 0 to 4 miles in all directions. (All areas with number suffix 1). Evacuate children and pregnant women 4-10 miles in all directions. (All areas with number suffix 2)
$> 15600$	Evacuate everyone 0 to 10 miles in all directions. (All areas with number suffixes 1 and 2)

Children and pregnant women \_\_\_\_\_

Everyone \_\_\_\_\_

NOTE: The 2 mile Emergency Planning Zone on the evacuation map will always be evacuated if evacuation of any area is required.

Additional Notes or Comments

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



Time/Date \_\_\_\_\_

## ENCLOSURE 4.2

OCONEE NUCLEAR STATION

OFFSITE DOSE CALCULATION

LOCA; NO VENT RELEASE

- AP/O/B/1000/07

Unit \_\_\_\_\_

Calculation performed by \_\_\_\_\_

## TIME DATE

- 1) A) Now \_\_\_\_/\_\_\_\_  
B) Incident \_\_\_\_/\_\_\_\_  
C) Hours Since Incident \_\_\_\_

- 2) Meteorology Data - 15 minute average.

NOTE: Sources of data are listed in order of preference. If the first choice is unavailable, use the second choice, etc. Fill in only one blank for each data point.

- (A)  $\Delta T(^{\circ}\text{F})$  1) Tower \_\_\_\_ $^{\circ}\text{F}$   
2) Use a  $\Delta T$  of  $0.4^{\circ}\text{F}$  if tower  $\Delta T$  is not available.

- (B) Wind Direction 1) Tower \_\_\_\_ $^{\circ}$   
2) River \_\_\_\_ $^{\circ}$   
3) National Weather Service \_\_\_\_ $^{\circ}$

- (C) Wind Speed 1) Tower \_\_\_\_mph  
2) River \_\_\_\_mph  
3) National Weather Service \_\_\_\_mph

NOTE: National Weather Service data is a standard observation, not a 15 minute average.

## ENCLOSURE 4.2

AP/0/B/1000/07

- 3) Calculate TF (time factor) based upon time (hours) since incident from the table below and record value.

Time Since Incident In Hours	Time Factor (TF)
0-1.0	0.28
1.1-2.0	0.36
2.1-5.0	0.60
5.1-10.0	0.94
10.1-20.0	1.50

TF = \_\_\_\_\_

- 4) Reactor Building DR (dose rate) by either a) or b).

a) Containment high range radiation monitor (RIA-57 or RIA-58)

\_\_\_\_\_ R/hr.

b) PIC-6-A (or similar hand held survey instrument) reading x correlation value (Encl. 4.4).

Survey Inst. \_\_\_\_\_ x Corr. value \_\_\_\_\_ = DR \_\_\_\_\_ R/hr.

NOTE: A reading on the survey instrument < 0.3 R/hr would indicate that the release source term used for the "warning message" to offsite agencies is a gap activity release.

NOTE: A reading on the survey instrument > 0.3 R/hr would indicate that the release source term used for the "warning message" to offsite agencies is a design basis accident.

- 5) Calculate DT (time determined dose)

DT \_\_\_\_\_ = DR \_\_\_\_\_ x TF \_\_\_\_\_

- 6) Is time of day between 1000 hrs and 1600 hrs (10:00 am and 4:00 pm)?

If yes, go to Step 7.

If no, go to Step 11.

- 7) Calculate DW (wind determined dose) based upon DT (Step 5) and WS (wind speed).

DW \_\_\_\_\_ =  $\frac{DT}{WS}$  \_\_\_\_\_

## ENCLOSURE 4.2

AP/O/B/1000/07

- 8) Determine distances and level of protective actions based upon DW (Step 7) and  $\Delta T^{\circ}F$  from table below:

Number suffix of areas on evacuation map to be evacuated:

Children and pregnant women \_\_\_\_\_

Everyone \_\_\_\_\_

Find the horizontal row corresponding to the  $\Delta T^{\circ}F$ . Follow across the row from left to right until the box containing the calculated DW value is reached. Read down the vertical column to find the appropriate actions and the corresponding distances from the plant.

	$\Delta T^{\circ}F$	DW	DW	DW	DW
A)	$-\infty$ to -1.3	$\leq 2.09E5$	2.09E5 to 7.8E5	7.8E5 to 3.9E6	$> 3.9E6$
B)	-1.2 to -1.0	$\leq 5.4E3$	5.4E3 to 2.70E4	2.7E4 to 3.2E5	$> 3.2E5$
C)	-0.9 to -0.4	$\leq 2.09E3$	2.09E3 to 1.04E4	1.04E4 to 7.4E4	$> 7.4E4$
D)	-0.3 to +10.0	$\leq 1.08E2$	1.08E3 to 5.4E3	5.4E3 to 3.2E4	$> 3.2E4$
		No action procedure is completed	Evacuate children and pregnant women 0-4 miles (Downwind areas with suffix 1)	Evacuate everyone 0-4 miles (Downwind areas with suffix 1)	Evacuate everyone 0-4 miles (Downwind areas with suffix 1)
			No action for 4-10 miles	Evacuate children and pregnant women 4-10 miles (Downwind areas with suffix 2)	Evacuate everyone 4-10 miles (Downwind areas with suffix 2)

Example: If  $\Delta T^{\circ}F$  is -1.1 and DW is 2.9E4, evacuate everyone from 0-4 miles and children and pregnant women from 4-10 miles.

ENCLOSURE 4.2  
AP/O/B/1000/07

9) a) Is wind speed  $\geq 5$  mph?

- ☐ If yes, use table in Step 9 b.
- ☐ If no, assume Sectors A1, B1, C1, D1, E1, and F1 are affected. Then use Table 9b to determine additional areas to be evacuated out beyond 4 miles.

b) Wind direction (from) and wind speed - 15 minute average.

Reverify every 15 minutes.

1st 15 min. average \_\_\_\_\_°; \_\_\_\_\_ mph

2nd 15 min. average \_\_\_\_\_°; \_\_\_\_\_ mph

3rd 15 min. average \_\_\_\_\_°; \_\_\_\_\_ mph

4th 15 min. average \_\_\_\_\_°; \_\_\_\_\_ mph

Find the wind direction and follow across the row to find the letter prefixes of the areas on the evacuation map to be evacuated and record.

Wind Direction (From)	Letter Prefixes of Areas to be Evacuated
15° - 41°	C, D, E
41° - 67°	D, E
67° - 103°	D, E, F
103° - 127°	E, F
127° - 174°	A, E, F
174° - 182°	A, F
182° - 215°	A, B, F
215° - 256°	A, B
256° - 270°	A, B, C
270° - 298°	B, C
298° - 344°	B, C, D
344° - 15°	C, D

## ENCLOSURE 4.2

AP/O/B/1000/07

- c) Letter prefixes of areas on evacuation map to be evacuated \_\_\_\_\_.
- 10) Combine the numbers determined in Step 8 with the letters from Step 9 to determine which sectors of evacuation map to evacuate.

Children and pregnant women \_\_\_\_\_

Everyone \_\_\_\_\_

NOTE: The 2 mile Emergency Planning Zone on the evacuation map will always be evacuated if evacuation of any area is required.

- 11) Use the table below if time of day is not between 1000 hrs and 1600 hrs. Apply the DT value from Step 5 on the table below. Read the corresponding action in the column to the right and record.

DT	PROTECTIVE ACTION
$\leq 610$	No protective action is necessary
610 to 3100	Evacuate children and pregnant women 0 to 4 miles in all directions (all areas with number suffix 1)
3100 to 15600	Evacuate everyone 0 to 4 miles in all directions. (All areas with number suffix 1). Evacuate children and pregnant women 4-10 miles in all directions. (All areas with number suffix 2)
> 15600	Evacuate everyone 0 to 10 miles in all directions. (All areas with number suffixes 1 and 2)

Children and pregnant women \_\_\_\_\_

Everyone \_\_\_\_\_

NOTE: The 2 mile Emergency Planning Zone on the evacuation map will always be evacuated if evacuation of any area is required.



ENCLOSURE 4.2

AP/O/E/1000/07

Additional Notes or Comments

This image shows a full page of white paper with horizontal black ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



Time/Date \_\_\_\_\_

## ENCLOSURE 4.3

OCONEE NUCLEAR STATION  
OFFSITE DOSE CALCULATION

VENT RELEASE; NO LOCA

AP/O/B/1000/7

Unit \_\_\_\_\_

Calculation performed by \_\_\_\_\_

## TIME DATE

- 1) A) Now \_\_\_\_/\_\_\_\_  
B) Incident \_\_\_\_/\_\_\_\_  
C) Hours Since Incident \_\_\_\_
- 2) Meteorology Data - 15 minute average.

NOTE: Sources of data are listed in order of preference. If the first choice is unavailable, use the second choice, etc. Fill in only one blank for each data point.

- (A)  $\Delta T(^{\circ}\text{F})$  1) Tower \_\_\_\_ $^{\circ}\text{F}$   
2) Use a  $\Delta T$  of  $0.4^{\circ}\text{F}$  if tower  $\Delta T$  is not available.
- (B) Wind Direction 1) Tower \_\_\_\_ $^{\circ}$   
2) River \_\_\_\_ $^{\circ}$   
3) National Weather Service \_\_\_\_ $^{\circ}$
- (C) Wind Speed 1) Tower \_\_\_\_mph  
2) River \_\_\_\_mph  
3) National Weather Service \_\_\_\_mph

NOTE: National Weather Service data is a standard observation, not a 15 minute average and is updated only once per hour.

## ENCLOSURE 4.3

AP/O/B/1000/07

- 3) Determine through which unit vent(s) (if any) activity is being released. Vent releases may occur on all three units' vents simultaneously since the Oconee Auxiliary Building is one enclosure with three vents.

Vent release on Unit(s) \_\_\_\_\_.

- 4) Record the following information for the affected unit(s) vent monitors identified in Step 3.

	Unit 1	Unit 2	Unit 3
Unit Vent Flow (Fv) (A0946)	_____ cfm	_____ cfm	_____ cfm
RIA-45 (A1679)	_____ cpm	_____ cpm	_____ cpm
RIA-46 (if > 10 cpm) (A1680)	_____ cpm	_____ cpm	_____ cpm
RIA-44* (R-1678)			
a) -Start of time period			
-count rate	_____ cpm	_____ cpm	_____ cpm
b) -end of time period			
-count rate	_____ cpm	_____ cpm	_____ cpm
c) -Δ time	_____ min	_____ min	_____ min
-Δ cpm	_____	_____	_____

NOTE: If the RIA Chart is used as a reference use the 15 minute interval during the last hour that had the greatest increase in RIA-44 counts. RIA-44 rate of increase may be read directly from the computer. (R-1678)

- 5) Multiply unit vent flow times the RIA readings and add to the results as follows for the affected units' vents.

- a) Noble Gas (NG)

RIA-45

Fv x RIA-45 (cpm)

U-1 \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_  
 U-2 \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_  
 U-3 \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_  
 total RIA-45 = \_\_\_\_\_

## ENCLOSURE 4.3

AP/0/B/1000/07

RIA-46

$$F_v \times \text{RIA-46 (cpm)}$$

$$\text{U-1} \quad \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

$$\text{U-2} \quad \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

$$\text{U-3} \quad \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

$$\text{total RIA-46} = \underline{\hspace{1cm}}$$

$$\text{NG} = [\text{total RIA-45} \times 1.71 \text{ E-8}] + [\text{total RIA-46} \times 6.82\text{E-4}]$$

$$\text{NG} = \underline{\hspace{2cm}} \quad (\text{record this value on Step 6})$$

b) Iodine Vent ( $L_T$ )RIA-44

$$F_v \times \frac{\Delta \text{RIA-44 (cpm)}}{\Delta \text{time (min)}}$$

$$\text{U-1} \quad \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

$$\text{U-2} \quad \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

$$\text{U-3} \quad \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

$$\text{total RIA-44} = \underline{\hspace{1cm}}$$

$$L_T = \text{total RIA-44} \times 2.76\text{E-7}$$

$$L_T = \underline{\hspace{2cm}} \quad (\text{record this value on Step 6})$$

6) Calculate DT by comparing Total Iodine ( $L_T$ ) vs Noble Gas (NG)

$$L_T \text{ (Step 5b)} = \underline{\hspace{1cm}} \quad \text{NG (Step 5a)} = \underline{\hspace{1cm}}$$

$$\text{DT} = \begin{cases} \text{if } L_T > \text{NG, DT} = L_T \\ \text{if } L_T < \text{NG, DT} = \text{NG} \end{cases}$$

$$\text{DT} = \underline{\hspace{1cm}}$$

## 7) Is time of day between 1000 hrs and 1600 hrs (10:00 am and 4:00 pm)?

If yes, go to Step 8.

If no, go to Step 12.

## ENCLOSURE 4.3

AP/O/B/1000/07

- 8) Calculate DW (wind determined dose) based upon DT (Step 6) and WS (wind speed).

$$DW = \frac{DT}{WS}$$

- 9) Determine distances and level of protective actions based upon DW (Step 8) and  $\Delta T^{\circ}F$  from table below:

Number suffix of areas on evacuation map to be evacuated:

Children and pregnant women \_\_\_\_\_

Everyone \_\_\_\_\_

Find the horizontal row corresponding to the  $\Delta T^{\circ}F$ . Follow across the row from left to right until the box containing the calculated DW value is reached. Read down the vertical column to find the appropriate actions and the corresponding distances from the plant.

	$\Delta T^{\circ}F$	DW	DW	DW	DW
A)	$\infty$ to -1.3	$<2.09E5$	2.09E5 to 7.8E5	7.8E5 to 3.9E6	$>3.9E6$
B)	-1.2 to -1.0	$<5.4E3$	5.4E3 to 2.70E4	2.7E4 to 3.2E5	$>3.2E5$
C)	-0.9 to -0.4	$<2.09E3$	2.09E3 to 1.04E4	1.04E4 to 7.4E4	$>7.4E4$
D)	-0.3 to +10.0	$<1.08E3$	1.08E3 to 5.4E3	5.4E3 to 3.2E4	$>3.2E4$
		No action procedure is completed	Evacuate children and pregnant women 0-4 miles (Downwind areas with suffix 1)	Evacuate everyone 0-4 miles (Downwind area with suffix 1)	
			No action for 4-10 miles	Evacuate children and pregnant women 4-10 miles (Downwind areas with suffix 2)	Evacuate everyone 4-10 miles (Downwind areas with suffix 2)

## ENCLOSURE 4.3

AP/O/B/1000/07

Example: If  $\Delta T^{\circ}F$  is -1.1 and  $DW$  is 2.9E4, evacuate everyone from 0-4 miles and children and pregnant women from 4-10 miles.

10) a) Is wind speed  $\geq$  5 mph?

☐ If yes, use table in Step 10 b.

☐ If no, assume Sectors A1, B1, C1, D1, E1, and F1 are affected. Then use Table 10b to determine additional areas to be evacuated out beyond 4 miles.

b) Wind direction (from) and wind speed - 15 minute average.

Reverify every 15 minutes.

1st 15 min. average \_\_\_\_°; \_\_\_\_ mph

2nd 15 min. average \_\_\_\_°; \_\_\_\_ mph

3rd 15 min. average \_\_\_\_°; \_\_\_\_ mph

4th 15 min. average \_\_\_\_°; \_\_\_\_ mph

Find the wind direction and follow across the row to find the letter prefixes of the areas on the evacuation map to be evacuated and record.



## ENCLOSURE 4.3

AP/0/B/1000/07

Wind Direction (From)	Letter Prefixes of Areas to be Evacuated
15° - 41°	C, D, E
41° - 67°	D, E
67° - 103°	D, E, F
103° - 127°	E, F
127° - 174°	A, E, F
174° - 182°	A, F
182° - 215°	A, B, F
215° - 256°	A, B
256° - 270°	A, B, C
270° - 298°	B, C
298° - 344°	B, C, D
344° - 15°	C, D

c) Letter prefixes of areas on evacuation map to be evacuated \_\_\_\_\_:

- 11) Combine the numbers determined in Step 3 with the letters from Step 10 to determine which sectors of evacuation map to evacuate.

Children and pregnant women \_\_\_\_\_

Everyone \_\_\_\_\_

NOTE: The 2 mile Emergency Planning Zone on the evacuation map will always be evacuated if evacuation of any area is required.

- 12) Use the table below if time of day is not between 1000 hrs and 1600 hrs. Apply the DT value from Step 6 on the table below. Read the corresponding action in the column to the right and record.



## ENCLOSURE 4.3

AP/O/B/1000/07

DT	PROTECTIVE ACTION
< 610	No protective action is necessary
610 to 3100	Evacuate children and pregnant women 0 to 4 miles in all directions (all areas with number suffix 1)
3100 to 15600	Evacuate everyone 0 to 4 miles in all directions. (All areas with number suffix 1). Evacuate children and pregnant women 4-10 miles in all directions. (All areas with number suffix 2)
> 15600	Evacuate everyone 0 to 10 miles in all directions. (All areas with number suffixes 1 and 2)

Children and pregnant women \_\_\_\_\_

Everyone \_\_\_\_\_

NOTE: The 2 mile Emergency Planning Zone on the evacuation map will always be evacuated if evacuation of any area is required.

Additional Notes or Comments


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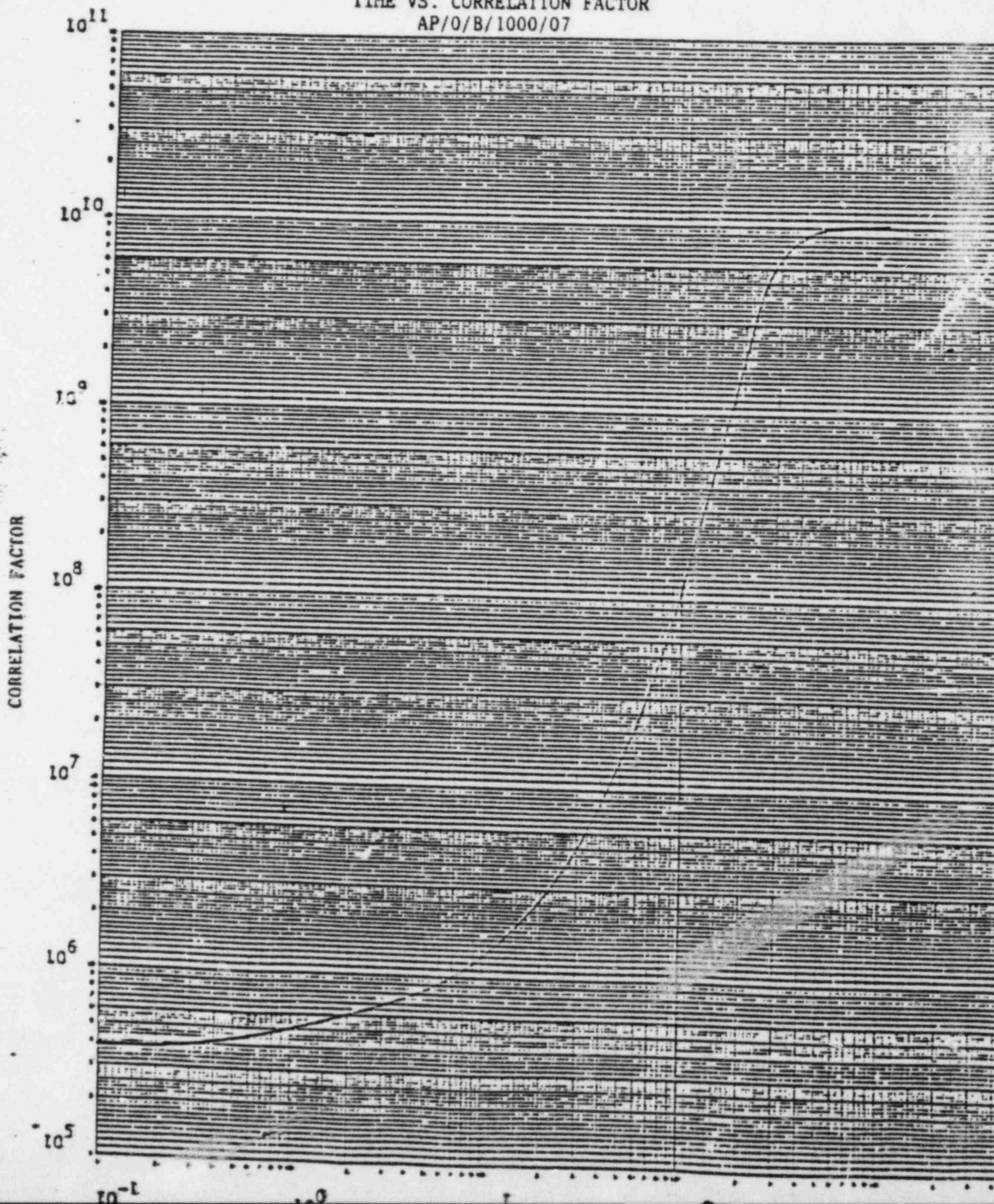
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Date \_\_\_\_\_

ENCLOSURE 4.4  
SURVEY INSTRUMENT CORRELATION CURVE  
TIME VS. CORRELATION FACTOR  
AP/O/B/1000/07



1190 - R

1165 - R

Time \_\_\_\_\_

Page 1 of 1

Date \_\_\_\_\_

Checked Control Copy \_\_\_\_\_

ENCLOSURE 4.5

STABILITY CLASS

AP/0/B/1000/07

1)  $\Delta T$       Stability Class

$-\infty$  to -1.3      A

-1.2 to -1.0      C

-0.9 to -0.4      D

-0.3 to +0.9      E

+1.0 to  $+\infty$       F

NOTE:      Circle current atmospheric stability class. This information is used in the "warning message" to offsite agencies.

Checked With Control Copy \_\_\_\_\_

Time/Date \_\_\_\_\_

ENCLOSURE 4.6

OCONEE NUCLEAR STATION

OFFSITE DOSE CALCULATION

USING COMPUTER DOSE

ASSESSMENT PROGRAM

Unit \_\_\_\_\_

Calculation Performed By \_\_\_\_\_

1. Dose Assessment Program (DAP) is general panel program 23 and is available from all panels. The available options are select and abort.
2. Upon initial entry, all inputs associated with the dose assessment procedure will be displayed. Values for the last four (4) items displayed are manual inputs and therefore must be entered by the operator. These manual inputs must be entered in all three (3) computers, with correct data for that unit.
3. To insert values for the manual inputs, the line finder should be positioned to the appropriate item and the value keyed in. If the line finder is not positioned to a valid line, the "Posn LF" message will be blinked. Shutdown time must be entered in military time (HHMM) and shutdown date must be entered in a MMDDYY form. Shutdown time and date will be validity checked and if found to be invalid, the instruction message will be blinked.



ENCLOSURE 4.6

4. After all necessary inputs have been entered, the operator may initiate the dose assessment by positioning the line finder to the designated line and pressing the ENTER button. If any inputs are found to be invalid, the following message will be output on the VIDEO and DAP will turn off:

DUE TO INVALID DATA, DOSE ASSESSMENT  
CANNOT BE DETERMINED AT THIS TIME

5. After initiation, DAP will printout on the typer associated with the calling panel the inputs, calculated time factor, corrected dose rate value, stability class and the recommended protection actions to be taken.



# INFORMATION ONLY CONTROL COPY

Form 34731 (10-81)  
(Formerly SPD-1002-1)

DUKE POWER COMPANY  
PROCEDURE PREPARATION  
PROCESS RECORD

(1) ID No: CP/1/A/2002/04C  
Change(s) 0 to  
1 Incorporated

- (2) STATION: Oconee Nuclear Station
- (3) PROCEDURE TITLE: Operating Procedure for the Post Accident Liquid  
Sampling (PALS) System

(4) PREPARED BY: Pat Hall DATE: 7/24/83

(5) REVIEWED BY: JP [Signature] DATE: 7/27/83

Cross-Disciplinary Review By: J. Herring N/R:         

- (6) TEMPORARY APPROVAL (IF NECESSARY):

By:    (SRO) Date:                         

By:    Date:                         

(7) APPROVED BY: V. B. Omer Date: 7/27/83

- (8) MISCELLANEOUS:

Reviewed/Approved By:    Date:                         

Reviewed/Approved By:    Date:

Checked Control Copy \_\_\_\_\_

Date \_\_\_\_\_

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION  
OPERATING PROCEDURE FOR THE  
POST ACCIDENT LIQUID SAMPLING (PALS) SYSTEM

1.0 Purpose

The Post Accident Liquid Sampling System (PALS) provides the capability to promptly obtain a reactor coolant system sample under a nuclear reactor accident condition. Sample acquisition during accident conditions will provide information to evaluate the extent of core damage which has occurred or is occurring through knowledge of reactor coolant chemistry and radiochemistry.

2.0 Limits and Precautions

- 2.1 The PALS will be used to sample the reactor coolant system under the following conditions:
- 2.1.1 Post Accident.
  - 2.1.2 Inaccessibility of Primary Sampling Area due to radiation levels.
  - 2.1.3 Request from the Station Chemist or his designee.
- 2.2 UNDER ACCIDENT CONDITIONS, VALVE ALIGNMENTS SHALL NOT BE MADE AND SAMPLES SHALL NOT BE TAKEN WITHOUT PRIOR AUTHORIZATION FROM THE TECHNICAL SUPPORT CENTER (TSC)! (Containment Isolation valves may be closed upon ES Actuation).
- 2.3 UNDER ACCIDENT CONDITIONS, DO NOT ATTEMPT ANY PHASE OF SAMPLING OR ANALYSIS WITHOUT HEALTH PHYSICS APPROVAL AND COVERAGE!
- 2.4 Radiation exposure to an individual during all phases of sampling should be limited so as not to exceed a quarterly accumulative exposure of 3 rems whole body; 7.5 rems skin of wholebody; or 18 3/4 rems extremities respectively. All personnel will need prior authorization from TSC to knowingly exceed any exposure limit. The exposure received may require an occupational exposure penalty and/or a medical decision as to whether an individual can continue in radiation work.
- 2.4.1 If necessary to remedy a situation immediately hazardous to life and property, the Planned Emergency Exposure for Duke Power Personnel will not exceed 5 rems wholebody; 30 rems skin of wholebody; or 75 rems extremities.

- 2.4.2 If necessary to save lives or prevent loss of life and/ or extensive damage to property (voluntary basis only), the Planned Emergency Exposure for Duke Power Personnel will not exceed 25 rems wholebody; 150 rems skin of wholebody; or 375 rems extremities.
- 2.4.3 For Outside Services Personnel the Planned Emergency Exposure will not exceed 5 rems wholebody; 30 rems skin of wholebody; 75 rems extremities; or 15 rems other single organ.
- 2.5 Portable shielding, remote handling equipment, video equipment, etc., shall be used where practical during sampling, sample preparation, and sample analysis.
- 2.6 Chemistry personnel shall operate only those valves followed by (C) in this procedure. If ES signal requires containment isolation during use of this procedure, Operations and Chemistry Personnel should be aware of any pressure remaining in sample lines or sampling panel.
- 2.7 Working copy must be compared to control copy before use and sign off steps (Initials/Time) completed as procedure progresses.

### 3.0 Procedure

NOTE: In order to maintain the PALS in operable condition at all times, the requirements on Enclosure 5.2, PALS Semi-annual Calibration Checklist must be done semi-annually and be current prior to Post Accident sampling. Enclosure 5.1, Post Accident Authorization for Operation of PALS, must be completed prior to Post Accident sampling.

### 3.1 Preparation for Sampling

#### 3.1.1 Valve Alignments

- 3.1.1.1 Notify Shift Supervisor that operation of the PALS is being initiated by Chemistry. Chemistry will select either Enclosure 5.5 for a RCS sample or Enclosure 5.6 for a RBNS sample, check it against the control copy, and take it to the responsible individual in Operations (designated by the Shift Supervisor) for completion. Request Operations to complete Step 3.1 of the selected enclosure.

- 3.1.1.2 The following valves are electrically controlled by the PALS Control Panel:

RCS Sample: 1RC-179 (C)

Reactor Building Normal Sump Sample: 1LWD-1026 (C)  
1LWD-1028 (C)

Return Line to Reactor Building Emergency Sump  
(either sample): 1LP-121 (C)

Demin. Water: 1DW-278 (C) (RCS Sample Line Flush)  
1DW-280 (C) (RBNS Sample Line Flush)

- 3.1.1.3 The following valves are operated manually at the Sampling Panel by Chemistry personnel. They must be verified open prior to use of the panel.

	Initials/Time
Instrument Air Supply Isolation 1IA-2423	_____/____
Panel Instrument Air Isolation	_____/____
Nitrogen Supply Isolation 1N-262	_____/____
Panel Nitrogen Isolation	_____/____
Cooling Water Supply Isolation 1DW-282	_____/____
Demin Water Supply Isolation 1DW-281	_____/____
Panel Demin Water Isolation	_____/____

- 3.1.1.4 The following should be verified as noted prior to periodic testing (not required for accident condition):

1LWD-1029 Low Point Drain (LPI Room) closed and capped

1RC-177 High Point Vent (next to Sampling Panel) closed and capped

1LP-110 Emergency Sump Line Drain (LPI Room) closed

1LP-111 Emergency Sump Line Drain Tell-tale (LPI Room) Closed and capped

1DW-278 Remote Starter (LPI Room) "ON"

1LWD-1028 Remote Starter (LPI Room) "ON"

1DW-91 Reactor Building Normal Sump Line Flush (LPI Room) Closed

3.1.2 Health Physics Notification

Contact Health Physics and ask for surveillance person prior to going to Control Panel. \_\_\_\_\_/\_\_\_\_\_

3.1.3 Additional Requirements

Record specific conductivity of buffer solution from Primary Chemistry Data Log. Pick up glass syringes and sample carrier from Primary Lab (or Radwaste Lab, whichever is more accessible), and take stop watch and panel keys to Control Panel. \_\_\_\_\_/\_\_\_\_\_

3.2 Panel Preparation

NOTE: If any item on panel is not clearly identified, refer to Enclosures 5.3 and 5.4 (Control Panel Diagrams).

3.2.1 Turn the main selector knob on the control panel to "Reset". Place key in System Power Switch and turn clockwise. (Panel lights should come on.) Press "Reset" button.

3.2.2 Place the toggle switches for the dilution water meter and dilution gas meter to "ON".

3.2.3 Place the toggle switch for the radiation monitor to "ON" and turn the scale select to "rem/hr". If the radiation monitor is not functional, HP coverage is sufficient to operate the panel. (If this is a routine test, submit a WR for repair).

3.2.4 Place the temperature probe selector to position 1.

3.2.5 Move the conductivity meter to "Measure" position.

3.2.6 Push in the pH meter standardize knob.

3.2.7 Select the system to be sampled - Reactor Coolant System or Reactor Building Normal Sump - with the system selector.

3.2.8 If RCS is to be sampled, open sample regulator valve at cooler outlet approximately 1/2 turn open. If RBNS is to be sampled, open sample regulator valve at cooler outlet approximately 4 turns open. Adjustments may be made in Step 3.4.5, if TC-1 indicates greater than 190°F. \_\_\_\_\_/\_\_\_\_\_

3.3 Panel Operation (Position 1) Panel Prep

3.3.1 Turn the Operation Selector switch to the PANEL PREP. position.

3.3.2 Momentarily depress the SELECTION POWER ACTIVATE pushbutton.



- 3.3.3 Depress the PURGE pushbutton for about 1 minute 10 seconds.
- 3.3.4 Depress the DRAIN pushbutton for about 1 minute 10 seconds.
- 3.3.5 Depress the CALIBRATE pushbutton and hold until the conductivity and pH meter readings stabilize.

- 3.3.6 Record the conductivity reading \_\_\_\_\_  $\mu\text{mhos/cm}$ . The conductivity should correspond with the specific conductivity of the pH standard measured in the lab. If not, contact Station Chemist or Primary Supervisor. (If this is a routine test, initiate a Work Request for repair. For an accident condition, personnel should move to a lower background area during this time, if one is available).

NOTE 1: Conductivity probe has a cell constant of 10 and has 10% inherent error.

NOTE 2: Multiply conductivity meter reading by 1000 to obtain specific conductivity value.

- 3.3.7 Adjust the pH meter to the known pH of the standard. \_\_\_\_\_/\_\_\_\_\_
- 3.3.8 Depress the PURGE pushbutton for about 30 seconds.
- 3.3.9 Depress the FLUSH pushbutton until the conductivity and pH meter readings stabilize.
- 3.3.10 Depress the PURGE pushbutton for about 30 seconds.
- 3.3.11 Depress the DRAIN pushbutton for about 60 seconds.
- 3.3.12 Repeat Steps 3.3.9, 3.3.10, 3.3.11 and then continue to Section 3.4.

#### 3.4 Panel Operation (Position 2) Sample Recirc

- 3.4.1 Request Operations complete Steps 3.2 and 3.3 of the enclosure selected in 3.1.1.1.
- 3.4.2 Turn the Operation Selector switch to the SAMPLE RECIRC. position.
- 3.4.3 Record the PALS or HP radiation monitor reading \_\_\_\_\_ (background). Watch radiation monitor reading for an increase as sample enters the panel.
- 3.4.4 Momentarily depress the SELECTION POWER ACTIVATE pushbutton.
- 3.4.5 Observe that the SAMPLE INLET and SAMPLE OUTLET indicating lights are lit. Record the starting time \_\_\_\_\_.



- 3.4.6 If TC-1 goes above 190°F, sample is not being sufficiently cooled. Turn selector to "Reset". Press "Reset" button and turn Power key to vertical position. Contact Station Chemist or his designee. (For an accident condition personnel should move to a lower background area during this time, if one is available.) If TC-1 is less than 190°F, record the temperature\_\_\_\_\_.
- 3.4.7 If sample recirc. is done during the semi-annual check, a visual inspection of accessible portions of the system should be performed for the purpose of identifying any external leakage during testing. Work requests shall be written promptly to eliminate any leakage found.
- 3.4.8 Turn the selector knob to "Sample", position 3.
- 3.5 Panel Operation (Position 3) Sample
  - 3.5.1 Turn the temperature selector to TC-2.
  - 3.5.2 Momentarily depress the SELECTION POWER ACTIVATE pushbutton.
  - 3.5.3 Observe that the SAMPLE INLET and SAMPLE OUTLET indicating lights are lit.
  - 3.5.4 Monitor the temperature gauge and when TC-2 stabilizes, record the temperature\_\_\_\_\_.
  - 3.5.5 Record the PALS or HP radiation reading\_\_\_\_\_. Subtract the initial background reading from sample radiation reading and record.
  - 3.5.6 Press the 1) TC-2 Stabilize Activate button; when pressure reading stabilizes, record\_\_\_\_\_.
  - 3.5.7 Press the 2) Pressure Stabilize Activate button and record time sample flow stops\_\_\_\_\_.
  - 3.5.8 Request Operations to complete Step 3.4 of the enclosure selected in 3.1.1.1.
- 3.6 Panel Operation (Position 4) Depressurization
  - 3.6.1 Turn the Operation Selector switch to the DEPRESSURIZATION position.
  - 3.6.2 Press the "Reset" button on the gas flow totalizer to zero the readout. Preset the counter on the totalizer to 99999.
  - 3.6.3 Momentarily depress the SELECTION POWER ACTIVATE pushbutton.

- 3.6.4 Observe that the DI WATER and SAMPLE OUTLET indicating lights are lit.
- 3.6.5 Verify the pressure gauge on the instrument panel indicates -25 inches of Mercury. Wait about 60 seconds.
- 3.6.6 Press the START button on the N<sub>2</sub> Preset Counter and observe the PRESS/VAC gauge. When the gauge needle just begins to move press the STOP button on the N<sub>2</sub> Preset Counter.
- 3.6.7 Continue to make small N<sub>2</sub> adds, by repeating 3.6.6 until the PRESS./VAC gauge reads about 0-2 inches.
- 3.6.8 Flip the Preset Counter POWER toggle switch to the OFF position.
- 3.6.9 If "5" inches is exceeded, as read from the PRESS./VAC gauge, a new sample will need to be taken.
- 3.7 Panel Operation (Position 5) Liquid Sample
  - 3.7.1 Turn the Operation Selector switch to the LIQUID SAMPLE position.
  - 3.7.2 Momentarily depress the SELECTION POWER ACTIVATE pushbutton.
  - 3.7.3 Observe that the DI WATER and SAMPLE OUTLET indicating lights are lit.
  - 3.7.4 Depress the LIQUID SAMPLE ACTIVATE 1) Log conductivity and hold until the conductivity meter stabilizes. Record the specific conductivity\_\_\_\_\_.
  - 3.7.5 Press both LIQUID SAMPLE ACTIVATE 1) Log conductivity and 2) Log pH buttons and hold until pH meter stabilizes. Record pH\_\_\_\_\_.
  - 3.7.6 Press the GAS SAMPLE 1) ACTIVATE button and hold for 1 second.
  - 3.7.7 Momentarily depress the 3) DILUTED GAS SAMPLE GRAB pushbutton.
- 3.8 Panel Operation (Position 6) Liquid Sample Prep
  - 3.8.1 Turn the Operation Selector switch to the LIQUID SAMPLE PREP position.
  - 3.8.2 Momentarily depress the SELECTION POWER ACTIVATE pushbutton.

- 3.8.3 Momentarily depress the ACTIVATE TO DESIRED mL VOLUME pushbutton and observe the SAMPLE ALIQUOT register advance one count (0.70 ml).
- 3.8.4 Press the "Reset" button on the dilution water flow totalizer and preset the meter for desired dilution (in 250 ml increments from 250-3500 mls). Press the "Start" button and let the dilution continue to completion. Record the dilution volume\_\_\_\_\_.
- 3.8.5 Press the Activate Mix button and hold for about 15 seconds.
- 3.9 Panel Operation (Position 7) Liquid Sample
  - 3.9.1 Turn the Operation Selector switch to the Liquid Sample position.
  - 3.9.2 Press the SELECTION POWER ACTIVATE button.
  - 3.9.3 Press Activate button. Wait 45 seconds (for levels in dilution cylinder and grab sampler to equalize).
  - 3.9.4 Momentarily depress the DILUTED SAMPLE GRAB pushbutton. Wait 10 seconds.
- 3.10 Panel Operation (Position 8) Flush
  - 3.10.1 Turn the Operation Selector switch to the FLUSH position.
  - 3.10.2 Press the SELECTION POWER ACTIVATE button.
  - 3.10.3 Press the FLUSH ACTIVATE button and wait 4-5 minutes. (Observe that the first FLUSH light and the SAMPLE OUTLET indicating light are both lit.)
  - 3.10.4 Press the FLUSH ACTIVATE button and monitor pH and conductivity meters until they reach equilibrium of demineralized water (approximately 10 minutes). Observe second flush light is lit.
  - 3.10.5 Press the FLUSH ACTIVATE pushbutton and wait 3 minutes. (Observe the third FLUSH light is lit.)
  - 3.10.6 Press the FLUSH ACTIVATE pushbutton and observe the COMPLETE light is lit.
- 3.11 Panel Operation (Position 9) Drain
  - 3.11.1 Turn the Operation Selector switch to the DRAIN position.
  - 3.11.2 Momentarily depress the SELECTION POWER ACTIVATE pushbutton. Press ACTIVATE and observe that the first DRAIN light is lit.

- 3.11.3 Wait for about 2 minutes and again depress the ACTIVATE pushbutton and observe the second DRAIN light is lit.
- 3.11.4 Wait for about 2 minutes and again depress the ACTIVATE pushbutton and observe the third DRAIN light is lit.
- 3.11.5 Wait for about 6 minutes and again momentarily depress the ACTIVATE pushbutton and observe the DRAIN COMPLETE light is lit.

### 3.12 Panel Shutdown and Decontamination

- 3.12.1 Turn the Sample Selector switch to the OFF position.
- 3.12.2 Turn the Operation Selector switch to the RESET position.
- 3.12.3 Momentarily depress the RESET pushbutton.
- 3.12.4 Turn the System Power keylock to the SUMP PUMP position for about 15 minutes (or until the pump switches itself off).
- 3.12.5 Turn the System Power keylock to the SAMPLE position and record the PALS or HP Radiation Monitor meter reading\_\_\_\_\_.
- 3.12.5.1 If the radiation field at the PASP is less than 3 R/Hr turn the System Power keylock to the OFF position and remove the PALS System key.
- 3.12.5.2 If the radiation field is greater than 3R/Hr repeat 3.10 thru 3.12.5.
- 3.12.6 If radiation level remains greater than 3 rem/hr after one repeat of Section 3.10 through 3.12.5, contact Station Chemist or his designee (for an accident condition personnel should move to a lower background area during this time, if one is available) for permission to return to Section 3.1 and take another sample using larger dilution volume. Permission given by\_\_\_\_\_.
- 3.12.7. Request HP to survey the Post Accident Sampling Panel and the area around the PASP prior to sample removal to ensure the 3 R/Hr is not exceeded.

### 3.13 Sampling

- 3.13.1 Collect 3-1.0 ml stripped gas samples at the gas grab sampler in lockable glass syringes. Place in plastic bag.
- 3.13.2 Collect 3-5.0 ml liquid samples at the liquid grab sampler in lockable glass syringes. Place in plastic bag.

NOTE: Flushing of remaining sample in grab sampler is desirable if radiation levels permit. Return to Position 6 and add 200 mls demin. water to Dilution Cylinder. Continue through Position 7, cycle through Position 8 and 9 completing the second and third drain steps. Go to the grab sampler and drain the liquid out (this liquid is not a sample-discard in PASP Sump or appropriate waste container in lab).

- 3.13.3 Request Operations to complete Steps 3.5 and 3.6 of the enclosure selected in 3.1.1.1.
- 3.13.4 Place plastic bags in sample carrier and transport to Hot Lab. Place sample carrier in operating fume hood behind a lead brick shield to await analysis.

### 3.14 Sample Analysis

#### 3.14.1 Gas

- 3.14.1.1 Analyze one syringe of stripped gas by Chemistry Procedure CP/O/B/2004/14A, Operation of the Fisher Model 25V Gas Partitioner for the Determination of Hydrogen in Gas Samples. Calculate the results by the following method:

$$\% \text{ H}_2 \times \frac{1000 \text{ cc}}{0.155 \text{ Kg}} \times \frac{1}{100} = \text{cc/Kg H}_2$$

Where: % H<sub>2</sub> is determined from CP/O/B/2004/14A

1000 cc = stripped gas bomb volume

0.155 Kg = collected sample size

$\frac{1}{100}$  = conversion of percent to decimal

Report result \_\_\_\_\_ cc/kg H<sub>2</sub>

- 3.14.1.2 Withdraw 1 cc of air from septum stoppered glass vial and load 1 cc of stripped gas into it from second syringe. Analyze by GeLi Spectral Analysis (HP/O/B/1001/14, Procedure for Nuclear Data 6600 System Operation). Activities will be reported by HP for 1 cc of diluted gas sample. Calculate activity of dissolved gas in 1 ml of reactor coolant as follows:

$$\mu\text{Ci in 1 cc} \times \frac{1000}{155} = \text{Total activity from dissolved gas in 1 ml RC.}$$

GeLi Spectra Attached \_\_\_\_\_.



3.14.1.3 Reserve third stripped gas syringe for use as a backup, if needed.

3.14.1.4 Additional gas sample dilution may be necessary to bring amount of hydrogen or activity within range of analyses. If so, withdraw 1 cc of air from a septum stoppered glass vial and load 1 cc of the sample to be diluted into it. Be sure to record the additional dilution information so that isotope activities may be adjusted accordingly.

3.14.2 Liquid

3.14.2.1 Take 1 ml of liquid sample and dilute to 50 ml with Super Q water in a 60 ml poly bottle. Analyze by GeLi Spectral Analysis (HP/0/B/1001/14, Procedure for Nuclear Data 6600 System Operation). Activities will be reported by HP for 1 ml of diluted liquid sample. Calculate activity of liquid portion of reactor coolant as follows:

$$\mu\text{ci/ml} = \text{activity in diluted 1 ml} \times \frac{\text{*Total Dilution Volume}}{0.70 \text{ ml}}$$

\*Step 3.8.4 + 0.7 mls.

GeLi Spectra Attached \_\_\_\_\_.

3.14.2.2 Take 5 ml of liquid sample and analyze for boron by CP/0/A/2004/02E, Post Accident Determination of Boron Concentration Using Carminic Acid. Correct results for dilution as follows:

$$\text{ppm B}_{\text{RCS}} = \text{ppm measured} \times \frac{\text{*Total Dilution Volume}}{0.70}$$

\*Step 3.8.4 + 0.7 mls

Boron Concentration \_\_\_\_\_ ppm.

3.14.2.3 Take 5 mls of liquid sample and analyze for chloride by CP/0/A/2004/03C, Post Accident Determination of Chloride by Specific Ion Electrode Using Beckman 4500 Meter. Correct results for dilution as in 3.14.2.2.

NOTE: Chloride analysis only to be done in an accident situation.

Chloride Concentration \_\_\_\_\_ ppm.



- 3.14.2.4 Report results of liquid sample analyses in Primary Chemistry Data Log.
- 3.14.2.5 Reserve third liquid syringe for use as a backup, if needed.
- 3.14.2.6 Additional liquid sample dilution may be necessary to bring amount of activity within range. If so, withdraw 1 ml of sample from 60 ml poly bottle (from Section 3.14.2.1) and dilute to 50 ml with Super Q for analysis. Be sure to record the additional dilution information so that isotope activities may be adjusted accordingly.
- 3.14.2.7 Route completed procedure to Technical Support Center (for routine sampling to Primary Supervisor).

Accepted By: \_\_\_\_\_

### 3.15 Waste Disposal

- 3.15.1 Determine by detailed planning meeting the exact course of action to be taken. Under no condition will liquid or solid wastes be disposed of without prior specific HP directions.
- 3.15.2 Designate a sealable carboy as the "Post Accident Lab Waste" container. This container must be shielded and used as an interim liquid waste disposal container for all liquid analytical waste.
- 3.15.3 In the event an area is grossly contaminated and cannot be decontaminated, evaluate the need for shielding or protective covering to prevent the spread of airborne activity.

### 4.0 References

- 4.1 NUREG-0737, Section II.B.3
- 4.2 DPC System Health Physics Manual
- 4.3 Radiological Health Handbook, U.S. Dept. of HEW (1970).
- 4.4 Radiation Safety Technician Training Course, H.J. Moe, ANL-7291 Rev. 1 (1972).
- 4.5 Post Accident Liquid Sampling System Manual, Steam Production Department, OM-267A-28 (1981)

- 4.6 MNS Operating Procedure OP/0/A/6200/48
- 4.7 DPC Alara Manual (1980)
- 4.8 ONS Emergency Plan
- 4.9 ONS Chemistry Manual Section 5.1

5.0 Enclosures

- 5.1 Post Accident Authorization for Operation of PALS
- 5.2 PALS Semi-Annual Calibration Checklist
- 5.3 PALS Control Panel Diagram - Left
- 5.4 PALS Control Panel Diagram - Right
- 5.5 Operations Checklist for Reactor Coolant System Valve Lineups to Post Accident Liquid Sampling System
- 5.6 Operations Checklist for Reactor Building Normal Sump Valve Lineups to Post Accident Liquid Sampling System.
- 5.7 Preparation of Thiosulfate Solution for Containment Air Post Accident Sample Panels

Checked Control Copy \_\_\_\_\_

Date \_\_\_\_\_

ENCLOSURE 5.1

CP/1/A/2002/04C

POST ACCIDENT AUTHORIZATION FOR OPERATION OF PALS

Technician/Time

1. Verbal/written direction for sampling the Reactor Coolant System (RCS) has been received from the Technical Support Center (TSC).  
Person Authorizing Sampling \_\_\_\_\_ / \_\_\_\_\_
2. The specific post-accident analysis requested by TSC: \_\_\_\_\_ / \_\_\_\_\_  
Sample to be taken: RCS ☐ RBNS ☐ \_\_\_\_\_ / \_\_\_\_\_  
\_\_\_\_ Boron  
\_\_\_\_ Chloride  
\_\_\_\_ Isotopic Analysis for \_\_\_\_\_ Iodines  
\_\_\_\_ Cesiums  
\_\_\_\_ Noble Gases  
\_\_\_\_ Non-Volatile Fission Products  
\_\_\_\_ Other (Specify) \_\_\_\_\_
3. Determine by detailed planning meeting the exact course of action and data required. \_\_\_\_\_ / \_\_\_\_\_
4. Evaluate the use of portable shielding, remote handling equipment, video equipment, etc., to minimize the exposure to personnel while sampling. \_\_\_\_\_ / \_\_\_\_\_
5. Have HP determine the required respiratory equipment and protective clothing to prevent or minimize internal exposure in any Planned Emergency situation. Use high range and/or extremity dosimetry if required. \_\_\_\_\_ / \_\_\_\_\_
6. Request HP to designate a route from PALS to the lab. \_\_\_\_\_ / \_\_\_\_\_  
Sample route designated: \_\_\_\_\_  
\_\_\_\_\_
7. Evaluate the use of portable shielding, remote handling equipment, video equipment, etc., to minimize the exposure to personnel in the lab for the required analyses. \_\_\_\_\_ / \_\_\_\_\_

Checked Control Copy \_\_\_\_\_

Date \_\_\_\_\_

ENCLOSURE 5.2

CP/1/A/2002/04C

PALS SEMI-ANNUAL CALIBRATION CHECKLIST

1. pH 7.4 buffer must be replaced semi-annually. Prepare 4 liters buffer by CP/0/B/2004/09C. Measure specific conductivity and report in Primary Chemistry Data Log.

Buffer Expiration Date: \_\_\_\_\_

Specific Conductivity: \_\_\_\_\_  $\mu\text{mhos/cm}$

Technician/Date: \_\_\_\_\_ / \_\_\_\_\_

2. Verify the 1000 ppm Boron standard currently in use in the Primary Lab will not expire prior to next semi-annual checklist.

1000 ppm Boron Std Expiration Date: \_\_\_\_\_

Technician/Date: \_\_\_\_\_ / \_\_\_\_\_

Carminic acid and 10 ppm Boron standard are to be made prior to sampling.

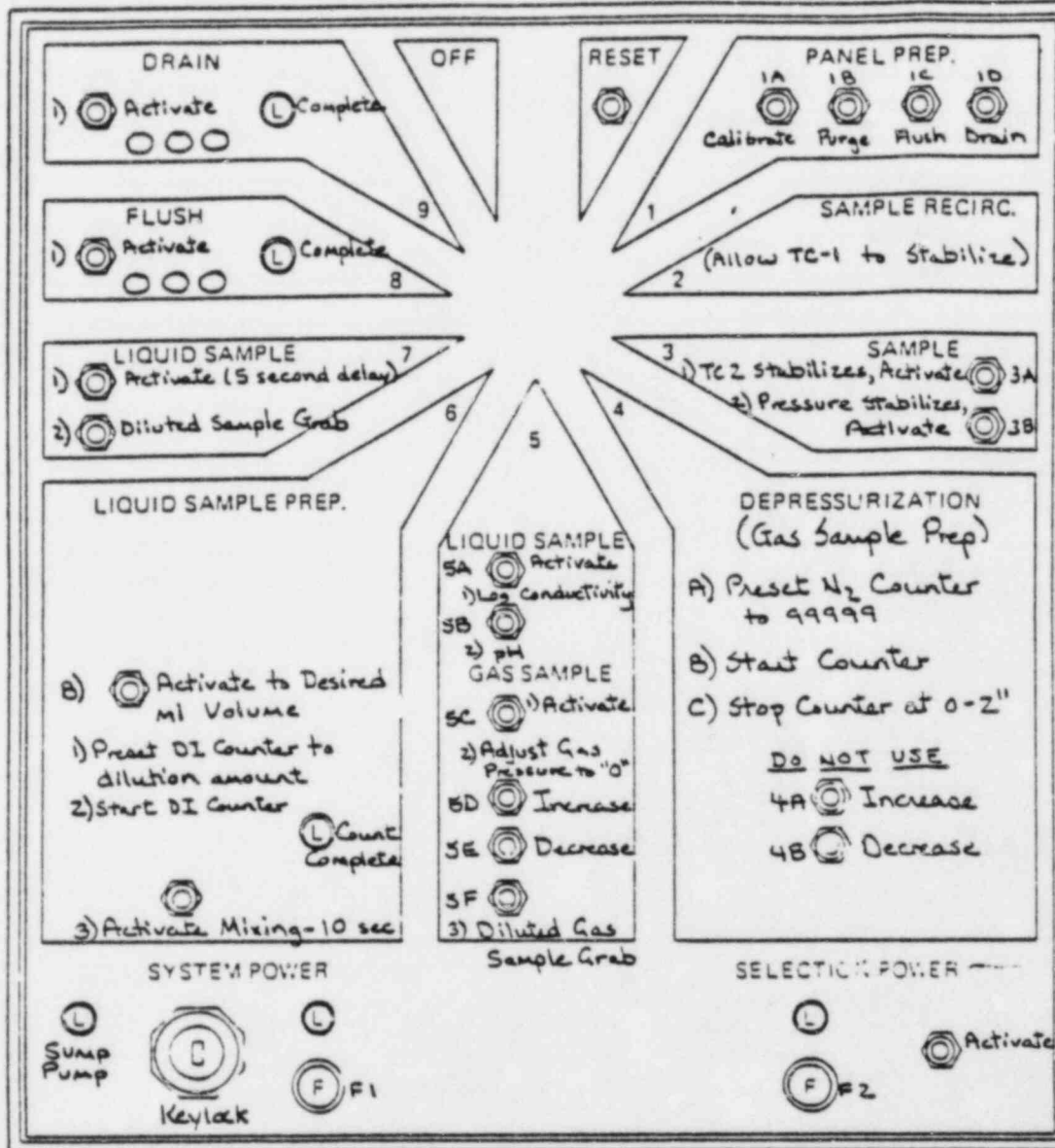
3. pH and conductivity meters must be checked when buffer solution is renewed. Complete PALS operating sections: 3.2.1, 3.2.5, 3.2.6, 3.3.1 through 3.3.11. Turn System Power Key to vertical position to deenergize panel.

Calibration Date: \_\_\_\_\_ Technician \_\_\_\_\_

4. Return enclosure to Primary Supervisor or his designee.

ENCLOSURE 5.3  
CP/1/A/2002/04C

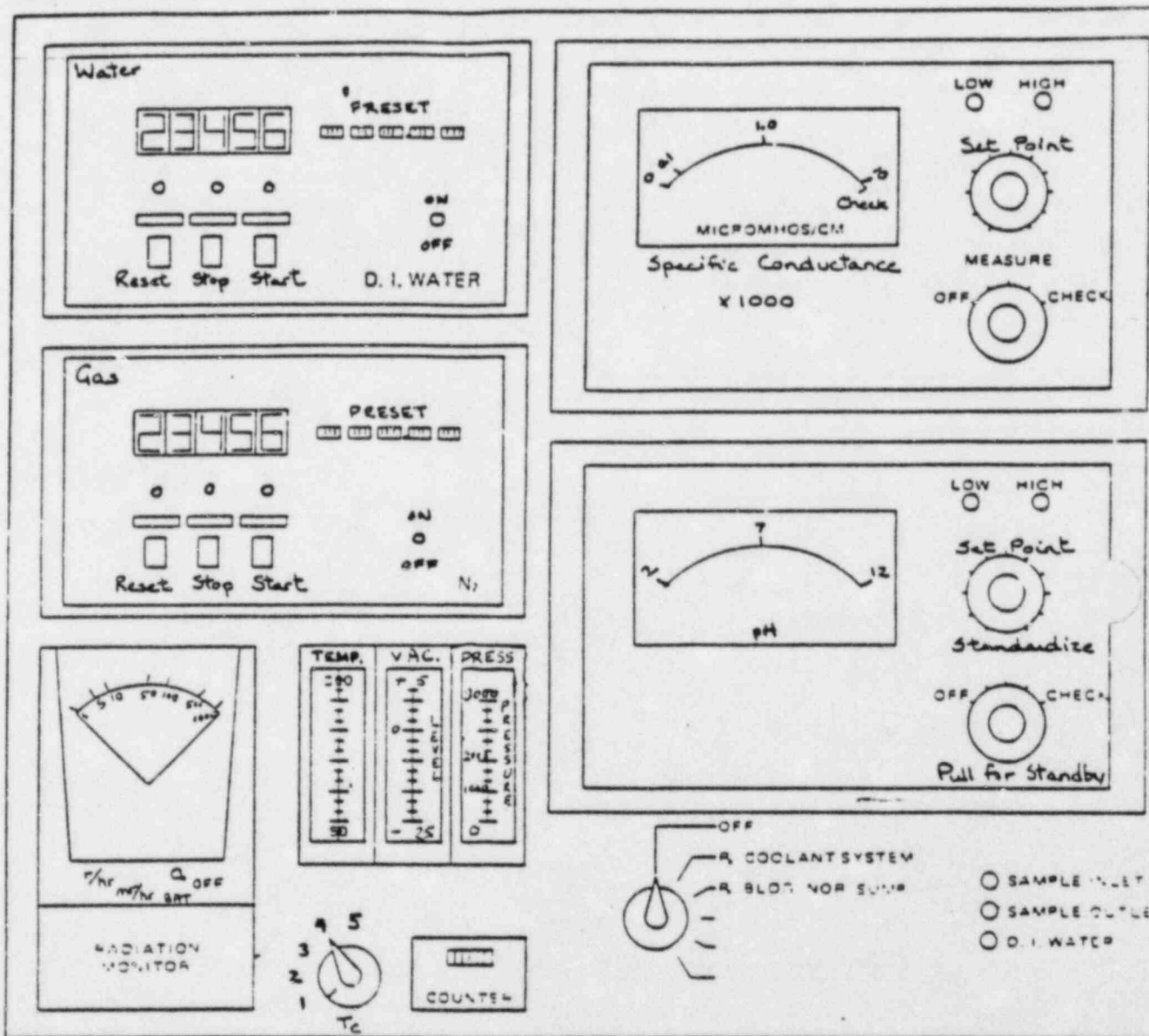
PALS Control Panel Diagram - Left



SEE DRAWING NO. L040180D FOR PANEL DETAIL

ENCLOSURE 5.4  
CP/1/A/2002/04C

PALS Control Panel Diagram - Right





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Date \_\_\_\_\_

CP/1/A/2002/04C

ENCLOSURE 5.5

OPERATIONS CHECKLIST FOR REACTOR COOLANT SYSTEM VALVE LINEUPS TO POST  
ACCIDENT LIQUID SAMPLING SYSTEM

1.0 Purpose

This enclosure gives the valve lineups needed for Chemistry Personnel to sample the Reactor Coolant System (RCS). Locations of valves are given to facilitate lineups.

2.0 Limits and Precautions

- 2.1 RIA-54 should be in service and monitored during the course of operation of the PALS.
- 2.2 Demineralized water header must be in service and have at least 60 psi pressure (per Station Directive 3.1.15).

3.0 Procedure

	<u>Date</u>	<u>Verification</u>
	<u>Init./Time</u>	<u>Date</u>
	<u>Init./Time</u>	<u>Init./Time</u>

3.1 Ensure the following breakers are closed:

3.1.1 1L2 Bkr. #39 Sampling/Control  
Panels Power Supply (located next  
to U2 sampling panel) \_\_\_\_\_/\_\_\_\_\_

3.1.2 MCC1XL Bkr. for 1DW-278 (RCS sample  
line flush) and 1LWD-1028 (RBNS  
Sample Line) \_\_\_\_\_/\_\_\_\_\_

3.2 To obtain a reactor coolant sample, the  
valves listed in this section should be  
aligned as follows:

3.2.1 IRC-84 Inside reactor building  
- refer to Fill and Vent  
Procedure (OP/1/A/1103/02)  
to verify OPEN status. \_\_\_\_\_/\_\_\_\_\_

## ENCLOSURE 5.5

CP/1/A/2002/04C

		Date Init./Time	Verification Date Init./Time
3.2.2	IRC-174/IRC-176 (Test Connections) and IRC-175 (High Point Vent)		
	inside reactor building - refer to Fill and Vent Pro- cedure (OP/1/A/ 1103/02) to verify CLOSED Status.	____/____	
3.2.3	Open IRC-162 inside reactor building-operated from control room.	____/____	____/____
3.2.4	Open IRC-163 inside reactor building-operated from control room.	____/____	____/____
NOTE: The following initial conditions <u>must</u> be observed.			
3.2.5	Containment integrity is required.	_____	_____
3.2.6	Designate a responsible person in the Control Room to immediately close the isolation valves (IRC-164 and IRC-165) if an ES actuation occurs.	_____	
3.2.7	Record that containment isolation valves IRC-164 and IRC-165 are open in OP/1/A/1102/20 (Shift Turnover).	_____	
3.2.8	Open IRC-164 in Unit 1 LPI Room- operated from Control Room.	____/____	____/____
3.2.9	Open IRC-165 in Unit 1 LPI Room- operated from Control Room.	____/____	____/____
CAUTION: If ES actuation occurs, immediately close isola- tion valves for containment isolation.			

ENCLOSURE 5.5  
CP/1/A/2002/04C

		Date Init./Time	Verification Date Init./Time
3.3	To allow recirculation of sample, align 1LP-65, return line valve to the RB Emergency Sump:		
NOTE: The following initial conditions <u>must</u> be observed.			
3.3.1	Containment integrity is required.	_____	_____
3.3.2	Station a responsible person in the vicinity of 1LP-65 to immediately close 1LP-65 if ES Actuation occurs. This person must be in constant communication with the Control Room the entire time 1LP-65 is open.		
3.3.3	Record that the valve is open in OP/O/A/1102/20 (Shift Turnover).	_____	
3.3.4	Open 1LP-65 manual valve (located in Unit 1 LPI Room) to be operated by reach rod from LPI/HPI Hatch Room 118, 119 (behind breaker panels ~ 15' south of 1LP-21).	_____/_____ _____/_____	_____/_____ _____/_____
3.4	Chemistry will inform Operations when they have obtained the RCS sample in the panel and the following valves should then be realigned as follows:		
3.4.1	CLOSE IRC-165 in Unit 1 LPI Room-operated from Control Room.	_____/_____ _____/_____	_____/_____ _____/_____
3.4.2	CLOSE IRC-164 in Unit 1 LPI Room-operated from Control Room.	_____/_____ _____/_____	_____/_____ _____/_____
NOTE: Remove the containment isolation valves (IRC-164 and IRC-165) from OP/O/A/1102/20 (Shift Turnover).			

## ENCLOSURE 5.5

CP/1/A/2002/04C

			<u>Date</u> <u>Init./Time</u>	<u>Verification</u> <u>Date</u> <u>Init./Time</u>
3.4.3	CLOSE 1RC-163	inside Reactor Building-operated from Control Room.	____/____	____/____
3.4.4	CLOSE 1RC-162	inside Reactor Building-operated from Control Room.	____/____	____/____
3.5	Chemistry will inform Operations when sampling has been completed. At this time, water put in the Emergency Sump Recirc. Line shall be drained. (At the discretion of the Shift Supervisor).			
3.5.1	Open 1LP-110	Drain on Emergency Sump Recirc Line (U1 LPI Room).		
3.5.2	Check high activity monitor rate in Control Room for indication drain has been completed.			
3.5.3	CLOSE 1LP-110	Drain on Emergency Sump Recirc Line (U1 LPI Room).		
3.5.4	CLOSE 1LP-65	Manual valve (located in LPI Room) operated by reach rod from LPI/HPI Hatch Room 118, 119 (behind breaker panels ~ 15' south of 1LP-21).	____/____	____/____
NOTE: This will regain containment integrity. Remove the containment isolation valve per OP/0/A/1102/20 (Shift Turnover).				
3.6	Return completed enclosure to Chemistry personnel operating PALS.		____/____	

Checked Control Copy \_\_\_\_\_

Date \_\_\_\_\_

CP/1/A/2002/04C

ENCLOSURE 5.6

OPERATIONS CHECKLIST FOR REACTOR BUILDING  
NORMAL SUMP VALVE LINEUPS TO POST ACCIDENT  
SAMPLING SYSTEM

		<u>Date</u> <u>Init./Time</u>	<u>Verification</u> <u>Date</u> <u>Init./Time</u>
1.0	<u>Purpose</u>		
	This enclosure gives the valve lineups needed for Chemistry Personnel to sample the Reactor Coolant System (RCS). Locations of valves are given to facilitate lineups.		
2.0	<u>Limits and Precautions</u>		
2.1	RIA-54 should be in service and monitored during the course of operation of the PALS.		
2.2	Demineralized water header must be in service and have at least 60 psi pressure (per Station Directive 3.1.15).		
3.0	<u>Procedure</u>		
		<u>Date</u> <u>Init./Time</u>	<u>Verification</u> <u>Date</u> <u>Init./Time</u>
3.1	Ensure the following breakers are closed:		
3.1.1	1L2 Bkr. #39 Sampling/Control Panels Power Supply (located next to U2 sampling panel)	____/____	
3.1.2	MCC1XL Bkr. #9C RB Normal Sump Sample Pump Power Supply.	____/____	
3.1.3	MCC1XL Bkr. for 1DW-278 (RCS Sample line flush) and 1LWD-1028 (RBNS Sample Line).	____/____	
3.2	To obtain a reactor building normal sump sample, the following valves should be aligned as indicated:		

## ENCLOSURE 5.6

CP/1/A/2002/04C

		Date Init./Time	Verification Date Init./Time
3.2.1	White tag open breaker on RB Normal Sump Pump 1A. White Tag No. _____ (Located on MCC1XL).	____/____	
3.2.2	White tag open breaker on RB Normal Sump Pump 1B. White Tag No. _____ (Located on MCC-1XL)	____/____	
3.2.3	CLOSE 1LWD-30 RB Normal Sump Pump 1A Suction. Operated by reach rod on north wall in LPI/HPI Hatch Room 118, 119.	____/____	
3.2.4	CLOSE 1LWD-33 RB Normal Sump Pump 1B Suction. Operated by reach rod on north wall in LPI/HPI Hatch Room 118, 119.	____/____	
3.2.5	OPEN 1LWD-1 Reactor building normal sump line. This is an ES valve operated from the Control Room.	____/____	____/____
3.2.6	OPEN 1LWD-2 Reactor building normal sump line. This is an ES valve operated from the Control Room.	____/____	____/____
3.3	To allow recirculation of sample, align LP-65, return line valve to the RB Emergency Sump:		
NOTE: The following initial conditions <u>must</u> be observed:			
3.3.1	Containment Integrity is required.	_____	_____



## ENCLOSURE 5.6

CP/1/A/2002/04C

		Date Init./Time	Verification Date Init./Time
3.3.2	Station a responsible person in the vicinity of 1LP-65 to immediately close 1LP-65 if ES Actuation occurs. This person must be in constant communication with the Control Room the entire time 1LP-65 is open.	_____	_____
3.3.3	Record that the valve is open in OP/0/A/1102/20 (Shift Turnover).	_____	_____
3.3.4	OPEN 1LP-65 Manual valve (located in Unit 1 LPI Room) to be operated by reach rod from LPI/HPI Hatch Room 118, 119 (behind breaker panels ~ 15' south of 1LP-21).	_____/____	_____/____
3.4	Chemistry will inform Operations when they have obtained the reactor building normal sump sample in the panel, and the following valves should then be realigned as follows:		
3.4.1	CLOSE 1LWD-2 Reactor building normal sump line. This is an ES valve operated from the Control Room.	_____/____	_____/____
3.4.2	CLOSE 1LWD-1 Reactor building normal sump line. This is an ES valve operated from the Control Room.	_____/____	_____/____
3.4.3	OPEN 1LWD-33 RB Normal Sump Pump (1WD-2B) Suction. Operated by reach rod on north wall in LPI/HPI Hatch Room 118, 119.	_____/____	_____/____

## ENCLOSURE 5.6

CP/1/A/2002/04C

			<u>Date</u>	<u>Verification</u>
			<u>Init./Time</u>	<u>Date</u>
				<u>Init./Time</u>
3.4.4	OPEN 1LWD-30	RB Normal Sump Pump (1WD-2A) Suction. Operated by reach rod on north wall in LPI/HPI Hatch Room 118, 119.	____/____	
3.4.5	Remove white tag from breaker on RB Normal Sump Pump 1B. White Tag No. _____		____/____	
3.4.6	Remove tag from breaker on RB Normal Sump Pump 1A. White Tag No. _____		____/____	
3.5	Chemistry will inform Operations when sampling has been completed. At this time, water put in the Emergency Sump Recirc. Line shall be drained. (At the discretion of the Shift Supervisor).			
3.5.1	OPEN 1LP-110	Drain on Emergency Sump Recirc. Line (U1 LPI Room)	____/____	____/____
3.5.2	Check high activity monitor rate in Control Room for indication drain has been completed.		____/____	
3.5.3	CLOSE 1LP-110	Drain on Emergency Sump Recirc. Line. (U1 LPI Room)	____/____	____/____
3.5.4	CLOSE 1LP-65	Manual valve (located in LPI Room) operated by reach rod from LPI/HPI Hatch Room 118, 119 (behind breaker panels ~ 15' south of 1LP-21).	____/____	____/____

ENCLOSURE 5.6

CP/1/A/2002/04C

<u>Date</u>	<u>Verification</u>
<u>Init./Time</u>	<u>Date</u>
	<u>Init./Time</u>

NOTE: This will regain containment integrity. Remove the containment isolation valve from OP/0/A/1102/20 (Shift Turnover).

- 3.6 Return completed enclosure to Chemistry Personnel operating PALS.

\_\_\_\_/\_\_\_\_

CP/1/A/2002/04C

ENCLOSURE 5.7

PREPARATION OF THIOSULFATE SOLUTION FOR  
CONTAINMENT AIR POST ACCIDENT SAMPLE PANELS

- 1) Prepare 2 liters of  $2.42 \times 10^{-2}$  M sodium hydroxide by pipetting 0.25 ml of 50% NaOH into a 2 l flask, making up to volume.
- 2) Transfer 500 ml  $\pm$  10 ml by graduated cylinder into each of 4 500 ml poly bottles. Add 1.0 ml of chloroform to each as a preservative.
- 3) Weigh out 4 portions of  $.3003 \pm .0012$  g of sodium thiosulfate ( $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$ ) and add one portion to each of the four bottles containing NaOH.
- 4) Label these solutions thiosulfate for containment air sampling and date. (They are stable for 6 months).
- 5) Keep the solutions in the Primary Chemistry Lab and sign them out to HP when requested in the Primary Sample Log for Unit 1.