

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: RP/0/A/5000/01
Change(s) 4 to
5 Incorporated

- (2) STATION: CATAWBA
- (3) PROCEDURE TITLE: Classification of Emergency
- (4) PREPARED BY: Mike Bolch DATE: May 21, 1985
- (5) REVIEWED BY: CY Hengel DATE: 5/21/85
Cross-Disciplinary Review By: TE Hengel N/R: _____
- (6) TEMPORARY APPROVAL (IF NECESSARY):
By: _____ (SRO) Date: _____
By: _____ Date: _____
- (7) APPROVED BY: Jw. Ly Date: 5/21/85
- (8) MISCELLANEOUS:
Reviewed/Approved By: _____ Date: _____
Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
CLASSIFICATION OF EMERGENCY

1.0 SYMPTOMS

1.1 Notification of Unusual Event

- 1.1.1 Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant.
- 1.1.2 No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety occurs.

1.2 Alert

- 1.2.1 Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant.
- 1.2.2 Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

1.3 Site Area Emergency

- 1.3.1 Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public.
- 1.3.2 Any releases are not expected to exceed EPA Protective Action Guideline exposure levels except near the site boundary.

1.4 General Emergency

- 1.4.1 Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity.
- 1.4.2 Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

2.0 IMMEDIATE ACTIONS

- 2.1 Compare actual plant conditions to the Emergency Action Level(s) listed in Enclosure 4.1 then declare the appropriate Emergency Class as indicated.

- 2.2 Refer to the applicable Emergency Response Procedure (RP) for the classification found in Enclosure 4.1:

Notification of Unusual Event	RP/0/A/5000/02
Alert	RP/0/A/5000/03
Site Area Emergency	RP/0/A/5000/04
General Emergency	RP/0/A/5000/05

3.0 SUBSEQUENT ACTIONS

- 3.1 To escalate, de-escalate or close out the Emergency, compare plant conditions to the Initiating Conditions of Enclosure 4.2.

4.0 ENCLOSURES

- 4.1 Emergency Event List for Emergency Classes

<u>Event No.</u>	<u>Page(s)</u>
4.1.1 Primary Coolant Leak	1 & 2
4.1.2 Fuel Damage	3
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- 4.2 Emergency Classification Guide Flowchart

CATAWBA NUCLEAR STATION
EMERGENCY ACTION LEVEL'S FOR

EVENT #: 4.1.1 Primary Coolant Leak

Class Notification of Unusual Event	Alert	Site Area Emergency	General Emergency
<p>1. NC Leakage > Tech. Specs. LCO:</p> <p>• NC Leak > 10 gpm identified primary leakage</p> <p><u>OR</u></p> <p>• >500 gpd from any S/G</p> <p><u>OR</u></p> <p>• > 1 gpm total P-S through all S/G</p> <p><u>OR</u></p> <p>• Any press boundary leakage</p> <p><u>OR</u></p> <p>• > 1 gpm unidentified leakage</p> <p><u>OR</u></p> <p>• > 40 gpm controlled leakage at 2235 psig</p> <p><u>OR</u></p> <p>• > 1 gpm from NC press isolation valve at 2235 psig</p> <p><u>AND</u></p> <p>Tech. Spec. Action Statement Time Limit is exceeded.</p>	<p>1. NC Leak > 50 gpm</p> <p>• For Modes 1, 2, 3 & 4 only •</p> <p>2. P-S Leak > 10 gpm</p> <p><u>AND</u></p> <p>a steam line break.</p> <p>Rapidly decreasing</p> <p>• NC Tavg</p> <p>• PZR Press</p> <p>• PZR Level</p> <p><u>AND</u></p> <p>• EMF-33 & 34 in alarm.</p> <p>• Steam Line Radiation Monitor in alarm on the affected S/G.</p> <p>• Steam Line low Press S/I signal.</p> <p>• Hi steam flow and low-low Tavg</p> <p><u>CONTINUED</u></p>	<p>1. NC Leak > Total ECCS capacity:</p> <p><u>SYMPTOMS</u></p> <p>• PZR Low Press Rx Trip</p> <p>• PZR Low Press S/I Signal</p> <p>• High Containment Press</p> <p>• High Containment Humidity</p> <p>• High Containment Sump Level</p> <p>• EMF-38, 39 & 40 in alarm</p> <p>2. Multiple S/G tube ruptures: (Several hundred gpm P-S leakage)</p> <p><u>AND</u></p> <p>loss of offsite power:</p> <p><u>SYMPTOMS</u></p> <p>• PZR Low Press Alarm</p> <p>• PZR Low Press Rx Trip</p> <p>• PZR Low Level Alarm</p> <p>core melt and failure of</p> <p>• Steam Line Radiation Monitor in alarm on the affected S/G.</p> <p><u>AND</u></p> <p>• UV alarm on 7KV buses</p> <p><u>CONTINUED</u></p>	<p>1. Small or large LOCA with failure of ECCS, leads to core melt:</p> <p><u>SYMPTOMS</u></p> <p>• S/I signal <u>and</u> Rx trip</p> <p><u>AND</u></p> <p>• N/I & ND pumps are running</p> <p><u>AND</u></p> <p>• N/I flow indicates "No flow"</p> <p><u>AND</u></p> <p>• High Containment Sump Level</p> <p>2. Small LOCA and initially successful ECCS with failure of NS System over several hours leads to</p> <p>containment:</p> <p><u>SYMPTOMS</u></p> <p>• PZR low press Rx trip</p> <p>• PZR low press S/I signal</p> <p>• NC temperature is rising</p> <p><u>AND</u></p> <p>• NS flow indicators show "No flow" after > 2 hours</p> <p><u>END</u></p>
<p>2. NC Leak > 50 gpm</p> <p>*For Modes 5 & 6 only*</p>			

CONTINUED

CATAWBA NUCLEAR STATION
EMERGENCY ACTION LEVEL'S FOR

EVENT # 4.1.1: Primary Coolant Leak (Continued)

Class Notification of Unusual Event	Alert	Site Area Emergency	General Emergency
3. Failure of a PZR PORV or safety valve to close following a reduction of NC Press: •Valid accoustical monitor indication of valve failure. <u>END</u>	3. S/G Tube Rupture <u>AND</u> loss of offsite power: <u>SYMPTOMS</u> •PZR low press alarm •PZR low press trip •PZR low level alarm •PZR low press S/I signal •EMF-33&34 in alarm •Steam Line Radiation Monitor in alarm on the affected S/G. <u>AND</u> •UV alarm on all 7 KV buses 4. Multiple S/G tube ruptures: (Several hundred gpm P-S leak) <u>SYMPTOMS</u> •PZR low press alarm •PZR low press Rx Trip •PZR low level alarm •PZR low press S/I signal <u>AND</u> •EMF-33&34 in alarm •Steam Line radiation Monitor in alarm on the affected S/G. <u>END</u>	3. > 50 gpm P-S leakage <u>AND</u> a steam line break <u>AND</u> identification of fuel damage. <u>SYMPTOMS</u> Rapidly decreasing: •NC Tavg •PZR Press •PZR Level •EMF-33&34 in alarm <u>AND</u> •Steam Line Radiation Monitor in alarm on the affected S/G <u>AND</u> •Steam line Low Press S/I signal •High Steam flow and Low Low Tavg <u>AND</u> •EMF-48 in alarm with either or both of the following: •Loose Parts Monitoring Alarm •Laboratory Analysis indicating fuel damage •EMF-53A and/or B indicates > 3R/hr <u>END</u>	

CATAWBA NUCLEAR STATION
EMERGENCY ACTION LEVEL'S FOR

EVENT # 4.1.2: Fuel Damage

Notification of Unusual Event	Class	Alert	Site Area Emergency	General Emergency
1. High coolant activity:	1.	Severe loss of fuel cladding; mechanical clad failure:	1. Degraded core with possible loss of coolable geometry:	1. Loss of 2 of 3 fission product barriers with a potential for loss of 3rd barrier:
a. > 1 μ Ci/gram Dose Equivalent I-131 or > 100 μ Ci/Gram \bar{E} gross activity.	a.	Very high coolant activity sample 200 μ Ci/ml to 1000 μ Ci/ml equivalent I-131.	•Inadequate Core Cooling See EP/1/A/5000/2B	a. LOCA as identified in Event 4.1.1 Site Area Emergency, Item #1
b. > 0.1% increase in fuel failure within 30 min.	b.	EMF-48 indicates increase > 1% fuel failures (> 40 μ Ci/ml) within 30 min.	> 1000 μ Ci/ml I-131	AND
OR		OR	•Severe Fuel Overtemperature 1% to 10% fuel failures as estimated by AP/0/A/5500/31	Incomplete Cont. Isol
1% to 5% fuel failures		•5% to 25% total fuel failures (> 200 μ Ci/ml I-131)	•Fuel Melt .5% to 5% fuel failures as estimated by AP/0/A/5500/31	b. LOCA as identified in Event 4.1.1 Site Area Emergency, Item #1
SYMPTOMS		See Notes	See Notes	AND
•EMF-48 alarm			END	•EMF-53A and/or B 4 > 10 R/hr
AND				AND
•I-131 concentration increases by 4 μ Ci/ml over a 30 min. period	2.	NC pump seizure leads fuel failure:		•Containment press > 14.8 psig for at least 2 minutes.
OR		SYMPTOMS		
•I-131 concentration 40 μ Ci/ml to 200 μ Ci/ml		•NC pump trip alarm		
See Notes		AND		
END		•Rx trip on low flow		
		AND		
		•> 1% increase fuel failures within 30 min. (> 40 μ Ci/ml within 30 min.)		
		OR		
		•5% total fuel failures (> 200 μ Ci/ml I-131)		
		See Notes		
		END		
				2. Severe Fuel Damage
				•Fuel Overtemperature > 10% fuel failures as estimated by AP/0/A/5500/31
				•Fuel Melt > 5% fuel failures as estimated by AP/0/A/5500/31
				END

NOTES: 1. Determined by Laboratory Analysis
2. Concentration may vary with ECCS dilution

CATAWBA NUCLEAR STATION
EMERGENCY ACTION LEVEL'S FOR

EVENT # 4.1.3: Steam System Failure

Class Notification of Unusual Event	Alert	Site Area Emergency	General Emergency
<p>1. Failure of a safety or PORV on an S/G to close, following a reduction of SM pressure.</p> <p>2. Rapid depressurization of secondary side:</p> <p><u>SYMPTOMS</u></p> <p>a. S/I signal b. As observed</p> <p><u>END</u></p>	<p>1. P-S Leak > 10 gpm</p> <p><u>AND</u></p> <p>a steam line break</p> <p><u>SYMPTOMS</u></p> <p>Rapidly decreasing:</p> <p>●NC Tavg ●PZR Press ●PZR Level</p> <p><u>AND</u></p> <p>●EMF-33 & 34 in alarm.</p> <p>●Steam line Radiation Monitor in alarm on the affected S/G.</p> <p>●Steam line low Press S/I signal ●High steam flow and Low-Low Tavg</p> <p><u>END</u></p>	<p>1. > 50 gpm P-S leakage</p> <p><u>AND</u></p> <p>a steam line break</p> <p><u>AND</u></p> <p>identification of fuel damage.</p> <p><u>SYMPTOMS</u></p> <p>Rapidly decreasing:</p> <p>●NC Tavg ●PZR Press ●PZR Level ●EMF-33 & 34 in alarm ●Steam Line Radiation Monitor in alarm on the affected S/G.</p> <p><u>AND</u></p> <p>●Steam line Low Press S/I signal ●High steam flow and Low-low Tavg</p> <p><u>AND</u></p> <p>●EMF-48 in alarm, with either or both of the following:</p> <p>●Loose Parts Monitor Alarm</p> <p>●Laboratory Analysis indicating fuel Damage</p> <p>●EMF-53A and/or B indicates > 3R/nr.</p> <p><u>END</u></p>	N/A

CATAWBA NUCLEAR STATION
EMERGENCY ACTION LEVEL'S FOR

EVENT # 4.1.4: High Radiation/Radiological Effluents

Class Notification of Unusual Event	Alert	Site Area Emergency	General Emergency
<p>1. Radiological Effluents Tech Specs Exceeded:</p> <p><u>SYMPTOMS</u></p> <p>•EMF-31, 35, 36, 37, 49 or 50 in alarm</p> <p><u>AND</u></p> <p>•uncontrolled releases continued indicating Radiological Effluent Tech. Specs. exceeded.</p> <p><u>END</u></p>	<p>1. High radiation level or high airborne con- tamination:</p> <p>Increase by a factor of 1000 in radiation monitor readings within station.</p> <p>2. Airborne radiological effluents > 10X TS limits (instantaneous rate):</p> <p><u>SYMPTOMS</u></p> <p>•EMF-35⁴ Low Range $\geq 6.2 \times 10$ cpm</p> <p>•EMF-36⁵ Low Range $\geq 1.7 \times 10$ cpm¹ High Range $\geq 2.5 \times 10$ cpm</p> <p><u>END</u></p>	<p>1. Radiological effluents > 50 mr/hr for 30 min.</p> <p><u>OR</u></p> <p>> 500 mr/hr Whole Body for 2 min. (or 5X these levels to Thyroid) at the site boundary:</p> <p><u>SYMPTOMS</u></p> <p>•EMF-35¹ Low Range offscale High Range $> 1.3 \times 10$ cpm</p> <p>•EMF-36³ Low Range offscale High Range $\geq 4.4 \times 10$ cpm</p> <p>•EMF-37 change of 143 cpm/minute for 30 minutes or a change of of 1430 cpm/minute for 2 minutes as determined from recorder trace.</p> <p><u>END</u></p>	<p>1. Effluent monitor detect levels corresponding to:</p> <p>1 R/hr Whole Body</p> <p><u>OR</u></p> <p>5 R/hr Thyroid at the Site Boundary:</p> <p><u>SYMPTOM</u></p> <p>•EMF-37 change of 2800 cpm/ minute over any time interval as determined from recorder trace.</p> <p><u>END</u></p>

CATAWBA NUCLEAR STATION
EMERGENCY ACTION LEVEL'S FOR

EVENT # 4.1.2: Loss of Shutdown Functions

Class
Notification of
Unusual Event

Alert

Site Area Emergency

General Emergency

N/A

1. Complete loss of function needed for unit cold shutdown:

SYMPTOMS
 - Failure of both trains of ND
 - AND
 - Inability to maintain natural or forced circulation.
2. Failure of the Reactor Protection System to initiate and complete a trip which brings the reactor subcritical:

 - Reactor remains critical after all attempts to trip have been completed.

END

1. Complete loss of functions needed for unit hot shutdown:

SYMPTOMS
 - Inability to establish NV pump injection
 - AND
 - Inability to establish CA flow
 - OR
 - Inability to establish KC flow.
2. TRANSIENT requiring operation of shutdown system with failure to trip:

 - Reactor remains critical after all attempts to trip have been completed.

END

1. Transient requiring Rx trip with failure to trip.

AND
 Additional failure of core cooling and ECCS would lead to core melt:

SYMPTOMS
 - Rx remains critical after all attempts to trip the Rx are complete
- AND
 - No ND and NI Flow indicated.
2. Transient initiated by loss of CF and CM Systems followed by failure of CA System for extended period. Core melting is possible in several hours with ultimate failure of containment likely:

SYMPTOMS
 - Rx trip on Lo-Lo S/G level
 - AND
 - Wide range S/G level toward offscale low on all S/G
 - AND
 - No CA flow indicated
 - OR
 - CA pumps not running and cannot be restored within 30 minutes

END

CATAWBA NUCLEAR STATION
EMERGENCY ACTION LEVEL'S FOR
EVENT # 4.1.6: Loss of Power

Class Notification of Unusual Event	Alert	Site Area Emergency	General Emergency
1. Loss of offsite Power: <u>SYMPTOM</u> ●UV alarm on all 7 KV buses	1. Loss of offsite power and loss of all onsite AC power for ≤ 15 min. <u>SYMPTOMS</u> ●UV alarm on all 7 KV buses <u>AND</u> ●UV alarm on 4160V buses	1. Loss of offsite power and loss of all onsite AC power for > 15 min. <u>SYMPTOMS</u> ●UV alarms on all 7 KV buses <u>AND</u> ●UV alarm on 4160V buses	1. Failure of offsite and onsite power with total loss of CA makeup for several hours, leads to core melt and failure of containment: <u>SYMPTOMS</u> ●UV alarms on all 7 KV buses <u>AND</u> ●Blackout load sequencer actuated <u>AND</u> ●CA pump(s) fail to start. <u>END</u>
2. loss of onsite power capability: <u>SYMPTOMS</u> a. Modes 1-4 ●Main generator incapable of supplying in-house loads <u>AND</u> ●Both D/G's incapable of powering essential buses b. Modes 5-6 ●Both D/G's incapable (for > 8 hours) of powering essential buses. <u>END</u>	2. loss of all vital DC buses for ≤ 15 min. <u>SYMPTOM</u> ●UV alarm on all vital DC buses <u>END</u>	2. Loss of all vital DC power for > 15 min. <u>SYMPTOM</u> ●UV alarm on all vital DC buses <u>END</u>	

CATAWBA NUCLEAR STATION
EMERGENCY ACTION LEVEL'S FOR

EVENT # 4.1.7: Fires and Security Actions

Class Notification of Unusual Event	Alert	Site Area Emergency	General Emergency
1. Fire within Plant lasting more than 10 minutes: (Note*) ●Observation of a fire lasting > 10 minutes.	1. Fire potentially affecting safety systems: ●Observation of a fire that could affect safety systems.	1. Fire compromising the functions of safety systems: ●Observation of a major fire that defeats redundant safety system or functions.	1. Any major internal or external events (e.g., fires, earthquakes substantially beyond design levels) which could cause massive common damage to the unit.
2. Security threat <u>OR</u> ●Attempted entry <u>OR</u> ●Attempted sabotage As reported by Security force. <u>END</u>	2. Ongoing Security compromise: ●As reported by Security Force <u>END</u>	2. Imminent loss of physical control of the plant (Note*): ●Physical attack on the plant (Note*) including imminent occupancy of Control Room and auxiliary shutdown panels. <u>END</u>	2. Loss of physical control of the plant (Note*): ●Physical attack on the plant has resulted in occupation of the Control Room and auxiliary shutdown panels. <u>END</u>

NOTE: Plant is defined as: Aux. Bldg., TB, SB, RB, D/G Rm.

CATAWBA NUCLEAR STATION
EMERGENCY ACTION LEVEL'S FOR

EVENT # 4.1.8: Loss of Alarms and/or Communication

Class Notification of Unusual Event	Alert	Site Area Emergency	General Emergency
<p>1. Indications or alarms on process or effluent parameters not functional in Control Room to an extent requiring unit shutdown</p> <p><u>AND</u></p> <p>A power reduction is initiated with intent to enter Mode 3:</p> <p><u>SYMPTOM</u></p> <ul style="list-style-type: none"> loss of process or effluent Radiation monitoring system <p>2. Other significant loss of assessment or communication capability.</p> <p><u>SYMPTOMS</u></p> <p>a. loss of all meteorological instrumentation onsite</p> <p><u>AND</u></p> <ul style="list-style-type: none"> inability to call National Weather Service for back up source of meteorological data. <p><u>OR</u></p> <p>b. loss of all radio <u>AND</u> telephone communications capability.</p> <p><u>END</u></p>	<p>1. Most or all alarms (annunciators) lost.</p> <p><u>END</u></p>	<p>1. Most or all alarms (annunciators) lost.</p> <p><u>AND</u></p> <p>An uncontrolled transient initiated while alarms lost.</p> <p><u>END</u></p>	<p>N/A</p>

CATAWBA NUCLEAR STATION
EMERGENCY ACTION LEVEL'S FOR

EVENT # 4.1.9: Spent Fuel Damage

Class
Notification of
Unusual Event

Alert

Site Area Emergency

General Emergency

N/A

1. Fuel damage accident
with release of radio-
activity to Containment
or fuel Handling Building:

SYMPTOMS

- EMF-15, 17, 38, 39, 40 or
42 in alarm

AND

- Observation of damage to
spent fuel assembly
following an accident in
fuel handling areas that,
in the opinion of the
Shift Supervisor, may have
resulted in damaged spent
fuel.

END

1. Major damage to spent
fuel in containment or
fuel Handling Building:

SYMPTOMS

- EMF-15, 17, 38, 39, 40
or 42 in alarm

AND

- Observation of major damage
to spent fuel assemblies

OR

- Water level below
fuel level following an
accident in fuel handling
areas that, in the
opinion of the Shift
Supervisor, may have
resulted in damaged
spent fuel.

END

N/A

CATAWBA NUCLEAR STATION
EMERGENCY ACTION LEVEL'S FOR

EVENT # 4.1.10: Natural Disasters and Other Hazards

Class Notification of Unusual Event	Alert	Site Area Emergency	General Emergency
<p>1.a. Earthquake < OBE felt or detected in plant (NOTE*)</p> <p>< 0.08g Horizontal</p> <p>OR</p> <p>< 0.053g Vertical</p> <p>b. Lake level</p> <p>• High > 580 ft. to 592.2 ft.</p> <p>• Low 559.9 ft. to 550 ft.</p> <p>c. Any tornado on site</p> <p>d. Sustained Winds > 73 mph</p> <p>2.a. Aircraft crash on-site or unusual aircraft activity over site</p> <p>b. Train derailed onsite</p> <p>c. Explosion within the site boundary</p> <p>d. Toxic or flammable gas release within the site boundary</p> <p>e. Turbine rotating component failure causes rapid unit shutdown.</p> <p>component failure</p> <p>END</p>	<p>1.a. Earthquake > OBE:</p> <p>> 0.08g Horizontal</p> <p>OR</p> <p>> 0.053g Vertical</p> <p>b. Lake level:</p> <p>• High 592 ft. 594.6 ft</p> <p>• Low < 550 ft.</p> <p>AND</p> <p>SNSWP available</p> <p>c. Any tornado striking the plant (NOTE*):</p> <p>d. Sustained Winds approaching 95 mph</p> <p>2.a. Aircraft crash on site affecting safe operation of the unit.</p> <p>b. Missile impact on site affecting safe operation of the unit.</p> <p>c. Explosion damage to site affecting safe operation of the unit.</p> <p>d. Uncontrolled entry of toxic or flammable gas into site affecting safe operation of the unit.</p> <p>e. Turbine rotating component failure causing penetration of turbine casing.</p> <p>END</p>	<p>1. When unit is not in cold shutdown:</p> <p>a. Earthquake > SSE:</p> <p>> 0.15g Horizontal</p> <p>OR</p> <p>> 0.10g Vertical</p> <p>b. Lake Level:</p> <p>• High > 594.6 ft.</p> <p>• Low < 550 ft.</p> <p>AND</p> <p>Loss of SNSWP</p> <p>c. Sustained Winds > 95 mph</p> <p>2. When unit is not in cold shutdown:</p> <p>a. Aircraft crash causing damage or fire to Containment Building, Control Room, Auxiliary Building, Fuel Building or RN Intake Structure</p> <p>b. Damage from missile or explosion causes inability to establish:</p> <p>1) charging pump injection</p> <p>2) CA flow</p> <p>3) KC or RN flow</p> <p>c. Entry of uncontrolled toxic or flammable gases into Control Room, Cable Spreading Room, Containment Building, Switchgear Room, Auxiliary Shutdown Panels or Diesel Rooms, affecting safe operation of the unit.</p> <p>END</p>	<p>1. Any major internal or external events (e.g., fires, earthquakes substantially beyond design levels) which could cause massive common damage to the unit.</p> <p>END</p> <p>NOTE: Plant is defined as: Aux. Bldg., IB, SB, RB, D/G Rm.</p>

CATAWBA NUCLEAR STATION
EMERGENCY ACTION LEVEL'S FOR

EVENT # 4.1.11: Other Abnormal Plant Conditions

Class Notification of Unusual Event	Alert	Site Area Emergency	General Emergency
<p>1. ECCS initiated: S/I signal verified by redundant indication and discharge into vessel.</p> <p>2. Abnormal coolant tempera- ture and/or pressure or 2. abnormal Reactor fuel temperature: ● Figure 2.1-1 Tech Specs exceeded. <u>OR</u> ● Core Sub-cooling Monitor less than acceptable (Outside Acceptable Region)</p> <p>3. Loss of containment integrity requiring shutdown by Tech. Spec. <u>AND</u> A power reduction is initiated <u>with</u> intent to enter Mode 3: ● Any automatic contain- ment isolation valve found to be open and inoperable and unisolable. <u>OR</u> ● Both air lock doors on a lock inoperable, <u>or</u> penetrations fail leak test per Tech Spec when containment integrity is required.</p>	<p>1. Evacuation of Control Room anticipated or required with control of shutdown systems established from local station.</p> <p>2. Other unit conditions exist that in the judgement of the Shift Supervisor, the Operations Duty Engineer, the Super- intendent of Opera- tions, or the Plant Manager warrant pre- cautionary activation of ISC & OSC.</p>	<p>1. Evacuation of Control Room <u>and</u> control of shutdown systems not established from local stations in 15 minutes.</p> <p>2. Other unit conditions exist that in the judgement of the Shift Supervisor, the Opera- tions Duty Engineer, the Superintendent of Operations or the Plant Manager warrant activa- tion of TSC & CMC and monitoring teams and a precautionary public notification.</p>	<p>1. Other unit conditions exist, from whatever source, that in the judgement of the Shift Supervisor, the Opera- tions Duty Engineer, the Superintendent of Opera- tions or the Plant Manager make release of large amounts of radio- activity in a short time period possible (e.g., any core melt situation).</p>

END

END

END

CONTINUED

CATAWBA NUCLEAR STATION
EMERGENCY ACTION LEVEL'S FOR

EVENT # 4.1.11: Other Abnormal Plant Conditions (Continued)

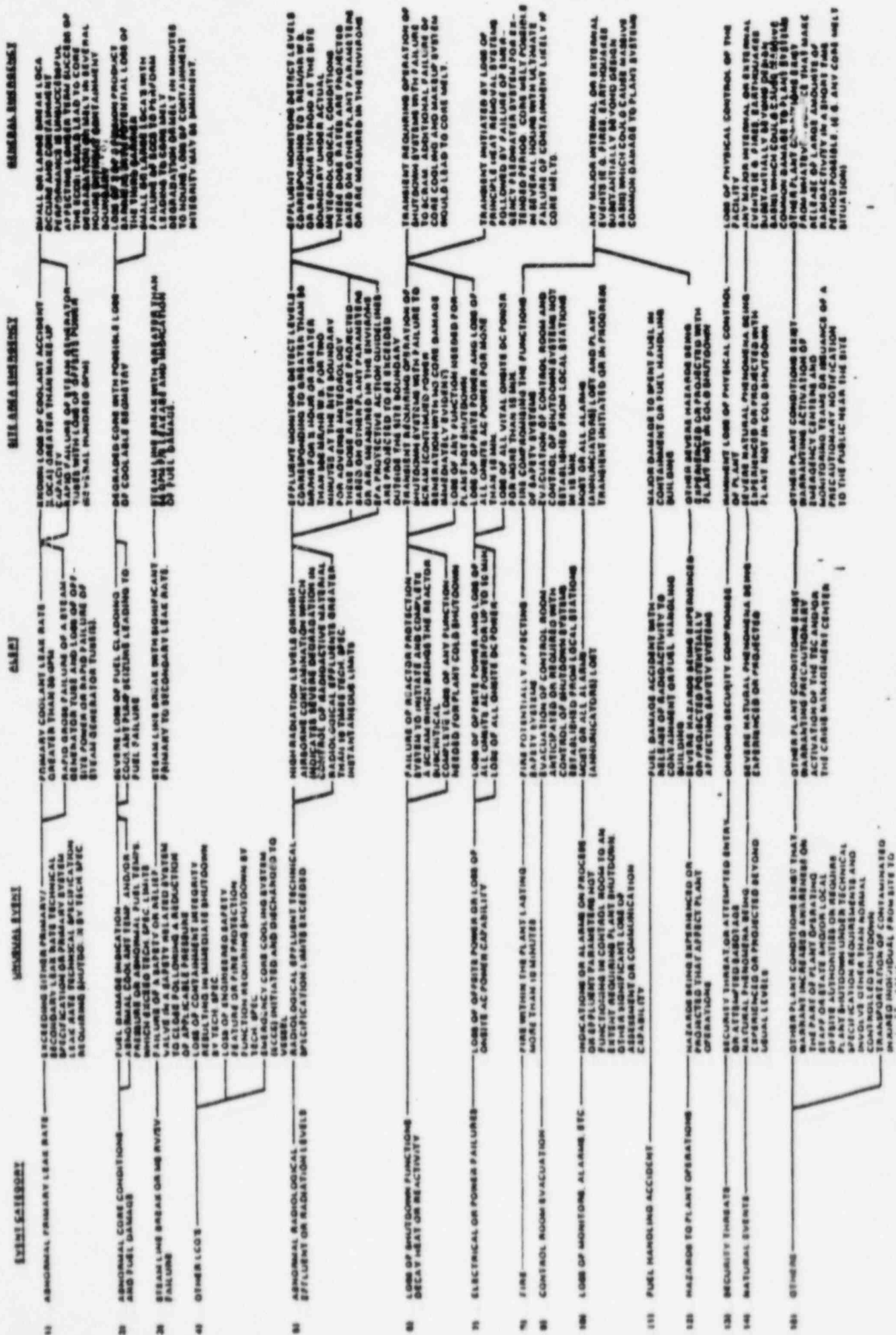
Class Notification of Unusual Event	Alert	Site Area Emergency	General Emergency
4. Loss of Engineered Safety feature or Fire Protection System function requiring shutdown by Tech Specs			
AND			
A power reduction is initiated with intent to enter Mode 3:			
■ESF actuation system found inoperable.			
OR			
■Fire Protection Water System found inoperable per Tech Spec.			
5. Other unit conditions exist that in the judge- ment of the Shift Super- visor, the Operations Duty Engineer, the Super- intendent of Operations or the Station Manager:			
a. Warrant increased awareness of local authorities			
OR			
b. Require unit shutdown under Tech Spec requirements			
AND			
■involve other than normal controlled shutdown.			
END			

CATAWBA NUCLEAR STATION
EMERGENCY ACTION LEVEL'S FOR

EVENT # 4.1.12: Contaminated and Injured Individual

Class Notification of Unusual Event	Alert	Site Area Emergency	General Emergency
1. Transportation of a contaminated injured individual from site to offsite medical facility.	N/A	N/A	N/A
•Contamination > 150 cpm as determined by HP			
END			

EMERGENCY CLASSIFICATION GUIDE FLOWCHART



DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: RP/0/A/5000/02
Change(s) 4 to
5 Incorporated

- (2) STATION: CATAWBA
- (3) PROCEDURE TITLE: Notification of Unusual Event
- (4) PREPARED BY: Mike Bolch DATE: May 21, 1985
- (5) REVIEWED BY: P. S. LeRoy DATE: 5-21-85
Cross-Disciplinary Review By: TE Hensley N/R: _____
- (6) TEMPORARY APPROVAL (IF NECESSARY):
By: _____ (SRO) Date: _____
By: _____ Date: _____
- (7) APPROVED BY: [Signature] Date: 5/23/85
- (8) MISCELLANEOUS:
Reviewed/Approved By: _____ Date: _____
Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
NOTIFICATION OF UNUSUAL EVENT

1.0 SYMPTOMS

- 1.1 This condition exists when events are in process or have occurred which indicate a potential degradation of the level of safety of the plant.

2.0 IMMEDIATE ACTIONS

- 2.1 Make initial notifications to individuals and organizations.

- 2.1.1 Complete Part I of Warning Message Form. (See example Enclosure 4.3.) Record receivers name and time (initial contact).

NOTE: Emergency Coordinator shall initial forms when message is approved for transmission.

NOTE: Warning Message Forms are kept in the Control Room and TSC, ensure that all used forms are returned to the back of the notebook.

- 2.1.2 Notifications shall be as the order of Enclosure 4.1 indicates. See RP/0/B/5000/13 for NRC Notification.

NOTE: The State and County notification must be made within 15 minutes of declaration of the emergency.

3.0 SUBSEQUENT ACTIONS

- 3.1 Termination or Follow up Notifications.

- 3.1.1 Terminate the Emergency with a follow-up message

NOTE: Use Parts I & III of Warning Message Form. The termination message shall be made approximately 30 minutes after the last transmitted message.

OR

- 3.1.2 Give follow-up messages to agencies listed in 4.1.3 of Enclosure 4.1, use the following schedule:

NOTE: For Unusual Events use only Part I of Warning Message Form.

- If the Unusual Event Situation lasts longer than one hour, then update each hour until terminated.

OR

- If there is any significant change to the situation or escalation to a higher classification.

NOTE: The State and County notification must be made within 15 minutes of escalation of the emergency.

OR

- As agreed upon with the individual agencies.

- 3.2 Complete Enclosure 4.2 to notify the Nuclear Production Duty Engineer.
- 3.3 Augment shift resources to assess and respond to the emergency situation as needed.
- 3.4 Assess the emergency condition, then remain in a Notification of Unusual Event, escalate to a more severe class or terminate the emergency.
- 3.5 The Compliance Engineer or delegate shall follow up with a written summary to county and state authorities, notified in 4.1.3 of Enclosure 4.1, within 24 hours.

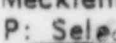

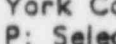

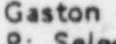

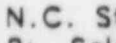
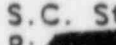

4.0 ENCLOSURES


- 4.1 Telephone Notification List
- 4.2 Emergency Message Format
- 4.3 Example Warning Message: Nuclear Facility to State/Local Government

TELEPHONE
NOTIFICATION LIST

		Initial
4.1.1	Station Manager - J. W. Hampton	
	Office [REDACTED]	
	Home - [REDACTED]	
	1st Alternate - C. W. Graves, Jr.	
	Office [REDACTED]	
	Home [REDACTED]	
	2nd Alternate - J. W. Cox	
	Office [REDACTED]	
	Home [REDACTED]	
	3rd Alternate - G. T. Smith	
	Office [REDACTED]	
	Home [REDACTED]	
	4th Alternate - B. F. Caldwell	
	Office [REDACTED]	
	Home [REDACTED]	
	5th Alternate - W. R. McCollum	
	Office (later)	
	Home [REDACTED]	
4.1.2	Compliance Engineer - C. L. Hartzell	
	Office [REDACTED]	
	Home [REDACTED]	
	1st Alternate - M. E. Bolch	
	Office [REDACTED]	
	Home [REDACTED]	
	2nd Alternate - P. G. LeRoy	
	Office [REDACTED]	
	Home [REDACTED]	

4.1.3 State & County Warning Points **Use Warning Message Form**
P: Selective Signal Group Call - (later)

1. Mecklenburg County
P: Selective Signal
A: 
Back-up: Emergency Radio, Code:  _____
2. York County
P: Selective Signal
A: 
Back-up: Emergency Radio, Code:  _____
3. Gaston County
P: Selective Signal
A: 
Back-up: Emergency Radio, Code:  _____
4. N.C. State, Raleigh
P: Selective Signal - (later)
A:  _____
5. S.C. State, Columbia (Not on Group Call)
P:  7:30 a.m. - 5:00 p.m. Weekdays
A:  After hours, Weekends & Holidays _____

4.1.4 Operations Duty Engineer - Plant Page
P & T Pager 
A: See Current Operations Work List for Home Phone Number. _____

4.1.5 Nuclear Production Duty Engineer
P & T Page 
** USE ENCLOSURE 4.2 ** _____

4.1.6 NRC Operations Center, Bethesda, Md. (RP/0/B/5000/13) _____

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
TO NUCLEAR PRODUCTION DUTY ENGINEER
EMERGENCY MESSAGE FORMAT

1. This is _____ at Catawba 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 # _____.
(Time)

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 not been any injuries to plant personnel.

6. Release of radioactivity: _____ is taking place
_____ is not taking place

7. NRC _____ Yes _____ No; State _____ Yes _____ No;
Counties _____ Yes _____ No; have been notified.

8. The Crisis Management Team _____ should ☒ should not be activated.
Corporate Communications and Company Management should be notified.

9. I can be reached at _____ for follow-up information.
(Telephone Number)

10. Additional Comments: _____

Name of Person Contacted _____ Date _____ Time _____

EXAMPLE

PART 1 INITIAL WARNING MESSAGE

RP/0/A/5000/02

Enclosure 4.3

Page 1 of 4

1. Date: _____ Time: _____ hours
2. This is: Catawba Nuclear Station concerning Unit # _____
My name is: _____ Telephone: _____
this message (Number _____):
____ (a) Reports a real emergency.
____ (b) Reports the change in the class of a real emergency.
____ (c) Reports the termination of a real emergency.
____ (d) Is an exercise message.
3. Message Authentication
Message Sender: I authenticate _____ as _____
(a) IF A TERMINATION MESSAGE. GO TO PART 3.
4. The class of emergency is:
____ X (a) Unusual Event _____ (c) Site Area Emergency
____ (b) Alert _____ (d) General Emergency
5. This class of emergency was declared at: _____ on _____
(time) (date)
6. The initiating event causing the emergency classification is: _____

7. The emergency condition:
____ (a) Does not involve the release of radioactive material from the plant.
____ (b) Involves the potential for a release, but no release is occurring.
____ (c) Involves the release of radioactive materials.
8. The following protective actions are recommended:
____ X (a) No protective action is recommended at this time.
____ (e) Other recommendations: _____

9. I repeat, this message:
____ (a) Reports a real emergency.
____ (b) Reports a change in the classification of a real emergency.
____ (c) Is an exercise message.
10. Do you have any questions? (Copy on separate sheet.)
11. RELAY THIS INFORMATION TO THE PERSONS LISTED IN YOUR ALERT PROCEDURES WHO MUST BE NOTIFIED OF INCIDENTS AT A NUCLEAR FACILITY.

*For Message sender: record names of Message Receivers on Page 4.

END OF PART 1

PART 2 FOLLOW-UP MESSAGE(S)

RP/0/A/5000/02

Enclosure 4.3

Page 2 of 4

1. Plant status:
Reactor (a) _____ is not tripped/ _____ was tripped at (Time): _____

Plant is at: (a) _____ % power (c) _____ hot shutdown
(b) _____ cold shutdown (d) _____ cooling down

Prognosis is: (a) _____ stable (c) _____ degrading
(b) _____ improving (d) _____ unknown
2. Emergency actions underway at the facility include: _____
3. Onsite support needed from offsite organizations: _____
4. Dose Projection Data
Windspeed: _____ mph Wind direction: From _____
Precipitation: _____
Release Type: (a) _____ Ground/(b) _____ Elevated
Stability Class: _____ (A, B, C, D, E, F, or G)
Weighted dose Conversion Factor: (a) _____ (R/hr)/(Ci/m³)(whole body) -
(b) _____ (R/hr)/(Ci/m³)(Child Thyroid)
Radiological Release: Noble Gas Equivalent Xe-133 & I-131
_____ curies/sec.
Iodine Equivalent
_____ curies/sec.
5. The type of actual or projected release is:
_____ (a) Airborne _____ (b) Waterborne
_____ (c) Surface Spill _____ (d) Other
_____ (e) No release is in progress or expected at this time
(Skip Items 6, 7 & 8)
_____ am
6. Release
_____ (a) will begin at _____ hours.
_____ (b) began at _____ hours.
7. The estimated duration of the release is _____ hours.
8. The source and description of the release is: _____

PART 2 FOLLOW-UP MESSAGE(S) Continued

RP/0/A/5000/02

Enclosure 4.3

Page 3 of 4

9. Dose Projections:

Site Boundary	Dose Commitment		Projected Integrated Dose in Rem Based on _____ hours of release	
	Whole Body Distance (rem/hour)	Child Thyroid (Rem/Hour of inhalation)	Whole Body	Child Thyroid
2 miles				
5 miles				
10 miles				

10. Field measurement of dose rate (mr/hr) or contamination (X)
(if available):

Time	Zone	Distance from Plant	Direction from Plant	Whole Body	Child Thyroid

11. I repeat, this message:

☐ (a) Reports a real emergency.
☐ (b) Reports a change in the class of a real emergency.
☐ (c) Is an exercise message.

12. Do you have any questions? (Copy on Separate Sheet)

*****END OF FOLLOW-UP MESSAGE(S)*****

* For Message Sender: Record names of Message Receivers on Page 4.

PART 3 TERMINATION MESSAGE

1. The event was terminated at _____ on _____.

(time) (date)

2. The event at the plant was terminated for the following reason(s): _____

*****END OF TERMINATION MESSAGE*****

*For Message Sender: record names of Message Receivers on Page 4.

WARNING POINTS ALERTED

RP/0/A/5000/02
Enclosure 4.3
Page 4 of 4

1. _____
(name) (title)

(date) (time) (warning point)

2. _____
(name) (title)

(date) (time) (warning point)

3. _____
(name) (title)

(date) (time) (warning point)

4. _____
(name) (title)

(date) (time) (warning point)

5. _____
(name) (title)

(date) (time) (warning point)

6. _____
(name) (title)

(date) (time) (warning point)

7. _____
(name) (title)

(date) (time) (warning point)

*****FOR UTILITY USE ONLY*****

Release of this message approved by: _____ at: _____
(Name) (Time) (Date)

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: RP/0/A/5000/03
Change(s) 4 to
5 Incorporated

- (2) STATION: CATAWBA
- (3) PROCEDURE TITLE: Alert
- (4) PREPARED BY: Mike Bolch DATE: May 21, 1985
- (5) REVIEWED BY: P. H. LeRoy DATE: 5-21-85
Cross-Disciplinary Review By: J. E. H. H. H. N/R: _____
- (6) TEMPORARY APPROVAL (IF NECESSARY):
By: _____ (SRO) Date: _____
By: _____ Date: _____
- (7) APPROVED BY: J. H. H. Date: 5/23/85
- (8) MISCELLANEOUS:
Reviewed/Approved By: _____ Date: _____
Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
ALERT

1.0 SYMPTOMS

- 1.1 Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant.

2.0 IMMEDIATE ACTIONS

- 2.1 Make initial notifications to individuals and organizations.

- 2.1.1 Complete Part I of Warning Message Form (see example Enclosure 4.3). Record receiver's name and time (initial contact).

NOTE: Emergency Coordinator shall initial forms when message is approved for transmission.

NOTE: Warning Message forms are kept in a Notebook in the Control Room and TSC, ensure that all used forms are returned to the back of the notebook.

- 2.1.2 Notifications shall be as the order of Enclosure 4.1 indicates. See RP/0/B/5000/13 for NRC Notification.

NOTE: The State and County notification must be made within 15 minutes of declaration of the emergency.

- 2.1.3 Advise station personnel to activate TSC and OSC.

- 2.1.4 Complete Enclosure 4.2 and advise the Nuclear Production Duty Engineer to bring the CMC to standby.

3.0 SUBSEQUENT ACTIONS

- 3.1 Accident Assessment:

- 3.1.1 Dispatch on site monitoring teams with associated communications equipment, see HP/0/B/1009/09.

- 3.2 Follow up Notifications.

- 3.2.1 Give Follow-up Messages to offsite agencies listed on 4.1.3 of Enclosure 4.1, use the following schedule:

- Every half hour until the emergency is terminated.

or

- If there is any significant change to the situation or escalating to a higher emergency classification.

NOTE: The State and County notification must be made within 15 minutes of escalation of the emergency.

or

- As agreed upon with the individual agencies.

3.2.2 Use parts 1 & 11 of Warning Message Form as applicable. Mark all spaces "N/A" when information is "Not Applicable" and mark "Later" when information is not currently available.

3.3 Recommend Protective Action Offsite

NOTE

Protective Action Recommendations are obtained from: OAC Program "Nuclear-23" or RP/0/A/5000/11, if the OAC is not operational, for Operations Personnel. If you have determined the need for the offsite protective actions, then reassess the emergency classification. You are no longer in an Alert situation.

3.4 If the emergency situation is rapidly degrading then conduct a Site Assembly, see RP/0/A/5000/10.

3.5 Augment shift resources to assess and respond to the emergency situation as needed.

3.6 Assess the emergency condition, then remain in an Alert, escalate to a more severe class, reduce the Emergency Class or terminate the emergency.

3.7 The Compliance Engineer or delegate shall close out the emergency with verbal summary to county and state authorities, notified in 4.1.3 of Enclosure 4.1, followed by written summary within 8 hours.

4.0 ENCLOSURES

4.1 Telephone Notification List

4.2 Emergency Message Format

4.3 Example Warning Message: Nuclear Facility to State/Local Government

TELEPHONE
NOTIFICATION LIST

		Initial
4.1.1	Station Manager - J. W. Hampton	
	Office [REDACTED]	
	Home - [REDACTED]	
	1st Alternate - C. W. Graves, Jr.	
	Office [REDACTED]	
	Home [REDACTED]	
	2nd Alternate - J. W. Cox	
	Office [REDACTED]	
	Home [REDACTED]	
	3rd Alternate - G. T. Smith	
	Office [REDACTED]	
	Home [REDACTED]	
	4th Alternate - B. F. Caldwell	
	Office [REDACTED]	
	Home [REDACTED]	
	5th Alternate - W. R. McCollum	
	Office (later)	
	Home [REDACTED]	
4.1.2	Compliance Engineer - C. L. Hartzell	
	Office [REDACTED]	
	Home [REDACTED]	
	1st Alternate - M. E. Bolch	
	Office [REDACTED]	
	Home [REDACTED]	
	2nd Alternate - P. G. LeRoy	
	Office [REDACTED]	
	Home [REDACTED]	

4.1.3 State & County Warning Points **Use Warning Message Form**
P: Selective Signal Group Call - (later)

1. Mecklenburg County _____
P: Selective Signal - _____
A: _____
Back-up: Emergency Radio, Code: _____
2. York County _____
P: Selective Signal - _____
A: _____
Back-up: Emergency Radio, Code: _____
3. Gaston County _____
P: Selective Signal - _____
A: _____
Back-up: Emergency Radio, Code: _____
4. N.C. State, Raleigh _____
P: Selective Signal - (later) _____
A: _____
5. S.C. State, Columbia (Not on Group Call) _____
P: _____ 7:30 a.m. - 5:00 p.m. Weekdays _____
A: _____ After hours, Weekends & Holidays _____

4.1.4 Operations Duty Engineer - Plant Page _____
P & T Pager _____
A: See Current Operations Work List for Home Phone Number.

4.1.5 Nuclear Production Duty Engineer _____
P & T Page _____
** USE ENCLOSURE 4.2 **

4.1.6 NRC Operations Center, Bethesda, Md. (RP/0/B/5000/13) _____

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
TO NUCLEAR PRODUCTION DUTY ENGINEER
EMERGENCY MESSAGE FORMAT

1. This is _____ at Catawba Nuclear Station.
(Name and Title)

2. This _____ is _____ is not a drill. An _____ Unusual Event
_____ X Alert
_____ Site Area Emergency
_____ General Emergency

was declared by the Emergency Coordinator at _____ on Unit # _____.
(Time)

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 not been any injuries to plant personnel.

6. Release of radioactivity: _____ is taking place
_____ is not taking place

7. NRC _____ Yes _____ No; State _____ Yes _____ No;
Counties _____ Yes _____ No; have been notified.

8. The Crisis Management Team X should be told to standby.
Corporate Communications and Company Management should be notified.

9. I can be reached at _____ for follow-up information.
(Telephone Number)

10. Additional Comments: _____

Name of Person Contacted _____ Date _____ Time _____

EXAMPLE

PART 1 INITIAL WARNING MESSAGE

RP/0/A/5000/03

Enclosure 4.3

Page 1 of 4

1. Date: _____ Time: _____ hours
2. This is: Catawba Nuclear Station concerning Unit # _____
My name is: _____ Telephone: _____
this message (Number _____):
____ (a) Reports a real emergency.
____ (b) Reports the change in the class of a real emergency.
____ (c) Reports the termination of a real emergency.
____ (d) Is an exercise message.
3. Message Authentication
Message Sender: I authenticate _____ as _____.
(a) IF A TERMINATION MESSAGE. GO TO PART 3.
4. The class of emergency is:
____ (a) Unusual Event _____ (c) Site Area Emergency
X (b) Alert _____ (d) General Emergency
5. This class of emergency was declared at: _____ on _____.
(time) (date)
6. The initiating event causing the emergency classification is: _____

7. The emergency condition:
____ (a) Does not involve the release of radioactive material from the plant.
____ (b) Involves the potential for a release, but no release is occurring.
____ (c) Involves the release of radioactive materials.
8. The following protective actions are recommended:
____ (a) No protective action is recommended at this time.
____ (e) Other recommendations: _____

9. I repeat, this message:
____ (a) Reports a real emergency.
____ (b) Reports a change in the classification of a real emergency.
____ (c) Is an exercise message.
10. Do you have any questions? (Copy on separate sheet.)
11. RELAY THIS INFORMATION TO THE PERSONS LISTED IN YOUR ALERT PROCEDURES WHO MUST BE NOTIFIED OF INCIDENTS AT A NUCLEAR FACILITY.

*For Message sender: record names of Message Receivers on Page 4.

END OF PART 1

PART 2 FOLLOW-UP MESSAGE(S)

RP/0/A/5000/03

Enclosure 4.3

Page 2 of 4

1. Plant status:
Reactor (a) _____ is not tripped/ _____ was tripped at (Time): _____

Plant is at: (a) _____ % power (c) _____ hot shutdown
(b) _____ cold shutdown (d) _____ cooling down

Prognosis is: (a) _____ stable (c) _____ degrading
(b) _____ Improving (d) _____ unknown
2. Emergency actions underway at the facility include: _____

3. Onsite support needed from offsite organizations: _____

4. Dose Projection Data
Windspeed: _____ mph Wind direction: From _____
Precipitation: _____
Release Type: (a) _____ Ground/(b) _____ Elevated
Stability Class: _____ (A, B, C, D, E, F, or G)
Weighted dose Conversion Factor: (a) _____ (R/hr)/(Ci/m³)(whole body)-
(b) _____ (R/hr)/(Ci/m³)(Child Thyroid)

Radiological Release: Noble Gas Equivalent Xe-133 & I-131
_____ curies/sec.
Iodine Equivalent
_____ curies/sec.
5. The type of actual or projected release is:
_____ (a) Airborne _____ (b) Waterborne
_____ (c) Surface Spill _____ (d) Other
_____ (e) No release is in progress or expected at this time
(Skip Items 6, 7 & 8)
6. Release
_____ (a) will begin at _____ hours.
_____ (b) began at _____ hours.
7. The estimated duration of the release is _____ hours.
8. The source and description of the release is: _____

PART 2 FOLLOW-UP MESSAGE(S) Continued

RP/0/A/5000/03

Enclosure 4.3

Page 3 of 4

9. Dose Projections:

Distance	Dose Commitment		Projected Integrated Dose in Rem Based on _____ hours of release
	Whole Body (rem/hour)	Child Thyroid (Rem/Hour of inhalation)	
Site Boundary			
2 miles			
5 miles			
10 miles			

10. Field measurement of dose rate (mr/hr) or contamination (X) (if available):

Time	Zone	Distance from Plant	Direction from Plant	Whole Body	Child Thyroid

11. I repeat, this message:

- _____ (a) Reports a real emergency.
 _____ (b) Reports a change in the class of a real emergency.
 _____ (c) Is an exercise message.

12. Do you have any questions? (Copy on Separate Sheet)

*****END OF FOLLOW-UP MESSAGE(S)*****

* For Message Sender: Record names of Message Receivers on Page 4.

PART 3 TERMINATION MESSAGE

- The event was terminated at _____ on _____
(time) (date)
- The event at the plant was terminated for the following reason(s): _____

*****END OF TERMINATION MESSAGE*****

*For Message Sender: record names of Message Receivers on Page 4.

RP/0/A/5000/03
Enclosure 4.3
Page 4 of 4

1.	(name)	(title)
	(date)	(time)
	(warning point)	
2.	(name)	(title)
	(date)	(time)
	(warning point)	
3.	(name)	(title)
	(date)	(time)
	(warning point)	
4.	(name)	(title)
	(date)	(time)
	(warning point)	
5.	(name)	(title)
	(date)	(time)
	(warning point)	
6.	(name)	(title)
	(date)	(time)
	(warning point)	
7.	(name)	(title)
	(date)	(time)
	(warning point)	

*****FOR UTILITY USE ONLY*****

Release of this message approved by: _____ at: _____
(Name) (Time) (Date)

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: RP/0/A/5000/04
Change(s) 4 to
5 Incorporated

(2) STATION: CATAWBA

(3) PROCEDURE TITLE: Site Area Emergency

(4) PREPARED BY: Mike Bolch DATE: May 21, 1985

(5) REVIEWED BY: P. H. LeRoy DATE: 5-21-85

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

(6) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____

By: _____ Date: _____

(7) APPROVED BY: J. L. Cox Date: 5/23/85

(8) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____

Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
SITE AREA EMERGENCY

1.0 SYMPTOMS

- 1.1 Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public.

2.0 IMMEDIATE ACTIONS

- 2.1 Make initial notifications to individuals and organizations.

- 2.1.1 Complete Part I of Warning Message Form (see Example Enclosure 4.3). Record receiver's name and time (initial contact).

NOTE: Emergency Coordinator shall initial forms when message is approved for transmission.

NOTE: Warning Message forms are kept in a notebook in the Control Room and TSC, ensure that all used forms are returned to the back of the notebook.

- 2.1.2 Notifications shall be as the order of Enclosure 4.1 indicates. See RP/0/B/5000/13 for NRC Notification.

NOTE: The State and County notification must be made within 15 minutes of declaration of the emergency.

- 2.1.3 Advise station personnel to activate TSC and OSC.

- 2.1.4 Complete Enclosure 4.2 and advise the Nuclear Production Duty Engineer to activate the CMC.

- 2.2 Protective Action Offsite

- 2.2.1 Recommend to Offsite Agencies that the Alerting Sirens be sounded and that the EBS be activated to inform the public of a potential for later protective actions.

- 2.3 Protective Action Onsite

- 2.3.1 Conduct a Site Assembly, see RP/0/A/5000/10.

3.0 SUBSEQUENT ACTIONS

3.1 Accident Assessment:

- 3.1.1 Dispatch field monitoring teams with associated communications equipment, see HP/0/B/1009/04.

3.2 Follow up Notifications.

- 3.2.1 Give follow-up message to offsite agencies listed on 4.1.3 of Enclosure 4.1, use the following schedule:

- Every half hour until the emergency is terminated.

or

- If there is any significant change to the situation or escalation to a higher emergency classification.

NOTE: The State and County notification must be made within 15 minutes of escalation of the emergency.

or

- As agreed upon with the individual agencies.

- 3.2.2 Use Parts I & II of Warning Message Form as applicable. Mark all spaces "N/A" when information is "Not Applicable" and mark "Later" when information is not currently available.

3.3 Follow-up Recommend Protective Action Offsite

NOTE

Protective Action Recommendations are obtained from: OAC Program "Nuclear-23" or RP/0/A/5000/11, if the OAC is not available, for Operations personnel.

- 3.3.1 The Emergency Coordinator shall make Protective Action Recommendations to the affected county warning points and to both SC and NC state warning points (Emergency Operations Center if established) or the designated state department as per the state's Radiological Emergency Response Plan. See Enclosure 4.4 for aid in protective action decision making.

NOTE

This authority shall not be delegated to other elements of the emergency organization.

- 3.3.2 If actual release of radioactive material will result in a projected dose to the population of:

<u>Whole Body</u>	<u>Thyroid</u>	<u>Recommendation</u>
<1 Rem	<5 Rem	No Protective Action is Required.
1 to <5 Rem	5 to <25 Rem	Recommend seeking shelter and wait for further instruction. Consider evacuation particularly for children & pregnant women. Control access to affected areas.
> 5 Rem	> 25 Rem	Recommend mandatory evacuation of population in the affected areas. Control access to affected areas.

NOTE

Monitor environmental radiation levels to verify and adjust recommendations as necessary.

- 3.4 Follow-up Protective Actions On-site.

- 3.4.1 Consider evacuation of non-essential station personnel, see RP/0/A/5000/10.

- 3.5 Augment shift resources to assess and respond to the emergency situation as needed.

- 3.6 Assess the emergency condition, then remain in a Site Area Emergency, escalate to a more severe class, reduce the emergency class, or terminate the emergency.

- 3.7 The Recovery Manager at the Crisis Management Center shall close out or recommend reduction of the emergency class, by briefing of offsite authorities at the Crisis Management Center or by phone if necessary, followed by written summary within 8 hours.










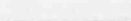



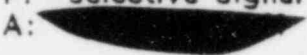



4.0 ENCLOSURES



- 4.1 Telephone Notification List
- 4.2 Emergency Message Format
- 4.3 Example Warning Message: Nuclear Facility to State/Local Government
- 4.4 Protective Action Recommendation Flow Chart
- 4.5 10 Mile Emergency Planning Zone (EPZ) Map and Wind Direction Determination Worksheet.




TELEPHONE
NOTIFICATION LIST


		Initial
4.1.1	Station Manager - J. W. Hampton	
	Office [REDACTED]	
	Home - [REDACTED]	
	1st Alternate - C. W. Graves, Jr.	
	Office [REDACTED]	
	Home [REDACTED]	
	2nd Alternate - J. W. Cox	
	Office [REDACTED]	
	Home [REDACTED]	
	3rd Alternate - G. T. Smith	
	Office [REDACTED]	
	Home [REDACTED]	
	4th Alternate - B. F. Caldwell	
	Office [REDACTED]	
	Home [REDACTED]	
	5th Alternate - W. R. McCollum	
	Office (later)	
	Home [REDACTED]	
4.1.2	Compliance Engineer - C. L. Hartzell	
	Office [REDACTED]	
	Home [REDACTED]	
	1st Alternate - M. E. Bolch	
	Office [REDACTED]	
	Home [REDACTED]	
	2nd Alternate - P. G. LeRoy	
	Office [REDACTED]	
	Home [REDACTED]	

4.1.3 State & County Warning Points **Use Warning Message Form**
P: Selective Signal Group Call - (later)

1. Mecklenburg County
P: Selective Signal
A: 
Back-up: Emergency Radio, Code: 
2. York County
P: Selective Signal
A: 
Back-up: Emergency Radio, Code: 
3. Gaston County
P: Selective Signal
A: 
Back-up: Emergency Radio, Code: 
4. N.C. State, Raleigh
P: Selective Signal - (later)
A: 
5. S.C. State, Columbia (Not on Group Call)
P: 
A: 
7:30 a.m. - 5:00 p.m. Weekdays
After hours, Weekends & Holidays 

4.1.4 Operations Duty Engineer - Plant Page
P & T Pager 
A: See Current Operations Work List for Home Phone Number.

4.1.5 Nuclear Production Duty Engineer
P & T Page 
** USE ENCLOSURE 4.2 **

4.1.6 NRC Operations Center, Bethesda, Md. (RP/0/B/5000/13) 

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
TO NUCLEAR PRODUCTION DUTY ENGINEER
EMERGENCY MESSAGE FORMAT

1. This is _____ at Catawba 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 # _____.
(Time)

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 not been any injuries to plant personnel.

6. Release of radioactivity: _____ is taking place
_____ is not taking place

7. NRC _____ Yes _____ No; State _____ Yes _____ No;
Counties _____ Yes _____ No; have been notified.

8. The Crisis Management Team ☒ should _____ should not be activated.
Corporate Communications and Company Management should be notified.

9. I can be reached at _____ for follow-up information.
(Telephone Number)

10. Additional Comments: _____

Name of Person Contacted _____ Date _____ Time _____

PART 1 INITIAL WARNING MESSAGE

Page 1 of 4

- *For Message sender: record names of Message Receivers on Page 4.

END OF PART 1

PART 2 FOLLOW-UP MESSAGE(S)

RP/0/A/5000/04
Enclosure 4.3
Page 2 of 4

1. Plant status:
 Reactor (a) _____ is not tripped/ _____ was tripped at (Time): _____

 Plant is at: (a) _____ % power (c) _____ hot shutdown
 (b) _____ cold shutdown (d) _____ cooling down

 Prognosis is: (a) _____ stable (c) _____ degrading
 (b) _____ Improving (d) _____ unknown
2. Emergency actions underway at the facility include: _____
3. Onsite support needed from offsite organizations: _____
4. Dose Projection Data
 Windspeed: _____ mph Wind direction: From _____
 Precipitation: _____
 Release Type: (a) _____ Ground/(b) _____ Elevated
 Stability Class: _____ (A, B, C, D, E, F, or G)
 Weighted dose Conversion Factor: (a) _____ (R/hr)/(Ci/m³)(whole body)
 (b) _____ (R/hr)/(Ci/m³)(Child Thyroid)

 Radiological Release: Noble Gas Equivalent _____ curies/sec.
 Iodine Equivalent _____ curies/sec.
5. The type of actual or projected release is:
 _____ (a) Airborne _____ (b) Waterborne
 _____ (c) Surface Spill _____ (d) Other
 _____ (e) No release is in progress or expected at this time
 (Skip Items 6, 7 & 8)
6. Release
 _____ will begin at _____ hours.
 _____ began at _____ hours.
7. The estimated duration of the release is _____ hours.
8. The source and description of the release is: _____

Dose Commitment

Based on _____ hours
of release

Site Boundary

2 miles

5 miles

10 miles

10. Field measurement of dose rate (mr/hr) or contamination (X) (if available):

Time	Zone	Distance from Plant	Direction from Plant	Whole Body	Child Thyroid

11. I repeat, this message:

- _____ (a) Reports a real emergency.
- _____ (b) Reports a change in the class of a real emergency.
- _____ (c) Is an exercise message.

12. Do you have any questions? (Copy on Separate Sheet)

*****END OF FOLLOW-UP MESSAGE(S)*****

* For Message Sender: Record names of Message Receivers on Page 4.

PART 3 TERMINATION MESSAGE

1. The event was terminated at _____ on _____.
(time) (date)
2. The event at the plant was terminated for the following reason(s): _____

*****END OF TERMINATION MESSAGE*****

*For Message Sender: record names of Message Receivers on Page 4.

RP/0/A/5000/04
Enclosure 4.3
Page 4 of 4

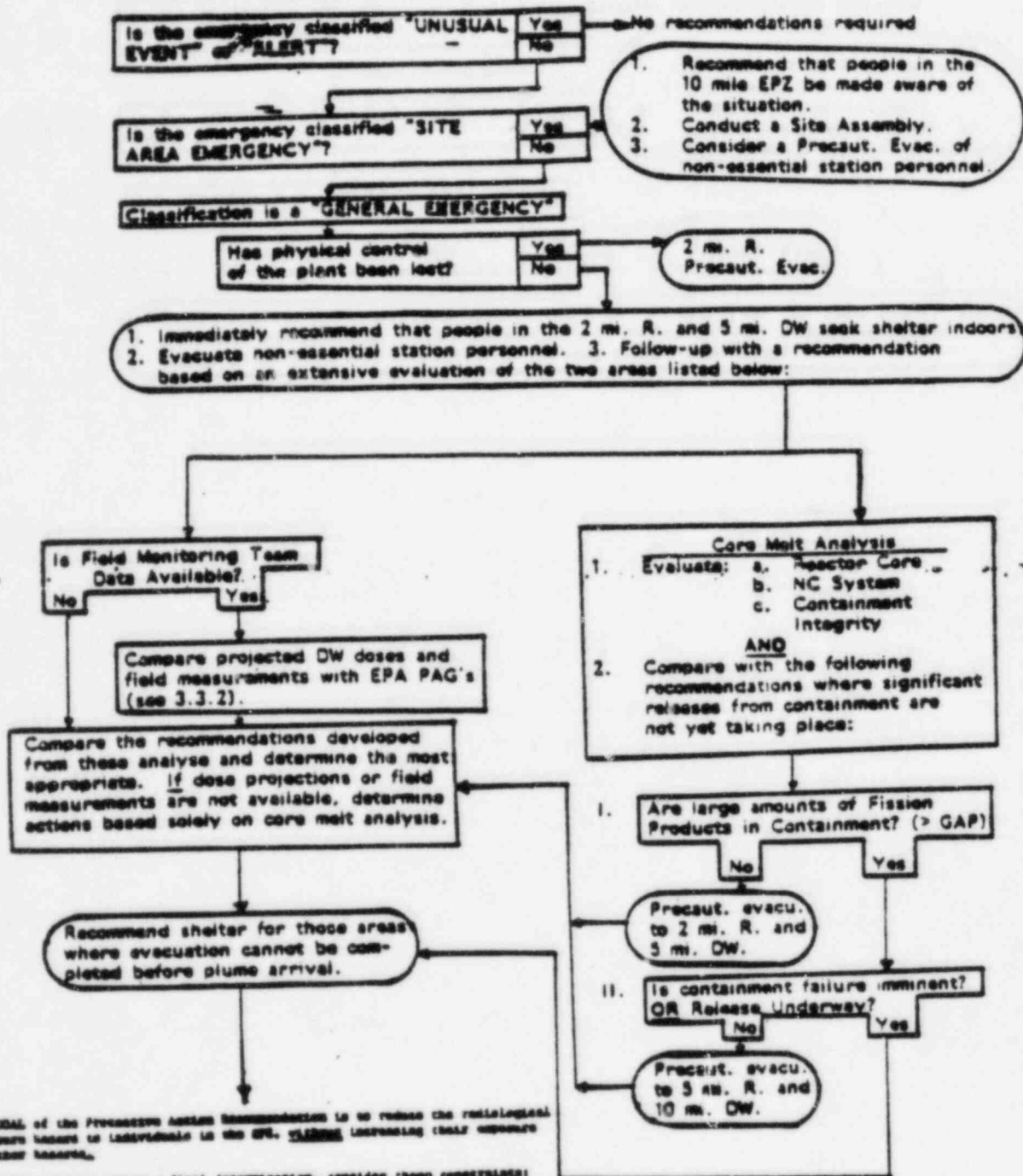
1.	(name)	(title)
	(date)	(time) (warning point)
2.	(name)	(title)
	(date)	(time) (warning point)
3.	(name)	(title)
	(date)	(time) (warning point)
4.	(name)	(title)
	(date)	(time) (warning point)
5.	(name)	(title)
	(date)	(time) (warning point)
6.	(name)	(title)
	(date)	(time) (warning point)
7.	(name)	(title)
	(date)	(time) (warning point)

*****FOR UTILITY USE ONLY*****

Release of this message approved by: _____ at: _____
(Name) (Time) (Date)

ENCLOSURE 4.4
PROTECTIVE ACTION RECOMMENDATION
FLOW CHART

RP/0/A/5000/04
SITE AREA EMERGENCY
Page 1 of 1



The goal of the Protective Action Recommendation is to reduce the radiological exposure to individuals in the EPZ, without increasing their exposure to other hazards.

Therefore, before making a final recommendation, consider these constraints:

1. Do not overwarn the public if evacuation cannot be completed before estimated plume arrival. (Compare evacuation time estimate versus estimated plume arrival time.)
2. Consideration on evacuation of areas nearest the plant.
3. Do bridge and road conditions present an impediment to evacuation?
4. Will weather conditions inhibit evacuation?
5. Can State/County agencies support the recommendation?
6. Is this a "Puff" or continuous release?
7. For any evacuation, recommend sheltering for the population in the plume exposure EPZ not evacuated.
8. Promptly release the population affected by any ground contamination following plume passage.

Abbreviations
DW - Downwind
R - Radius

CATAWBA NUCLEAR STATION

10-MILE EMERGENCY PLANNING ZONE

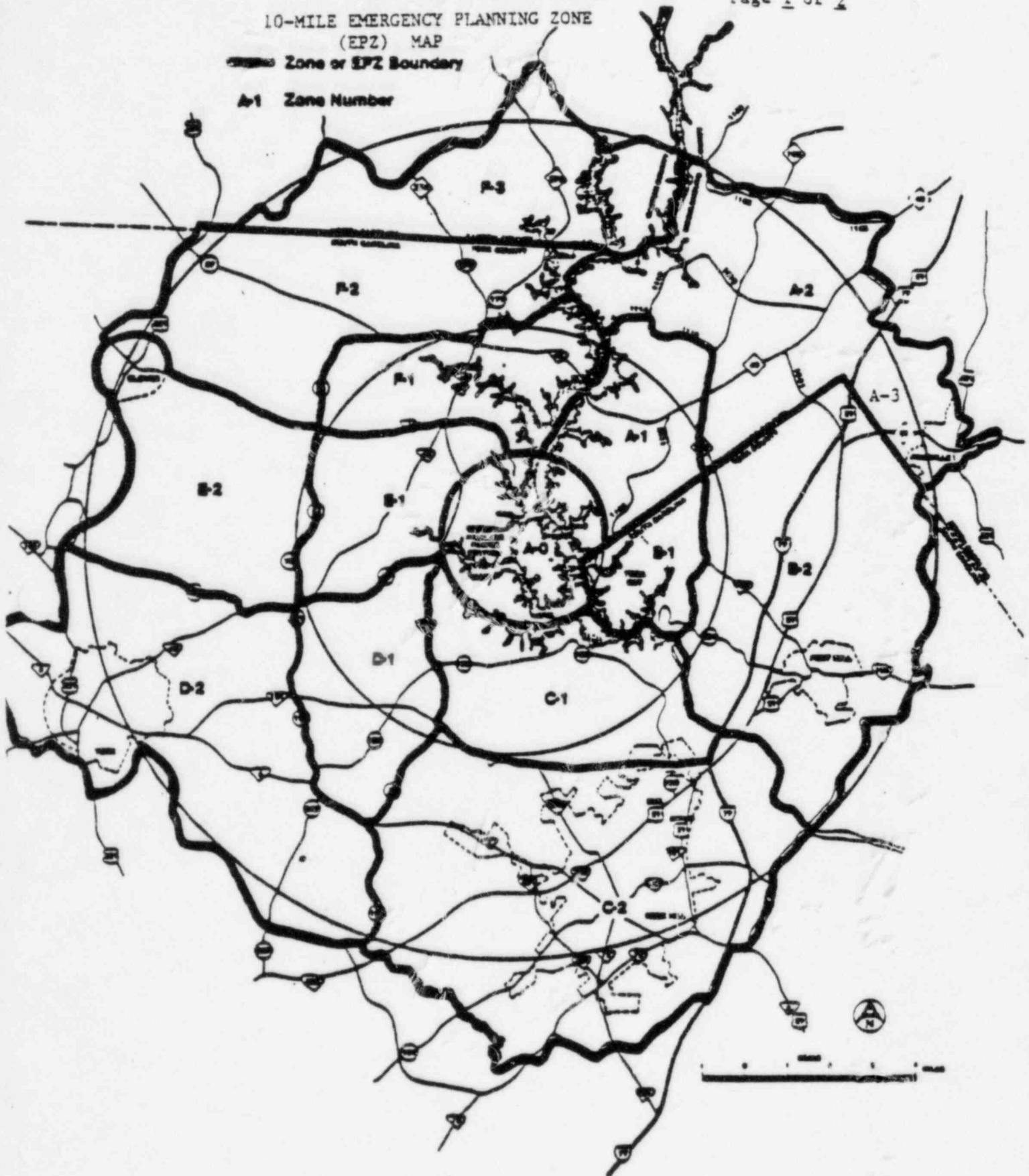
(EPZ) MAP

Zone or EPZ Boundary

A-1 Zone Number

Enclosure 4.5

Page 1 of 2



DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
RP/O/A/5000/04
ENCLOSURE 4.5

WIND DIRECTION DETERMINATION WORK SHEET

Based on wind direction (WD), determine the affected zones from the tables below. Circle the wind direction and affected zones.

NOTE: Upper tower wind direction is preferred. If not available, use lower WD, then use WD from National Weather Service.

- A. IF WIND SPEED IS < 5 MPH, THE AFFECTED ZONES ARE A-0, A-1, B-1, C-1, D-1, E-1 and F-1.
- B. IF WIND SPEED IS > 5 MPH, SELECT THE AFFECTED ZONES FROM THE TABLES BELOW AS APPLICABLE.

Table 2.1	
0-5 Mile Radius Wind Direction	Affected Zones
0.1° - 360°	A-0
<u>PLUS</u>	
0.1° - 22°	C-1, D-1
22° - 73°	C-1, D-1, E-1
73° - 108°	C-1, D-1, E-1, F-1
108° - 120°	D-1, E-1, F-1
120° - 159°	E-1, F-1
159° - 207°	E-1, F-1, A-1
207° - 247°	F-1, A-1, B-1
247° - 265°	A-1, B-1
265° - 298°	A-1, B-1, C-1
298° - 338°	B-1, C-1
338° - 360°	B-1, C-1, D-1

Table 2.2	
5-10 Mile Radius Wind Direction	Affected Zones
0.1 - 27°	C-2, D-2
27° - 69°	C-2, D-2, E-2
69° - 95°	D-2, E-2, F-2
95° - 132°	D-2, E-2, F-2, F-3
132° - 144°	E-2, F-2, F-3
144° - 160°	E-2, F-2, F-3, A-2
160° - 201°	F-2, F-3, A-2
201° - 229°	F-2, F-3, A-2, B-2
229° - 249°	F-3, A-2, B-2
249° - 259°	A-2, A-3, B-2
259° - 290°	A-2, B-2, C-2, A-3
290° - 304°	A-3, B-2, C-2
304° - 333°	B-2, C-2
333° - 360°	B-2, C-2, D-2

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: RP/0/A/5000/05
Change(s) 4 to
5 Incorporated

- (2) STATION: CATAWBA
- (3) PROCEDURE TITLE: General Emergency
- (4) PREPARED BY: Mike Bolch DATE: May 21, 1985
- (5) REVIEWED BY: P. J. LeRoy DATE: 5-21-85
Cross-Disciplinary Review By: J. E. Henry N/R: _____
- (6) TEMPORARY APPROVAL (IF NECESSARY):
By: _____ (SRO) Date: _____
By: _____ Date: _____
- (7) APPROVED BY: [Signature] Date: 5/23/85
- (8) MISCELLANEOUS:
Reviewed/Approved By: _____ Date: _____
Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
GENERAL EMERGENCY

1.0 SYMPTOMS

- 1.1 Events are in process or have occurred which involve an actual or imminent substantial core degradation or melting with potential for loss of containment integrity.

2.0 IMMEDIATE ACTIONS

- 2.1 Make initial notifications to individuals and organizations.

- 2.1.1 Complete Part I of Warning Message Form (see example Enclosure 4.3). Record receiver's name and time (initial contact).

NOTE: Emergency Coordinator shall initial forms when message is approved for transmission.

NOTE: Warning Message forms are kept in a notebook in the Control Room and TSC, ensure that all used forms are returned to the back of the notebook.

- 2.1.2 Notifications shall be as the order of Enclosure 4.1 indicator. See RP/0/B/5000/13 for NRC Notification.

NOTE: The State and County notification must be made within 15 minutes of declaration of the emergency.

- 2.1.3 Advise station personnel to activate TSC and OSC.

- 2.1.4 Complete Enclosure 4.2 and advise the Nuclear Production Duty Engineer to activate the CMC.

- 2.2 Protective Actions Offsite

- 2.2.1 Recommend to Offsite Agencies that all residents of the 2 mile radius zone (A-O) and any zone 5 miles downwind of the plant seek immediate shelter and await further instructions.

- 2.3 Protective Action Onsite

- 2.3.1 Conduct a Site Assembly, see RP/0/A/5000/10.

- 2.3.2 Evacuate non-essential personnel to the Evacuation Relocation Centers, see RP/0/A/5000/10.

3.0 SUBSEQUENT ACTIONS

3.1 Accident Assessment:

- 3.1.1 Dispatch field monitoring teams with associated communications equipment, see HP/0/B/1009/04.

3.2 Follow up Notifications.

- 3.2.1 Give follow-up messages to offsite agencies listed on 4.1.3 of Enclosure 4.1, use the following schedule:
 - Every half hour until the emergency is closed out.
or
 - If there is any significant change to the situation.
or
 - As agreed upon with the individual agencies.
- 3.2.2 Use Parts I & II of Warning Message Form as applicable. Mark all spaces "N/A" when information is "Not Applicable" and mark "Later" when information is not currently available.

3.3 Follow-up Recommend Protective Action Offsite

NOTE

Protective Action Recommendation are obtained from: OAC Program "Nuclear-23" or RP/0/A/5000/11, if the OAC is not operational, for Operations personnel.

- 3.3.1 The Emergency Coordinator shall make Protective Action Recommendations to the affected county warning points and to both SC and NC state warning points (Emergency Operations Center if established) or the designated state department as per the state's Radiological Emergency Response Plan. See Enclosure 4.4 for aid in protective action decision making.

NOTE

This authority shall not be delegated to other elements of the emergency organization.

- 3.3.2 If actual release of radioactive material will result in a projected dose to the population of:

<u>Whole Body</u>	<u>Thyroid</u>	<u>Recommendation</u>
<1 Rem	<5 Rem	No Protective Action is Required.
1 to <5 Rem	5 to <25 Rem	Recommend seeking shelter and wait for further instruction. Consider evacuation particularly for children & pregnant women. Control access to affected areas.
>5 Rem	>25 Rem	Recommend mandatory evacuation of population in the affected areas. Control access to affected areas.

NOTE

Monitor environmental radiation levels to verify and adjust recommendations as necessary.

- 3.4 Augment on shift resources to assess and respond to the emergency situation as needed.
- 3.5 Assess the emergency condition, then remain in an General Emergency, reduce the emergency class or terminate out the emergency.
- 3.6 The Recovery Manager at the Crisis Management Center shall close out the emergency or recommend reduction of the emergency class by briefing the offsite authorities at the Crisis Management Center or by phone if necessary, followed by written summary within 8 hours.

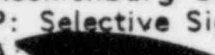

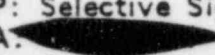

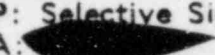

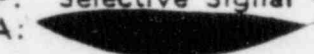


4.0 ENCLOSURES


- 4.1 Telephone Notification List
- 4.2 Emergency Message Format
- 4.3 Example Warning Message: Nuclear Facility to State/Local Government
- 4.4 Protective Action Recommendation Flow Chart
- 4.5 10 Mile Emergency Planning Zone (EPZ) Map and Wind Direction Determination Worksheet


TELEPHONE
NOTIFICATION LIST

		Initial
4.1.1	Station Manager - J. W. Hampton	
	Office [REDACTED]	
	Home [REDACTED]	
	1st Alternate - C. W. Graves, Jr.	
	Office [REDACTED]	
	Home [REDACTED]	
	2nd Alternate - J. W. Cox	
	Office [REDACTED]	
	Home [REDACTED]	
	3rd Alternate - G. T. Smith	
	Office [REDACTED]	
	Home [REDACTED]	
	4th Alternate - B. F. Caldwell	
	Office [REDACTED]	
	Home [REDACTED]	
	5th Alternate - W. R. McCollum	
	Office (later)	
	Home [REDACTED]	
4.1.2	Compliance Engineer - C. L. Hartzell	
	Office [REDACTED]	
	Home [REDACTED]	
	1st Alternate - M. E. Bolch	
	Office [REDACTED]	
	Home [REDACTED]	
	2nd Alternate - P. G. LeRoy	
	Office [REDACTED]	
	Home [REDACTED]	

4.1.3 State & County Warning Points **Use Warning Message Form**
P: Selective Signal Group Call - (later)

1. Mecklenburg County
P: Selective Signal -
A: 
Back-up: Emergency Radio, Code:  _____
2. York County
P: Selective Signal -
A: 
Back-up: Emergency Radio, Code:  _____
3. Gaston County
P: Selective Signal -
A: 
Back-up: Emergency Radio, Code:  _____
4. N.C. State, Raleigh
P: Selective Signal - (later)
A:  _____
5. S.C. State, Columbia (Not on Group Call)
P:  7:30 a.m. - 5:00 p.m. Weekdays
A:  After hours, Weekends & Holidays _____

4.1.4 Operations Duty Engineer - Plant Page
P & T Pager  _____
A: See Current Operations Work List for Home Phone Number.

4.1.5 Nuclear Production Duty Engineer
P & T Page  _____
** USE ENCLOSURE 4.2 **

4.1.6 NRC Operations Center, Bethesda, Md. (RP/0/B/5000/13) _____

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
TO NUCLEAR PRODUCTION DUTY ENGINEER
EMERGENCY MESSAGE FORMAT

1. This is _____ at Catawba Nuclear Station.
(Name and Title)

2. This _____ is _____ is not a drill. An _____ Unusual Event
_____ Alert
_____ Site Area Emergency
_____ X General Emergency

was declared by the Emergency Coordinator at _____ on Unit # _____.
(Time)

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 not been any injuries to plant personnel.

6. Release of radioactivity: _____ is taking place
_____ is not taking place

7. NRC _____ Yes _____ No; State _____ Yes _____ No;
Counties _____ Yes _____ No; have been notified.

8. The Crisis Management Team X should _____ should not be activated.
Corporate Communications and Company Management should be notified.

9. I can be reached at _____ for follow-up information.
(Telephone Number)

10. Additional Comments: _____

Name of Person Contacted _____ Date _____ Time _____

PART 1 INITIAL WARNING MESSAGE

1. Date: _____ Time: _____ hours

2. This is: Catawba Nuclear Station concerning Unit # _____

My name is: _____ Telephone: _____

this message (Number _____):

_____ (a) Reports a real emergency.

_____ (b) Reports the change in the class of a real emergency.

_____ (c) Reports the termination of a real emergency.

_____ (d) Is an exercise message.

3. Message Authentication

Message Sender: I authenticate _____ as _____.

(a) IF A TERMINATION MESSAGE. GO TO PART 3.

4. The class of emergency is:

_____ (a) Unusual Event _____ (c) Site Area Emergency

_____ (b) Alert X (d) General Emergency

5. This class of emergency was declared at: _____ on _____.

(time) (date)

6. The initiating event causing the emergency classification is: _____

7. The emergency condition:

_____ (a) Does not involve the release of radioactive material from the plant.

_____ (b) Involves the potential for a release, but no release is occurring.

_____ (c) Involves the release of radioactive materials.

8. The following protective actions are recommended:

_____ (a) No protective action is recommended at this time.

_____ (b) People living in zones A-0 + 5 mi DW remain indoors with the doors and windows closed, turn off air conditioners and other ventilation, monitor EBS stations. (see note)

_____ (c) People living in zones _____ evacuate their homes and businesses and go to the designated shelter.

_____ (d) Pregnant women and children in zones _____ remain indoors with the doors and windows closed, turn off air conditioners and other ventilation, and monitor EBS stations.

_____ (e) Other recommendations: _____

NOTE. This recommendation applies to the immediate notification only.

9. I repeat, this message:

_____ (a) Reports a real emergency.

_____ (b) Reports a change in the classification of a real emergency.

_____ (c) Is an exercise message.

10. Do you have any questions? (Copy on separate sheet.)

11. RELAY THIS INFORMATION TO THE PERSONS LISTED IN YOUR ALERT PROCEDURES WHO MUST BE NOTIFIED OF INCIDENTS AT A NUCLEAR FACILITY.

*For Message sender: record names of Message Receivers on Page 4.

END OF PART 1

PART 2 FOLLOW-UP MESSAGE(S)

RP/0/A/5000/05
Enclosure 4.3
Page 2 of 4

1. Plant status:
Reactor (a) _____ is not tripped/ _____ was tripped at (Time): _____

Plant is at: (a) _____ % power (c) _____ hot shutdown
(b) _____ cold shutdown (d) _____ cooling down

Prognosis is: (a) _____ stable (c) _____ degrading
(b) _____ Improving (d) _____ unknown
2. Emergency actions underway at the facility include: _____

3. Onsite support needed from offsite organizations: _____

4. Dose Projection Data
Windspeed: _____ mph Wind direction: From _____
Precipitation: _____
Release Type: (a) _____ Ground/(b) _____ Elevated
Stability Class: _____ (A, B, C, D, E, F, or G)
Weighted dose Conversion Factor: (a) _____ (R/hr)/(Ci/m³)(whole body)
(b) _____ (R/hr)/(Ci/m³)(Child Thyroid)

Radiological Release: Noble Gas Equivalent Xe-133 & I-131
_____ curies/sec.
Iodine Equivalent
_____ curies/sec.
5. The type of actual or projected release is:
_____ (a) Airborne _____ (b) Waterborne
_____ (c) Surface Spill _____ (d) Other
_____ (e) No release is in progress or expected at this time
(Skip Items 6, 7 & 8)
6. Release
_____ will begin at _____ hours.
_____ began at _____ hours.
7. The estimated duration of the release is _____ hours.
8. The source and description of the release is: _____

Dose Commitment

Projected Integrated
Dose in Rem
Based on _____ hours
of release

Distance (rem/hour)	Whole Body	Child Thyroid
2 miles		
5 miles		
10 miles		

- | Time | Zone | Distance from Plant | Direction from Plant | Whole Body | Child Thyroid |
|------|------|---------------------|----------------------|------------|---------------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

- _____ (a) Reports a real emergency.
- _____ (b) Reports a change in the class of a real emergency.
- _____ (c) Is an exercise message.

- *****END OF FOLLOW-UP MESSAGE(S)*****

PART 3 TERMINATION MESSAGE

1. The event was terminated at _____ on _____.
(time) (date)
2. The event at the plant was terminated for the following reason(s): _____

*****END OF TERMINATION MESSAGE*****

*For Message Sender: record names of Message Receivers on Page 4.

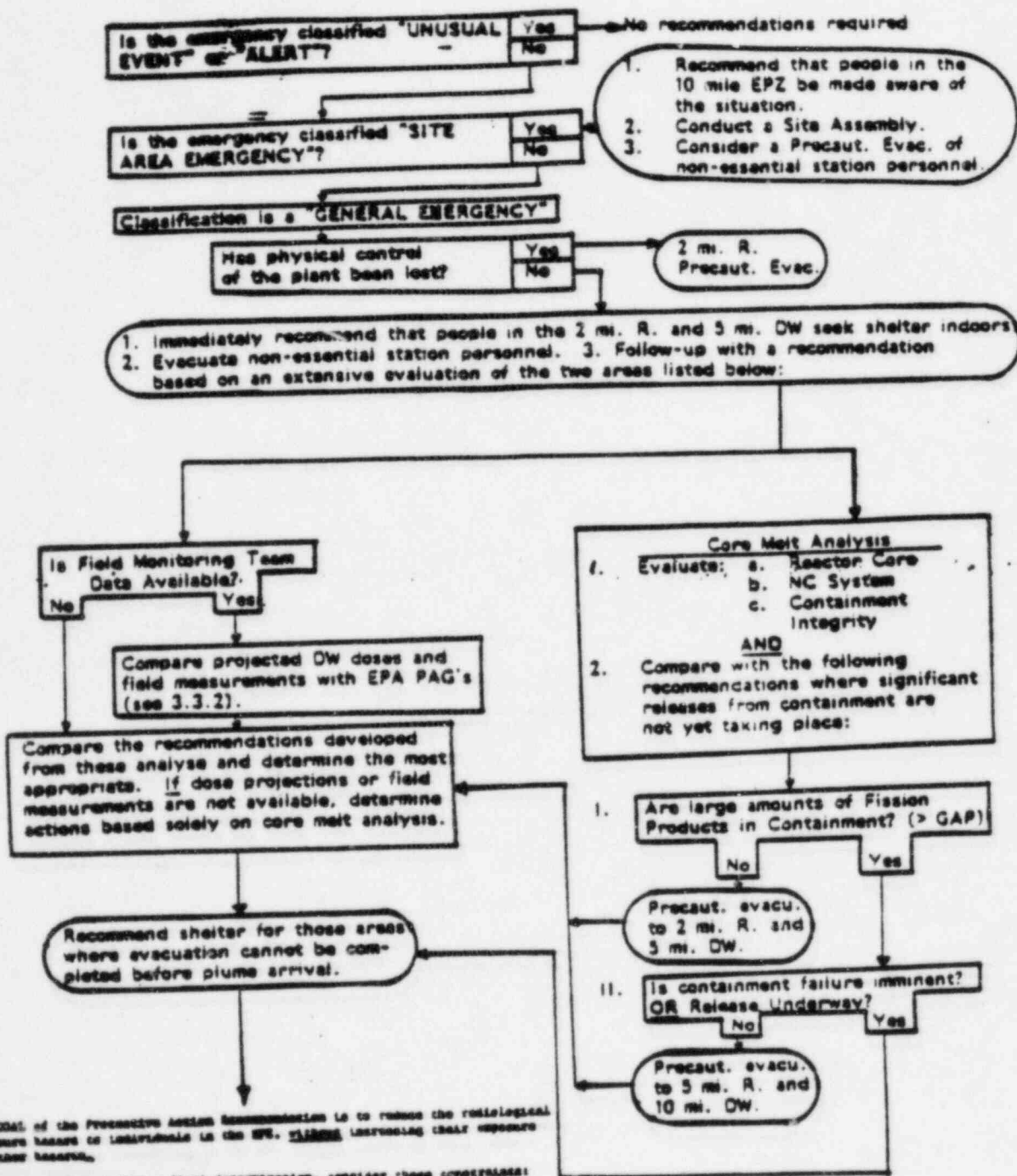
RP/0/A/5000/05
Enclosure 4.3
Page 4 of 4

*****FOR UTILITY USE ONLY*****

Release of this message approved by: _____ at: _____
(Name) (Time) (Date)

ENCLOSURE 4.4
PROTECTIVE ACTION RECOMMENDATION
FLOW CHART

RP/O/A/5000/05
GENERAL EMERGENCY
Page 1 of 1



The goal of the Protective Action Recommendation is to reduce the radiological exposure hazard to individuals in the EPZ. Timing is crucial in making these decisions to save lives.

Therefore, before making a final determination, consider these considerations:

1. Do not evacuate the public if evacuation cannot be completed before estimated plume arrival. (Compare evacuation time estimate versus estimated plume arrival time.)
2. Consideration on evacuation of areas nearest the plant.
3. Do bridge and road conditions present an impediment to evacuation?
4. Will weather conditions inhibit evacuation?
5. Can State/County agencies support the recommendation?
6. Is this a "Puff" or continuous release?
7. For any evacuation, recommend sheltering for the population in the plume exposure EPZ not evacuated.
8. Promptly release the population affected by any ground contamination following plume passage.

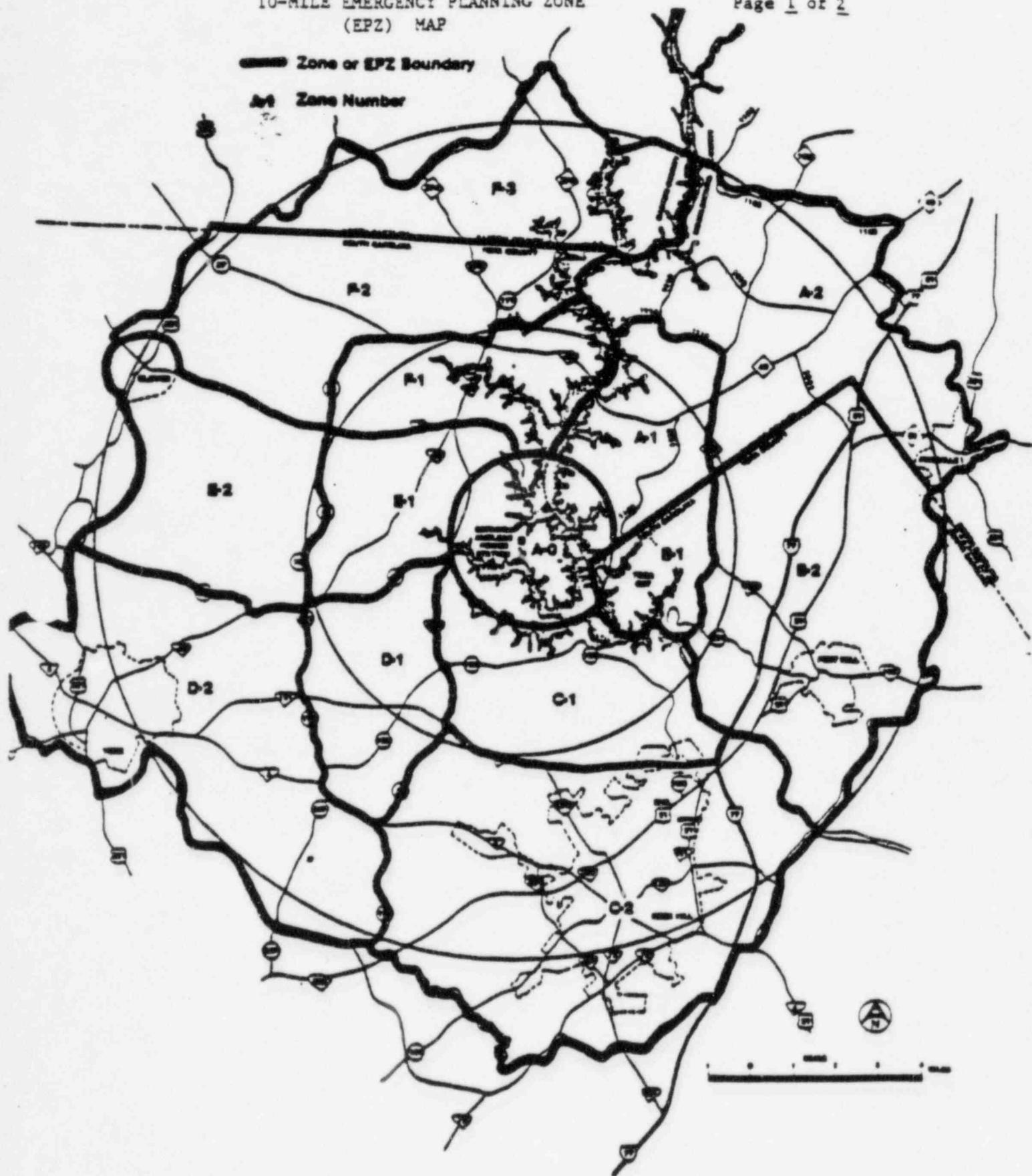
Abbreviations
DW - Downwind
R - Radius

CATAWBA NUCLEAR STATION
10-MILE EMERGENCY PLANNING ZONE
(EPZ) MAP

RF/O/A/3000/03
Enclosure 4.5
Page 1 of 2

Zone or EPZ Boundary

Zone Number



DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
RP/O/A/5000/05
ENCLOSURE 4.5

WIND DIRECTION DETERMINATION WORK SHEET

Based on wind direction (WD), determine the affected zones from the tables below. Circle the wind direction and affected zones.

NOTE: Upper tower wind direction is preferred. If not available, use lower WD, then use WD from National Weather Service.

- A. IF WIND SPEED IS < 5 MPH, THE AFFECTED ZONES ARE A-0, A-1, B-1, C-1, D-1, E-1 and F-1.
- B. IF WIND SPEED IS > 5 MPH, SELECT THE AFFECTED ZONES FROM THE TABLES BELOW AS APPLICABLE.

Table 2.1	
0-5 Mile Radius Wind Direction	Affected Zones
0.1° - 360°	A-0
<u>PLUS</u>	
0.1° - 22°	C-1, D-1
22° - 73°	C-1, D-1, E-1
73° - 108°	C-1, D-1, E-1, F-1
108° - 120°	D-1, E-1, F-1
120° - 159°	E-1, F-1
159° - 207°	E-1, F-1, A-1
207° - 247°	F-1, A-1, B-1
247° - 265°	A-1, B-1
265° - 298°	A-1, B-1, C-1
298° - 338°	B-1, C-1
338° - 360°	B-1, C-1, D-1

Table 2.2	
5-10 Mile Radius Wind Direction	Affected Zones
0.1 - 27°	C-2, D-2
27° - 69°	C-2, D-2, E-2
69° - 95°	D-2, E-2, F-2
95° - 132°	D-2, E-2, F-2, F-3
132° - 144°	E-2, F-2, F-3
144° - 160°	E-2, F-2, F-3, A-2
160° - 201°	F-2, F-3, A-2
201° - 229°	F-2, F-3, A-2, B-2
229° - 249°	F-3, A-2, B-2
249° - 259°	A-2, A-3, B-2
259° - 290°	A-2, B-2, C-2, A-3
290° - 304°	A-3, B-2, C-2
304° - 333°	B-2, C-2
333° - 360°	B-2, C-2, D-2

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

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: ¹⁰⁰⁹HP/0/R/10009/04
Change(s) 0 to
0 Incorporated
_{5/13/85}

- (2) STATION: Catawba
- (3) PROCEDURE TITLE: Environmental Monitoring For Emergency Conditions Within
The Ten Mile Radius Of Catawba Nuclear Station
- (4) PREPARED BY: W. J. F. [Signature] DATE: 5-9-85
- (5) REVIEWED BY: [Signature] DATE: 5-9-85
Cross-Disciplinary Review By: _____ N/R [Signature]
- (6) TEMPORARY APPROVAL (IF NECESSARY):
By: _____ (SRO) Date: _____
By: _____ Date: _____
- (7) APPROVED BY: [Signature] Date: 5/10/85
- (8) MISCELLANEOUS:
Reviewed/Approved By: _____ Date: _____
Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
ENVIRONMENTAL MONITORING FOR
EMERGENCY CONDITIONS WITHIN THE
TEN MILE RADIUS OF CATAWBA NUCLEAR STATION

1.0 PURPOSE

To provide a method for identifying gaseous plumes or liquid effluent, and obtaining field data indicative of the radiation exposure to the general public following a suspected uncontrolled release of radioactivity. This procedure shall also be implemented by the Crisis Management Center once it is activated.

2.0 REFERENCES

- 2.1 HP/O/B/1000/06 Emergency Equipment Functional Check and Inventory
- 2.2 HP/O/B/1002/04 Collection of Operational Environmental Weekly Samples
- 2.3 HP/O/B/1002/05 Collection of Operational Environmental Monthly Samples
- 2.4 HP/O/B/1002/06 Collection of Operational Environmental Quarterly Samples
- 2.5 HP/O/B/1002/08 Collection of Operational Environmental Semimonthly Samples
- 2.6 HP/O/B/1002/10 Collection of Operational Environmental Semiannual Samples
- 2.7 HP/O/B/1003/05 Operating and Calibration Procedure: Eberline Model PIC-6A Portable Ion Chamber
- 2.8 HP/O/B/1003/12 Operating and Calibration Procedure: Eberline Model E-520 Portable Beta-Gamma Geiger Counter
- 2.9 HP/O/B/1003/17 Operation and Calibration Procedure: Canberra Series - 10 Portable MCA
- 2.10 HP/O/B/1003/31 Operation and Calibration: Eberline Model E140N Portable Count Rate Meter
- 2.11 HP/O/B/1009/16 Distribution of Potassium Iodide Tablets in the Event of a Radioiodine Release
- 2.12 HP/O/B/1009/19 Emergency Radio System Operations, Maintenance and Communications

3.0 LIMITS AND PRECAUTIONS

- 3.1 The Field Monitoring Teams (FMT) should park vehicles completely off the road when sampling and use vehicle emergency flashers while stopped.
- 3.2 Four (4) FMTs consisting of two (2) technicians per team and one (1) helicopter team (1 person) if necessary shall be formed as follows:

<u>Team Call Signs</u>	<u>Transportation</u>
Alpha	Land Vehicle
Bravo	Land Vehicle
Charlie	Land Vehicle
Delta	Land Vehicle
Echo	Helicopter

- 3.3 Each FMT shall use particulate masks and protective clothing whenever activity justifies it or when directed by the Field Monitoring Coordinator (FMC).
- 3.4 If the team members are expected to be exposed to I-131 in excess of 70 MPC (6.1×10^{-7} $\mu\text{Ci/ml}$), and directed by the FMC, each team member should ingest a tablet of potassium iodide per Reference 2.11.
- 3.5 Environmental sampling during emergency conditions shall not replace, but rather supplement normal environmental monitoring.
- 3.6 Minimum labeling requirements for all samples are as follows:
- 3.6.1 Date and time.
 - 3.6.2 Location.
 - 3.6.3 Volume of the sample (if applicable).
 - 3.6.4 Name of person sampling.
- 3.7 Each FMT shall maintain open radio communications with the FMC per Reference 2.12. If radio becomes inoperable, call in sample results on a phone at 831-8182 or 803/831-2282 (Lake Wylie/Charlotte), 861-0331 (Gaston County), 324-3128 (Rock Hill and Fort Mill).
- 3.8 If any equipment becomes inoperable, notify the FMC and wait for further instructions.
- 3.9 Annual training in the use of this procedure and the associated equipment and instrumentation shall be conducted and documented on TSR-10.
- 3.10 Portable MCA's shall be picked up at the Health Physics instrument issue point when directed by the FMC. Ensure that the dewars are adequately filled per Reference 2.9.

- 3.11 Ensure that portable survey instrumentation is on and monitored during transport to all sampling locations.
- 3.12 When returning kits to the Emergency Kit Storage Room, perform an equipment inventory check using the Environmental Survey Kit Checklist (Reference 2.1). Note deviations and forward to the Respiratory/Instrument Calibration Supervisor.

4.0 PROCEDURE

4.1 Activation

4.1.1 Upon notification and assembly (FMC), the FMT members shall:

- 4.1.1.1 Report to the Health Physics area on the 609' elevation (on back shifts report to Administration Building) and wait for further instructions from the FMC.
- 4.1.1.2 Report to the Emergency Kit Storage Room in the Temporary Administration Building to get Environmental Survey Kits.
- 4.1.1.3 Ensure the tamper seal on the Environmental Survey kits have not been broken and inventory any that have (Reference 2.1).
- 4.1.1.4 Immediately place batteries in the portable survey instruments and make a communication check with TSC, using the portable FM radios.
 - 4.1.1.4.1 Perform a battery check and survey the area for higher than background radiation levels.
 - 4.1.1.4.2 Report any above background radiation levels to the FMC. As advised by the FMC, move to a low background area to complete source checks.
- 4.1.1.5 Source check survey instruments and portable MCA for proper operation (References 2.7, 2.8, 2.9, 2.10) if applicable.
- 4.1.1.6 Don TLD, high and low range dosimetry, and fill out dose cards.
- 4.1.1.7 Ensure the Portable Power Generator is operational and the gas can is fully fueled (Reference 2.1).
- 4.1.1.8 Obtain emergency vehicles as directed in Enclosure 5.9.

- 4.1.1.9 Each FMT will proceed to the survey point assigned by the FMC (Enclosure 5.3).
- 4.1.1.10 The radio operator in the TSC shall complete Radio Operators Log Field Monitoring Data Sheet (Enclosure 5.4), with the appropriate information.

4.2 Locating and Tracking the Plume

- 4.2.1 At the assigned survey point, the FMT shall perform a general area Beta-Gamma survey. This method should be used to locate center and width of plume.
 - 4.2.1.1 Record date, time, location and dose rate (mr/hr) on the Field Monitoring Data Sheet (Enclosure 5.5).
- 4.2.2 If survey results are less than or equal to expected background, call in the results to the FMC and wait for further instructions.
- 4.2.3 If survey results are greater than background, take protective actions as necessary. Then, if directed, take an air sample (volume should be $> 10^6$ ml) equipped with a Silver Zeolite Cartridge and particulate filter.
 - 4.2.3.1 Insert cartridge with arrow pointing in.
 - 4.2.3.2 Insert filter paper with smooth side facing out.
 - 4.2.3.3 Calculate required sample time per Enclosure 5.6.
 - 4.2.3.4 Place the generator and air sampler in a safe location (i.e. away from wet areas and off the roadway) ensuring the sampler is approximately two feet above the ground or higher and begin sampling.
 - 4.2.3.5 When air sample is completed, place the Silver Zeolite Cartridge in a poly bag for analysis.
 - 4.2.3.6 Place filter in a separate poly bag and label.
 - 4.2.3.7 As directed by the FMC, transport the completed sample to a vehicle that is carrying a Canberra Series - 10 Portable MCA for analysis per Reference 2.9.
 - 4.2.3.8 Ensure the correct information is annotated on the Field Monitoring Team Work Sheet for Determining Iodine Activity (Enclosure 5.7).

4.2.3.9 Wait for further instructions from the FMC.

4.3 Special Sampling, as directed:

4.3.1 All sampling outside of Auxiliary, Service and Turbine Buildings should be done in conjunction with Operations Support Center (OSC) personnel.

4.3.2 Take smears and place them in separate poly bags, label and retain for later analysis.

4.3.3 Count smears on E140N and record on Field Monitoring Data Sheet (Enclosure 5.5). Call in results to FMC.

4.3.4 Collect water samples in cubitainers using good Health Physics practices and label and retain for later analysis.

4.3.5 Place TLD's in the environment.

4.3.6 Retrieve and replace air sample and/or TLD's that are already located in the environment. Locations are listed in Enclosure 5.1. Place samples in separate poly bags, label and retain for later analysis.

4.3.7 Collect broad leaf vegetation sample label and retain for later analysis (Reference 2.3).

4.3.7.1 Cut vegetation in a one square meter area approximately two inches above the ground.

NOTE: Vegetation which leaves are not in the shape of needles, i.e. pine or spruce needles.

4.3.8 Collect shoreline sediment sample (one liter) label and retain for later analysis (Reference 2.6).

4.3.9 Collect milk sample (one full cubitainer) label and retain for later analysis (Reference 2.5). Locations are listed in Sample Enclosure 5.2.

4.4 Turnover

4.4.1 Each FMT shall be relieved as directed by the FMC.

4.4.2 Inform the relief FMT on the status of the following:

4.4.2.1 Radiation surveys and dose rates in the plume area.

4.4.2.2 Kit Inventory consumed.

4.4.2.3 Equipment operating status.

4.4.2.4 Any sampling problems.

- 4.4.2.5 Plant status information.
- 4.4.3 Direct the relief FMT to don TLD's and pocket dosimetry and fill out dose cards.
- 4.4.4 Return all samples to the Emergency Kit Storage Room as directed by the FMC.
- 4.4.5 Turn in all data sheets to the FMC or his designee.

5.0 ENCLOSURES

- 5.1 Air Sampler, TLD, and Water Sample Locations
- 5.2 Milk Sample Locations
- 5.3 Predetermined Sampling Locations
- 5.4 Sample of Radio Operators Log Field Monitoring Survey Data
- 5.5 Sample of Field Monitoring Data Sheet
- 5.6 Sample Time Required For Minimum Sample Volume
- 5.7 Sample of Field Monitoring Team Work Sheet For Determining Iodine Activity
- 5.8 TSC Field Monitoring Organization
- 5.9 Emergency Vehicles

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
HP/O/B/1009/04
ENCLOSURE 5.1
AIR SAMPLER, TLD, AND WATER SAMPLE LOCATIONS

Air Sample Locations (need key CPD-1)

<u>Zone</u>	<u>& Radius (Mi)</u>	<u>No.</u>	<u>Description</u>
A0	1	1	Hwy 274-N, right Liberty Hill Rd., right in fork to end (Air CNS #200, need key).
A0	1	5	Left at Steam Production entrance on Concord Rd., left on Old Concord Rd., right on Acacia Rd., left on Crepe Myrtle Rd., left on Blue Bird Ln., through gate to end (Air CNS #201, need key).
B1	3	1	Hwy 49-N, right Hwy 160, right at Tega Cay sign (98), right before Tega Cay entrance into Duke Power Company substation (Air CNS #212, need key).
C2	10	5	Hwy 274-S, left Hwy 161, right Mt. Gallant Rd. (195), right Hwy 21-121 By-Pass, right on Hwy 72 - 121 By-pass, left on dirt road (Trash Pile Rd.) across from Wayne's Auto Service, go to Duke Power Company substation (Air CNS #217, need key).
A0	1	26	Behind Catawba Nuclear Station overlook (Air CNS #205, need key).

TLD Locations

I. Site Boundary TLD's

<u>Zone</u>	<u>& Radius (Mi)</u>	<u>No.</u>	<u>Description</u>
A0	1	44	Hwy 274-N, right Liberty Hill Rd., right in fork, pass softball field to large rocks at fence on right. TLD is on fence (TLD CNS #222).
A0	1	1	Hwy 274-N, right Liberty Hill Rd., right in fork to end (TLD CNS #200, need key).
A0	1	5	Left at Steam Production entrance on Concord Rd., left on Old Concord Rd., right on Acacia Rd., left on Crepe Myrtle Rd., left on Blue Bird Ln., through gate to end (TLD CNS #201, need key).
A0	1	8	Left at Steam Production entrance on Concord Rd., left on Old Concord Rd., right on Acacia Rd., left on Crepe Myrtle Rd. Go to first drive on right past Paradise Pl., TLD across road (TLD CNS #202).

DUKE POWER COMPANY
 CATAWBA NUCLEAR STATION
 HP/O/B/1009/04
 ENCLOSURE 5.1

AIR SAMPLER, TLD. AND WATER SAMPLE LOCATIONS

<u>Zone</u>	<u>& Radius (Mi)</u>	<u>No.</u>	<u>Description</u>
A0	1	11	Left at Steam Production entrance on Concord Rd., left on Old Concord Rd., right on Acacia Rd., left on Crepe Myrtle Rd. TLD is .1 miles on left in curve (TLD CNS #223).
A0	1	14	Left at Steam Production entrance on Concord Rd., left on Old Concord Rd., right on Acacia Rd. TLD .2 miles on right (TLD CNS #224).
A0	1	45	Left at Steam Production entrance on Concord Rd., left on Old Concord Rd. to end. TLD on fence on left (TLD CNS #203).
A0	1	17	Left at Steam Production entrance on Concord Rd. to first transmission tower on left after bridge (TLD CNS #225).
A0	1	20	Left at Steam Production entrance on Concord Rd., TLD on left across bridge just past fence (TLD CNS #226).
A0	1	23	Left at Steam Production entrance on Concord Rd., TLD on left at beginning of guardrail posts (TLD CNS #204).
A0	1	26	Behind Catawba Nuclear Station overlook (TLD CNS #205).
A0	1	29	Left at Steam Production entrance on Concord Rd., TLD at Shady Shore Dr. on right corner at Bethel Community Clubhouse sign (TLD CNS #227).
A0	1	32	Right at Steam Production entrance on Concord Rd., TLD at first dirt left (Valelake Dr.) on right corner (TLD CNS #228).
A0	1	35	TLD on top of hill at Catawba Nuclear Station Construction entrance on North side of street (TLD CNS #206).
A0	1	38	Hwy 274-N, right at Liberty Hill Rd., right in fork to third power line on right, walk about 200 yds. South along boundary fence. TLD on fence (TLD CNS #229).
A0	1	41	Hwy 274-N, right at Liberty Hill Rd., go .8 miles (right in fork) TLD on fence on right (TLD CNS #207).

DUKE POWER COMPANY
 CATAWBA NUCLEAR STATION
 HP/O/B/1009/04
 ENCLOSURE 5.1

AIR SAMPLER, TLD, AND WATER SAMPLE LOCATIONS

<u>Zone</u>	<u>& Radius (Mi)</u>	<u>No.</u>	<u>Description</u>
II. 4-5 Mile TLD's			
F1	4	4	Hwy 49-N to River Hills Plantation rear entrance at Robinwood Rd. TLD behind green building on right corner (TLD CNS #230).
F1	4	6	Hwy 49-N to River Hills Plantation front entrance guardhouse (TLD CNS #231).
A1	4	2	Hwy 49-N to intersection of Pleasant Hill Rd. (1109), TLD on power line (TLD CNS #232).
A1	4	4	Hwy 49-N, right Pleasant Hill Rd. (1109), right Youngblood Rd. (1102), left Zoar Rd. (1105), right Thomas Rd. (1104), TLD behind second house on right (TLD CNS #233).
B2	4	2	Hwy 49-N, right Hwy 160 to Home Federal Savings and Loan on left. TLD on left rear corner of building. (TLD CNS #234).
B1	4	3	Hwy 49-N, right Hwy 160, right on Dam Rd. (99), last gravel right in sharp curve before Lake Wylie Dam, left through fence to substation, TLD on right of inner substation fence (TLD CNS #235).
C1	4	1	Hwy 274-S, left Mt. Gallant Rd. (195), left India Hook Rd. (30) to S.C. Wildlife Resources Dept (TLD CNS #236).
C1	4	3	Hwy 274-S, left Mt. Gallant Rd. (195), right Homestead Rd. (657) to end, TLD straight across intersection of Twin Lakes Rd. (TLD CNS #237).
C1	4	5	Hwy 274-S, left Mt. Gallant Rd. (195), right W. Oak Dr. (962) to end at fork, TLD on left at fence (TLD CNS #238).
D1	5	1	Hwy 274-S to Carter Lumber Co., TLD on fence near gate (TLD CNS #239).
D1	4	2	Hwy 274-S, right Campbell Rd. (80), left on Paraham Rd. (54) to transmission tower on right, TLD on brown power pole (TLD CNS #240).
D1	5	4	Hwy 274-S, right Campbell Rd, (80) for about 3 miles, TLD on left at beginning of horse fence (TLD CNS #241).

DUKE POWER COMPANY
 CATAWBA NUCLEAR STATION
 HP/O/B/1009/04
 ENCLOSURE 5.1

AIR SAMPLER, TLD, AND WATER SAMPLE LOCATIONS

<u>Zone</u>	<u>& Radius (Mi)</u>	<u>No.</u>	<u>Description</u>
E1	5	2	Hwy 49-S, right Paraham Rd, (54) to transmission tower on left after bridge (TLD CNS #242).
E1	5	3	Hwy 274-N, left Hwy 55, left Kingsberry Rd. (114) to transmission tower on left (TLD CNS #243).
F1	4	1	Hwy 274-N, left Hwy 55 to Bethel School, TLD on side of small building in back (TLD CNS #244).
F1	4	3	Hwy 274-N left on Glenvista Rd. to Crowder Creek Boat Landing, TLD to East of parking lot (TLD CNS #245).
B2	8	1	Hwy 49-N, right Carowinds Blvd. (1441), left Choate Cir., TLD on inside of fence left of the guardhouse (TLD CNS #246).
B1	3	1	Hwy 49-N, right Hwy 160, right Tega Cay sign (98), right before Tega Cay entrance into Duke Power Company substation (TLD CNS #212).
B2	7	6	Hwy 49-N, right Hwy 160 to Fort Mill, right Lee St., left Self St., TLD at Fort Mill Municipal Water Supply behind Springs Mill (TLD CNS #247).
C2	7	3	Hwy 274-S, right on Herlong Ave. to Piedmont Medical Center emergency entrance to back of hospital. TLD on fence at back right corner of Liquid Oxygen storage area (TLD CNS #248).
C2	10	5	Hwy 274-S to Newport, left at stop light, right on Rawlinson Rd., left Hwy 5, right on Heckle Blvd. (901) to end, left on Hwy 72, right on dirt road just across from Wayne's Auto Service, go to Duke Power Company Substation (TLD CNS #217).
C2	8	6	Hwy 274-S, left Hwy 161, right Rawlinson Rd. (56), left Hwy 5 to Rock Hill Career Development Center, TLD on transmission tower (TLD CNS #249).

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
HP/O/B/1009/04

ENCLOSURE 5.1

AIR SAMPLER, TLD, AND WATER SAMPLE LOCATIONS

<u>Zone</u>	<u>& Radius (Mi)</u>	<u>No.</u>	<u>Description</u>
D2	10	4	Hwy 274-S, right Campbell Rd. (80), left Hwy 49-S, left Rd. 64, left Hwy 5. Go to Duke Power Company Appliance Center on left. TLD on fence in back (TLD CNS #250).
E2	10	2	Hwy 55 into Clover, TLD at Duke Power Company Appliance Center in rear lot on inner fence (TLD CNS #251).
<u>Water Sample Locations</u>			
F3	14	4	Hwy 274-N, right Pole Branch Rd. (279), right Hwy 273 into Belmont, right Catawba St., left at next light to Belmont Municipal Water Supply (Water CNS #218).
C2	7	2	Hwy 274-S, left Hwy 161, right Mt. Gallant Road (195) to end. Rock Hill Municipal Water Supply across intersection on left (Water CNS #214).
B2	7	6	Hwy 49-N, right Hwy 160 to Fort Mill, right Lee St., left Self St., go to Fort Mill Municipal Water Supply behind Springs Mill (Water CNS #213).
A0	1	46	Left exiting Steam Production entrance on Concord Rd., left just after canal bridge. Go to pier (water CNS #208, need key).
B1	4	5	Hwy 49-N, right Hwy 160, right Dam Rd. (99), left Gray Rock Rd. (251) to Lake Wylie Dam. Walk through plant to upstream side of the dam (water CNS #211).
B1	4	6	Hwy 49-N, right Hwy 160, right Dam Rd. (99), left Gray Rock Rd., (251) to Lake Wylie Dam. Ride or walk to river access on downstream side of dam.
C2	7	8	Hwy 274-S left Mt. Gallant Rd. (195), left Hwy 161, left Cherry Rd. (Hwy 21), left on dirt road at Fort-Rock Drive-In to end, go right to Rock Hill Municipal water intake.
A1	4	6	Hwy 49-N, left at Camp Steere sign after crossing Buster Boyd Bridge (Water CNS #215).

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
HP/O/E/1009/04
ENCLOSURE 5.2
MILK SAMPLE LOCATIONS

<u>Zone</u>	<u>Radius (Mi)</u>	<u>Milk</u>	
D1	6	M	Hwy 274-S, right Hwy 161, left Rd. 1080 to Pursley Dairy.
D2	8	M	Hwy 274-S, right Hwy 161, left Scism Dairy and Equipment Co. (CASE sign).
E2	6	M	Hwy 274-N, left Hwy 55, left Clinton Dairy Rd.
F1	3	M	Hwy 274-N, right Lake Wylie Rd. (1099) to first house on left, (Ingram Richmond residence).
F2	7	M	Hwy 274-N, Hwy 55, right Paraham Rd. (54), left Hwy 557. Barnett Dairy 1 mile on left.
D1	7	M	Hwy 274-S to Newport, left at stop light, right Adnah Church Rd. (81). Woods Dairy 1.5 miles on left.
F2	13	M	Hwy 274-N, left Hwy 55, go through Clover, SC. Right on Lloyd White Rd. (143). left on Crowders Creek Rd. (1103), next paved right (1125). Oates Dairy is half mile on left.

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
HP/O/B/1009/04
ENCLOSURE 5.3
PREDETERMINED SAMPLING LOCATIONS

<u>Zone</u>	<u>Radius (Mi)</u>	<u>No.</u>	<u>Description</u>
A0	1	1	Hwy 274-N, right Liberty Hill Rd., right in fork to end (TLD & Air CNS #200, need key).
A0	1	2	Hwy 274-N, right Lake Wylie Rd. (1099), right at Hudson Rd. fork, right at Commodore Pl. fork, left on Tioga Rd. to end.
A0	2	3	Hwy 274-N, right Lake Wylie Rd., (1099), left fork after pavement ends, on Hudson Rd. to end.
A0	2	4	Hwy 49-N, right Pleasant Hill Rd. (1109), right Youngblood Rd. (1102) to dead end at Catawba Yacht Club.
A0	1	5	Left exiting Steam Production entrance on Concord Rd., left on Old Concord Rd., right on Acacia Rd., left on Crepe Myrtle Rd., left on Blue Bird Ln. through gate to end (TLD & Air CNS #201, need key).
A0	1	6	Hwy 49-N, right Pleasant Hill Rd. (1109), right Youngblood Rd. (1102), left on Snug Harbor Rd. (1357), right Coze Cove Rd. (1434) to end.
A0	2	7	Hwy 49-N, right Pleasant Hill Rd. (1109), right Youngblood Rd. (1102), to intersection of Snug Harbor Rd. (1357).
A0	1	8	Left exiting Steam Production entrance on Concord Rd., left on Old Concord Rd., right on Acacia Rd., left on Crepe Myrtle Rd. Go to first drive on right past Paradise Pl., TLD across road (TLD CNS #202).
A0	1	9	Hwy 49-N, right Pleasant Hill Rd. (1109), right Youngblood Rd. (1102), left Snug Harbor Rd. (1357) to end.
A0	2	10	Hwy 49-N, right Pleasant Hill Rd. (1109), right Youngblood Rd. (1102), left Snug Harbor Rd. (1357), stay on Snug Harbor at Kalabash Rd. Fork, take first gravel left (Crosshavens Dr.) after fork to the end (Beware of dogs).

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
HP/G/B/1009/04
ENCLOSURE 5.3
PREDETERMINED SAMPLING LOCATIONS

<u>Zone</u>	<u>Radius (Mi)</u>	<u>No.</u>	<u>Description</u>
A0	1	11	Left exiting Steam Production entrance on Concord Rd., left on Old Concord Rd., right on Acacia Rd., left on Crepe Myrtle Road. TLD is .1 miles on left in curve (TLD CNS #223).
A0	1	12	Hwy 49-N, right Pleasant Hill Rd. (1109), right Youngblood Rd. (1102), left McKee Rd (1100), right Bankhead Rd. to end.
A0	2	13	Hwy 49-N, right Pleasant Hill Rd. (1109), right Youngblood Rd. (1102), left McKee Rd. (1100), right Bankhead Rd. to intersection of Bessbrook Rd.
A0	1	14	Left exiting Steam Production entrance on Concord Rd., left on Old Concord Rd., right on Acacia Rd. TLD .2 miles on right (TLD CNS #224).
A0	1	15	Left exiting Steam Production entrance on Concord Rd., take first dirt fork to left on Kingsberry Dr., Stop at Commodore Yacht Club.
A0	1	16	Left exiting Steam Production entrance on Concord Rd. to last big curve before pavement ends.
A0	1	17	Left exiting Steam Production entrance on Concord Rd. to first transmission tower on left after bridge (TLD CNS #225).
A0	1	18	Left exiting Steam Production entrance on Concord Rd., go to end and turn right on Sandlapper Rd. Stop at transmission tower.
A0	2	19	Hwy 274-S, left Allison Creek Rd. (1081) to end of pavement.
A0	2	20	Left exiting Steam Production entrance on Concord Rd. TLD on left across bridge, just past fence (TLD CNS #226).
A0	1	21	Left Hwy 274-S, left Allison Creek Rd. (1081), left Spratt Rd., to end (Beware of dogs).
A0	2	22	Hwy 274-S, left Allison Creek Rd. (1081) to intersection of Bardale Rd.

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
HP/O/B/1009/04
ENCLOSURE 5.3
PREDETERMINED SAMPLING LOCATIONS

<u>Zone</u>	<u>Radius (Mi)</u>	<u>No.</u>	<u>Description</u>
A0	1	23	Left exiting Steam Production entrance on Concord Rd. TLD on left at beginning of guardrail posts (TLD CNS #204).
A0	1	24	Hwy 274-S, left Allison Creek Rd. (1081), left at Spratt Rd., left Morrison Rd., then right in next 2 forks, left in next fork to end.
A0	2	25	Hwy 274-S, left Allison Creek Rd. (1081), to intersection of Spratt Rd.
A0	1	26	Behind Catawba Nuclear Station overlook (TLD and Air CNS #205, need key).
A0	1	27	Right exiting Steam Production entrance on Concord Rd., first dirt left on Valelake Rd., left in fork to end.
A0	2	28	Hwy 274-S, left Allison Creek Rd. (1081) to intersection of Colina Rd.
A0	1	29	Left exiting Steam Production entrance on Concord Rd. TLD at Shady Shore Dr. on right corner at Bethel Community Clubhouse sign (TLD CNS #227).
A0	1	30	Right exiting Steam Production entrance on Concord Rd., first dirt left on Valelake Rd., right in fork to end.
A0	2	31	Hwy 274-S to intersection of Campbell Rd. (80).
A0	1	32	Right exiting Steam Production entrance on Concord Rd. TLD at first dirt left (Valelake Dr.) on right corner (TLD CNS #228).
A0	1	33	Right exiting Steam Production entrance on Concord Rd., left on dirt road (Pine Pt. Dr.) just before Granny's Restaurant, stop .5 miles.
A0	2	34	Hwy 274-S to Big Allison Creek bridge.
A0	1	35	TLD on top of hill at intersection of Catawba Nuclear Station Construction entrance and Road 1132 (TLD CNS #206).
A0	1	36	Right exiting Steam Production entrance to transmission line just before Granny's Restaurant on Concord Rd. (1132).

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
HP/0/B/1009/04
ENCLOSURE 5.3
PREDETERMINED SAMPLING LOCATIONS

<u>Zone</u>	<u>Radius (Mi)</u>	<u>No.</u>	<u>Description</u>
A0	2	37	Hwy 274-N, left Liberty Hill Rd., take first left and go to end.
A0	1	38	Hwy 274-N, right at Liberty Hill Rd., right in fork to third transmission line on right, walk about 200 yds. South along boundary fence. TLD is on fence (TLD CNS #229).
A0	1	39	Hwy 274-N, right at Liberty Hill Rd., right in fork to third transmission line on right.
A0	2	40	Right exiting Steam Production entrance on Concord Rd. to end. Right on Hwy 274-N for 1 mile.
A0	1	41	Hwy 274-N, right at Liberty Hill Rd., go .8 miles (right in fork), TLD on fence on right (TLD CNS #207).
A0	1	42	Hwy 274-N, right at Liberty Hill Rd., right in fork, go to softball field entrance.
A0	2	43	Hwy 274-N, right Lake Wylie Rd. (1099), right Beaver Creek Trail to end.
A0	1	44	Hwy 274-N, right at Liberty Hill Rd., right in fork, pass softball field to large rock piling on fence. TLD is on fence (TLD CNS #222).
A0	1	45	Left exiting Steam Production entrance, left on Old Concord Rd. to end. TLD on fence on left (TLD CNS #203).
A0	1	46	Left exiting Steam Production entrance on Concord Rd. Turn left just after canal bridge. Go to pier (water CNS #208, need key).
<hr/>			
A1	3	1	Hwy 49-N to NC side of Buster Boyd Bridge.
A1	4	2	Hwy 49-N to intersection of Pleasant Hill Rd. (1109), TLD on transmission tower (TLD CNS #232).
A1	5	3	Hwy 49-N to Steele Creek Vol. Fire Dept. on right.

DUKE POWER COMPANY
 CATAWBA NUCLEAR STATION
 HP/O/B/1009/04
 ENCLOSURE 5.3
 PREDETERMINED SAMPLING LOCATIONS

<u>Zone</u>	<u>Radius (Mi)</u>	<u>No.</u>	<u>Description</u>
A1	4	4	Hwy 49-N, right Pleasant Hill Rd (1109), right Youngblood Rd. (1102), left Zoar Rd. (1105), right Thomas Rd. (1104, TLD behind second house on right in pines (TLD CNS #233).
A1	5	5	Hwy 49-N, right Pleasant Hill Rd. (1109, right Youngblood Rd. (1102), left Hamilton Rd. (1106) to intersection of Hwy 160.
A1	4	6	Hwy 49-N, left at Camp Steere sign after crossing Buster Boyd Bridge (Water CNS #215).
<hr/>			
A2	10	1	Hwy 49-N, stop one mile past Westinghouse Blvd. at Roberts Systems 8500 on left.
<hr/>			
A3	10	1	Hwy 49-N, right Carowinds Blvd. (1441), left Hwy 51 to Pineville, stop near Sugar Creek bridge.
<hr/>			
B1	3	1	Hwy 49-N, right Hwy 160, right on Gold Hill Rd. (98) at Tega Cay sign, right before Tega Cay entrance on gravel road into Duke Power Company substation (TLD & Air CNS #212, need key).
B1	2	2	Hwy 49-N, right Pleasant Hill Rd. (1109), right Youngblood Rd. (1102), left McKee Rd (1100)., left Bankhead Rd., left Bessbrook Rd. to end.
B1	4	3	Hwy 49-N, right Hwy 160, right on Dam Rd. (99), last gravel right in sharp curve before Lake Wylie Dam, left through fence to substation, TLD on right of inner substation fence (TLD CNS #235).
B1	2	4	Hwy 49-N, right Hwy 160, right on Gold Hill Rd. (98) at Tega Cay sign, enter Tega Cay following Tega Cay Dr., right Windjammer Dr., 6 miles, Right at circle, Left Kiwi Point to end.

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
HP/O/B/1009/04
ENCLOSURE 5.3
PREDETERMINED SAMPLING LOCATIONS

<u>Zone</u>	<u>Radius (Mi)</u>	<u>No.</u>	<u>Description</u>
B1	4	5	Hwy 49-N, right Hwy 160, right Dam Rd. (99), left Gray Rock Rd. (251) to Lake Wylie Dam. Walk through plant to upstream side of the dam (water CNS #211).
B1	4	6	Hwy 49-N, right Hwy 160, right Dam Rd. (99), left Gray Rock Rd. (251) to Lake Wylie Dam. Go to river access on downstream side of dam.
B2	8	1	Hwy 49-N, right Carowinds Blvd. (1441), left Choate Circle, TLD on inside of fence left of the guardhouse (TLD CNS #246).
B2	4	2	Hwy 49-N, right Hwy 160 to Home Federal Savings and Loan on left. TLD on left rear corner of building (TLD CNS #234).
B2	5	3	Hwy 49-N, right Hwy 160, left on Gold Hill Rd. (98) at Home Federal Savings and Loan, stop at intersection of Whitley Rd.
B2	10	4	Hwy 49-N, right Carowinds Blvd. (1441), left Hwy 51 to Pineville, right Hwy 521 (Polk St.) in Pineville, right on Dorman Rd., stop at state line.
B2	5	5	Hwy 49-N, right Hwy 160, right Sutton Rd. (49) to intersection of Gray Rock Rd. (251).
B2	7	6	Hwy 49-N, right Hwy 160 to Fort Mill, Right Lee St., left Self St. TLD at Fort Mill Municipal Water Supply on right behind Springs Mill (TLD CNS #247, also Water CNS #213).
B2	10	7	Hwy 49-N, right Hwy 160 through Fort Mill to the Sugar Creek bridge.
C1	4	1	Hwy 274-S, left Mt. Gallant (195), left India Hook Rd. (30) to SC Wildlife Resources Dept. (TLD CNS #236).
C1	5	2	Hwy 274-S, left Mt. Gallant Rd. (195), go beyond India Hook to Red Burketts Body Shop on right.

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
HP/O/B/1009/04
ENCLOSURE 5.3
PREDETERMINED SAMPLING LOCATIONS

<u>Zone</u>	<u>Radius (Mi)</u>	<u>No.</u>	<u>Description</u>
C1	4	3	Hwy 274-S, left Mt. Gallant Rd. (195), right Homestead Rd. (657) to end. TLD straight across intersection of Twin Lakes Rd. (TLD CNS #237).
C1	5	4	Hwy 274-S, left Mt. Gallant Rd. (195), right Homestead Rd. (657) to end.
C1	4	5	Hwy 274-S, left Mt. Gallant Rd. (195), right W. Oak Dr. (962) to end at fork. TLD on left at fence (TLD CNS #238).
C1	5	6	Hwy 274-S, left Mt. Gallant Rd. (195), right at York County Museum (658) to end at SC National Guard Armory.
C1	5	7	Hwy 274-S to Carter Lumber Co.
<hr/>			
C2	10	1	Hwy 274-S, left Hwy 161, left in fork on Celanese Rd. (50) to intersection of Springdale Rd.
C2	7	2	Hwy 274-S, left Hwy 161, right Mt. Gallant Rd. (195) to end. Go to Rock Hill Municipal Water Supply across intersection on left (Water CNS #214).
C2	7	3	Hwy 274-S, right on Herlong Ave. to Piedmont Medical Center emergency entrance to back of hospital. TLD on fence at back right corner of Liquid Oxygen storage area (TLD CNS #248).
C2	10	4	Hwy 274-S, left Hwy 161, right Mt. Gallant Rd. (195), right Hwy 21-121 By-pass to Fast Fare on left at intersection of Springsteen Rd.
C2	10	5	Hwy 274-S to Newport, left at stop light, right on Rawlinson Rd., left Hwy 5, right on Heckle Blvd. (901) to end, left on Hwy 72, right on dirt road across from Wayne's Auto Service. Go to Duke Power Company substation (TLD & Air CNS #217, need key).
C2	8	6	Hwy 274-S, left Hwy 161, right Rawlinson Rd. (56), left Hwy 5 to Rock Hill Career Development Center, TLD on transmission tower (TLD CNS #249).

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
HP/O/B/1009/04
ENCLOSURE 5.3
PREDETERMINED SAMPLING LOCATIONS

<u>Zone</u>	<u>Radius (Mi)</u>	<u>No.</u>	<u>Description</u>
C2	10	7	Hwy 274-S, left Hwy 161, right Adnah Church Rd. (81), right on Hwy 5, left on Eastview Rd. (102) to intersection of Oak Park Rd. (103).
C2	7	8	Hwy 274-S, left Mt. Gallant Rd. (195), left Hwy 161, left Hwy 21, left on dirt road at Fort-Rock Drive-In to end, go right to Rock Hill Municipal Water Intake.
D1	5	1	Hwy 274-S to Carter Lumber Co. TLD on fence near gate (TLD CNS #239).
D1	4	2	Hwy 274-S, right Campbell Rd. (80), left Paraham Rd. (54) to transmission tower on right, TLD on power pole (TLD CNS #240).
D1	5	3	Hwy 274-S, right Campbell Rd. (80), left Paraham Rd. (54), next right on Rd. 815 to Allison Creek bridge.
D1	5	4	Hwy 274-S, right Campbell Rd. (80) for about 3 miles, TLD on left at beginning of horse fence (TLD CNS #241).
D2	10	1	Hwy 274-S, left Hwy 161, right Adnah Church Rd. (81), right Hwy 5, quick left on Eastview Rd. (102), right Holland Rd. (157), right Turkey Farm Rd. (1172), left Russell Rd. (536), go .2 miles.
D2	10	2	Hwy 274-S, left Hwy 161, right Adnah Church Rd. (81), right Hwy 5, left Billy Wilson Rd. (1451), right Turkey Farm Rd. (1172) to Fishing Creek bridge.
D2	10	3	Hwy 274-S, right Campbell Rd. (80), left Hwy 49-S, stop at Pantry before entering York.
D2	10	4	Hwy 274-S, right Campbell Rd. (80), left Hwy 49-S, left Rd. 64, left Hwy 5. Go to Duke Power Company Appliance Center on left. TLD on fence in back (TLD CNS #250).

DUKE POWER COMPANY
 CATAWBA NUCLEAR STATION
 HP/O/B/1009/04
 ENCLOSURE 5.3
 PREDETERMINED SAMPLING LOCATIONS

<u>Zone</u>	<u>Radius (Mi)</u>	<u>No.</u>	<u>Description</u>
D2	10	5	Hwy 274-S, right Campbell Rd. (80), left 49-S, right Old Limestone Rd. (172) to end.
E1	5	1	Hwy 274-S, right Campbell Rd. (80) to intersection of Hwy 49.
E1	5	2	Hwy 49-S, right Paraham Rd. (54) to transmission tower on left after bridge (TLD CNS #242).
E1	5	3	Hwy 274-N, left Hwy 55, left Kingsberry Rd. (114) to transmission tower on left (TLD CNS #243).
E1	5	4	Hwy 274-N, left Hwy 55 to intersection of Kingsberry Rd. (114).
E2	5	1	Hwy 274-S, right Campbell Rd. (80), right Paraham Rd. (54) to intersection of Dr. Nichols Rd. (819).
E2	10	2	Hwy 274-N, left Hwy 55 into Clover, go to Duke Power Company Appliance Center on left. TLD on fence in back (TLD CNS #251).
E2	10	3	Hwy 274-N, left Hwy 55 to Pantry at intersection of Hwy 321 in Clover (behind Pantry).
F1	4	1	Hwy 274-N, left Hwy 55 to Bethel School. TLD on side of small building in back (TLD CNS #244).
F1	5	2	Hwy 274-N, left Hwy 55, right Bethel School Rd. (152) to intersection of Hollandale Dr.
F1	4	3	Hwy 274-N left on Glenvista Rd. to Crowder Creek boat landing, TLD to east of parking lot (TLD CNS #245).
F1	4	4	Hwy 49-N to River Hills Plantation rear entrance at Robinwood Rd. TLD behind green building on right corner (TLD CNS #230).

DUKE POWER COMPANY
 CATAWBA NUCLEAR STATION
 HP/O/B/1009/04
 ENCLOSURE 5.3
 PREDETERMINED SAMPLING LOCATIONS

<u>Zone</u>	<u>Radius (Mi)</u>	<u>No.</u>	<u>Description</u>
F1	5	5	Hwy 49-N, left Sherer Church Rd. to end.
F1	4	6	Hwy 49-N to River Hills Plantation entrance guardhouse (TLD CNS #231).
F1	5	7	Hwy 49-N, left Montgomery Rd. at the River Rat Restaurant. Stop in horseshoe curve near lake.
<hr/>			
F2	10	1	Hwy 274-N, left Hwy 557, right Ridge Rd. (27) to Bowling Green Presbyterian Church.
F2	5	2	Hwy 274-N, left Hwy 557 to Pine Grove Baptist Church.
<hr/>			
F3	10	1	Hwy 274-N, left Hwy 557, next paved right on Oakridge Rd. at Bethel Fire Dept. (Rd. 435) to intersection of Hwy 274 (in NC).
F3	10	2	Hwy 274-N, right Pole Branch Rd. (279) to Friendship Baptist Church on left.
F3	10	3	Hwy 274-N, right Pole Branch Rd. (279), right Hwy 273 to Allen Steam Plant Bridge.
F3	14	4	Hwy 274-N, right Pole Branch Rd. (279), right Hwy 273 into Belmont, right Catawba St., left at next light to Belmont Municipal Water Supply (Water CNS #218).

ENCLOSURE 5.4
RADIO OPERATORS' LOG
FIELD MONITORING SURVEY DATA

Page _____ of _____
Station _____

Date _____
FMC _____
Radio Operator _____

[illegible]

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
ENCLOSURE 5.4
RADIO OPERATORS LCG
FIELD MONITORING SURVEY DATA

Page ____ of ____
Station _____

Date _____
FMC _____
Radio Operator _____

[illegible]

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
HP/O/B/1009/04
ENCLOSURE 5.6
SAMPLE TIME REQUIRED FOR MINIMUM SAMPLE VOLUME

FLOW RATE

MINIMUM REQUIRED SAMPLING TIME IN MINUTES

CFM	LPM	
.5	= 14 71
1.0	= 28 36
1.5	= 42 24
2.0	= 56 18
2.5	= 70 15
3.0	= 84 12
3.5	= 99 11
4.0	= 113 9
4.5	= 127 8

NOTE: When estimating time required to get a minimum volume of 1×10^6 ml if flow rate for the air sampler in use is not on table, go to next Lower flow rate. The LPM are rounded off to the conservative side.

Example: Air Sampler flow rate = 106 LPM. Minimum time 11 minutes

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
HP/O/B/1009/04
ENCLOSURE 5.7

Page 1 of 2

FIELD MONITORING TEAM WORK SHEET FOR DETERMINING IODINE ACTIVITY

Team Members _____ Date _____ Air Sampler No. _____
Team Call Sign _____ Canberra No. _____

AIR SAMPLE INFORMATION

ANALYSIS RESULTS

A Sample ID. No./Time/Location	B Air Sampler Run Time (Min)	C Flow Rate (LPM)	D Iodine Activity Microcuries/ml	E Dose Rate mrem/hr	F Results Reported By:
____/____/____	_____	_____	_____	_____	_____
____/____/____	_____	_____	_____	_____	_____
____/____/____	_____	_____	_____	_____	_____
____/____/____	_____	_____	_____	_____	_____
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____/____/____	_____	_____	_____	_____	_____
____/____/____	_____	_____	_____	_____	_____
____/____/____	_____	_____	_____	_____	_____
____/____/____	_____	_____	_____	_____	_____

Column A) Number of Sample/Time it was Taken/Sampling Location (ex. AO-2-10).
Column B) Length of time the air sampler ran.
Column C) Air sampler meter flow rate.
Column D) Activity from Canberra.
Column E) Dose rate from Canberra.
Column F) Signature of person that calls in results to FMC.

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
HP/O/B/1009/04
ENCLOSURE 5.7
OPERATOR GUIDELINES

Page 2 of 2

5.6.1 MCA and Detector Set-Up

- 5.6.1.1 Disconnect DC power cord from unit.
- 5.6.1.2 Turn the contrast switch on the front of the unit clockwise to the ON mode.
- 5.6.1.3 Place sample holder with Na-22 check source onto the detector.
- 5.6.1.4 Press TEST SYSTEM.
- 5.6.1.5 Press ENTER to begin test.
- 5.6.1.6 If test failed, press CLEAR ENTRY and remove the instrument from service.
- 5.6.1.7 If test passed, press ENTER.

5.6.2 Collecting and Measuring Filter Cartridges

NOTE: Record data on Field Monitoring Team Work Sheet for Determining Iodine Activity (Sample Enclosure 5.6).

- 5.6.2.1 Press ANALYZE FILTER SAMPLE.
- 5.6.2.2 Press ENTER.
- 5.6.2.3 For each sample:
 - 5.6.2.3.1 Place cartridge with the recognizable side toward the detector (in small poly bag) in sample holder.
 - 5.6.2.3.2 Put detector and sample holder in shield.
 - 5.6.2.3.3 Press ENTER to accept ID number.
 - 5.6.2.3.4 Press ENTER to accept current Flow Rate (LPM). Otherwise, change number and press ENTER.
 - 5.6.2.3.5 Press ENTER to accept current Flow Time (min). Otherwise, change number and press ENTER.
 - 5.6.2.3.6 If the volume is determined to be too small, resample, press ENTER and return to Step 5.6.2.3.
 - 5.6.2.3.7 Press ENTER to start Collect/Analyze.
 - 5.6.2.3.8 Report/Record Iodine activity ($\mu\text{Ci/ml}$) and dose rate (mrem/hr).
 - 5.6.2.3.9 Press NEXT SAMPLE.
 - 5.6.2.3.10 Label the cartridge and retain for later analysis.

5.6.3 After sampling completion, turn the contract switch counter-clockwise to the STAND-BY mode.

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
HP/O/B/1009/04
ENCLOSURE 5.8
TSC FIELD MONITORING ORGANIZATION

<u>POSITION</u>	<u>NAME</u>	<u>BUSINESS PHONE</u>	<u>HOME PHONE</u>
-----------------	-------------	-----------------------	-------------------

Field Monitoring Coordinators:

Primary:	C. V. Wray		
Alternates:	R. L. Rivard		
	J. E. Threatt		

TSC Radio Operators:

Primary:	D. E. Sexton		
Alternate:	P. W. Sturgis		

Field Monitoring Teams:

All Health Physics personnel with Field Monitoring Training.

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
HP/O/B/1009/04
ENCLOSURE 5.9
EMERGENCY VEHICLES

The two designated emergency vehicles are the Operations pick-up truck and the Technical Services vehicle used primarily by Chemistry. These two vehicles are to be obtained (as directed by the FMC) by getting the keys from the front desk Security Officer. A set of all keys to station vehicles shall be maintained by Security at the Personnel Access Portal (PAP).

Obtain any other Station vehicles (if available) as directed by the FMC. Voluntary use of personal vehicles is another alternative that may be considered.

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
HP/O/B/1009/04
ENCLOSURE 5.9
EMERGENCY VEHICLES

The two designated emergency vehicles are the Operations pick-up truck and the Technical Services vehicle used primarily by Chemistry. These two vehicles are to be obtained (as directed by the FMC) by getting the keys from the front desk Security Officer. A set of all keys to station vehicles shall be maintained by Security at the Personnel Access Portal (PAP).

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

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: HP/O/B/1009/09
Change(s) 0 to
2 incorporated
5/1/85

- (2) STATION: Catawba
- (3) PROCEDURE TITLE: Guidelines For Accident And Emergency Response
- (4) PREPARED BY: W. J. Zwick DATE: 5/9/85
- (5) REVIEWED BY: [Signature] DATE: 5-9-85
- Cross-Disciplinary Review By: _____ N/R: [Signature]
- (6) TEMPORARY APPROVAL (IF NECESSARY):
- By: _____ (SRO) Date: _____
- By: _____ Date: _____
- (7) APPROVED BY: [Signature] Date: 5/10/85
- (8) MISCELLANEOUS:
- Reviewed/Approved By: _____ Date: _____
- Reviewed/Approved By: _____ Date: _____

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

1.0 PURPOSE

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

2.0 REFERENCES

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

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

3.0 LIMITS AND PRECAUTIONS

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

4.0 PROCEDURE

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

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

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

HP/O/B/1009/09
ENCLOSURE 5.1

GUIDELINES FOR PLANNED EMERGENCY EXPOSURES

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

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

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

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

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

* Doses up to this limit may be authorized by the Recovery Manager, Station Manager or Emergency Coordinator. For application of these exposures, extensive damage to property should be considered to result in loss of life or the inability to control or mitigate the accident with the assurance that life can be protected.

- 4.0 If possible, the individual(s) should be selected by the following conditions:

- 4.1 Personnel should be volunteers or professional rescue personnel.
- 4.2 Personnel should be broadly familiar with the potential consequences of such exposure.
- 4.3 Women capable of reproduction should not take part in these actions.
- 4.4 All factors being equal, volunteers above the age of 45 should be selected.

- 5.0 Exposure shall be maintained ALARA.

- 6.0 Internal exposure should be minimized by the use of the best available respiratory protection, and the contamination should be controlled by the use of available protective clothing.

- 7.0 All exposures (permissible, planned maximum, planned emergency and accidental) shall require documentation and an occupational dose penalty if necessary.

HP/O/B/1009/09
ENCLOSURE 5.1

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

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

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

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

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

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

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

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

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

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

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

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

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

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

5.6.5.3.2.1 Date, Time

5.6.5.3.2.2 Dosimeter Reading

5.6.5.3.2.3 Retotal of quarterly dose.

5.6.5.4 Proceed to the TSC and coordinate Support Function Response.

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

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

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

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

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

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

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

5.10.1 Assemble supporting materials and take to TSC.

5.10.1 Initial Response

5.10.2.1 Activate the field monitoring organization by:

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

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

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

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

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

5.10.2.3 Obtain meteorological information and determine initial sample direction.

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

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

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

5.10.2.5 Proceed to the TSC.

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

5.11.1 Continuing Response

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

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

5.11.1.2 Direct and implement field monitoring strategies by:

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

5.11.1.2.2 Directing FMT's to monitor locations.

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

5.11.1.2.4 Advise FMT's on public protective actions and conditions they should be aware of while in the area.

5.11.1.3 Advise the Data Analysis Coordinator to field monitoring results.

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

5.11.1.4.1 Posting current FMT locations.

5.11.1.4.2 Posting latest instrument survey results for each monitoring location.

5.11.1.4.3 Illustrating approximate plume shape and location.

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

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

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

5.11.2 CMC Turnover

- 5.11.2.1 Once CMC is established, coordinate turnover of FMT's to CMC control.
- 5.11.2.2 Turnover of TSC FMT's to CMC Control shall occur at the intersection of SC 274 and SC 49. Should plume location interfere, alternate turnover location may be established.
- 5.11.2.3 Once CMC has assumed control of FMT's, notify the Data Analysis Coordinator and dissolve TSC field monitoring organization.

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

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

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

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

HP/O/B/1009/09

ENCLOSURE 5.14

RESERVE PERSONNEL/PERSONNEL MONITORING LEADER

- 5.14.1 Assemble all Health Physics personnel not initially required for emergency response. Non essential personnel should be evaluated for use in the emergency.
- 5.14.2 Identify personnel and/or personnel monitoring teams for the following locations.
 - 5.14.2.1 All on-site assembly areas are identified in Station Directive 3.C.7.
 - 5.14.2.2 PAP Area.
 - 5.14.2.3 Construction Personnel Exit Area (Brass Gate).
 - 5.14.2.4 Evacuation Facility (Alpha or Bravo). Two monitoring teams if both location are used.
- 5.14.3 Initiate, as necessary, HP/O/B/1009/05, Personnel/Vehicle Monitoring for Emergency Conditions.
- 5.14.4 Initiate random monitoring of vehicles located in the upper and lower parking lots starting with vehicles nearest the affected unit. The monitoring team identified in Step 5.14.2.4 should be used for this purpose.
- 5.14.5 Coordinate with the TSC Surveillance and Control Coordinator on relocating personnel monitoring teams if background radiation renders normal monitoring locations unfit.
- 5.14.6 Supervise Health Physics efforts at the Evacuation Facility(s) as per Reference 2.2.
- 5.14.7 Provide direction to reserve Health Physics personnel:
 - 5.14.7.1 Direct and control personnel in the staging area (DRC office in the Administration Building).
 - 5.14.7.2 Coordinate with Surveillance and Control Coordinator to provide addition manpower, as necessary.
 - 5.14.7.3 Coordinate with Support Functions Coordinator to provide additional manpower, as necessary.
 - 5.14.7.4 Direct activities of Field Monitoring Teams if relieved by CMC personnel.
 - 5.14.7.5 Begin scheduling activities for Health Physics personnel.
 - 5.14.7.6 Support OSC Supervisor with major activities as required.

OSC RESPONSE PERSONNEL DOSE RECORD FORM

Name: _____ HP Badge No.: _____

Social Security No.: _____ Exposure Class: _____

Birthdate: _____ Age: _____ Work Group: _____

*Quarterly Dose to Date: _____ mrem

**Yearly Dose to Date: _____ mrem

Permissable Lifetime Dose to Date: _____ mrem

Total Lifetime Dose to Date: _____ mrem

[illegible]

*Current Quarter Dose _____ mrem Plus Today's Dosimeter Dose _____ mrem.

***Current Yearly Dose _____mrem Plus Today's Dosimeter Dose _____mrem.


HP/O/B/1009/09
ENCLOSURE 5.16


PROCUREMENT OF HELICOPTERS FOR AERIAL ENVIRONMENTAL SURVEILLANCE

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

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

To obtain helicopter(s) for emergency service contact:

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

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

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

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

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

(2) STATION: Catawba

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

(4) PREPARED BY: Robin S. Williams DATE: 5-22-85

(5) REVIEWED BY: Fletcher Wilson DATE: 5-23-85

Cross-Disciplinary Review By: _____ N/R: F. Wilson

(6) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____

By: _____ Date: _____

(7) APPROVED BY: J. L. Date: 5/25/85

(8) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____

Reviewed/Approved By: _____ Date: _____

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

1.0 PURPOSE

To provide for the availability and readiness of Emergency Equipment.

2.0 REFERENCES

- 2.1 HP/O/B/1005/08; Respirator Quality Assurance
- 2.2 HP/O/B/1009/19; Emergency Radio System Operations, Maintenance and Communications
- 2.3 Catawba Nuclear Station Directive 2.11.13
- 2.4 Catawba Nuclear Station Directive 3.2.2
- 2.5 Catawba Nuclear Station Directive 3.3.3
- 2.6 Catawba Nuclear Station Emergency Plan
- 2.7 Catawba Nuclear Station Technical Specifications 6.8.1
- 2.8 Duke Power Company Radio Operator's Manual
- 2.9 Maintenance of Silver Zeolite Air Sampling Cartridges Letter; File: CN-768.01
- 2.10 10CFR 50 Appendix E
- 2.11 Technical Manual for Groban Gasoline Generators
- 2.12 Shelf-life of Health Physics Clothing; File: CN-766.00.

3.0 LIMITS AND PRECAUTIONS

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

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

4.0 PROCEDURE

4.1 Monthly Emergency Equipment Check/Inventory

4.1.1 Portable Generator Check

- 4.1.1.1 Portable generators shall be considered acceptable for use if:

- 4.1.1.1.1 The oil level is at an acceptable level per Reference 2.11.

- 4.1.1.1.2 The generator starts and runs for at least 5 minutes.

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

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

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

4.1.2 Two-Way Low Band FM Radios

- 4.1.2.1 The radios shall be considered acceptable for use if:

- 4.1.2.1.1 Each radio transmits a message to another radio.

- 4.1.2.1.2 Each radio receives a message from another radio.

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

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

4.1.3 Batteries

4.1.3.1 All batteries shall be considered acceptable for use if:

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

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

4.1.3.2 Document battery check on Enclosure 5.1.

4.1.4 Portable Survey Instruments

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

4.1.4.1.1 The instrument battery checks.

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

4.1.4.1.3 The instrument has no apparent physical damage.

4.1.4.1.4 The instrument's calibration date is current.

4.1.4.2 Document the instrument's operability on Enclosure 5.1.

4.1.5 Portable Air Samplers

4.1.5.1 Air Samplers shall be considered acceptable for use if:

4.1.5.1.1 The sampler operates when plugged into an electrical outlet.

4.1.5.1.2 The calibration date on the sampler is current.

4.1.5.1.3 The sampler has no apparent physical damage.

- 4.1.5.2 Document the sampler's operability on Enclosure 5.1.

4.1.6 Respiratory Equipment

- 4.1.6.1 Respiratory equipment shall be considered acceptable for use if:

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

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

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

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

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

4.2 Quarterly Emergency Equipment Inventory/Inspection

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

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

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

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

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

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

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

NOTE: Base Call Sign - KNHB-778

Radio Call Signs - KB36274
(Alpha, Bravo, Charlie,
Delta, Echo, Foxtrot)

4.2.1.3.4 Document operability of radios on Enclosure 5.1.

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

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

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

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

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

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

4.2.1.10 Ensure the flashlight bulb illuminates properly.

4.2.1.11 Check all protective clothing to ensure it has not exceeded the recommended shelf-life per Enclosure 5.15.

4.2.1.12 Ensure that GMR-I canisters have not exceeded their expiration date.

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

- 4.2.1.14 The Technician shall sign off Enclosure 5.1 and forward to the Respiratory/Instrument Calibration (R/IC) Supervisor.

4.2.2 Weather Information Check

- 4.2.2.1 Quarterly a call shall be placed to the National Weather Service located in Columbia, SC at 803-794-2330 or 803-794-2593. If these numbers cannot be reached, an alternate number in Charlotte (704-399-6000) may be used. Obtain wind direction, wind speed, and cloud cover from one of these sources for the vicinity of Catawba Nuclear Station.
- 4.2.2.2 Obtain the same information from the Control Room.
- 4.2.2.3 Record this information on the Weather Information Form (Enclosure 5.3).

4.3 Deviation Authorization

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

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

- 4.4.1 At the end of the quarter all of the required documentation will be placed in the Health Physics Satellite Master File.
- 4.4.2 Sign off the PT printout and forward as per Reference 2.4.

5.0 ENCLOSURES

- 5.1 Sample of Monthly /Quarterly Emergency Equipment Check Sheet
- 5.2 Sample of Emergency Equipment Kit Location Sheet
- 5.3 Sample of Weather Information Form
- 5.4 Sample of Recovery Kit List of Contents

- 5.5 Sample of Environmental Survey Kit List of Contents
- 5.6 Sample of Environmental Survey Kit List of Contents (Helicopter)
- 5.7 Sample of Personnel Survey Kit List of Contents
- 5.8 Sample of Personnel Survey Kit List of Contents (Evacuation Facility)
- 5.9 Sample of Emergency Medical Kit List of Contents (First Aid Room)
- 5.10 Sample of Emergency Medical Kit List of Contents (Piedmont Medical Center)
- 5.11 Sample of Operations Support Center Kit List of Contents
- 5.12 Sample of Technical Support Center Kit List of Contents
- 5.13 Sample of Fuel Transfer Kit List of Contents
- 5.14 Sample of Emergency Equipment Deviation Authorization Sheet
- 5.15 Sample of Recommended Shelf-life for Protective Clothing

CATAWBA NUCLEAR STATION

MONTHLY/QUARTERLY EMERGENCY EQUIPMENT CHECK SHEET

[illegible]

Generator Number	Comments	Signature/Date

[illegible]

WATKINS NUCLEAR STATION
Piedmont Location Sheet
RP/O/B/1000/06
ENCLOSURE 5.2

KITS

LOCATION

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

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

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

Signature/Date

CATARACT NUCLEAR STATION
RECOVERY KIT LIST OF CONTENTS
HP/O/B/1000/06
ENCLOSURE 5.4

ITEM	MINIMUM AMOUNT
List of Contents	1
Eberline E-520 w/HP-270 Probe	1
Exempt Source	1
Low/High Range Dosimeters (0-500 mR), (0-5R)	2 each
Dose Cards	25
TLD Badges	6
Dosimeter Charger	1
Boundary Ribbon or Rope (50 yd. roll)	1
Masking Tape (roll)	1
Rain Suits (set)	2
Coveralls: Cotton	2
Gloves: Cotton (pair)	2
Rubber (pair)	2
Shoe Covers: Disposable (pair)	2
Rubber (pair)	2
Hoods: Cotton	2
Poly Bags (Various)	12
Caution Signs w/inserts	2
Legal Pad	1
Instrument/Smear Survey (pad)	1
Pens	2
Grease Pencil and refills	1
Full Face Respirator With GMR-I Canister (or equivalent)	2
First Aid Kit	1
Potassium Iodide Tablets	275 bottles
Trans. Line Maint.	150 bottles
Security PAP	150 bottles
Construction Personnel Area	275 bottles
Allen Steam Station	100
KI Distribution Data Sheet	1
Smears (box)	30
NuCon Smears	1
Flashlight	10
Batteries (Size D)	1
Scissors	100
Medication Envelopes	60
Trans. Line Maint.	60
Security PAP	100
Construction Personnel Area	1
Allen Steam Station	100
Crisis Management Team Phone Directory**	3
SLED Badges (Personnel and Vehicle each)**	1
Emergency Planning Zone Maps**	1
HP/O/B/1009/16	

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

**These items are found only in the Recovery Kits located at Allen Steam Station and Transmission Line Maintenance Building.

CATAWBA NUCLEAR STATION
 ENVIRONMENTAL SURVEY KITS LIST OF CONTENTS
 HP/O/B/1000/06
 ENCLOSURE 5.5

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

CATAWBA NUCLEAR STATION
ENVIRONMENTAL SURVEY KITS LIST OF CONTENTS
HP/O/B/1000/06
ENCLOSURE 5.5

ITEM	MINIMUM AMOUNT
KI Tablet Distribution Data Sheet	1
Radio Operator Manual	1
CPD1 Key	1
Cotton Liners (pairs)	5
SLED Badges (Personal - Vehicle)	4
HP/O/B/1009/04	1
HP/O/B/1009/16	1
HP/O/B/1003/17	1
HP/O/B/1009/19	1

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

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

CATALINA NUCLEAR STATION
 ENVIRONMENTAL SURVEY KITS LIST OF CONTENTS (Helicopter)
 HP/O/B/1000/06
 ENCLOSURE 5.6

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

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

HIMMELPA NUCLEAR STATION
 PERSONNEL SURVEY KITS LIST OF CONTENTS
 HP/O/B/1000/06
 ENCLOSURE 5.7

ITEM	MINIMUM AMOUNT
List of Contents	1
Eberline E-140N w/HP-210 Probe (or equivalent)***	2
Sample Slide Tray***	1
Exempt Source	1
Emergency Radio Transmitter/Receiver**	1
Radio Operator Manual	1
Low/High Range Dosimeters (0-500 mR/hr), (0-5 R/hr)	2 each
Dose Cards	25
TLD Badges	2
Dosimeter Charger	1
Full Face Respirator With GMR-I (or equivalent)	2
Potassium Iodine Tablets (bottle)	2
KI Distribution Data Sheet	1
Coveralls: Cotton	6
Gloves: Cotton (pair)	6
Rubber (pair)	6
Shoe Covers: Disposable (pair)	6
Rubber (pair)	6
Hoods: Cotton	6
Boundary Ribbon or Rope (50 yd. roll)	1
Caution Signs w/inserts	4
Masking Tape (roll)	1
Poly Bags (Various)	6
Smears (box)	1
NuCon Smears	25
Instrument/Smear Survey (pad)	1
Pens	2
Grease Pencil & Refills	1
Legal Pad	1
Scissors	1
Rain Suits	3
Decon Kit	1
1) Rad Con	
2) Rad Wash	
3) Paper Towels	
4) Scrub Brush	
5) Cotton Swabs	
6) Fingernail Clippers	
7) Phisoex (125 ml)	
8) Personnel Decontamination Forms	
Batteries (Size D)	10
Station Directive 3.8.3	1
HP/O/B/1004/06	1
HP/O/B/1009/05	1
HP/O/B/1009/16	1
HP/O/B/1009/19**	1

CATAWBA NUCLEAR STATION
PERSONNEL SURVEY KITS LIST OF CONTENTS
HP/0/B/1000/06
ENCLOSURE 5.7

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

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

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

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

ITEM	MINIMUM AMOUNT
List of Contents	1
Eberline E-140N w/HP-210 Probe (or equivalent)	3
Exempt Source	1
Low/High Range Dosimeters (0-500 mR), (0-5R)	4 each
Dose Cards	25
TLD Badges	4
Dosimeter Charger	1
Potassium Iodide Tablets (bottle)	2
KI Tablet Distribution Data Sheet	1
Medication Envelopes	3
Coveralls: Cotton	6
Gloves: Cotton (pair)	6
Rubber (pair)	6
Shoe Covers: Disposable (pair)	6
Rubber (pair)	6
Hoods: Cotton	6
Boundary Ribbon or Rope (50 yd. roll)	1
Caution Signs w/inserts	4
Masking Tape (roll)	1
Poly Bags (Various)	6
Smears (box)	1
Instrument/Smear Survey (pad)	1
Pens	2
Grease Pencil & Refills	1
Legal Pad	1
Decon Kit	1
1) Rad Con	
2) Rad Wash	
3) Paper Towels	
4) Scrub Brush	
5) Cotton Swabs	
6) Fingernail Clippers	
7) Phisohex (125 ml)	
8) Personnel Decontamination Forms	
Scissors	1
Disposable Coveralls	40
Station Directive 3.8.3	1
Evacuation Personnel Dose Record	50
Catawba Nuclear Station Telephone Directory	1
Batteries (Size D)	10
HP/O/B/1004/06	1
HP/O/B/1009/05	1
HP/O/B/1009/16	1

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

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

ITEM	MINIMUM AMOUNT
List of Contents	1
Eberline E-140N w/HP-210 Probe (or equivalent)	1
Exempt Source	1
Poly Bags (various sizes)	6
Smears (box)	1
NuCon Smears	25
Coveralls: Cotton	6
Gloves: Cotton (pair)	6
Rubber (pair)	6
Shoe Covers: Disposable (pair)	6
Rubber (pair)	6
Hoods: Cotton	6
Rain Suits	2
Tape, Radioactive Material	1
Tape, Masking 2"	1
Tape, Duct 2"	1
Instrument/Smear Survey (pad)	1
Pens	2
Legal Pad	1
Caution Signs w/inserts	3
Radioactive Material Tags	50
Scissors	1
Poly for Ambulances (bundles)	3
Batteries (Size D)	4
HP/O/B/1004/06	1
HP/O/B/1009/08	1

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

CATAWBA NUCLEAR STATION
EMERGENCY MEDICAL KITS LIST OF CONTENTS
PIEDMONT MEDICAL CENTER
HP/O/B/1000/06
ENCLOSURE 5.10

ITEM	MINIMUM AMOUNT
List of Contents	1
Eberline E-52C w/HP-270 Probe	1
Eberline E-140N W/210 Probe (or equivalent)	1
Exempt Source	1
Poly Bags (various sizes)	14
Smears (box)	1
NuCon Smears	25
Tape, Radioactive Material	1
Tape, Masking 2"	2
Tape, Duct 2"	4
Instrument/Smear Survey (pad)	1
Caution Signs w/inserts	5
Rad Rope	1
TLD Badges	10
Pocket Dosimeters (0-500mR)	10
Dose Cards	25
Dosimeter Charger	1
Radioactive Material Tags	50
Floor and Vent Covering	1
Disposable Coveralls	25
Disposable Shoe Covers (pairs)	25
Disposable Hoods	10
Cubitainers	5
Decon Kit	1
1) Rad Con	
2) Rad Wash	
3) Paper Towels	
4) Scrub Brush	
5) Cotton Swabs	
6) Fingernail Clippers	
7) Phisohex (125 ml)	
8) Personnel Decontamination Forms	
Cotton Gloves (pairs)	50
Rubber Gloves (pairs)	20
Batteries (Size D)	8
Grease pencils (box)	1
Stanchions	4
HP/O/B/1004/06	1
HP/O/B/1009/08	1

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

CATAWBA NUCLEAR STATION
OPERATIONS SUPPORT CENTER KITS LIST OF CONTENTS
HP/O/B/1000/06
ENCLOSURE 5.11

ITEM	MINIMUM AMOUNT
List of Contents	1
Coveralls: Cotton	40
Gloves: Cotton (pair)	40
Rubber (pair)	40
Shoe Covers: Disposable (pair)	40
Rubber (pair)	40
Hoods: Cotton	40
Full Face Respirators with GMR-I Canister (or equivalent)	10
Flashlights	11
Batteries (Size D)	34
Batteries (9 volt)	20
Eberline PIC 6A	5
RM-14 w/HP-210 Probe	1
E-140N w/HP-210 Probe (or equivalent)	1
Exempt Source	1
Camera (Polaroid)	1
Polaroid Film Paks	2
Masking Tape (Roll)	2
Dosimeters (0-100R), (0-5R)	5
Dose Cards	25
Dosimeter Charger	1
Small Sample Bottles or Medication Envelopes	10
Rain Suits	5
Poly Bags (various sizes)	50
Radeco H809V Air Sampler	3
Silver Zeolite (CP-100G or GY-130) Filter Cartridges	30
Particulate Filters	30
Filter Cartridge Labels	30
Potassium Iodide Tablets (bottle)	20
KI Distribution Data Sheet	10
HP/O/B/1004/06	1
Decon Kit	1
1) Rad Con	
2) Rad Wash	
3) Paper Towels	
4) Scrub Brush	
5) Cotton Swabs	
6) Fingernail Clippers	
7) Phisoex (125 ml)	
8) Personnel Decontamination Forms	
Instrument/Smear Survey (pad)	1
Telephone	2
Post-Accident Containment Air Sampling Equipment Kit	1
Pen (box)	1
Grease Pencil (and refills) (box)	1
Extension Cord (50 ft.)	2
Extension Cords (25 ft.)	2
Stopwatch	2
Large Battery Lanterns	4
Plant Drawings	1

CATAWBA NUCLEAR STATION
OPERATIONS SUPPORT CENTER KITS LIST OF CONTENTS
HP/O/B/1000/06
ENCLOSURE 5.11

ITEM	MINIMUM AMOUNT
OSC Response Personnel Dose Record Forms	125
Smears (box)	1

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

CATARMA NUCLEAR STATION
 TECHNICAL SUPPORT CENTER KIT LIST OF CONTENTS
 HP/O/B/1000/06
 ENCLOSURE 5.12

Page 1

ITEM	MINIMUM AMOUNT
List of Contents	1
Coveralls: Cotton	20
Gloves: Cotton (pair)	20
Rubber (pair)	20
Shoe Covers: Disposable (pair)	20
Rubber (pair)	20
Hoods: Cotton	20
Full Face Respirators with GMR-I Canister (or equivalent)	6
Eberline E-520 w/HP-270 Probe	1
Eberline PIC-6A	3
E-140N w/HP-210 Probe (or equivalent)	1
Exempt Source	1
Radeco H809V Air Sample	1
Dosimeter (0-100R), (0-5R)	6 each
Dose Cards	25
Silver Zeolite (CP-100G or GY-130) Filter Cartridges	30
Particulate Filters	30
Filter Cartridge Labels	25
Dosimeter Charger	1
Potassium Iodide Tablets (bottle)	25
Boundary Ribbon or Rope (50 yd. roll)	1
Caution Signs w/inserts	3
Rad Tape	2
Smears (box)	1
Poly Bags	6
Masking Tape (Roll)	1
Pen	2
Legal Pad	1
Grease Pencil (and refills)	1
Flashlights	8
Batteries (Size D)	30
Batteries (9V)	12
Small Sample Bottles or Medication Envelopes	10
Rain Suits	6
Decon Kit	1
1) Rad Con	
2) Rad Wash	
3) Paper Towels	
4) Scrub Brush	
5) Cotton Swabs	
6) Fingernail Clippers	
7) Phisohex (125 ml)	
8) Personnel Decontamination Forms	
Instrument/Smear Survey (pad)	1
Request for Exposure Extension Forms	15
Plant Drawings	1
HP/O/B/1009/16	1
HP/O/B/1004/06	1

CATAWBA NUCLEAR STATION
TECHNICAL SUPPORT CENTER KIT LIST OF CONTENTS
HP/O/B/1000/06
ENCLOSURE 5.12

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

CATAWBA NUCLEAR STATION
FUEL TRANSFER KIT LIST OF CONTENTS
HP/O/B/1000/06
ENCLOSURE 5.13

ITEM	MINIMUM AMOUNT
List of Contents	1
Shoe Covers: Disposable (pair)	20
Rubber (pair)	6
Gloves: Cotton (bundle)	1
Surgeons (box)	1
Rubber (pair)	6
Coveralls: Disposable	4
Cotton	6
Hoods	4
Wet Suit	2
Hard Hat	3
Full Face Respirators with GMR-I Canister (or equivalent)	2
Radeco H809V Air Sampler	1
Eberline E-140N w/HP-210 Probe (or equivalent)	1
Eberline PIC-6A	1
Eberline E-520 w/HP-270 Probe	1
Exempt Source	1
Silver Zeolite Cartridges and Particulate Filters	10
Labels for Filters and Cartridges	10
Potassium Iodide Tablets (Bottle)	30
TLD Badge	5
Low/High Range Dosimeter (0-500 mR), (0-5R)	5 each
Dose Card	25
Dosimeter Charger	1
Weather-Proof Caution Signs with Inserts	4
Radioactive Waste Signs (4" x 6")	12
Caution: Radiation/Radioactive Material Tags	12
50 yd. Roll of Barricade Tape (Magenta & Yellow)	4
Step Off Pads	3
Poly Bags	12
Hand Gardening Spade	1
Wide Mouth Sample Bottles	4
Plastic Sample Bottles or Medication Envelopes	12
Kimwipes (box)	2
NuCon Smears	100
Copy of NAC-1 Drawings (Prints)	1
Copy of Loading and Unloading Instructions	1
Duct Tape (Roll)	2
Masking Tape (1" and 2" Rolls)	1 each
Contact Pyrometer with Probe	2
Safety Glasses	5
Binoculars	1
Tool Kit	1
Batteries (9 Volt)	4
Flashlights	2
Batteries (Size D)	18
Steno Pad with 2 Mechanical Lead Pencils	1
Pencil Refills	1

CATAWBA NUCLEAR STATION
FUEL TRANSFER KIT LIST OF CONTENTS
HP/O/B/1000/06
ENCLOSURE 5.13

ITEM	MINIMUM AMOUNT
Grease Pencils	2
All Purpose Marker	2
Scotch Tape Roll and Dispenser	1
Roll of Dimes	1
Gasoline Generator (Gasoline Stored in Safety Cabinet)	1
Instrument/Smear Survey (pad)	1
HP/O/B/1009/16	1

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

CATAWBA NUCLEAR STATION
RECOMMENDED SHELF-LIFE FOR PROTECTIVE CLOTHING

Cotton Goods:	4 years
Tyvek Goods:	4 years
Duraguard Goods:	4 years
Rubber overshoes	4 years
Vinyl Gloves:	6 months
Latex Gloves:	6 months
PVC goods:	1 year

NOTE: If the date marked on the protective clothing exceeds the allowable shelf-life, remove the protective clothing from the emergency kit.

CATAWBA NUCLEAR STATION DIRECTIVE 3.0.7 (TS)

REVISION NO. 5 DATE 6-1-85

APPROVAL JW Hampton

DUKE POWER COMPANY

CATAWBA NUCLEAR STATION

SITE ASSEMBLY/EVACUATION

1.0 PURPOSE

- 1.1 To account for station personnel, contractor personnel, other Duke Power Company employees and visitors onsite in an emergency situation.
- 1.2 To ensure personnel safety by evacuation to a predesignated location offsite when the situation warrants and to ensure the protection of essential personnel remaining onsite.
- 1.3 To provide for the control of evacuated employees until the emergency situation is returned to normal or until other disposition is made.
- 1.4 To provide training and drills on assembly and evacuation to plant personnel and others with unescorted access to station.

2.0 SPECIFIC RESPONSIBILITIES

- 2.1 All station employees, contractor personnel, visitor and other Duke Power Company employees onsite are required to comply with the actuation of a Site Assembly (within 30 minutes of initiation) or Evacuation. All personnel are also responsible for knowing the location of their assembly point (indicated on back of their security badge), who they are to contact upon assembly and to where they are to evacuate.
- 2.2 The Shift Supervisor/Emergency Coordinator is responsible for implementing the Site Assembly or Evacuation depending upon the situation.
- 2.3 Station sections are responsible for accounting for their onsite personnel to the Security Shift Clerk or Sergeant at extension 2393. See Section 5.1.2.2 A through N. The maintenance of accountability shall also be accomplished by status reports every 30 minutes.
- 2.4 Personnel shall notify their Supervisor, who in turn report to Coordinator and higher levels as applicable.
- 2.5 During evening and night shift or on weekends or holidays, personnel without their supervisor onsite will report to the Security Shift Clerk or Sergeant at extension 2393.

- 2.6 Construction personnel are responsible for reporting to their supervisor, who will report on to the Construction Project Manager.
- 2.7 QA personnel are responsible for reporting to the Senior QA Engineer.
- 2.8 Vendor and contractor personnel are responsible for reporting to their supervisor.
- 2.9 Station Sections, and other organizations as listed in 5.1.2.2 A through N, after assembling shall report to the Security Shift Clerk or Sergeant at extension 2393. All personnel MUST BE accounted for within 30 minutes of the announcement.
- 2.10 If personnel are directed to proceed to either or both of the Evacuation Relocation Sites, the Evacuation Coordinator at that site will be responsible for:
 - 2.10.1 Obtaining the key to Site Alpha from Security, if necessary.
 - 2.10.2 Maintaining communication with the Shift Supervisor/Emergency Coordinator.
 - 2.10.3 Accounting for station personnel and others as they arrive at the site and reporting to Shift Supervisor/Emergency Coordinator the status of the evacuated employees.
 - 2.10.4 Disseminating status reports to evacuated personnel.
 - 2.10.5 Interfacing with the management of the relocation site.
- 2.11 The Security Shift Lt., Clerk or Sergeant shall receive the reports of personnel accountability, noting all personnel who are unaccounted for on Enclosure 1 and report to the Security and Contract Coordinator in the TSC or to the Shift Supervisor in the Control Room.
- 2.12 The Shift Supervisor/Emergency Coordinator is responsible for securing from the Site Assembly or Evacuation when the situation has returned to a normal status.
- 2.13 Health Physics will monitor personnel exiting from the PAP and Construction Exits, during a Site Evacuation, and will have personnel available at the Evacuation Relocation Site per Reference 3.5.
- 2.14 Health Physics will monitor assembly areas and exit points to assure radiation protection of these personnel assembled.
- 2.15 Security shall be responsible for search and rescue of unaccounted for personnel and may require assistance from other station groups.

3.0 REFERENCES

- 3.1 Catawba Nuclear Station Emergency Plan
- 3.2 Catawba Nuclear Station Directive 3.8.4
- 3.3 System Health Physics Manual
- 3.4 RP/O/A/5000/10, Conducting a Site Assembly/Evacuation
- 3.5 HP/O/B/1009/05, Personnel Monitoring for Emergency Conditions
- 3.6 Catawba Construction Procedure CP-833, Site Assembly and Evacuation

4.0 ADDITIONAL INFORMATION

- 4.1 Bomb Threat - Personnel are to assemble in the station parking lots unless otherwise directed.
- 4.2 Inability to Reach Assembly Point - Personnel are to "call in" their whereabouts before the 30 minutes, if they cannot reach their assembly point, and are to proceed in person as soon as possible.
- 4.2 Working in RCA - Persons in protective clothing should leave their work areas and go to the appropriate change rooms. In the change room, they should contact the appropriate persons as designated in 5.1.2.2 for personnel accountability reporting. Judgement should be used concerning the advisability of changing clothes and reporting to normal assembly areas.

5.0 PROCEDURE

5.1 Site Assembly

5.1.1 Events Initiating a Site Assembly

- 5.1.1.1 A Site Assembly is an occurrence that warrants the accountability of all personnel on site for reasons of personnel safety or for dissemination of information.

5.1.1.2 Events Necessitating a Site Assembly:

A. Emergency Classification

- a. Alert, if plant conditions are rapidly degrading (opinion of Shift Supervisor/ Emergency Coordinator)

b. Site Area Emergency

c. General Emergency

- B. Other plant conditions could warrant a precautionary assembly/evacuation as determined by the Shift Supervisor/Emergency Coordinator.
- C. Auxiliary Building radiation levels abnormally high, in areas where access is unrestricted
1. > 2 mr/hr
 2. > 1×10^6 cpm airborne by EMF-41

5.1.2 Implementation

5.1.2.1 The Shift Supervisor/Emergency Coordinator shall announce the Site Assembly per RP/O/A/5000/10, Conducting A Site Assembly/Evacuation.

5.1.2.2 Upon hearing the alarm and the announcement, all personnel shall report to their predesignated assembly points as follows:

NOTE: ENTRY INTO THE PROTECTED AREA IS SECURED UPON A SITE ASSEMBLY; therefore, all non-essential station personnel shall go to either their primary (inside Security boundary) or secondary (outside Security boundary) assembly point.

Personnel may exit thru the PAP to get to their assembly point as necessary.

Group	<u>ASSEMBLY POINTS</u>	
	Primary	Secondary
<u>A. Operations</u>		
1) Staff & other personnel not on shift	Operations Office Area	Conf. Rm. #3 Admin. Bldg.
2) On shift personnel	Control Room or OSC	N/A
3) Training groups	Classroom in High Rise	Conf. Rm. #3 Admin. Bldg.
<u>B. Station Services</u>		
1) Administrative Personnel, Clerical and DDP	DDP Rm. SB	Station Services Area Admin. Bldg.
2) Safety/Medical	Safety Office	TAB
3) Security	Security Assembly Rm.	Conf. Rm. #2 Admin. Bldg.
NOTE: Security personnel on assignment remain "ON POST" or proceed to the OSC, as directed by Security Management.		
4) K-MAC & 4C's Personnel	K-MAC Office High Rise	Conf. Rm. #2 Admin. Bldg.
5) Training Services	Safety Office	TAB
<u>C. Technical Services</u>		
1) Compliance & Project Services	Office in High Rise	Body Burden Room
2) Performance	Prf. Office Area SB	Body Burden Room
3) a. Secondary Chemistry	CT Lab	Body Burden Room
b. Environmental Chemistry	Water Treatment Bldg.	Body Burden Room
c. Staff, Radwaste & Primary Chemistry	Chem. Office ASB	Body Burden Room
4) Health Physics	HP Office ASB 609 El.	Body Burden Room

Group	Primary Assembly Point	Secondary Assembly Point
D. <u>Maintenance</u>		
1) Mechanical	Mechanical Shop Area	Gen. Trn. Room Admin. Bldg.
2) I&E/NSS	I&E Shop SB	Gen. Trn. Room Admin. Bldg.
I&E/NSS on Unit #2	NSS Cal Trailer TB #2	
3) Planning	Inside Warehouse Tool Issue Area	Gen. Trn. Room Admin. Bldg.
E. Integrated Scheduling	Integrated Scheduling Office Area SB	Conf. Rm #3 Admin. Bldg.
F. QA	QA Office High Rise	Admin. Bldg. Break Rm.
G. Construction	See Const. Procedure 833	
H. Support Groups (SMS, SSD) - Report through Planning Group.	High Rise Break Rm.	Admin. Bldg. Break Rm.
I. Model Group	CSRG Office	Gen. Trn. Rm. Admin. Bldg.
J. Owner's Group	CSRG Office	Gen. Trn. Rm. Admin. Bldg.
K. CSRG	CSRG Office	Gen. Trn. Rm. Admin. Bldg.
L. Community Relations	TSC	Gen. Trn. Rm. Admin. Bldg.
M. NRC Residents & Staff	NRC Office High Rise	Body Burden Room
N. Visitors - Remain with escort or go to PAP if unescorted.		

NOTES

1. Station Security shall be responsible for the accountability of visitors within the PAP. Visitors outside the Protected Area can remain in the PAP Lobby, other visitors can be sent to the Break Room in the Service Building, to be decided on by Security Management.
2. If there are any radiological implications, any Health Physics escort shall take his/her visitor to the PAP.
3. Contracted Personnel should assemble with the Station group that they assigned (ex. Rad Services with HP), unless otherwise indicated.

4. ABBREVIATIONS

SB - Service Building
ASB - Auxillary Service Building
OSC - Operations Support Center
PAP - Personnel Access Portal
TB #2 - Turbine Building #2
TAB - Temporary Admin Building

5.1.2.3 Upon initiation of a Site Assembly, Security shall prevent entry into the Protected Area through the PAP except for the following essential personnel:

- A. Emergency Organization personnel, designated by a red dot on the upper part of their security badge.
- B. Operation Shift Personnel
- C. Catawba Nuclear Station Fire Brigade personnel
- D. Catawba Nuclear Station Field Monitoring team personnel
- E. Crisis Management Team personnel with proper identification
- F. NRC personnel
- G. Security personnel
- H. Others as directed by the Emergency Coordinator.

5.1.3 Accounting for Personnel

- 5.1.3.1 Unaccounted for personnel will be reported to the Shift Supervisor/Emergency Coordinator, by Security after the first 30 minute accounting period. Efforts to locate the missing person(s) will begin approximately 45 minutes after the assembly is initiated.
- 5.1.3.2 If necessary, Security will institute Search and Rescue operations to locate and retrieve unaccounted for personnel. Other station groups will be called upon to assist, as necessary.
- 5.1.3.3 The status of unaccounted for personnel will be maintained in the Central Alarm Station.

5.1.4 Maintenance of Accountability

- 5.1.4.1 If the requirement for an assembly no longer exists, permission to return to normal duties will be given by the Emergency Coordinator.
- 5.1.4.2 Plant conditions may require evacuation of the station. Instructions will be given by the Emergency Coordinator.
- 5.1.4.3 All reporting organizations shall report to Security on the status of their personnel at thirty (30) minute intervals or some other frequency as specified, in the same manner as the initial report.

5.1.5 Securing from a Site Assembly

- 4.1.5.1 When the emergency condition has been brought under control or when it has been determined that personnel can return to their work location safely, the all-clear message will be sounded by the Shift Supervisor.

5.2 Evacuation

5.2.1 Evacuation Coordination

- 5.2.1.1 Prior to a Site Evacuation the Shift Supervisor/ Emergency Coordinator shall notify the Evacuation Coordinator. He shall be the "individual-in-charge" at the Evacuation-Relocation Site. See Enclosure 1 of Catawba Nuclear Station Directive 3.8.4.
- 5.2.1.2 In the event of a Site Evacuation without the Evacuation Coordinator present, the most senior employee present shall assume the duties of the Evacuation Coordinator.
- 5.2.1.3 Information about the status of evacuation will be relayed to the Evacuation Coordinator who will disseminate it as necessary.
- 5.2.1.4 The Evacuation Coordinator will meet with York County Sheriff's Deputies or South Carolina Highway Patrol to lead the way to the chosen Evacuation-Relocation Site.

A. York County Sheriff Department . . 327-2021

B. S. C. Highway Patrol 366-7668

- 5.2.1.5 The Evacuation Coordinator or delegate will remain in touch with the TSC or CMC and will direct the return of station personnel if needed or authorize the personnel to go home as the situation warrants.
- 5.2.1.6 SLED Identification badges will be issued to those personnel who need them at the Evacuation Relocation Site.

5.2.2 Evacuation-Relocation Sites

- 5.2.2.1 Site "Alpha" - Duke Power Company Transmission Line Maintenance Warehouse on Parham Road (CR-54) (Enclosure 2)

- 5.2.2.1.1 The Shift Supervisor/Emergency Coordinator or delegate shall call the listed phone number or radio to inform them of the planned evacuation. If there is no response to the call, the key to Site Alpha is kept by Catawba Nuclear Station Security. The key can be obtained by Catawba Nuclear Station personnel, designated by the Emergency Coordinator.

- 5.2.2.1.2 Phone Numbers:

- 373-7309
 - (803) 366-4777

- 5.2.2.1.3 Radio via Dispatcher's frequency.

- 5.2.2.2 Site "Bravo" - Duke Power Company Allen Steam Station on Southpoint Road (Enclosure 3)

- 5.2.2.2.1 The Shift Supervisor/Emergency Coordinator or delegate shall call the listed phone number or radio to inform them of the planned evacuation. Since Allen Steam Station is operable at all times, no backup access is required.

- 5.2.2.2.2 Phone Numbers:

- 373-4646
 - (704)825-2022

- 5.2.2.2.3 Radio via Dispatcher's Frequency

5.2.3 Implementation

- 5.2.3.1 Site Evacuations are initiated only after station personnel have been assembled by a Site Assembly.
- 5.2.3.2 The Shift Supervisor/Emergency Coordinator shall determine which Evacuation-Relocation Site to evacuate to based on current meteorological conditions and the nature of the emergency.
- 5.2.3.3 The Shift Supervisor/Emergency Coordinator or delegate shall sound the Site Evacuation alarm followed by an announcement on the plant page system per RP/O/A/5000/10, Conducting A Site Assembly/Evacuation.
- 5.2.3.4 Upon hearing the Site Evacuation alarm and the announcement, all evacuating personnel shall be monitored at the PAP or Construction Exits by HP personnel before proceeding to the location as announced.
- 5.2.3.5 Upon arrival at the Evacuation-Relocation Site, personnel shall remain as a group to be checked for possible contamination, where they shall be under the direction and control of the Evacuation Coordinator.

5.2.4 Radiological Protection for Essential Personnel

- 5.2.4.1 Personnel to remain onsite after the initiation of a Site Evacuation shall be designated by Station Management whenever a Site Area Emergency is declared.
- 5.2.4.2 The Technical Support Center and Control Room are areas where essential personnel should be sent to avoid excess radiation exposure.
- 5.2.4.3 Access to the Radiation Control Areas will be controlled by personnel in the Operation Support Center using RP/O/B/5000/12.

5.2.5 Securing from a Site Evacuation

- 5.2.5.1 When the emergency situation has been brought under control and when it has been determined that the evacuated personnel can return to their work location safely, the Evacuation Coordinator will be notified by either the Shift Supervisor/Emergency Coordinator or by the CMC Recovery Manager.

5.3 Training and Drills

5.3.1 All personnel with unescorted access to the station are given training on Site Assembly/Evacuation on an annual basis as part of the General Employee Training Program.

5.3.2 Site Assembly drills will be conducted on a semi-annual basis to test the ability of personnel onsite to adequately respond in an emergency.

5.3.3 A Site Evacuation drill will be conducted once a year to coincide with the Station's Annual Emergency Exercise.

NOTE: The evacuation will be simulated, except for a small group of non-essential employees who will actually proceed to the Evacuation-Relocation Site.

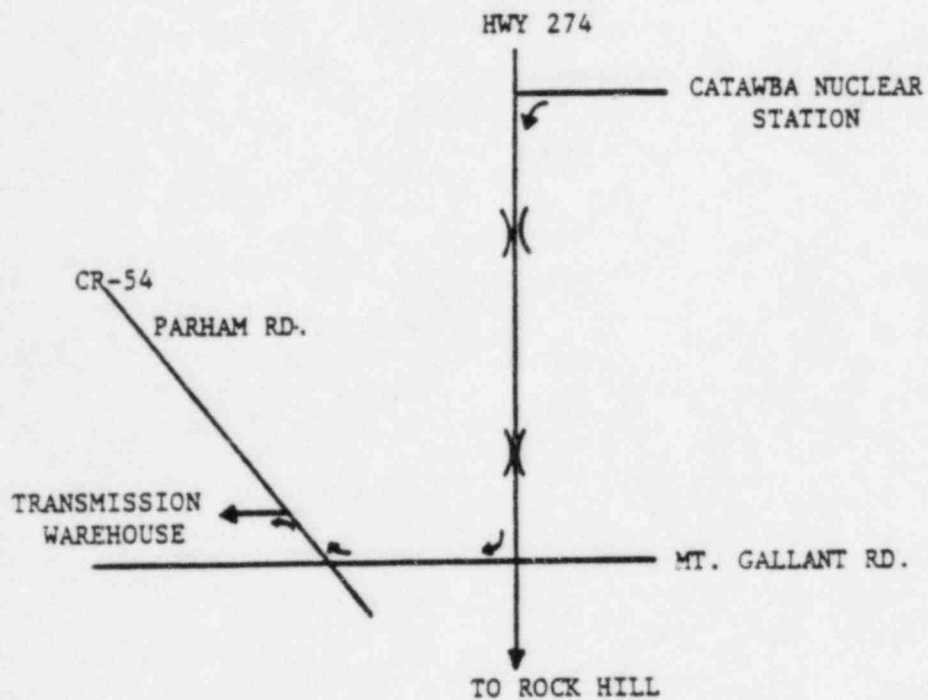
CATAWBA NUCLEAR STATION
STATION DIRECTIVE 3.0.7 (TS)
ENCLOSURE 1

UNACCOUNTED FOR PERSONNEL

<u>NAME</u>	<u>GROUP</u>	<u>SUPERVISOR</u>	<u>LAST KNOWN LOCATION</u>	<u>STATUS</u>
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CATAWBA NUCLEAR STATION
STATION DIRECTIVE 3.0.7 (TS)
ENCLOSURE 2

EVACUATION/RELOCATION SITE "ALPHA"
DUKE POWER CO. TRANSMISSION LINE WAREHOUSE
PARHAM ROAD (CR-54) YORK COUNTY

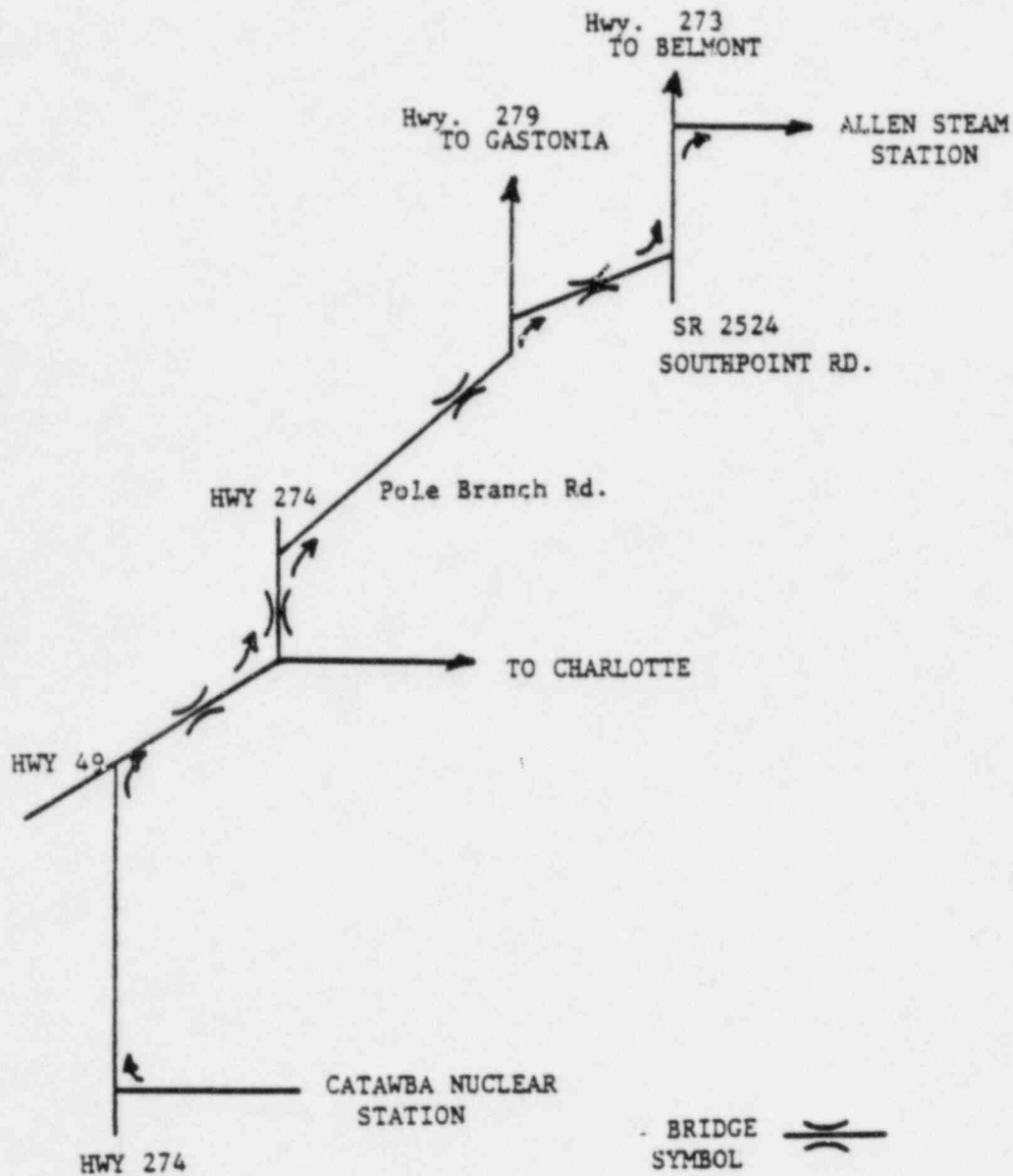


BRIDGE
SYMBOL



CATAWBA NUCLEAR STATION
STATION DIRECTIVE 3.0.7 (TS)
ENCLOSURE 3

EVACUATION/RELOCATION SITE "BRAVO"
DUKE POWER CO. ALLEN STEAM STATION
SOUTHPOINT ROAD (SR2524) GASTON COUNTY



CATAWBA NUCLEAR STATION DIRECTIVE 3.8.4 (TS)

REV. NO. 11 DATE 6-1-85

APPROVAL *[Signature]*

DUKE POWER COMPANY

CATAWBA NUCLEAR STATION

ONSITE EMERGENCY ORGANIZATION

1.0 PURPOSE

To define the role of the Emergency Coordinator and other members of the Onsite Emergency Organization in implementing the station Emergency Plan and to provide for augmentation of the normal operating shift during an emergency situation.

2.0 REFERENCES

- 2.1 Catawba Nuclear Station Emergency Plan
- 2.2 Catawba Nuclear Station Operations Management Procedure 1-8, "Authority and Responsibility of Licensed Reactor Operators and Licensed Senior Reactor Operators"
- 2.3 Station Directive 2.8.1 (TS) "Reporting Requirements"
- 2.4 Station Directive 3.0.7 (TS), Site Assembly/Evacuation.

3.0 RESPONSIBILITIES

- 3.1 Shift Supervisor - All emergencies are initially handled by the Shift Supervisor. The Shift Supervisor on duty will ensure that all immediate actions required by station emergency or abnormal procedures, applicable to the situation, are performed and that all actions necessary for the protection and safety of personnel and property are being taken.

- 3.2 Emergency Coordinator - The Shift Supervisor shall assume the function of the Emergency Coordinator until the arrival of the Station Manager or his designee at which time the functions of the Emergency Coordinator are transferred to the Station Manager or his designee.

The Shift Supervisor shall then continue to take actions necessary to ensure that the emergency situation is brought under control.

- 3.3 Recovery Manager - The responsibilities of the Emergency Coordinator will be assumed by the Recovery Manager at the Crisis Management Center (CMC) as this organization is staffed and ready to assume its

function. This assumption of the Emergency Coordinator functions by the Recovery Manager, will take place for the Site Area Emergency and General Emergency classifications.

The Emergency Coordinator shall continue to take actions necessary to ensure that the emergency situation is brought under control and shall coordinate activities between the station and the CMC.

4.0 DUTIES

4.1 Shift Supervisor - immediate duties include the following:

- 4.1.1 Determine from the initiating conditions, the applicable Emergency Class.
- 4.1.2 Declare the Emergency as necessary and assume the functions the Emergency Coordinator.
- 4.1.3 Assign someone from the shift to begin the notifications as per applicable procedure.
- 4.1.4 Take necessary on-site remedial actions.
- 4.1.5 Initiate activation of the Technical Support Center and Operations Support Center.
- 4.1.6 Providing protective action recommendations to authorities responsible for implementing offsite emergency measures.

NOTE: This authority and responsibility shall not be delegated to other elements of the station emergency organization.

4.2 Station Manager/Emergency Coordinator - relieves the Shift Supervisor of the Emergency Coordinator function and assumes the responsibility for implementing the station Emergency Plan including:

- 4.2.1 Staffing the Technical Support Center and Operations Support Center with those personnel deemed necessary to effectively assess the emergency condition.
- 4.2.2 Instituting those procedures necessary to allow the Control Room to gain immediate control of the emergency situation.
- 4.2.3 Notification and activation of Crisis Management Team, county and state organizations and the Nuclear Regulatory Commission.
- 4.2.4 Providing protective action recommendations to authorities responsible for implementing off-site emergency measures.

NOTE: This authority and responsibility shall not be delegated to other elements of the station emergency organization.

4.2.5 Continued maintenance of an adequate state of emergency preparedness until the emergency situation has been effectively managed and the station is returned to a normal or safe operating condition.

4.3 Technical Support Center Staff - The Technical Support Center (TSC), location shown in Enclosure 4, will be activated and staffed to support the control room and coordinate emergency and/or recovery efforts with offsite groups, corporate headquarters, state and local government and the NRC. The station operating staff is used as the TSC staff in the emergency situation as deemed necessary by the Emergency Coordinator. Individuals with a TSC function will have a routine function that is similar to their role in an emergency.

4.3.1 Operations Group:

- A. The Superintendent of Operations when designated, shall assume the duties of the Station Manager. He will provide expertise to the Station Manager and the Shift Supervisor regarding solutions to operational problems. He shall ensure that each operating shift is manned with competent personnel trained and prepared to manage all emergency situations, and he shall augment his personnel resources as necessary to accomplish this goal. He shall provide technical expertise to other members of the TSC and shall work closely with the Superintendent of Maintenance in restoring station equipment to an operational status during and after the emergency condition. This individual shall be the first alternate to the Emergency Coordinator in the event the Station Manager is unavailable.
- B. The Operating Engineer shall assume the duties of the Superintendent of Operations when so designated. He will provide technical expertise to the Superintendent of Operations and other members of the TSC as required and maintain contact with Operations personnel in the Control Room.
- C. The Assistant Operating Engineer shall assume the duties of the Operating Engineer when so designated. He will provide technical expertise to the Superintendent of Operations, the Operating Engineer and other members of the TSC as required and maintain contact with the Operations personnel stationed in the Operations Support Center (OSC).

4.3.2 Technical Services Group:

- A. The Superintendent of Technical Services shall assume the duties of the Station Manager when so designated. He will provide expertise to the Station Manager and the Shift Supervisor (via the Operating Engineer) regarding solutions to operational problems. He shall provide technical expertise to other members of the TSC in the areas of Health Physics, Chemistry, Performance and Reactor Engineering and in Licensing and Engineering support programs. He shall ensure that all areas of responsibility under his direction are staffed with competent personnel, properly trained and prepared to support any operational emergency condition. This individual shall be the second alternate to the Emergency Coordinator in the event the Station Manager is unavailable.
- B. The Health Physics Section of the TSC
1. The Station Health Physicist shall assume the duties of the Superintendent of Technical Services when so designated. He will provide technical expertise to the Superintendent of Technical Services, the Station Manager and other members of the TSC as required. He will provide for the calculation and distribution of off-site dose determinations for releases of radioactive materials to the atmosphere and make recommendations to the Station Manager through the Superintendent of Technical Services on Protective Actions necessary for limiting exposure to station personnel and members of the public. The Station Health Physicist shall also work closely with the appropriate members of the Crisis Management Center to assure that radiological hazards during any emergency situations are minimized. The Station Health Physicist shall ensure that all areas under his direction are staffed and prepared to manage Health Physics support for any emergency condition.
 2. Health Physics S&C Coordinator shall coordinate and direct the actions of in plant radiological monitoring teams and provide data on plant radiological status.
 3. H. P. Support Coordinator shall direct the actions of the remainder of the Health Physics functions.
 4. Data Analysis Coordinator shall provide for the calculation and distribution of Off-site Dose projections and field monitoring information

assessable by Health Physics personnel and relay this to the Station Health Physicist.

The Data Analysis Coordinator shall also direct the Field Monitoring Coordinator as necessary to evaluate dose projects versus field data.

5. Field Monitoring Coordinator shall direct the actions of the field monitoring teams in gathering both on-site and off-site radiological data and make this information available to the Data Analysis Coordinator or Station Health Physicist. Constant communications will be maintained by a Radio Operator or by the use of plant or commercial telephone lines to the field teams.
- C. The Station Chemist shall assume the duties of the Superintendent of Technical Services when so designated. He will provide technical expertise to the Superintendent of Technical Services and to other members of the TSC as required. He is responsible for coordinating chemical technical support and for initiating necessary action to ensure adequate chemical sampling and evaluation to support the emergency condition. The Station Chemist shall ensure that all areas under his direction are staffed and prepared to manage Chemistry support for any emergency condition.
- D. The Performance Engineer shall assume the duties of the Superintendent of Technical Services when so designated. He will provide technical expertise to the Superintendent of Technical Services and to other members of the TSC as required. He will assure that adequate levels of technical and engineering manpower are available to: manage test procedure review, carryout special test procedures, insure control and accountability of special nuclear materials, and evaluate plant and reactor performance. A Test Engineer shall assist the Performance Engineer in the evaluation of plant systems and transmission of information to the CMC. A Performance Technician(s) will operate the TSC Operator Aid Computer Terminal to post and update plant status. This information will be transmitted through the VAX computer to other users. The Performance Engineer shall ensure that all areas under his supervision are staffed and prepared to manage Performance support for any emergency condition.
- E. The Reactor Engineer shall assume the duties of the Performance Engineer when so designated. He will provide technical expertise to the Performance

Engineer and to other members of the TSC as required. The Reactor Engineer shall ensure that all areas under his direction are staffed and prepared to manage technical support for any emergency condition.

- F. The Compliance Engineer shall assume the duties of the Superintendent of Technical Services when so designated. He is responsible for coordinating station activities with regulating agencies, coordinating the reporting and investigation of all incidents and for providing review of appropriate station technical matters.

The Compliance Engineer shall ensure that all areas under his direction are staffed and prepared to manage technical support for any emergency condition.

- G. The Project Services Engineer shall assume the duties of the Superintendent of Technical Services when so designated. He is responsible for assisting in the collection of information or data for transmission to offsite authorities. The Project Services Engineer shall ensure that all areas under his direction are staffed and prepared to manage technical support for any emergency condition.

- H. TSC Logkeeper shall record events that occur from the time of activation of the TSC and shall be directed by the Emergency Coordinator.

- I. Offsite Communicator shall make followup notifications to State and/or County EOC's. The Offsite Communicator will proceed to the Control Room when the TSC is activated to assist with notifications until the Station Manager assumes duties of the Emergency Coordinator.

4.3.3 Station Services Group:

- A. The Superintendent of Station Services when designated shall assume the duties of the Station Manager. He will provide technical expertise to the Station Manager and to the Shift Supervisor (via the Operating Engineer) regarding solutions to administrative problems associated with emergency conditions at the station. He shall provide technical expertise to other members of the TSC in the area of Contract Services, Security, Training and Safety, and Administrative Coordination. He shall ensure that all areas under his direction are staffed and prepared to manage administrative support for any emergency condition. This individual shall be the fourth alternate to the Emergency Coordinator in the event the Station Manager is unavailable.

- B. The Security and Contract Coordinator shall assume the duties of the Superintendent of Station Services when so designated. He will provide technical expertise to the Superintendent of Station Services and to other members of the TSC as required. He is responsible for coordinating Security and Contract Services for the station. The Security Chief shall ensure that all areas under his direction are staffed and prepared to manage Security and Contract Services for any emergency condition.
- C. The Administrative Coordinator shall assume the duties of the Superintendent of Station Services when so designated. She will provide technical expertise to the Superintendent of Station Services and to other members of the TSC as required. She is responsible for coordinating and maintaining general administrative functions and for contacting the TSC clerk(s) as needed. The Administrative Coordinator shall ensure that all areas under her direction are staffed and prepared to manage administrative functions during any emergency condition.
- D. The Training and Safety Coordinator shall assume the duties of the Superintendent of Station Services when so designated. She will provide technical expertise to the Superintendent of Station Services and to other members of the TSC as required. She is responsible for coordinating the station training and safety activities, Fire Protection and Medical Services in support of the emergency organization. The Training and Safety Coordinator shall ensure that all areas under her direction are staffed and prepared to provide needed training and safety evaluations during any emergency condition.

4.3.4 Maintenance Group:

- A. The Superintendent of Maintenance when designated, shall assume the duties of the Station Manager. He will provide technical expertise to the Station Manager and the Superintendent of Operations regarding solutions to operational problems. He shall provide technical expertise to other members of the TSC in areas of Mechanical Maintenance, Planning, Instrument and Electrical Maintenance, and Materials Support. He will insure that all areas of responsibility under his direction are staffed with competent personnel properly trained and prepared to support any operational emergency condition. This individual shall be the third alternate to the Emergency Coordinator in the event the Station Manager is unavailable.

- B. The Mechanical Maintenance Engineer shall assume the duties of the Superintendent of Maintenance when so designated. He will provide technical expertise to the Superintendent of Maintenance and to other members of the TSC as required. He is responsible for preventative and actual maintenance for all station mechanical equipment and facilities. The Mechanical Maintenance Engineer shall insure that all areas under his direction are staffed and prepared to manage maintenance support for any emergency condition.
- C. The Planning Engineer shall assume the duties of the Superintendent of Maintenance when so designated. He will provide technical expertise to the Superintendent of Maintenance and to other members of the TSC as required. He is responsible for the implementation and evaluation of the maintenance management program and for the administration of the materials procurement program. The Planning Engineer shall insure that all areas under his direction are staffed and prepared to manage planning and materials support for any emergency condition.
- D. The Instrument and Electrical Engineer shall assume the duties of the Superintendent of Maintenance when so designated. He will provide technical expertise to the Superintendent of Maintenance and to other members of the TSC as required. He is responsible for maintaining all station I&E equipment in an operational state. The I&E Engineer will be the station contact with the Transmission Department personnel in the event of loss of offsite power. The Instrument and Electrical Engineer shall ensure that all areas under his direction are staffed and prepared to manage I&E support for any emergency condition.

4.4 Operations Support Center Staff

- 4.4.1 The Operations Support Center (OSC), location shown in Enclosure 5, shall be activated by the Emergency Coordinator in accordance with the applicable Emergency Procedure. The OSC will be staffed and organized as per Enclosure 3 or as deemed necessary by the Shift Supervisor or Station Manager. Those personnel assigned to the OSC shall be under the control of the OSC Coordinator designated by the Emergency Coordinator.
- 4.4.2 The Operations Support Center shall include as a minimum the following personnel:
 - A. Operations: Operators on shift who are not actually assigned to the control room and additional operations people on site or called out as required by the Shift Supervisor or Station Manager.

B. Health Physics: A Health Physics Supervisor and five technicians as deemed necessary by the Station Health Physicist. The Health Physics Supervisor shall work closely with the OSC Coordinator in charge and shall maintain contact with the HP S&C Coordinator in the TSC.

C. Other station groups as necessary.

4.4.3 In the event that the Operations Support Center becomes environmentally uninhabitable due to radiological or other conditions, the OSC shall move to the rear of the Control Room or to other facilities as applicable.

5.0 ACTIVATION OF EMERGENCY ORGANIZATION

5.1 Phased Activation of TSC Organization

5.1.1 Selected station personnel are notified of situations classified as Unusual Events by Emergency Response Procedure, RP/O/A/5000/02. These individuals shall then respond as appropriate and shall notify any additional personnel in their organization to respond as needed. At the Alert class or greater TSC activation is required, either full or partial as deemed necessary by the Station Manager.

5.1.2 To effectively respond to an emergency situation and to avoid unnecessary personnel from being activated, the TSC is divided into a Phase I and II organization, with other TSC personnel as needed. The Station Manager may activate Phase I separately or both Phase I and II jointly (Phase II is never activated without prior activation of Phase I).

5.1.3 See Enclosure 6 for Notification Mechanism.

5.2 Phase I of the Technical Support Center

5.2.1 Phase I of the Technical Support Center organization shall be staffed and organized as indicated below or as deemed necessary by the Station Manager.

NOTE: See Enclosure (1) for TSC organization.

5.2.2 Personnel assigned to Phase I of TSC shall be capable of supplementing the on-shift Emergency Response within 30 to 45 minutes of notification.

- A. The Station Manager/Emergency Coordinator
- B. Group Superintendents
- C. Station Health Physicist
- D. Performance Engineer
- E. Instrument and Electrical Engineer
- F. Offsite Communicator
- G. Fielding Monitoring Coordinator

- H. Data Analysis Coordinator
- I. S & C Coordinator
- J. HP Support Coordinator
- K. Reactor Engineer
- L. Project Services Engineer

- 5.2.3 In the event that the Technical Support Center becomes environmentally uninhabitable due to radiological or other conditions and the Control Room remains secure (habitable), Phase I of the TSC shall move inside the Control Room area. In the event the Control Room also becomes uninhabitable due to radiological or other conditions, Phase I of the TSC shall move to the Administration Building or to other facilities as applicable.

5.3 Phase II of the Technical Support Center

- 5.3.1 Phase II of the Technical Support Center organization shall be staffed and organized as indicated below or as deemed necessary by the Station Manager.

- A. Operating Engineer
- B. Assistant Operating Engineer
- C. The Station Chemist
- D. The Test Engineer
- E. Performance Technician(s)
- F. The Compliance Engineer
- G. The Mechanical Maintenance Engineer
- H. The Security & Contract Coordinator
- I. The Training and Safety Coordinator

- 5.3.2 Personnel assigned to Phase II of TSC shall be capable of supplementing the on-shift Emergency Response within 45 to 75 minutes of notification.

- 5.3.3 In the event that the Technical Support Center becomes environmentally uninhabitable due to radiological or other conditions, Phase II of the TSC shall move to the Administration Building or to other facilities as applicable, when directed by the Station Manager.

5.4 Site Evacuation

- 5.4.1 At the Site Area Emergency class, Group Superintendents shall develop a list of all essential personnel that will remain onsite.
- 5.4.2 Health Physics shall determine the habitability of the TSC, OSC & Control Room for the protection of station personnel remaining onsite after the Site Evacuation.

5.5 Other TSC Personnel

5.5.1 Full activation of the TSC is as shown in Enclosure (1). Other personnel not specified as part of the Phase I and II staff but still necessary for TSC are as indicated below:

- A. The Administrative Coordinator
- B. The Planning Engineer
- C. Clerks as needed, determined by Group Superintendents
- D. TSC Logkeeper
- E. Radio Operator

5.6 OSC Notification

5.6.1 Operations personnel will be notified by the Operation's Duty Engineer or someone designated either by station phone or home phone as required.

5.6.2 Health Physics personnel will be notified by the Station Health Physicist either by station phone or home phone as required.

6.0 EMERGENCY ORGANIZATION SUPPORT

6.1 Clerical assistance for the Station Manager and the four station superintendents will be provided by one of their normally assigned clerks. Notification of this individual will be made by the Administrative Coordinator.

6.2 Food and beverage will be supplied to the TSC and OSC as appropriate for the time of day. After initial staffing of the TSC and OSC, coffee and snack material will be provided by the Administrative group.

6.3 Station Fire Brigade

6.3.1 The fire brigade will have its normal functions of fire fighting in an emergency situation as needed.

6.3.2 In the event of an emergency requiring activation of the Technical Support Center Phase I & II, the Station Fire Chief or his designee shall make frequent reports to the Training and Safety Coordinator regarding the status of any fires.

6.3.3 The Station Fire Chief or his designee shall also coordinate and direct the services of any outside fire departments called upon to assist in fire fighting on station property.

6.4 Station Security

6.4.1 The security force will have its normal function of station security in an emergency situation.

- 6.4.2 In the event of an emergency requiring activation of the Technical Support Center Phase I & II, the Security Shift Lieutenant or his designee shall make frequent reports to the Security and Contract Coordinator regarding the status of any security violations, threats or civil disturbances.
- 6.4.3 The Security Shift Lieutenant shall also coordinate and direct the services of any outside law enforcement agencies called upon to assist in an emergency situation.
- 6.4.4 The Security Shift Lieutenant shall inform the Security and Contract Coordinator in the TSC of the status of Site Assembly/Evacuation.

6.5 Evacuation Coordinator

- 6.5.1 In the event of a site evacuation, the Evacuation Coordinator shall be the overall person in charge at the evacuation site.
 - A. This position reports to the Emergency Coordinator or his designee for matters pertaining to personnel disposition, and status of the evacuation.
 - B. All evacuated supervisory personnel will in turn report to the Evacuation Coordinator.
- 6.5.2 The Emergency Coordinator shall notify the Evacuation Coordinator of the need for a Site Evacuation.

7.0 TRAINING & DRILLS

7.1 Initial Training

- 7.1.1 Training will be provided for Onsite Emergency Organizations personnel listed in Enclosures 1 of this directive as per Station Directive 2.5.2 (TS).
- 7.1.2 Operations personnel, Security personnel and Fire Brigade members will receive training as a part of their regular shift training or as scheduled by the Training Coordinator.

7.2 Annual Training

- 7.2.1 Emergency Organization personnel will receive annual overview retraining as per part 0 of the Emergency Plan.

7.3 Drills

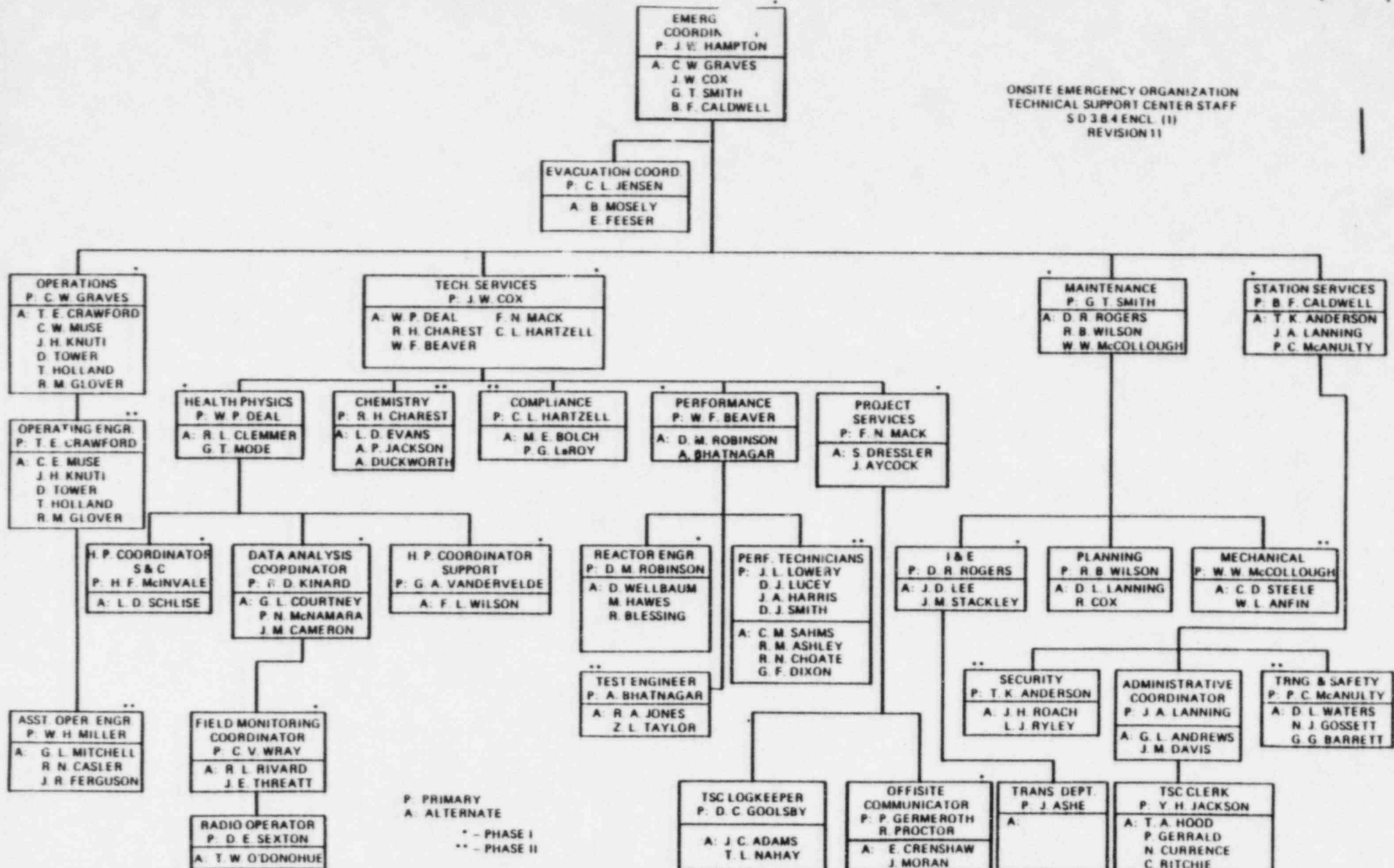
- 7.3.1 Practice drill sessions will be held for each group within the organization to allow the individuals to perform their assigned functions.

- 7.3.2 The drill instructor will make corrections of performance as needed, during the drill.
- 7.3.3 The drill scenario, participants names and evaluation will be documented and any deficiencies will be corrected.

8.0 ENCLOSURES

- Enclosure (1) Technical Support Center Staff - Phase I & II
- Enclosure (2) Technical Support Center Telephone Activation
- Enclosure (3) Operations Support Center Personnel
- Enclosure (4) TSC Location
- Enclosure (5) OSC Location
- Enclosure (6) Notification Mechanism

ONSITE EMERGENCY ORGANIZATION
TECHNICAL SUPPORT CENTER STAFF
SD 384 ENCL (1)
REVISION 11



ONSITE EMERGENCY ORGANIZATION
TELEPHONE ACTIVATION

S.D. 3.8.4 Rev. 11
Enclosure 2
Page 1 of 4

All telephone numbers will be AREA CODE 803 unless otherwise noted.

Emergency Coordinator/Station Manager

P:	J. W. Hampton	O:	
		H:	
A:	C. W. Graves	O:	
		H:	
A:	J. W. Cox	O:	
		H:	
A:	G. T. Smith	O:	
		H:	
A:	B. F. Caldwell	O:	
		H:	

Superintendent of Operations

P:	C. W. Graves	O:	
		H:	
A:	T. E. Crawford	O:	
		H:	
A:	C. E. Muse	O:	
		H:	
A:	J. H. Knuti	O:	
		H:	
A:	D. Tower	O:	
		H:	
A:	R. M. Glover	O:	
		H:	
A:	T. E. Holland	O:	
		H:	

Superintendent of Technical Service

P:	J. W. Cox	O:	
		H:	
A:	W. P. Deal	O:	
		H:	
A:	R. H. Charest	O:	
		H:	
A:	W. F. Beaver	O:	
		H:	
A:	C. L. Hartzell	O:	
		H:	
A:	F. N. Mack	O:	
		H:	

Superintendent of Station Services

P:	B. F. Caldwell	O:	
		H:	
A:	T. K. Anderson	O:	
		H:	
A:	J. A. Lanning	O:	
		H:	
A:	P. McAnulty	O:	
		H:	

Superintendent of Maintenance

P:	G. T. Smith	O:	
		H:	
A:	D. R. Rogers	O:	
		H:	
A:	R. B. Wilson	O:	
		H:	
A:	W. W. McCollough	O:	
		H:	

NOTE

P: Primary A: Alternate O: Office H: Home

ON-SITE EMERGENCY ORGANIZATION
TELEPHONE ACTIVATION

S.D. 3.8.4 Rev. 11
Enclosure 2
Page 2 of 4

All telephone numbers will be AREA CODE 803 unless otherwise noted.

Operating Engineer

P: T. E. Crawford O:
H:
A: C. E. Muse O:
H:
A: J. H. Knuti O:
H:
A: D. Tower O:
H:
A: R. M. Glover O:
H:
A: T. E. Holland O:
H:

Asst. Operating Engineer

P: R. N. Casler O:
H:
A: G. Mitchell O:
H:
A: W. H. Miller O:
H:
A: J. R. Ferguson O:
H:

Health Physics

P: W. P. Deal O:
H:
A: R. L. Cleommer O:
H:
A: G. T. Mode O:
H:

Field Monitoring Coordinator

P: C. V. Wray O:
H:
A: R. L. Rivard O:
H:
A: J. E. Threatt O:
H:

Data Analysis Coordinator

P: R. D. Kinard O:
H:
A: G. L. Courtney O:
H:
A: P. N. McNamara O:
H:
A: J. M. Cameron O:
H:

H. P. Support Coordinator

P: G. A. Vandervelde O:
H:
A: F. L. Wilson O:
H:

Chemistry

P: R. H. Charest O:
H:
A: L. D. Evans O:
H:
A: A. P. Jackson O:
H:
A: A. Duckworth O:
H:

Compliance Engineer

P: C. L. Hartzell O:
H:
A: M. E. Bolch O:
H:
A: P. G. Leroy O:
H:

ONSITE EMERGENCY ORGANIZATION
TELEPHONE ACTIVATION

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Enclosure 2
Page 3 of 4

All telephone numbers will be AREA CODE 803 unless otherwise noted.

Performance Engineer

P: W. F. Beaver O:
H:
A: A. S. Bhatnager O:
H:
A: D. M. Robinson O:
H:

Reactor Engineer

P: D. M. Robinson O:
H:
A: M. Hawes O:
H:
A: D. Wellbaum O:
H:
A: R. Blessing O:
H:

Radio Operator

P: D. E. Sexton O:
H:
A: T. W. O'Donohue O:
H:

Performance Technician

A: M. Sahms O:
H:
P: J. Lowery O:
H:
A: G. Dixon O:
H:
A: R. Ashley O:
H:
P: J. A. Harris O:
H:
P: D. Smith O:
H:
P: D. Lucey O:
H:
A: R. Choate O:
H:

Planning Engineer

P: R. Wilson O:
H:
A: D. Lanning O:
H:
A: R. Cox O:
H:

Mechanical Engineer

P: W. W. McCollough O:
H:
A: C. D. Steele O:
H:
A: W. L. Anfin O:
H:

I&E Engineer

P: D. R. Rogers O:
H:
A: J. Lee O:
H:
A: J. Stackley O:
H:

Security & Contract Coordinator

P: T. K. Anderson O:
H:
A: J. Roach O:
H:
A: L. Ryley O:
H:

NOTE

P: Primary

A: Alternate

O: Office

H: Home

ONSITE EMERGENCY ORGANIZATION
TELEPHONE ACTIVATION

S.D. 3.8.4 Rev. 11
Enclosure 2
Page 4 of 4

All telephone numbers will be AREA CODE 803 unless otherwise noted.

Administrative Coordinator

P: J. Lanning O:
H:
A: G. Andrews O:
H:
A: J. Davis O:
H:

Training & Safety

P: P. McNulty O:
H:
A: D. Waters O:
H:
A: J. Gossett O:
H:
A: G. Barrett O:
H:

TSC Logkeeper

P: D. C. Goolsby O:
H:
A: J. Adams O:
H:
A: T. Nahay O:
H:

TSC Clerks

P: Y. Jackson O:
H:
A: T. Hood O:
H:
A: P. Gerrald O:
H:
A: N. Currence O:
H:
A: C. Ritchie O:
H:

Offsite Communicator

P: J. M. Aycock O:
H:
A: P. W. Germeroth O:
H:
A: E. M. Crenshaw O:
H:
A: R. Proctor O:
H:

H.P. Coordinator S&C

P: H. F. McInvale O:
H:
A: L. D. Schlise O:
H:

Test Engineer

P: A. S. Bhatnagar O:
H:
A: R. A. Jones O:
H:
A: Z. L. Taylor O:
H:

Project Services Engineer

P: F. N. Mack O:
H:
A: S. W. Dressler O:
H:
A: J. M. Aycock O:
H:

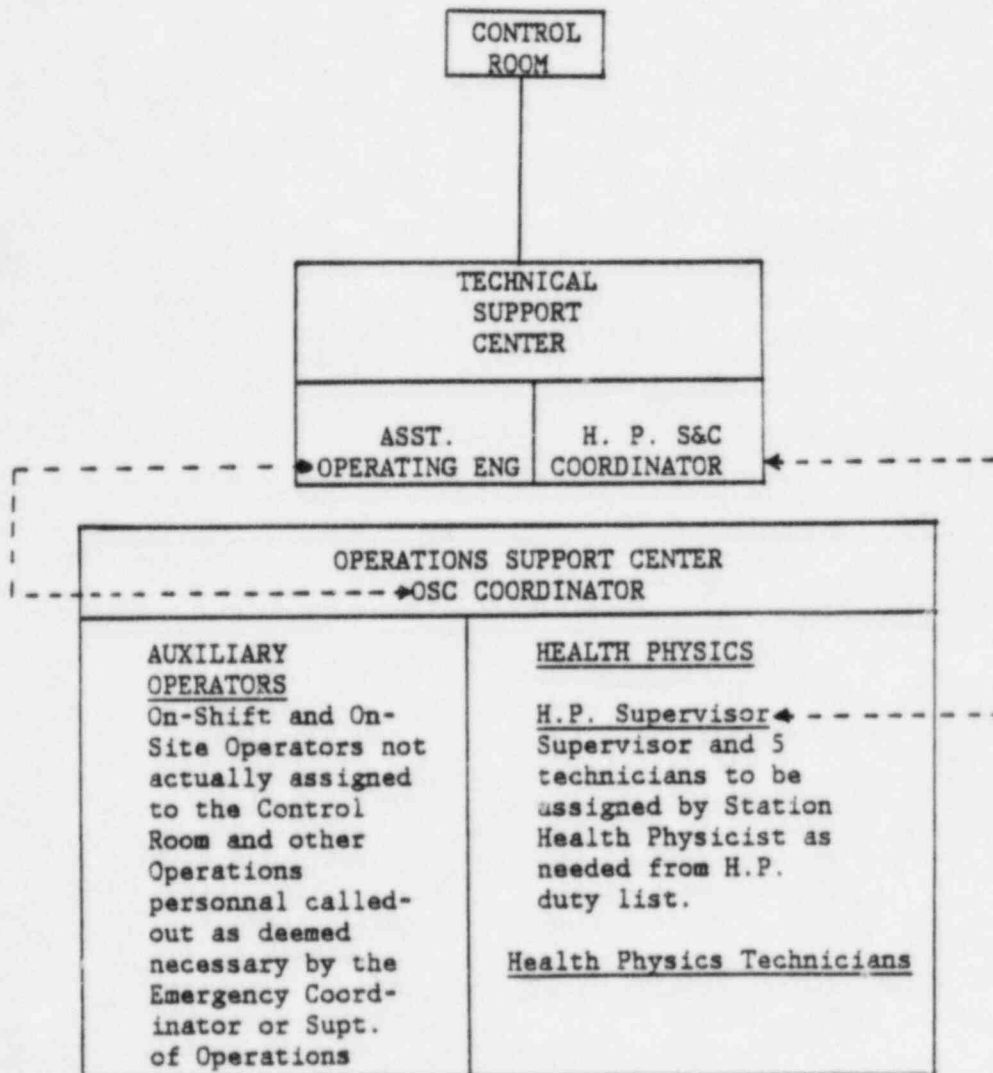
Evacuation Coordinator

P: C. L. Jensen O:
Beeper
H:
A: B. J. Moseley O:
Beeper
H:
A: E. L. Feeser O:
Beeper
H:

Transmission

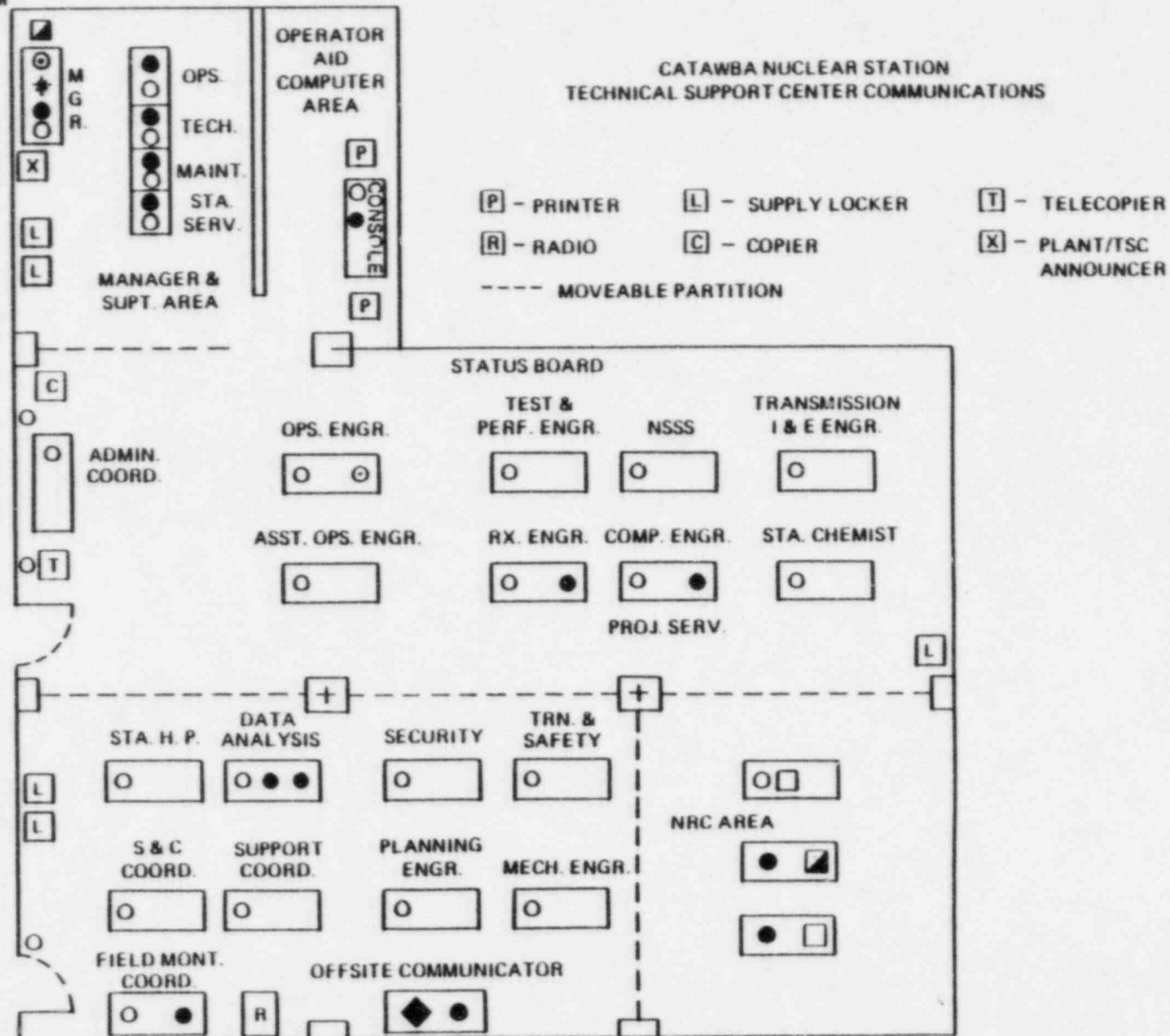
P: J. B. Ashe O:
H:

ONSITE EMERGENCY ORGANIZATION
OPERATIONS SUPPORT CENTER



← TO CONTROL ROOM

CATAWBA NUCLEAR STATION TECHNICAL SUPPORT CENTER COMMUNICATIONS

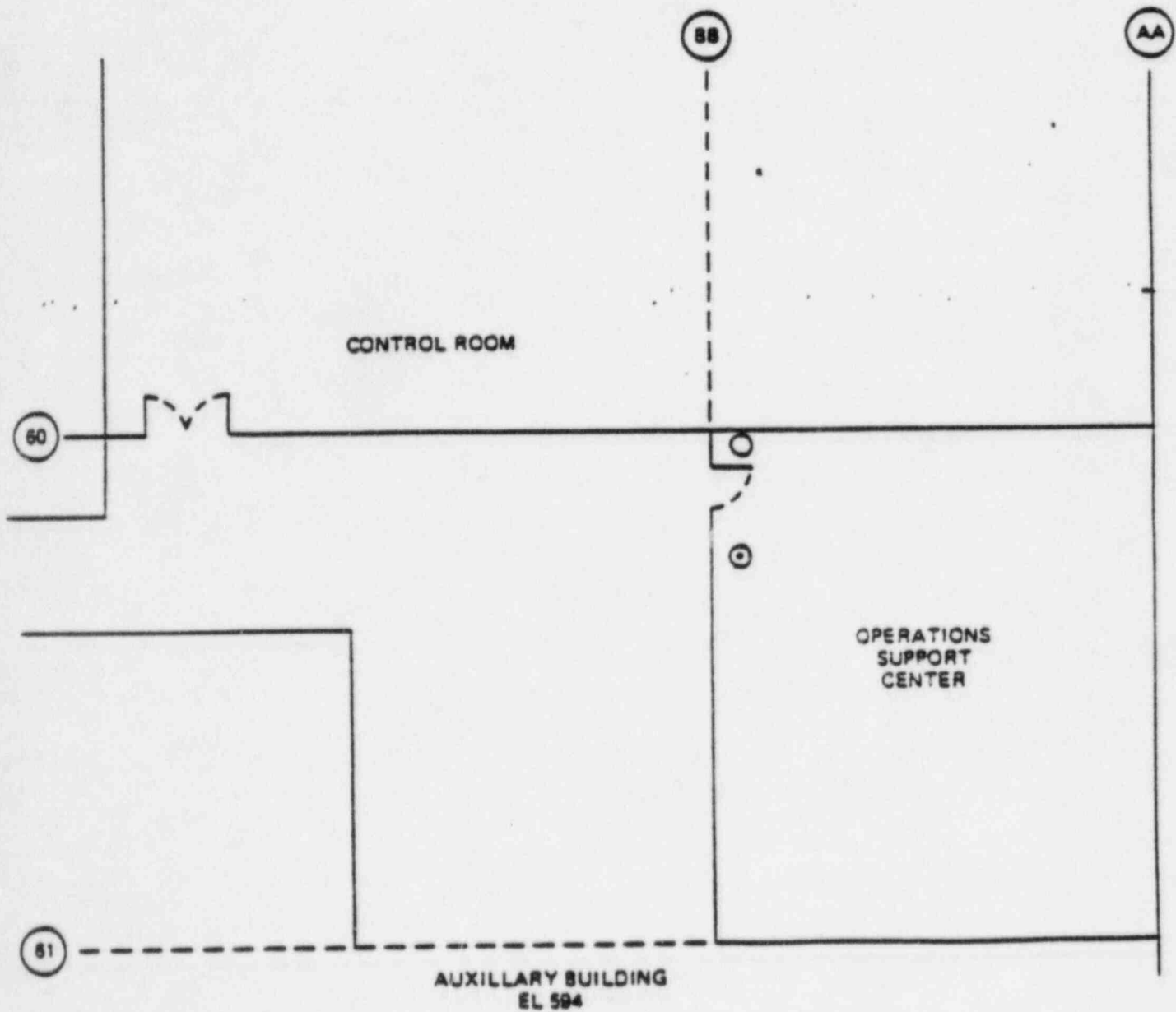


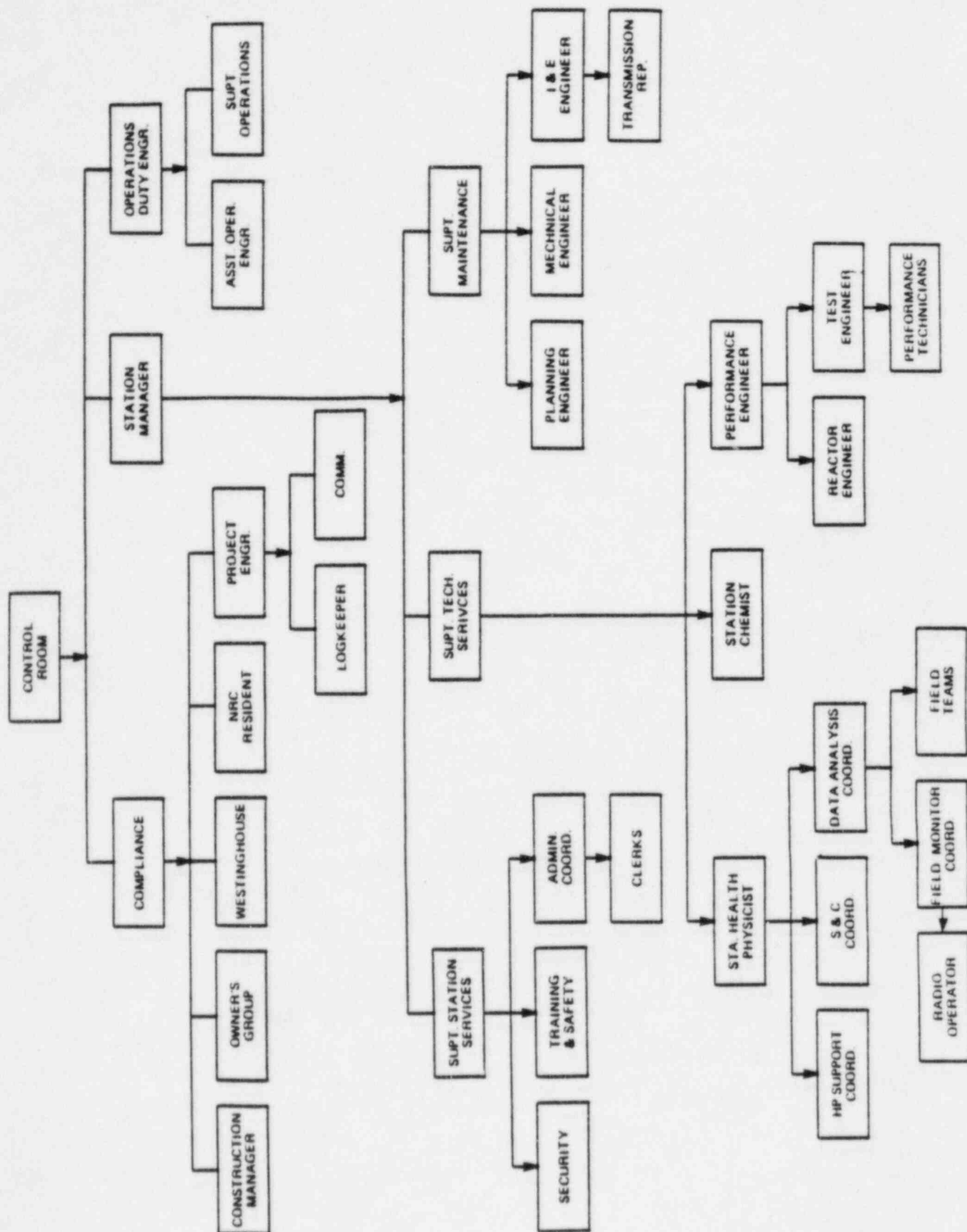
TYPES OF COMMUNICATIONS

- - PLANT PHONE
- - OUTSIDE LINE
- ◆ - RINGDOWN PHONE
- ⚡ - LINE TO RECOVERY MGR.
- ▣ - EMERG. NOTIFICATION SYS. TO NRC
- - FEDERAL TELEPHONE SYSTEM
- ⊕ - OPERATIONS INTERCOM

CATAWBA NUCLEAR STATION
DIRECTIVE 3.8.4 REV. 10
ENCLOSURE (4)

CATAWBA NUCLEAR STATION
OPERATIONS SUPPORT CENTER





CATAWBA NUCLEAR STATION
NOTIFICATION MECHANISM
S. D. 3.8.4 ENCL. 6