

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: HP/O/B/1009/10
Change(s) 0 to
0 Incorporated

(2) STATION: McGuire Nuclear Station

(3) PROCEDURE TITLE: Releases of Liquid Radioactive Materials Exceeding
Technical Specifications

(4) PREPARED BY: Scott E. Foreman DATE: 1-11-83

(5) REVIEWED BY: G. R. Leonard DATE: 1/11/83

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

(6) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____

By: _____ Date: _____

(7) APPROVED BY: Tracy McConnell Date: 1/2/83

(8) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____

Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
McGUIRE NUCLEAR STATION
RELEASES OF LIQUID RADIOACTIVE MATERIALS
EXCEEDING TECHNICAL SPECIFICATIONS

1.0 Purpose

This procedure describes the methods for calculating the radionuclide concentration at area water supply intakes following an accidental liquid release, and the subsequent actions to be taken when the concentration exceeds Technical Specifications.

2.0 References

- 2.1 Station H.P. Manual, Section 18.2; Environmental Monitoring for Emergency Conditions.
- 2.2 EMF Unit Data Book.
- 2.3 10CFR20 Appendix B.
- 2.4 Station H.P. Manual, Section 16.3; Survey Documentation.
- 2.5 Travel time and dispersion characteristics of Mountain Island Lake, Duke PWR/80-02.

3.0 Limits and Precautions

- 3.1 This procedure is being used in an Emergency situation which could result in shutdown of area water supply intakes. The procedure should be fully understood and used carefully and accurately.
- 3.2 This procedure is written for use under abnormal conditions which could involve extremely high radiation levels. Only Health Physics management should authorize the use of this procedure when needed and should provide appropriate surveillance and control of people taking the samples.
- 3.3 Check that the counting equipment to be used has been calibrated and daily response checks have been performed.
- 3.4 Individuals collecting the samples should be aware of the possibility of airborne contamination and high radiation levels in sampling areas. Use protective clothing, gloves, respiratory protective equipment, portable shielding, high range dosimeters and survey instruments as determined by Health Physics supervision.

- 3.5 Collect samples, count samples and calculate activities in accordance with reference 2.4.

4.0 Procedures

- 4.1 Health Physics will collect and evaluate samples as per reference 2.1.

- 4.2 Health Physics will determine the discharge point concentration from EMF data and/or samples taken.

NOTE: For EMF data see conversion graphs for CPM to $\mu\text{Ci/ml}$ located in Unit Data Book (Reference 2.2).

- 4.3 The Offsite Dose Assessment Team will determine the potential for contamination of area water supplies using Enclosure 5.1 (Transit Time/Radionuclide Concentration Calculations) and sampling data from Health Physics.

- 4.4 If data indicates that a release thru the CCW to Lake Norman will exceed 10CFR20, Appendix B Limits, at affected area water intakes, the Emergency Coordinator shall:

- 4.4.1 Request maximum possible water flow at Cowans Ford Hydro Station from System Load Dispatcher.

- 4.4.2 Notify the area water supply pumping stations to cease pumping operations until the contamination levels have passed or have been diluted to within acceptable limits. Tech. Spec limits from 10CFR20, Appendix B, for unknown mixture is 3×10^{-8} , or table II if isotope analysis is available.

- 4.5 If data indicates that a release thru the Conventional Waste Water Treatment Pond to the Catawba River will exceed 10CFR20, Appendix B limits at the Charlotte Water intakes, the Emergency Coordinator shall:

- 4.5.1 Request minimum water flow at Cowans Ford Hydro Station and Mountain Island Dam from System Load Dispatcher.

NOTE: Transit time to Charlotte Water Department intakes is approximately 79 days with NO FLOW thru Cowans Ford.

- 4.5.2 Notify the Charlotte Water Department that a release of radioactive materials has occurred into the Catawba River and that sampling and evaluation of

samples is being undertaken. In the event that sampling confirms that contamination levels at the Charlotte intake will exceed 10CFR20, Appendix B limits, request the Charlotte Water Department to cease pumping operations during the period of time contaminated water supplies are passing the Charlotte pumping station intakes (see Enclosure 5.2).

- 4.6 At the request of the Emergency Coordinator thru the Station Health Physicist, Health Physics will sample and evaluate the concentration of contamination in the Catawba River near the discharge point.
- 4.7 The people notified in the appropriate Emergency Procedures (EP/O/A/5000/31, 32, 33, or 34) will be responsible to decide what protective measure should be taken in the interest of public health and safety. The state agency is responsible for appropriate long-term public health action (North Carolina Department of Crime Control and Public Safety).
- 4.8 Actual field measurements of whole body doses will be compared to whole body dose projections by the Data Evaluation Coordinator.

5.0 Enclosures

- 5.1 Transit Time/Radionuclide Concentration Calculations.
- 5.2 Emergency Plan Implementing Procedures Telephone List.

ENCLOSURE 5.1

TRANSIT TIMES/RADIONUCLIDE CONCENTRATION CALCULATIONS

Description

Transit times and radionuclide concentrations for a release of radioactive material from McGuire Nuclear Station release point to the water intakes of Huntersville, Davidson, Charlotte, and from McGuire Nuclear Station to the Catawba River and Charlotte water intake.

McGuire Discharge Point	Water Intake	Transit Time (hrs)	Dilution Constant (D)	Formula Required
CCW Discharge to Lake Norman	Huntersville	4	0.22	#1
	Davidson	11	0.22	#1
	Charlotte	8	0.22	#2
Conventional Waste Water Treatment Point to the Catawba River	Charlotte	4	0.33	#3
		(See Note 1)	(See Note 2)	

NOTE 1: Transit time assumes 4 unit Cowan's Ford operation.

Formulas: #1 $C = E \left(\frac{D}{M} \right)$

#2 $C = E \left(\frac{D}{G} \right)$

#3 $C = E \left(\frac{D}{F} \right)$

Where:

C = Radionuclide Concentration at area water supply intake
(Ci/ml)

E = Discharge Point Concentration (+Ci/ml)

D = Dilution Constant

M = McGuire CCW Flow in cfs, (1 Unit Operation, 1 Pump = 712 cfs, 2 Pumps = 1424 cfs, 3 Pumps = 1931 cfs, 4 Pumps = 2263 cfs)

F = Cowans Ford flow in cfs (Request flow rate in cfs from system dispatcher).

G = M or F, whichever is greater.

NOTE 2: Dilution constant was derived from a "Mountain Island Dye Study" conducted by Duke Power Company in 1978 and 1979 and published in a complete report by the title of "Travel Time and Dispersion Characteristics of Mountain Island Lake".

EMERGENCY PLAN IMPLEMENTING PROCEDURES TELEPHONE LIST

Charlotte Water	River Pumping Station	
	Administration Building	
	Curtis Frederick - Plant Super.	(Work)
	Emergency Radio Call Sign	
Huntersville Water	Pumping Station	
	Robert Cobb	(Home)
	Paul Reynolds	(Home)
	J. Johnson	(Office)
		(Home)
	Richard French (Town Manager)	(Office)
		(Home)
	Emergency Radio Call Sign	
Davidson Water	Pumping Station	
	Nancy McCormac - Mayor	(Office)
		(Home)
	Frank Ellington	(Home)
	Baxter Fisher	(Home)
	Civil Preparedness- Bob Manning	(Home)
		(Work)
	Bill Brannon	(Home)
		(Office)
	Emergency Radio Call Sign	
Health Physics	Shift Technician	

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: PT/O/A/4600/11
Change(s) 0 to
2 Incorporated

(2) STATION: McGuire Nuclear Station

(3) PROCEDURE TITLE: Function Check of Emergency Vehicle and Equipment

(4) PREPARED BY: Sgt E. [Signature] DATE: 7-1-73

(5) REVIEWED BY: GFT [Signature] DATE: 2/2/83

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

(6) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____

By: _____ Date: _____

(7) APPROVED BY: [Signature] Date: [Signature]

(8) MISCELLANEOUS: .

Reviewed/Approved By: _____ Date: _____

Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
McGUIRE NUCLEAR STATION
FUNCTION CHECK OF EMERGENCY VEHICLE AND EQUIPMENT

1.0 Purpose

- 1.1 To ensure that protective equipment and supplies are operational, and that communications capability exists with the various emergency personnel and emergency organizations at all times in the support of an emergency condition at the station.

2.0 References

- 2.1 NUREG—0654 (Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants).

3.0 Time Required

- 3.1 Sixteen (16) manhours.

4.0 Prerequisite Tests

N/A

5.0 Test Equipment

N/A

6.0 Precautions and Limitations

- 6.1 A minimum of two people shall be aboard the emergency boat when in use.
- 6.2 Emergency boat operators shall maintain radio communications with the McGuire Nuclear Station at all times and will verify this capability by performing a radio check every 30 minutes during the period the boat is being operated.
- 6.3 Personnel aboard the emergency boat shall wear floatation vests at all times and semi-dry suits when Condenser Circulating Water (RC) inlet temperature drops below 60°F., and outside air temperature is below 55° F.
- 6.4 Emergency boat fuel tank level shall be maintained at $\geq \frac{1}{2}$ full at all times.
- 6.5 Personnel using an emergency vehicle shall wear seat belts.
- 6.6 Personnel shall follow all FCC regulations during radio transmissions.

7.0 Required Station Status

N/A

8.0 Prerequisite System Conditions

N/A

9.0 Test Method

N/A

10.0 Data Required

- 10.1 Equipment Check-Off List - Emergency Vehicles (Enclosure 13.1)
- 10.2 ~~Equipment Check-Off List - Emergency Boat (Enclosure 13.2)~~
- 10.3 Post Accident Containment Air Sampling Equipment (Enclosure 13.3)
- 10.4 Protective Equipment and Supplies Locations (Enclosure 13.4)
- 10.5 Protective Equipment and Supplies Check-Off List - Recovery Kits (Enclosure 13.5)
- 10.6 Protective Equipment and Supplies Check-Off List - Environmental Survey Kits (Enclosure 13.6, 13.7, 13.8, 13.9, 13.10)
- 10.7 Protective Equipment and Supplies Check-Off List - Personnel Survey Kit - Construction Post #1 (Enclosure 13.11)
- 10.8 Protective Equipment and Supplies Check-Off List - Personnel Survey Kit - Brass Shack (Enclosure 13.12)
- 10.9 Protective Equipment and Supplies Check-Off List - Personnel Survey Kit - PAP Area (Enclosure 13.13)
- 10.10 Protective Equipment and Supplies Check-Off List - Personnel Survey Kit - Evacuation Facility (Enclosure 13.14)
- 10.11 Technical Support Center Kit Check List (Enclosure 13.15)
- 10.12 Medical Decontamination Kit Check-Off List (Enclosure 13.16)
- 10.13 Medical Decontamination Kit Check-Off List, Charlotte Memorial Hospital (Enclosure 13.17)
- 10.14 Operation Support Center Kit Check List (Enclosure 13.18)
- 10.15 Fuel Shipment Kit (Enclosure 13.19)
- 10.16 Verification of Emergency Communications (Enclosure 13.20)

10.17 National Weather Service and Onsite Weather (Enclosure
13.21)

11.0 Acceptance Criteria

N/A

12.0 Procedure

12.1 Emergency Vehicles

Date/Initials

____/____ 12.1.1 Once during each month and after emergency use,
the emergency vehicles shall be inventoried per
Enclosure 13.1 (Equipment Check-Off List -
Emergency Vehicles).

____/____ 12.1.2 With each inventory a check-off list shall be
completed and any discrepancies shall be noted
on the list and reported to the emergency plan
group immediately.

____/____ 12.1.3 Preventive maintenance shall be the
responsibility of the Emergency Planning group
of Health Physics and be performed by
predesignated service areas.

12.2 Emergency Boat

____/____ 12.2.1 Once during each month and after use, the
emergency boat shall be inventoried per
enclosure 13.2 (Equipment Check-Off List -
Emergency Boat).

NOTE: Run Time (Minimum 2 hours per month
may be postponed up to, but not more
than 3 months due to inclement
weather.

____/____ 12.2.2 With each inventory the check-off list shall be
completed and any discrepancies shall be noted
on the list and reported to the emergency plan
group immediately.

____/____ 12.2.3 Every 100 hours of operation, the emergency
boat shall be delivered to an authorized
service representative for routine preventative

maintenance as per the owner's-operators' manual.

12.3 Protective Equipment Kits

- _____/_____ 12.3.1 Once during each month and after use, each emergency kit listed in enclosure 13.4 (Protective Equipment Kit Locations) shall be inventoried per applicable enclosure 13.5 - 13.10 (Protective Equipment Kit Check-Off Lists).
- _____/_____ 12.3.2 With each inventory the check-off list shall be completed and a copy placed in the applicable kit. (The original shall be filed with the completed procedure records). Any discrepancies shall be noted on the check-off list and reported to the emergency plan group immediately.
- _____/_____ 12.3.3 Check all batteries in kits monthly for strength and condition.
- _____/_____ 12.3.4 Verify calibration date and functional check each instrument during inventory.
- _____/_____ 12.3.5 Verify that silver zeolite cartridges are sealed air tight, and must be changed out two (2) years from date on package.

12.4 Telephone Communications

- _____/_____ 12.4.1 Once per calendar quarter, all telephone numbers and pages utilized in emergency procedures RP/O/A/5700/01-04, and Station Directives 3.8.1, 3.8.2 shall be verified correct and in working order.

12.5 Radio Communications

- _____/_____ 12.5.1 Once during each month, McGuire emergency radio transmitter/receivers shall be operationally checked as follows:
- _____/_____ 12.5.1.1 McGuire Emergency Base Station - verify capable communications with all county Emergency Operations Centers.

_____/_____
12.5.1.2 Once a month, a call will be made to the National Weather Service located at the Charlotte Airport and McGuire Control Room to obtain the wind direction, speed and cloud cover.

_____/_____
12.5.2 Verification of capable emergency communications shall be documented per enclosure 13.20 (Verification of Emergency Communications) and maintained on file by the Emergency Plan Group.

12.6 Gasoline powered generators shall be operationally checked quarterly and preventative maintenance done as described in Section 4 of the owners' manual.

13.0 Enclosures

- 13.1 Equipment Check-Off List - Emergency Vehicles
- 13.2 Equipment Check-Off List - Emergency Boat
- 13.3 Post Accident Containment Air Sampling Equipment List.
- 13.4 Protective Equipment and Supplies Locations
- 13.5 Protective Equipment and Supplies Check-Off List - Recovery Kits
- 13.6 Protective Equipment and Supplies Check-Off List - Environmental Survey Kits Health Physics Vehicle
- 13.7 Protective Equipment and Supplies Check-Off List - Environmental Survey Kits Station Manager's Vehicle
- 13.8 Protective Equipment and Supplies Check-Off List - Environmental Survey Kits Chemistry Vehicle
- 13.9 Protective Equipment and Supplies Check-Off List - Environmental Survey Kits Planning Pickup
- 13.10 Environmental Survey Kit (Boat)
- 13.11 Protective Equipment and Supplies Check-Off List - Personnel Survey Kit - Construction Post #1
- 13.12 Protective Equipment and Supplies Check-Off List - Personnel Survey Kit - Brass Shack
- 13.13 Protective Equipment and Supplies Check-Off List - Personnel Survey Kit PAP Area
- 13.14 Protective Equipment and Supplies Check-Off List - Personnel Survey Kit - Evacuation Facility

- 13.15 Technical Support Center Kit Check List
- 13.16 Medical Decontamination Kit Check-Off List
- 13.17 Medical Decontamination Kit Check-Off List, Charlotte
Memorial Hospital
- 13.18 Operational Support Center Kit Check-Off List
- 13.19 Fuel Shipment Kits Check-Off List
- 13.20 Verification of Emergency Communications
- 13.20 National and On-Site Weather Information

EQUIPMENT CHECK-OFF LIST
EMERGENCY VEHICLES

Vehicle #

7632 Health Physics Vehicle
4352 Chemistry Vehicle
8031 Planning Vehicle
8937 Station Manager's Vehicle

<u>ITEM</u>	<u>AMOUNT</u>
Fire Extinguisher	1
First Aid Kit	1
Vehicle Accident Form	1
Keys (PAP)	1 set each
Keys (Trailer #7)	1 set each

Discrepancies:

Signature/Date

EQUIPMENT CHECK-OFF LIST
EMERGENCY BOAT

INVENTORY

<u>TIME</u>	<u>AMOUNT</u>
Floatation Vest (one per person)	4
Semi-Dry Suits (one per person as required)	4
Buoyant Jacket (one per person as required)	4
Fire Extinguisher	1
Paddles	2
First Aid Kit	1
Anchor and Line	1
Snake Bite Kit	1
Loud Hailer	1

OPERATIONAL CHECKS

	Check <u> ✓ </u>
Bilge Pump	_____
Loud Hailer	_____
Horn	_____
Siren	_____
Navigation Lights	_____
Search Lights	_____
Fuel Tank Level <u> > </u> $\frac{1}{2}$ full	_____
Run Time (Minimum - 2 hours by log)	_____

Discrepancies:

Signature/Date

POST ACCIDENT CONTAINMENT
AIR SAMPLING EQUIPMENT

Check ☒ _____

Nalgene 500 ml Bottles of NAOH with Accompanying
Vial of $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$

6 _____

Nalgene 500 ml Thiosulfate Sample Bottles

6 _____

Stainless Steel 100cc Gas Bombs

6 _____

Poly Bags

6 _____

Stop Watch

1 _____

Location:

Health Physics Shift Lab in File Drawer Labeled "Post Accident Air
Sampling Equipment."

Signature/Date

PROTECTIVE EQUIPMENT AND SUPPLIES

<u>KITS</u>	<u>LOCATION</u>
Recovery Kits (4)	Control Room Station Manager's Office Training & Technology Cent. Cowans Ford Dam
Environmental Survey Kits (5)	Trailer #7
Personnel Survey Kits (5) Construction Post #1 Brass Shack PAP Area Evacuation Facility (2)	Unit 2 PAP Unit 2 PAP Security - PAP Area Cowans Ford Dam, and Training & Technology Center
Medical Decontamination Kit	Auxiliary Building First Aid Room and Charlotte Memorial Hosp.
Operational Support Center Kit	Operational Support Center
Technical Support Center Kit	Technical Support Center
Fuel Shipment Kits (2)	Trailer #7

RECOVERY KITS CHECK LIST

ITEM	AMOUNT
Xetex Mod 305B	1
High Range Dosimeters	2
Dosimeter Charger	1
Boundary Ribbon or Rope (50 yd. roll)	1
Masking Tape (roll)	1
Rain Suits (set)	2
Protective Clothing (set)	2
Poly Bags (various)	12
Caution Signs w/inserts	2
Legal Pads	1
HP Form #2 (Smear Survey Form)	5
Pens	2
Grease Pencil	1
Norton 7600 Respirators w/7500-83 Chemical Cartridges	2
First Aid Kit	1
Potassium Iodide Tablets	470 Bottles-Cowans Ford, 150 Bottles-Control Room, Station Manager's Office, Training & Technology Cent.
Smears (box)	1
NuCon Smears	30
Soap (bar)	6
Flashlight	1
Batteries	4
Pocket Knife	1
Small Sample Bottles	200 Cowans Ford 60 Station Managers Office Training & Technology Cent. Control Room

Discrepancies:

Signature/Date

ENVIRONMENTAL SURVEY CHECK LIST
HEALTH PHYSICS VEHICLE

ITEM	AMOUNT
Xetex Mod 305B and Eberline E-520 or E-120 w/260 probe	1 each
Sam-2 w/SD-22 probe	1
Emergency Radio Transmitter/Receiver	1
Radaco H809V Air Sampler	1
High Range Dosimeter	2
Dosimeter Charger	1
TLD (in separate labeled container)	2
Norton 7600 Respirator w/7500-83 Chemical Cartridges	2
Potassium Iodide Tablets (bottle)	1
Protective Clothing (full set)	3
Poly Bags (various sizes)	6
Masking Tape (roll)	1
Limnological Sampler	1
Cubitainers	6
Hand Gardening Spade	1
Stopwatch	1
Flashlight	1
Batteries	4
Silver Zeolite (CT100G or GY130) Filter Cartridges and Particulate Filters	30
Labels for Filter Cartridges	30
Smears (box)	1
NuCon Smears	30
HP Form #2 (Smear Survey Form)	10
HP Form #6 (Air Survey Form)	10
Map of Ten Mile Zone Sectors	1
Legal Pad	1
Snake Bite Kit	1
Pen	2
Grease Pencil	1
Dime Roll	1
Pocket Knife	1
Health Physics Manual - Section 18.2	1
Grass Clippers	1
Gasoline Powered Generators	1

Signature/Date

Discrepancies:

ENVIRONMENTAL SURVEY CHECK LIST
STATION MANAGER'S VEHICLE

ITEM	AMOUNT
Xetex Mod 305B and Eberline E-520 or E-120 w/260 probe	1 each
Sam-2 w/RD-22 probe	1
Emergency Radio Transmitter/Receiver	1
Radeco H809V Air Sampler	1
High Range Dosimeter	2
Dosimeter Charger	1
TLD (in separate labeled container)	2
Norton 7600 Respirator w/7500-83 Chemical Cartridges	2
Potassium Iodide Tablets (bottle)	1
Protective Clothing (full set)	3
Poly Bags (various sizes)	6
Masking Tape (roll)	1
Cubitainers	6
Hand Gardening Spade	1
Stopwatch	1
Flashlight	1
Batteries	4
Silver Zeolite (CP100G or GY130) Filter Cartridges and Particulate Filters	30
Labels for Filter Cartridges	30
Smears (box)	1
NuCon Smears	30
HP Form #2 (Smear Survey Form)	10
HP Form #6 (Air Survey Form)	10
Map of Ten Mile Zone Sectors	1
Legal Pad	1
Snake Bite Kit	1
Pen	2
Grease Pencil	1
Dime Roll	1
Pocket Knife	1
Health Physics Manual - Section 18.2	1
Grass Clippers	1
Gasoline Powered Generators	1

Signature/Date

Discrepancies:

ENVIRONMENTAL SURVEY CHECK LIST
CHEMISTRY VEHICLE

ITEM	AMOUNT
Xetex Mod 305B and Eberline E-520 or E-120 w/260 probe	1 each
Sam-2 w/RD-22 probe	1
Emergency Radio Transmitter/Receiver	1
Radeco H809V Air Sampler	1
High Range Dosimeter	2
Dosimeter Charger	1
TLD (in separate labeled container)	2
Norton 7600 Respirator w/7500-83 Chemical Cartridges	2
Potassium Iodide Tablets (bottle)	1
Protective Clothing (full set)	3
Poly Bags (various sizes)	6
Masking Tape (roll)	1
Cubitainers	6
Hand Gardening Spade	1
Stopwatch	1
Flashlight	1
Batteries	4
Silver Zeolite (CP100G or GY130) Filter Cartridges and Particulate Filters	30
Labels for Filter Cartridges	30
Smears (box)	1
NuCon Smears	30
HP Form #2 (Smear Survey Form)	10
HP Form #6 (Air Survey Form)	10
Map of Ten Mile Zone Sectors	1
Legal Pad	1
Snake Bite Kit	1
Pen	2
Grease Pencil	1
Dime Roll	1
Pocket Knife	1
Health Physics Manual - Section 18.2	1
Grass Clippers	1
Gasoline Powered Generator	1

Signature/Date

Discrepancies:

ENVIRONMENTAL SURVEY CHECK LIST
PLANNING PICKUP VEHICLE

ITEM	AMOUNT
Xetex Mod 305B and Eberline E-520 or E-120 w/260 probe	1 each
Sam-2 w/RD-22 probe	1
Emergency Radio Transmitter/Receiver	1
Radeco H809V Air Sampler	1
High Range Dosimeter	2
Dosimeter Charger	1
TLD (in separate labeled container)	2
Norton 7600 Respirator w/7500-83 Chemical Cartridges	2
Potassium Iodide Tablets (bottle)	1
Protective Clothing (full set)	3
Poly Bags (various sizes)	6
Masking Tape (roll)	1
Limnological Sampler	1
Cubitainers	6
Hand Gardening Spade	1
Stopwatch	1
Flashlight	1
Batteries	4
Silver Zeolite (CP100G or GY130) Filter Cartridges and Particulate Filters	30
Labels for Filter Cartridges	30
Smears (box)	1
NuCon Smears	30
HP Form #2 (Smear Survey Form)	10
HP Form #6 (Air Survey Form)	10
Map of Ten Mile Zone Sectors	1
Legal Pad	1
Snake Bite Kit	1
Pen	2
Grease Pencil	1
Dime Roll	1
Pocket Knife	1
Health Physics Manual - Section 18.2	1
Grass Clippers	1
Gasoline Powered Generators	1

Signature/Date

Discrepancies:

ENVIRONMENTAL SURVEY CHECK LIST

BOAT

ITEM	AMOUNT
Xetex Mod 305B and Eberline E-520 or E-120 w/260 Probe	1
Porta-Mobile Radio Transmitter/Receiver	1
Radeco Air Sampler H809V	1
Trippe PV1000FC Powerverter	1
High Range Dosimeters	2
TLD (in seperate labeled container)	2
Norton 7600 Respirator w/7500-83 Chem. PGS.	2
Potassium Iodide Tablets (Bottle)	1
Protective Clothing (Full Set)	2
Masking Tape (roll)	1
Limnological Sampler	1
Cubitainers	10
Flashlight	1
Batteries	4
Silver Zeolite Filter Ctgs. and Particulate Filters	20
Labels for Filter Ctgs.	20
Map of 10 Mile Zone Sectors	1
Legal Pad	1
Pen	3
Grease Pencil	2

Discrepancies:

Signature/Date

PERSONNEL SURVEY KIT
CONSTRUCTION POST #1

CHECK LIST

ITEM	AMOUNT
Eberline E-520 or E-120 w/HP-260 probe	1
Emergency Radio Transmitter/Receiver, provided by Security	1
High Range Dosimeters	1
Dosimeter Charger	1
Norton 7600 Respirator w/7500-83 Chemical Cartridges	1
Potassium Iodine Tablets (bottle)	1
Protective Clothing (full set)	6
Boundary Ribbon or Rope (50 yd. roll)	1
Caution Signs w/inserts	4
Masking Tape (roll)	1
Poly Bags (various)	6
Smears (box)	1
NuCon Smears	25
HP Form #2 (Smear Survey Form)	10
Pens	2
Grease Pencil	1
Health Physics Manual, Section 18.1	1
Legal Pad	1
Pocket Knife	1

Discrepancies:

Signature/Date

PT/O/A/4600/11
Enclosure 13.12

PERSONNEL SURVEY KIT
BRASS SHACK
CHECK LIST

ITEM	AMOUNT
Eberline E-520 or E-120 w/HP-260 probe	1
Emergency Radio Transmitter/Receiver, provided by Security	1
High Range Dosimeters	1
Dosimeter Charger	1
Norton 7600 Respirator w/7500-83 Chemical Cartridges	1
Potassium Iodide Tablets (bottle)	1
Protective Clothing (full set)	6
Boundary Ribbon or Rope (50 yd. roll)	1
Caution Signs w/inserts	4
Masking Tape (roll)	1
Poly Bags (various)	6
Smears (box)	1
NuCon Smears	25
HP Form #2 (Smear Survey Form)	10
Pens	2
Grease Pencil	1
Health Physics Manual, Section 18.1	1
Legal Pad	1
Pocket Knife	1

Discrepancies:

Signature/Date

PERSONNEL SURVEY KIT
PAP AREA
CHECK LIST

ITEM	AMOUNT
Eberline E-520 or E-120 w/HP260 probe	2
Emergency Radio Transmitter/Receiver, provided by Security	1
High Range Dosimeters	2
Dosimeter Charger	1
Norton 7600 Respirator w/7500-83 Chemical Cartridges	2
Potassium Iodide Tablets (bottle)	1
Protective Clothing (full set)	6
Boundary Ribbon or Rope (50 yd. roll)	1
Caution Signs w/inserts	4
Masking Tape (roll)	1
Poly Bags (various)	6
Smears (box)	1
NuCon Smears	25
HP Form #2 (Smear Survey Form)	10
Pens	2
Grease Pencil	2
Health Physics Manual, Section 18.1 and Section 11.3	1 each
Legal Pad	1
Pocket Knife	1
Hand Soap	10
Hand Brushes	2
Atomic Swipes	12
Citric Acid (1 lb.)	1
Disposable Towels	1 pk.
Fingernail Clippers	1
Disposable Coveralls	40
Phisohex	1 quart

Discrepancies:

Signature/Date

PERSONNEL SURVEY KIT
EVACUATION FACILITY
CHECK LIST

ITEM	AMOUNT
Eberline E-520 or E-120 w/HP260 probe	2
Emergency Radio Transmitter/Receiver, provided by Security	1
High Range Dosimeters	4
Dosimeter Charger	1
Norton 7600 Respirator w/7500-83 Chemical Cartridges	4
Potassium Iodide Tablets (bottle)	2
Small Sample Bottles	4
Protective Clothing (full set)	6
Boundary Ribbon or Rope (50 yd. roll)	2
Caution Signs w/inserts	6
Masking Tape (roll)	1
Poly Bags (various)	6
Smears (box)	1
NuCon Smears	25
HP Form #2 (Smear Survey Form)	10
Pens	2
Grease Pencil	2
Health Physics Manual, Section 18.1 and Section 11.3	1 each
Legal Pad	1
Pocket Knife	1
Hand Soap	10
Hand Brushes	2
Atomic Swipes	12
Citric Acid (1 lb.)	1
Disposable Towels	1 pk.
Fingernail Clippers	1
Disposable Coveralls	40
Phisohex	1 quart

Discrepancies:

Signature/Date

TECHNICAL SUPPORT CENTER KIT
CHECK LIST

ITEM	AMOUNT
Protective Clothing (set)	6
Norton 7600 Respirators w/7500-83 Chem. Ctgs.	6
Xetex Mod 305B or PIC 6A	1
Radeco H809V Air Sampler	1
Silver Zeolite (CP-100G or GY-130) Filter Cartridges & Particulate Filters	25
Labels for Filter Cartridges	25
SAM-2 w/RD-22 Probe	1
Potassium Iodide Tablets (bottle)	25
Small Sample Bottles	10
Caution Signs w/inserts	3
Rad Tape	2
Smears	30
Plastic Bags	6
Masking Tape (roll)	1
Pen	2
Grease Pencil	1
Discrepancies:	

Signature/Date

MEDICAL DECONTAMINATION KIT CHECK-OFF LIST

ITEM	AMOUNT
Eberline RM-14 w/HP-210 Probe (E.P. Lab)	1
Decon Cleaner	3
Disposable Towels	10
Poly Bags 20" x 40"	2
Poly Bags 12" x 18"	4
Fingernail Clippers	1
Smears	25
NuCon Smears	25
Hand Brushes	2
Hand Soap	10
Protective Clothing (full set)	4
Disposable Rain Suits	2
Tape, Radioactive Material	1
Tape, Masking 2"	1
Tape, Duct 2"	1
HP Form #2	4
RP/O/A/3700/05	1
Swipes, Atomic (Kotex)	12
Citric Acid (1 lb.)	1
Phisoex	1 gallon
Discrepancies:	

Signature/Date

MEDICAL DECONTAMINATION KIT CHECK-OFF LIST
CHARLOTTE MEMORIAL HOSPITAL

ITEM	AMOUNT
Eberline E-120 w/HP210 and HP270 Probes	2
Decon Cleaner	3
Disposable Towels	10
Poly Bags 20" x 40"	2
Poly Bags 12" x 18"	4
Fingernail Clippers	1
Smears	25
NuCon Smears	25
Hand Brushes	2
Hand Soap	10
Protective Clothing, provided by Hospital	4
Disposable Rain Suits	2
Tape, Radioactive Material	1
Tape, Masking 2"	6
Tape, Duct 2"	6
HP Form #2	4
RP/O/A/5700/05	1
Swipes, Atomic (Kotex)	36
Citric Acid (1 lb.)	1
Hair Clippers, Electric	1
Absorbent Paper	150
Caution Signs w/inserts	5
Rad Rope	1
Pocket Dosimeters 0-200 mR	25
Dosimeter Charger	1

Discrepancies:

Signature/Date

OPERATION SUPPORT CENTER KIT
CHECK-OFF LIST

ITEM	AMOUNT
Protective Clothing (set)	4
Norton 7600 Respirators w/7500-83 Chemical Cartridges	4
Flashlight	4
Batteries	8
Portable Radiac Instrument (PIC 6-A) or Xetex	2
Camera	1
Film Pacs	2
Masking Tape (roll)	2
Dosimeters (0-5R) (0-50R)	4 each
Dosimeter Charger	1
Rain Suits	4
Poly Bags	12
Batteries (Camera)	1
Flashbulbs (Camera)	8
Pkg. Blank RWPs	1
Pkg. Respirator Cards	1
Log Book	1
HP Form #2 (Smear Survey Form)	10
HP Form #6 (Air Survey Form)	10
Smears (Box)	1
P&C Filter Cartridges	30
Particulate Filters	30
Labels for Filter Cartridges	30
Plastic Bags for Cartridges	30
Extension Cord	1
Tape Recorder	1

Discrepancies:

Signature/Date

FUEL SHIPMENT KIT

ITEM	AMOUNT
Air Purifying Respirator	2
Coveralls	4
Rubber Shoe Covers, pairs	6
Rubber Gloves, pairs	6
Poly Bags 20" x 40"	12
Step Off Pads	3
50 yd. Roll of Barricade Tape (Magenta & Yellow)	4
Roll of Duct Tape	2
Box of Small Kimwipes	2
TLD Badges in Separate Labeled Container	5
Personnel Dosimeters	5
Dosimeter Charger	1
Steno Pad with 2 Ink Pens	1
NuCon Smears	100
Cotton Gloves, Bundle	1
Shoe Covers, disposable, pair	20
All Purpose Marker	2
Scotch Tape Roll and Dispenser	1
Masking Tape, 1 roll 1" and 1 roll 2"	2
Eberline E-520 w/HP-270 probe	1
Rain Suit, disposable	2
Hood, disposable	4
Weather-Proof Caution Signs with Inserts	4
Radioactive Waste Signs (4" x 6")	25
Caution: Radiation/Radioactive Material Tags	12
Binoculars	1
Coins for Telephone (roll of dimes)	1
Plastic Sample Bottles	12
Safety Glasses	5
Hard Hats	3
Contact Pyrometer	2
Flashlight and extra batteries	2
Portable Air Sampler	1
Silver Zeolite Cartridges and labels	10 each
Eberline E-520 or E-120 w/HP260 Probe	1
Trippe PV100FC Powerverter or Gasoline Powered Generator	1

Discrepancies:

Signature/Date

VERIFICATION OF EMERGENCY COMMUNICATIONS

This document shall serve as written verification that on the date below all telephone numbers and pages enclosed in emergency procedures RP/O/A/5700/01 thru RP/O/A/5700/04, Station Directive 3.8.1 and Station Directive 3.8.2 are correct and in working order, and that all jack-in telephones in the Technical Support Center are in working order. (To be done quarterly).

Signature/Date

Furthermore, this document shall serve as written verification that McGuire Nuclear Station's emergency radio transmitter/receivers have been successfully checked for operation at the distances prescribed by this procedure. (To be done monthly).

Signature/Date

Discrepancies Note: _____

Corrective Actions Taken: _____

PT/O/A/4600/11

Enclosure 13.21

WEATHER INFORMATION

NATIONAL WEATHER SERVICE

ONSITE DATA

Wind Direction

Wind Speed

Cloud Cover

Time

Discrepancies:

Signature/Date

APPROVAL _____

REV. 6 DATE 2

SECTION 18.2 ENVIRONMENTAL MONITORING FOR EMERGENCY CONDITIONS

1.0 Purpose

- 1.1 To provide environmental monitoring following an accidental release of radioactive material in excess of technical specifications to the environment.

2.0 References

- 2.1 Station Directive 3.8.1 (Site Assembly and Evacuation).
- 2.2 HP/O/B/1009/09, Release of Radioactive Materials thru the Unit Vent Exceeding Technical Specifications.
- 2.3 HP/O/B/1009/10, Release of Liquid Radioactive Materials Exceeding Technical Specifications.
- 2.4 RP/O/A/5700/02, Alert.
- 2.5 RP/O/A/5700/03, Site Area Emergency.
- 2.6 RP/O/A/5700/04, General Emergency.

3.0 Precautions and Limitations

- 3.1 Environmental sampling during emergency conditions shall not replace, but rather supplement normal environmental monitoring.
- 3.2 If survey teams expect to be exposed to airborne particulate activity $> 3 \times 10^{-9}$ $\mu\text{C}/\text{ml}$ gross $\beta\gamma$, or $> 6 \times 10^{-13}$ $\mu\text{C}/\text{ml}$ α , they shall don particulate masks.
- 3.3 If survey teams expect to be exposed to Iodine-131 in excess of 10 x MPC, they shall ingest 130 milligrams (1 tablet) of potassium iodide.
- 3.4 If survey teams expect to be exposed to contamination levels > 1000 dpm/100cm² $\beta\gamma$, > 20 dpm/100cm² α , they shall don protective clothing.
- 3.5 Survey teams shall wear high range personnel dosimetry provided in the kits when entering areas where suspected radiation levels may warrant.

4.0 Procedure

- 4.1 Upon request for offsite monitoring, Health Physics shall dispatch four (4) predesignated emergency environmental survey teams (at least two technicians/team) to their predesignated emergency vehicles/boat.
- 4.2 Each survey team shall be equipped with an emergency kit containing as a minimum, the following:
 - 4.2.1 Victoreen 491 or Eberline E-520 with H.P. 260 probe and Xetex Mod 305A.
 - 4.2.2 SAM-2 with RD-22 probe.
 - 4.2.3 Portable air sampler with Silver Zeolite (CP-100G) filter cartridges and particulate filters.
 - 4.2.4 12VDC to 120VAC powerverter or Gasoline Powered Generator.
 - 4.2.5. One Norton 7600 or MSA dual side cartridge type particulate mask per team member.
 - 4.2.6 Emergency TLDs and high range personnel dosimeter.
 - 4.2.7 Emergency radio transmitter/receiver.
 - 4.2.8 Stopwatch.
 - 4.2.9 Flashlight.
 - 4.2.10 Protective clothing.
 - 4.2.11 Assorted poly bags.
 - 4.2.12 Sample bottles.
 - 4.2.13 Limnological samplers.
 - 4.2.14 Smears.
 - 4.2.15 Survey forms.
 - 4.2.16 Potassium Iodide tablets.
 - 4.2.17 Small change for telephone to station.
 - 4.2.18 A copy of Station Health Physics Manual. 18.2, Environmental Monitoring for Emergency Conditions.
 - 4.2.19 Map of Ten Mile Zone Sectors.
- 4.3 Emergency environmental survey teams shall obtain keys to their respective vehicles at Trailer #7 or the PAP, and before leaving the site shall ensure the following:
 - 4.3.1 Verify communications with the Control Room or Technical Support Center dispatcher.
 - 4.3.2 Ensure DC/AC powerverter, Gasoline powered generator, and air sampler run satisfactorily.

- 4.3.3 Ensure stopwatch and flashlight are in working order.
- 4.3.4 Battery check survey instruments and response check if applicable.
- 4.3.5 Ensure vehicle is fueled to maximum.
- 4.4 Upon ensuring that their equipment is in satisfactory working order, the survey teams shall proceed to the predetermined survey points within the sectors designated by the Control Room or Technical Support Center dispatcher.
- 4.5 The survey teams shall maintain open communications with the Control Room or Technical Support Center dispatcher informing him of sample results at each predetermined survey point.
- 4.6 At each survey point, the survey teams shall:
 - 4.6.1 Take an air sample (10^6 ml) utilizing a Silver Zeolite (CP-100G) cartridge and particulate filter.
 - 4.6.1.1 Using the SAM-2, count the sample for I^{131} . Record results. Report corrected counts, count time, and efficiency factor to the Technical Support Center who will calculate the I^{131} concentration using the following formula:

$$\frac{(\text{Corrected Counts}) \left(\frac{1}{\text{Time}} \right) (\text{Eff. Factor}) (4.50E-7)}{\left(\frac{1}{\text{Vol. in ml}} \right) \left(\frac{1}{1} \right) \left(\frac{1}{1} \right)} = \mu\text{Ci/ml}$$
 - 4.6.2 Perform a general area $\beta\gamma$ survey. Record results.
 - 4.6.3 Take smears and water samples as directed by the Technical Support Center dispatcher. Record time and location.
 - 4.6.4 The Environmental Monitoring Coordinator in the Technical Support Center will transmit the field results to the Data Evaluation Coordinator for comparison of projected offsite doses to the actual measurements in the field.
 - 4.6.5 Retain all sample for future analysis.
- 4.7 In the course of their monitoring, the survey teams may be utilized to inform unknowing persons they come across, should area evacuations become imminent.

- 4.8 Once the extent of the release is known, survey teams shall continue to monitor survey points as directed by the Control Room or the Technical Support Center dispatcher in order to observe changes in radiation/contamination levels or locations.
- 4.9 The emergency environmental survey teams shall be supplemented, relieved, or secured as directed by the Station Health Physicist.

- 4.9.1 The Environmental Survey Teams designations and vehicles are:

ALPHA - Chemistry Vehicle - #4352

BRAVO - Health Physics Vehicle - #7632

CHARLIE - Station Manager's Vehicle - #8937

DELTA - Planning Pickup (Spare) - #8031

ECHO - Health Physics Boat

NOTE: Upon notification by the Crisis Management Center that members of the Crisis Management Center (CMC) survey teams have assembled, the assigned emergency environmental monitoring survey teams from the station will report in to the FMC at the CMC to turn over the offsite sampling responsibilities at the earliest convenient time.

5.0 Enclosures

- 5.1 List of Designated Survey Points.
- 5.2 List of Designated Limnological Sample Points.
- 5.3 Map with Designated Survey Points Marked (Original located in TSC).
- 5.4 Map of Exclusion Area Survey Points.
- 5.5 Field Monitoring Team Log Sheet.

Enclosure 5.1
List of Designated Survey Points
McGuire Nuclear Station

Example: A 3 - 1
 Evacuation Mile Sample
 Zone Radius Point

- X - 1 Flagpole at Technical Training Center
- X - 2 South end of bridge over discharge canal
- X - 3 Intersection of Construction Access Road and SR2182 (Hager
 Ferry Road)
- X - 4 Construction Access Road at the construction yard just north
 of the clearing, viewing the Standby Nuclear Service Water
 Pond.
- X - 5 Entrance to McGuire firing range on N.C. Highway 73.
- X - 6 South side of N.C. Highway 73, 20 yards east of the McGuire
 Steam Production entrance.
- X - 7 North side of N.C. Highway 73 where railroad tracks and the
 highway become parallel.
- X - 8 Dam at Waste Water Collection Basin. Access through O.C. Gate
 #5 (South River Gate)*
- A - 2-1 Southwest end of Belle Isle Drive off SR 2149.
- A - 3-1 West end of SR 2151.
- A - 3-2 Intersection of SR 2151 and SR 2149.
- A - 3-3 South end of SR 2148 (Nance Road).
- A - 5-1 Intersection of SR 2189 (Bethel Church Road) and Seaghorn
 Drive.
- A - 5-2 Knox Grill at intersection of N.C. Highway 73 and SR 2159
 (Knox Road).

* Contact the Shift Lieutenant at Ext. 4432 or via emergency radio
 for access.

NOTE: Sampling locations denoted with "X" indicate locations within
 the Exclusion Area Boundary.

- B - 1-1 One mile from plant on Lake Norman.
- B - 1-2 One mile from plant on Lake Norman.
- B - 1-3 One mile from plant on Lake Norman.
- B - 1-4 One mile from plant on Lake Norman.
- B - 1-5 One mile from plant on Lake Norman.
- B - 1-6 Emergency boathouse at boat dock.
- C - 1-1 Approximately one mile on Hubbard Road off Highway 73.
- C - 1-2 End of Hubbard Road.
- C - 1-3 Approximately one mile west on SR 2133.
- C - 1-4 Catawba River, access through O.C. Gate 7 (Lower Dam Access)*
- C - 1-5 River bank at north tip of island, access thru O.C. Gate 7 (Lower Dam Access)*
- C - 2-1 Intersection of SR 2138 (Beatties Ford Road) and SR 2133 (Stevens Road).
- C - 2-2 West end of SR 2132.
- D - 2-1 Intersection of SR 2128 (Beatties Ford Road) and SR 2136 (Gilead Road).
- D - 3-1 East end of SR 2148 (Babe Stillwell Farm Road).
- D - 3-2 Intersection of SR 2136 (Gilead Road) and SR 2131 (Bud Henderson Road).
- D - 3-3 Intersection of SR 2128 (Beatties Ford Road) and SR 2129 (Jim Kidd Road).
- D - 3-4 Intersection of SR 2074 (Meck Road) and SR 2127 (Allison Ferry Road).
- D - 3-5 West end of SR 2127 (Allison Ferry Road).
- D - 5-1 Intersection of SR 2136 (Gilead Road) and SR 2139 (Remson Road).
- D - 5-2 Intersection of SR 2117 (Hambright Road) and SR 2120 (McCoy Road).
- D - 5-3 Intersection of SR 2074 (Beatties Ford Road) and SR 2117 (Hambright Road).
- D - 5-4 Intersection of SR 2074 (Beatties Ford Road) and SR 2125.

- E - 6-1 Intersection of SR 2004 (Mt. Holly-Huntersville Road) and SR 2075 (Riverview Road).
- E - 7-1 Intersection of SR 2004 (Mt. Holly-Huntersville Road) and SR 2001 (Pump Station Road).
- E - 8-1 Intersection of SR 2025 (Miranda Road) and SR 2043.
- E - 8-2 Bridge over Long Creek on N.C. Highway 16 between SR 1664 and SR 2005.
- E - 10-1 Intersection of SR 2619 (Peachtree Road) and SR 2027 (Cora Ave).
- E - 10-2 Intersection of SR 1771 (Cathey Road) and SR 1769 (Tom Saddler Road).
- F - 5-1 Intersection of U.S. Highway 21 and SR 2004 (Mt. Holly-Huntersville Road).
- F - 7-1 Intersection of SR 2004 (Mt. Holly-Huntersville Road) and SR 2116 (Alexanderana Road).
- F - 8-1 Intersection of Interstate 77 and SR 2110 (Reames Road).
- F - 9-1 Intersection of SR 2442 (Asbury Church Road) and SR 2426 (Huntersville-Concord Road).
- F - 9-2 Intersection of SR 2442 (Asbury Church Road) and SR 2445.
- F - 10-1 Intersection of SR 2459 (Eastfield Road) and SR 2475 (Prosperity Church Road).
- F - 10-2 Intersection of N.C. Highway 115 and SR 2631 (Beechwood Mobile Home Park Road).
- G - 5-1 Intersection of U.S. Highway 21 and SR 2145 (Sam Furr Road).
- G - 6-1 South end of SR 2438 (Hagers Road) - right fork.
- G - 6-2 Intersection of N.C. Highway 115 and SR 2416 (Bailey Road).
- G - 8-1 Bridge over Rocky River on N.C. Highway 73 between SR 2420 and SR 2422.
- G - 8-2 Intersection of SR 2427 (McCord Road) and Sr 2439 (Ramah Church Road).
- G - 10-1 Intersection of SR 2418 (Shearer Road) and SR 2419.
- H - 5-1 Intersection of U.S. Highway 21 and SR 2147.
- H - 7-1 Intersection of Interstate Highway 77 and SR 2158 (Goodrum Drive).

- I - 5-1 South end of SR 2160.
- I - 6-1 Intersection of SR 1100 (Mayhew Road) and SR 2065.
- I - 7-1 Intersection of SR 1100 (Mayhew Road) and SR 1111 (Tom White Road).
- I - 7-2 South end of SR 1113 (Isle of Pines Road).
- I - 8-1 South end of SR 1439.
- I - 9-1 Intersection of SR 1100 (Mayhew Road) and SR 1177 (Chuckwood Road).
- I - 10-1 Intersection of SR 1113 and SR 1455.
- J - 6-1 West end of SR 1102 (Williamson Chapel Road) in All Seasons Campground.
- J - 9-1 Intersection of N.C. Highway 115 and SR 1137 (Midway Lake Road).
- J - 10-1 West end of SR 1194.
- J - 10-2 Intersection of SR 1132 (Midway Lake Road) and SR 1136 (J.P. White Road).
- L - 9-1 Barclay's Mini-Market and Texaco on SR 1373.
- L - 9-2 South end of SR 1841 (Webbs Chapel Road).
- M - 3-1 Highway 16 at Turbyfill Nursery.
- M - 4-1 Beatties Ford Access Area on SR 1439.
- M - 4-2 Picnic Area south of railroad crossing on N.C. Highway 16 between SR 1394 and SR 1397.
- M - 5-1 East end of SR 1495 in Westport Community.
- M - 5-2 Railroad Crossing east of Forney Creek on SR 1380 (Triangle Road) between SR 1386 and SR 1387.
- M - 5-3 East Lincoln High School at intersection of N.C. Highway 73 and SR 1386.
- M - 5-4 Bridge over Killian's Creek on SR 1545 (Old Plank Road) between N.C. Highway 16 and SR 1398.
- M - 6-1 Bridge over Anderson Creek on SR 1385 (Anderson Branch Road) between N.C. Highway 73 and SR 1383.
- N - 6-1 Intersection of SR 1379 and SR 1376.

- N - 6-2 Intersection of SR 1380 (Triangle Road) and SR 1381.
- N - 8-1 Bridge over Anderson Creek on SR 1360 (Tucker's Campground Road) between SR 1382 and SR 1384.
- N - 8-2 Bridge over Killian's Creek on SR 1373 (Denver Road) between N.C. Highway 16 and SR 1360.
- N - 8-3 Intersection of SR 1375 and SR 1635.
- N - 10-1 Intersection of SR 1360 (Tucker's Campground Road) and SR 1349.
- O - 10-1 Intersection of SR 1362 (Mechpelah Road) and N.C. Highway 73.
- P - 6-1 Intersection of SR 1545 (Old Plank Road) and SR 1-12 (Mariposa Road).
- P - 8-1 Bridge over Leeper's Creek (North Branch) on SR 1404 between SR 1535 and SR 1403.
- P - 10-1 Intersection of SR 1360 (Tucker's Campground Road) and SR 1361.
- Q - 1-1 Cowans Ford Dam - east end, access through O.C. Gate # 10*.
- O - 1-2 SR 1395 at Lake Norman Overlook.
- Q - 1-3 Intersection of Highway 73 and SR 1528.
- Q - 2-1 Bill's Marina on SR 1395.
- Q - 2-2 Intersection of N.C. Highway 73 and SR 1393.
- Q - 2-3 Intersection of N.C. Highway 73 and SR 1528.
- Q - 2-4 Railroad crossing on SR 1396 (Killian Road) between SR 1397 and SR 1909.
- Q - 3-1 East end of SR 1441.
- Q - 3-2 Intersection of SR 1393 and SR 1568 (Nixon Heights entrance).
- Q - 3-3 Bridge over Johnsons Creek on SR 1397 (Sifford Road) between SR 1396 and SR 1652.
- R - 8-1 Intersection of SR 1902 (Mariposa Road) and SR 1906.
- R - 9-1 Intersection of N.C. Highway 27 and SR 1903 (Lawrence Road).
- S - 8-1 Intersection of SR 1935 (Stanley Road) and SR 1923 (Old N.C. 27).
- U - 10-1 Intersection of N.C. Highway 273 and N.C. Highway 27.

- V - 3-1 Intersection of SR 1968 and SR 1909 approximately 0.5 mile past Gaston County line.
- V - 5-1 Intersection of N.C. Highway 16 and SR 1911.
- V - 5-2 Lucia Fire Department in Lucia on N.C. Highway 16.
- V - 5-3 Water tower across from Riverband Steam Station on SR 1912.
- V - 5-4 Intersection of SR 1912 (Horseshoe Bend Beach Road) and SR 1913.
- V - 7-1 Bridge over Leepers Creek on SR 1820 (Alexis-Lucia Road) between SR 1907 and SR 1902.
- V - 7-2 Bridge over Dutchman's Creek on SR 1905 (Upper Stanley Road) between SR 1820 and SR 1919.
- V - 8-1 Intersection of SR 1919 (Stanley Road) and SR 1918 (Sandy Ford Road).
- V - 8-2 Pinewood Elementary School on N.C. Highway 273 south of entrance to Mt. Island dam.

List of Designated Limnological Sample Points

Huntersville Intakes - Sector D (East-Northeast) 2-3 miles.

Sample elevation - 742'

Accessable by Land on SR 2145 (Norman Island Road)

Davidson Intakes - Sector B (North-Northeast) 5-6 miles

Sample elevation - 736'

Accessable by Land on SR 2195 (Torrence Church Road)

Charlotte Intakes - Sector I (South) 5-6 miles

Sample elevation 635' - Unit 1 intake

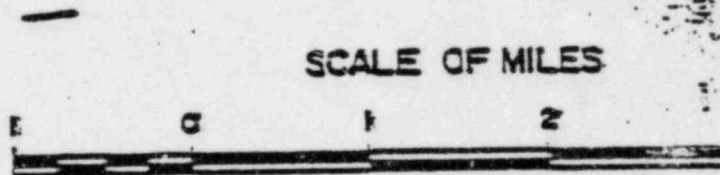
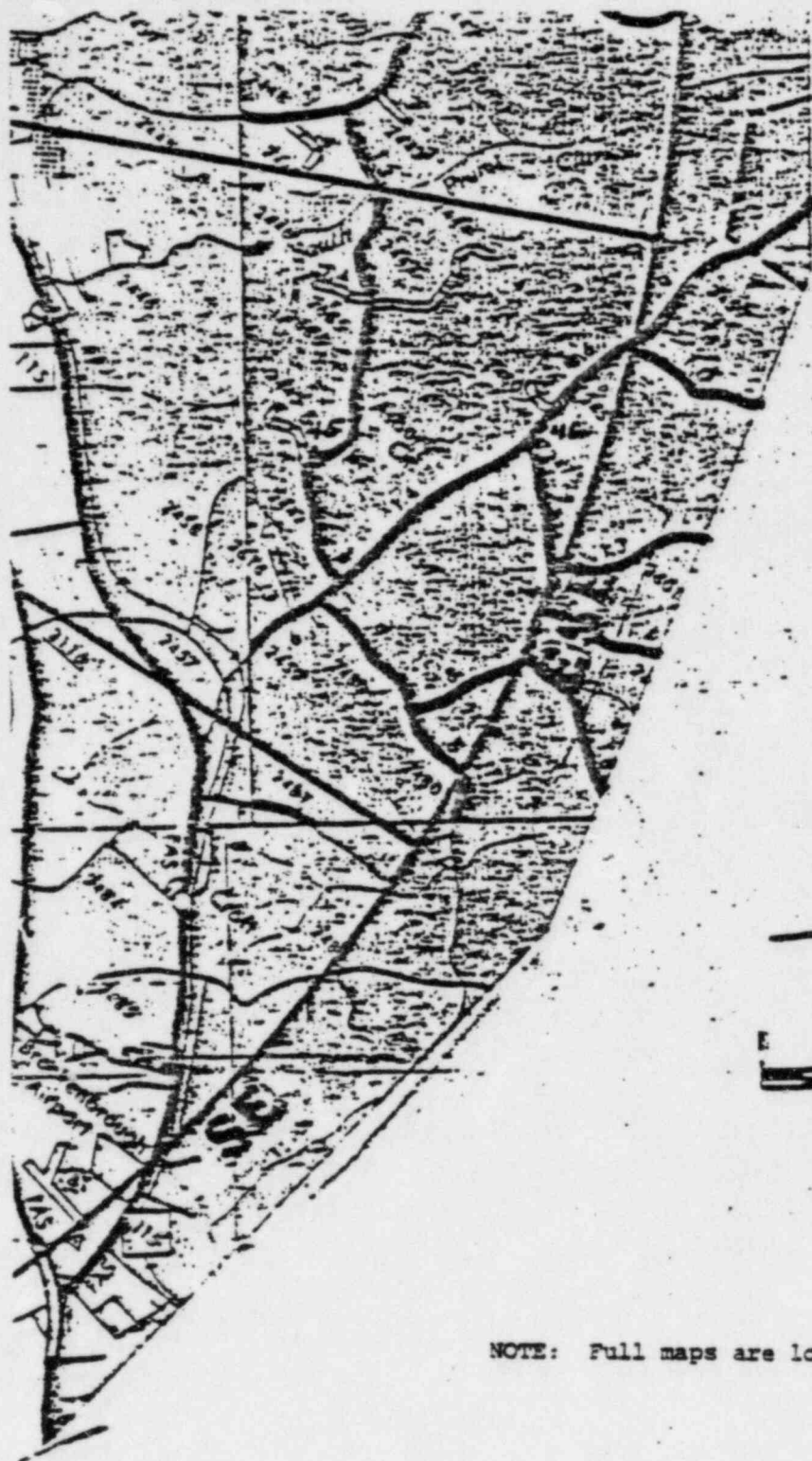
640' - Unit 2 intake

637' - Unit 3 intake

Accessable by Land on SR 2004 (Mt. Holly-Huntersville Road)

NOTE: 1. Full Lake elevation is 760'

2. Catwba River spillway elevation (for Charlotte intakes) is 647' 6"



NOTE: Full maps are located in the emergency kits.

McGUIRE NUCLEAR S

HP MANUAL SECTION 18.2

ENCLOSURE 53



UP Manual Section 1.2.2

Enclosure 5.4

FIELD MONITORING TEAM LOG SHEET
ENCLOSURE 5.5

[illegible]

February 7, 1983

MEMORANDUM

To: All Holders of the McGuire Nuclear Station
Emergency Plan Implementing Procedures Manual

Subject: Revision 4, Emergency Plan Implementing
Procedures Manual

A recent change to procedure indexing has changed certain Emergency Plan EP-Emergency Procedures and AP-Abnormal Procedures to a new class of RP-Response Procedures.

To incorporate this change, please remove the following EP/AP procedures and tabs from your manuals:

EP/O/A/5000/05	Notification of Unusual Event
EP/O/A/5000/06	Alert
EP/O/A/5000/07	Site Area Emergency
EP/O/A/5000/08	General Emergency
AP/O/A/5500/27	Care and Transportation of Contaminated Injured Individuals
AP/O/A/5500/29	Natural Disasters
AP/O/A/5500/30	Earthquake
AP/O/A/5500/31	Release of Toxic or Flammable Gases
AP/O/A/5500/32	Collisions/Explosions

Insert the attached new "RP" procedures and tabs after the Index tab.

Remove old Index marked Rev. 3 of August 1982 and insert attached new Index marked Rev. 4, February 1983.

Complete the attached Document Transmittal and return to me.

If I may be of any assistance or answer any questions concerning this change please call me at McGuire, Extension 4445.

Mike

Mike Glover
Emergency Preparedness Coordinator
McGuire Nuclear Station

MSG/nsr/EMPLAN

Attachment

cc: P. F. 9.4.4.3

EMERGENCY PLAN IMPLEMENTING PROCEDURES INDEX

<u>Procedure #</u>	<u>Title</u>
RP/O/A/5700/01	Notification of Unusual Event
RP/O/A/5700/02	Alert
RP/O/A/5700/03	Site Area Emergency
RP/O/A/5700/04	General Emergency
RP/O/A/5700/05	Care and Transportation of Contaminated Injured Individuals
RP/O/A/5700/06	Natural Disasters
RP/O/A/5700/07	Earthquake
RP/O/A/5700/08	Release of Toxic or Flammable Gases
RP/O/A/5700/09	Collisions/Explosions
OP/O/A/6200/48	Operating Procedure for the Operation of the Post Accident Liquid Sample System
HP/O/B/1009/02	Alternative Methods for Determining Dose Rate within the Reactor Building
HP/O/B/1009/03	Recovery Plan
HP/O/B/1009/04	Procedure for Estimating Food Chain Doses Under Post Accident Conditions
HP/O/B/1009/05	First Response Evaluation of Offsite Dose From a Reactor Coolant Leak Inside Containment
HP/O/B/1009/06	Procedure for Quantifying High Level Gaseous Radioactivity Release During Accident Conditions
HP/O/B/1009/08	Evaluation of a Reactor Coolant Leak Inside Containment
HP/O/B/1009/09	Release of Reactor Coolant through Unit Vent Exceeding Technical Specifications
HP/O/B/1009/10	Releases of Liquid Radioactive Exceeding Technical Specifications
HP/O/B/1009/15	Nuclear Post Accident Containment Air Sampling System Operating Procedure
HP/O/B/1009/16	Distribution of Potassium Iodide Tablets in the Event of a Radioiodine Release
PT/O/A/4600/06	Exercises and Drills
PT/O/A/4600/11	Functional Check of Emergency Vehicle and Equipment
Station Directive 2.0.5	News Release
Station Directive 2.5.1	Emergency Response Training Program
Station Directive 3.7.3	Bomb Threat
Station Directive 3.8.1	Site Assembly/Evacuation
Station Directive 3.8.2	Station Emergency Organization
McGuire Nuclear Station	Section:
Health Physics Manual	18.1 Accident and Emergency Response
	18.2 Environmental Monitoring for Emergency Conditions
	18.3 Personnel Monitoring for Emergency Conditions

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: RP/O/A/5700/01
Change(s) 0 to
0 Incorporated

(2) STATION: McGuire Nuclear Station

(3) PROCEDURE TITLE: Notification of Unusual Event

(4) PREPARED BY: Mike Glover DATE: January 11, 1983

(5) REVIEWED BY: W. H. Hill DATE: 2-1-83

Cross-Disciplinary Review By: _____

N/R: ADG

(6) TEMPORAL APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____

By: _____ Date: _____

(7) APPROVED BY: G. L. Lacy Date: 2-1-83

(8) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____

Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
McGUIRE NUCLEAR STATION
NOTIFICATION OF UNUSUAL EVENT

1.0 Symptoms

- 1.1 This condition exists whenever unusual 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 Automatic

None

2.2 Manual

- 2.2.1 The Shift Supervisor shall be informed of all events initiating this procedure.

3.0 Subsequent Action

Initial/N/A

 /

- 3.1 The Shift Supervisor shall assure that the appropriate emergency condition (Notification of Unusual Event, Alert, Site Area Emergency, or General Emergency) is declared by evaluating the actual plant condition with Enclosure 4.1, Emergency Classification Flowchart and Enclosure 4.2, List of Initiating Conditions, Emergency Action Levels, and Associated Emergency Procedure/Document.

 /

- 3.2 The Shift Supervisor shall assure that all actions required by the initiating Emergency Procedure will be performed and that all actions necessary for the protection of persons and property are being taken.

NOTE

If at any time in the course of events in this procedure, site evacuation or personnel assembly/accountability appears necessary, refer to Station Directive 3.8.1.

 /

- 3.2 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 Station Manager or his designee assumes the responsibility of the Emergency Coordinator.

- /
- 3.4 The Emergency Coordinator shall assure prompt (within about 15 minutes of declaring the emergency) notification of the North Carolina State and Local County Warning Points indicated on Enclosure 4.3. He shall also assure notification of all other personnel listed in Enclosure 4.3.

NOTE 1.

See Enclosure 4.4, Telephone Listing, for notification, telephone numbers/radio codes/pager codes.

NOTE 2.

See Enclosure 4.5, Notification of Emergency Conditions, for information to be provided to State/County Warning Points.

NOTE 3.

See Enclosure 4.6, Emergency Plan Message Format for information to be provided to Nuclear Production Duty Engineer.

- /
- 3.5 In the event a release or potential release of radioactive materials is a threat to plant personnel or members of the general public the Emergency Coordinator shall request Health Physics personnel to evaluate the consequences utilizing the appropriate Health Physics procedure, HP/O/B/1009/05, HP/O/B/1009/06, HP/O/B/1009/08, HP/O/B/1009/09 or HP/O/B/1009/10.
- /
- 3.6 The Emergency Coordinator shall provide protective action recommendations as necessary to the affected county warning point(s) and to the North Carolina warning point (Emergency Operations Centers if established) or the State Radiologic Protection Section, Department of Human Resources (see Enclosure 4.4 Telephone Listing) as directed by the state in accordance with the North Carolina Radiological Emergency Response Plan. If actual release of radioactive materials will result in a projected dose (REM) to the population of: (EPA Protective Action Guidelines).
- 3.6.1 Whole body <1, thyroid <5, NO protective action is required. Monitor environmental radiation levels to verify.

- 3.6.2 Whole body 1 to <5, thyroid 5 to <25, recommend seeking shelter and wait for further instructions. Consider evacuation particularly for children and pregnant women. Monitor environmental radiation levels. Control access to affected areas.
- 3.6.3 Whole body 5 and above, thyroid 25 and above, recommend mandatory evacuation of populations in the affected areas. Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. Control access to affected areas.

NOTE

See Enclosure 4.4, Telephone Listing for notification.

- / 3.7 The Emergency Coordinator shall augment on shift resources to assess and respond to the emergency situation as needed to ensure the protection of persons and property.
- / 3.8 The Emergency Coordinator will assess the Emergency Condition and determine the need to remain in a Notification of Unusual Event, escalate to a more severe class or close out the emergency.
- / 3.9 The Projects and Licensing Engineer or his designee will close out the Emergency with verbal summary to county and State authorities, notified in Step 3.4, followed by written summary within 24 hours.

4.0 Enclosures

- 4.1 Emergency Classification Guide Flowchart
- 4.2 List of Initiating Conditions, Emergency Action Levels, and Associated Emergency Procedure/Document.
- 4.3 Notification Chart
- 4.4 Telephone Listing
- 4.5 Notification of Emergency Conditions.
- 4.6 Emergency Plan Message Format

EMERGENCY CLASSIFICATION GUIDE FLOWCHART



LIST OF INITIATING CONDITIONS, EMERGENCY ACTION LEVELS, AND
ASSOCIATED EMERGENCY PROCEDURE/DOCUMENT

Initiating Conditions		Emergency Action Level (EAL)	Emergency Procedure/Document
4.2.1	Emergency Core Cooling Initiated (SI) and discharge to vessel has occurred.	Safety Injection signal verification by redundant indication and indication of discharge to vessel.	EP/1/A/5000/01, EP/1/A/5000/02, EP/1/A/5000/03, EP/1/A/5000/04, AP/1/A/5500/35
4.2.2	Radiological effluent Technical Specification limits exceeded.	EMF49, 50, 35, 36, 37 Alarm indicating Technical Specification Limits exceeded.	Tech Specs 3/4.11, Environmental Tech Specs, HP/0/B/1009/09, HP/0/B/1009/10, HP/0/B/1009/05
4.2.3	Fuel Damage Indication:		
a.	High coolant activity sample exceeding Tech. Specs.	a. $>1 \mu\text{Ci}/\text{gram}$ Dose Equivalent I-131 or $>100 \mu\text{Ci}/\text{gram}$ gross activity. E—	AP/1/A/5500/18
		NOTE: These calculations available from counting facility on request.	
b.	Failed fuel monitor indicates Mechanical Clad Failure greater than 1% to 5% or 0.1% equivalent fuel failures within 30 minutes.	b. Increase in I-131 concentration by $7\mu\text{Ci}/\text{ml}$ over a 30 minute period, or, I-131 concentration is in the range of $70\mu\text{Ci}/\text{ml}$ to $350 \mu\text{Ci}/\text{ml}$ verified by increased EMF-48 readings and laboratory analysis.	
4.2.4	Abnormal coolant temperature and/or pressure or abnormal fuel temperature outside of Technical Specification Limits.	Figure 2.1-1 Tech Specs exceeded and Core Subcooling Monitor less than acceptable. (Below Curve) Verified as necessary by redundant Instrumentation. (e.g., narrow and wide range pressure/temperature subcooling monitors)	AP/1/A/5500/05

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
4.2.5 Exceeding either primary/secondary leak rate requiring shutdown by Tech. Specs. or primary leak rate requiring shutdown by Tech. Specs.	>1GPM total P/S leakage >500 GPD from any S/G >10GPM Identified Primary Leakage Verified by EMF readings, level control, make-up rate, and or chemical/radiological analysis.	EP/1/A/5000/02, EP/1/A/5000/04, AP/1/A/5500/10
4.2.6 Failure of a safety or relief valve in a safety related system to close, following reduction of applicable pressure. (Primary System (NC) or Main Steam (SM)).	Valid accoustical monitor indication of valve failure.	EP/1/A/5000/02, AP/1/A/5500/11, EP/1/A/5000/03
4.2.7 Loss of offsite power or loss of onsite AC power capability.	Undervoltage alarms on 7KV buses or blackout load sequencers actuated.	AP/1/A/5500/07
4.2.8 Loss of containment integrity requiring shutdown by Tech Specs (3/4.6.1).	Any automatic containment isolation valve found to be open and inoperable and unisolable or both air lock doors on a lock inoperable, <u>or</u> penetration(s) fail leak test per Tech Specs when containment integrity required.	AP/1/A/5500/24
4.2.9 Loss of engineered safety feature or fire protection system function requiring shutdown by Tech Specs (e.g., malfunction, personnel error, or procedural inadequacy).	ESF actuation system found inoperable <u>or</u> Fire Suppression Water System found inoperable per Tech Specs.	AP/1/A/5500/19, AP/1/A/5500/21, AP/1/A/5500/20, Tech Specs 3/4.5, 3/4.7.10, 3/4.7.11

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
4.2.10 Fire within the plant lasting more than 10 minutes.	Observation <u>or</u> fire detection alarm with confirming observation of a fire lasting more than 10 minutes.	Station Directive 2.11
4.2.11 Indications or alarms on process or effluent parameters not functional in Control Room to an extent requiring plant shutdown or other significant loss of assessment or communication capability (e.g., all meteorological instrumentation, or radio networks).	Loss of process or effluent radiation monitoring system <u>or</u> Loss of all meteorological instrumentation onsite <u>or</u> Loss of all radio/telephone communications capability offsite.	OP/0/A/6700/03, Tech Specs 3/4.3
4.2.12 Security threat or attempted entry or attempted sabotage.	As notified by Security Force.	Station Security Plan
4.2.13 Natural phenomenon being experienced or projected beyond usual levels.		
a. Any earthquake felt in plant or detected on station seismic instrumentation.	(<.08gH, <.053gV), Annunciator Alarm, (AD-13)	
b. 50-year flood or low water, hurricane surge, seiche (lake tidal wave)	As observed	
c. Any tornado on site	As observed	
d. Any hurricane	Winds >73 mph/from National Weather Service information.	RP/0/A/5700/06, RP/0/A/5700/07

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
4.2.14 Other hazards being experienced or projected.		
a. Aircraft crash onsite or unusual aircraft activity over facility.	As observed	
b. Train derailment on site.	As observed	
c. Near site or onsite explosion.	As observed	
d. Near site or onsite toxic or flammable gas release.	As observed	RP/O/A/5700/08
e. Turbine rotating component failure causing rapid plant shutdown (Loss of Condenser Heat Sink).	Turbine trip and observation of a turbine malfunction or failure.	AP/O/A/5500/23, RP/O/A/5700/09, AP/O/A/5500/02
4.2.15 Other plant conditions exist that in the judgment of the Shift Supervisor, the Operations Duty Engineer, the Superintendent of Operations, or the Station Manager warrant increased awareness on the part of State and/or local offsite authorities or require plant shutdown under Tech Specs requirements and involve other than normal controlled shutdown (e.g., cooldown rate exceeding Tech Specs limits, pipe cracking found during operation).	As determined by the Shift Supervisor/ Emergency Coordinator.	As directed by plant conditions.

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
4.2.16 Transportation of contaminated injured individual from site to offsite hospital.	As observed.	RP/0/A/5700/05
4.2.17 Rapid depressurization of secondary side.	As observed and actuation of 4.2.1 and 4.2.6 above.	AP/1/A/5500/06

NOTIFICATION CHART
NOTIFICATION OF UNUSUAL EVENT

INITIATING CONDITIONS (from ENCLOSURE 4.2)

TO BE NOTIFIED	4.2.1	4.2.2	4.2.3	4.2.4	4.2.5	4.2.6	4.2.7	4.2.8	4.2.9	4.2.10	4.2.11	4.2.12	4.2.13	4.2.14	4.2.15	4.2.16	4.2.17	INITIAL
Shift Supervisor	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
OPS. Duty Engineer	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Station Manager	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Supt. of Operations	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Supt. of Tech. Services	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Project/Licen. Engineer	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Nuclear Prod. Duty Eng.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
N.C. State Warning Point	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mecklenburg Warning Pt.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Catawba Co. Warning Pt.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Lincoln Co. Warning Pt.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Gaston Co. Warning Pt.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Iredell Co. Warning Pt.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Cabarrus Co. Warning Pt.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
NRC Via EMS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
NRC (Station Rep.)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Construction Proj. Mgr.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Station Health Physicist	NO	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Station Safety Supervisor	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Supt. of Maintenance	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Supt. of Administration	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

* - Whenever radiological hazards may be involved

X - to be notified

TELEPHONE LISTING

4.4.1 Operations Duty Engineer (PA System)
P&T Pager -

4.4.2 Station Manager
Home - - System Speed
Home - - System Speed -

4.4.3 Superintendent of Operations -
Home - - System Speed

4.4.4 Superintendent of Technical Services -
Home - - System Speed

4.4.5 Projects & Licensing Engineer -
Home - - System Speed

4.4.6 Nuclear Production Duty Engineer - System Speed -
P&T Pager

4.4.7 NC State Warning Point, Raleigh - - System Speed -

4.4.8 Mecklenburg County Warning Point - Primary: Ring Down Phone
Back-up: - - System Speed
Back-up: Emergency Radio, Code: -

4.4.9 Lincoln County Warning Point - Primary: Ring Down Phone
Back-up: - - System Speed
Back-up: Emergency Radio, Code: -

4.4.10 Catawba County Warning Point - Primary: Ring Down Phone
Back-up: - - System Speed
Back-up: Emergency Radio, Code: -

4.4.11 Iredell County Warning Point - Primary: Ring Down Phone
Back-up: - - System Speed
Back-up: Emergency Radio, Code: -

4.4.12 Gaston County Warning Point - Primary: Ring Down Phone
Back-up: - - System Speed
Back-up: Emergency Radio, Code: -

4.4.13 Cabarrus County Warning Point - Primary: Ring Down Phone
Back-up: - - System Speed
Back-up: Emergency Radio, Code: -

NOTE

1. Radio Code will activate
all county radio units.
2. P&T Pager, Central Division (Charlotte Area)
Dial -

- 4.4.14 N.R.C. Operation Center, Emergency Notification System (ENS phone)
- 4.4.15 N.R.C. Station Representative (Orders)
Office (MNS) -
Office (ONS)
Home -
P&T Pager -
Page from Central (MNS Area)
or from Southern (ONS Area) -
- 4.4.16 Construction Project Manager: Construction Ext.
Home - System Speed or
 - System Speed
- 4.4.17 Station Health Physicist
Home - System Speed -
P&T Pager
- 4.4.18 Station Safety Supervisor -
Home - - System Speed -
- 4.4.19 Superintendent of Maintenance -
Home - - System Speed -
- 4.4.20 Superintendent of Administration -
Home - - System Speed -
- 4.4.21 Radiation Protection Section Department of Human Resources
 - System Speed -

MCGUIRE NUCLEAR STATION
NOTIFICATION OF EMERGENCY CONDITIONS

4.5.1 Include as a minimum, the following information to the North Carolina State Warning Point, and the six County Warning Points, (Mecklenburg, Catawba, Iredell, Lincoln, Gaston, and Cabarrus).

NOTE 1: See Enclosure 4.4, Telephone Listing

NOTE 2: A. Complete Part I of this format as a minimal first notification of a reportable incident.

B. Complete Part I and II of this format to provide minimal followup information.

PART I: Initial Emergency Message Information

☒ ACKNOWLEDGEMENT

TELEPHONE RESPONSE:

"This is McGuire Nuclear Station.

Please acknowledge when you are

ready to copy Emergency Information."

Mecklenburg _____
Iredell _____
Lincoln _____
Cabarrus _____
Gaston _____
Catawba _____

1. This is McGuire Nuclear Station.

2. My name is: _____.

3. This message (Number ____):

_____ a. Reports a real emergency.

_____ b. Is an exercise message.

4. My telephone number/extension is: _____.

5. Message Authentication: _____.

6. The class of emergency is:

_____ a. Notification of an Unusual Event

_____ b. Alert

_____ c. Site Area Emergency

_____ d. General Emergency

7. This Classification of Emergency was declared at: _____/on _____.

AM/PM DATE

8. The initiating event causing the Emergency Classification is:

9. The Emergency Condition:

_____ a. Does not involve the release of radioactive materials from the plant.

_____ b. Involves the POTENTIAL for a release, but NO release is occurring.

_____ c. Involves a release of radioactive material.

10. We recommend the following protective action:
- ☐ a. No protective action is recommended at this time.
 - ☐ b. People living in zones _____ remain indoors with doors and windows closed.
 - ☐ c. People in zones _____ EVACUATE their homes and businesses.
 - ☐ d. Pregnant women and children in zones _____ remain indoors with the doors and windows closed.
 - ☐ e. Pregnant women and children in zones _____ evacuate to the nearest shelter/reception center.
 - ☐ f. Other recommendations: _____

11. There will be:
- ☐ a. A followup message
 - ☐ b. No further communications
12. I repeat, this message:
- ☐ a. Reports an actual emergency.
 - ☐ b. Is an exercise message.

13. Relay this information to the persons indicated in your alert procedures for an incident at McGuire Nuclear Station.

NOTE: Record the Name, Title, Date, Time, and Warning Point at end of Part II.

PART II: Followup Emergency Message Information

1. The type of actual or projected release is:
- ☐ a. Airborne
 - ☐ b. Waterborne
 - ☐ c. Surface spill
 - ☐ d. Other
2. The source and description of the release is: _____

3. ☐ a. Release began/will begin at _____ a.m./p.m.; time since reactor trip is _____ hours.
- ☐ b. The estimated duration of the release is _____ hours.

4. Dose projection base data:

Radiological release: _____ curies, or _____ curies/sec.
Wind speed: _____ mph
Wind direction: From _____°
Stability class: _____ (A,B,C,D,E,F, or G)
Release height: _____ Ft.
Dose conversion factor: _____ R/hr/Ci/M³ (whole body)
_____ R/hr/Ci/M³ (Child Thyroid)
Precipitation _____
Temperature at the site: _____°F

5. Dose projections:

Dose Commitment

Distance	Whole Body Rem/hour	(Child Thyroid) Rem/hour of inhalation
Site Boundary		
2 miles		
5 miles		
10 miles		

Projected Integrated Dose In Rem

Distance	Whole Body	Child Thyroid
Site Boundary		
2 miles		
5 miles		
10 miles		

6. Field measurement of dose rate or contamination (if available):

7. Emergency actions underway at the facility include: _____

8. Onsite support needed from offsite organizations: _____

9. Plant status:

- a. Reactor is: not tripped/tripped
- b. Plant is at: _____% power/hot shutdown/cold shutdown/cooling down
- c. Prognosis is: stable/improving/degrading/unknown.

10. I repeat, this message:
 a. Reports an actual emergency.
 b. Is an exercise message.
11. Do you have any questions?

END OF FOLLOW-UP MESSAGE

NOTE: Record the name, title, date, time, and warning point notified.

(1)	_____	Communicator
	(Name)	(Title)
	_____	Mecklenburg
	(Date) (Time)	(Warning Point)
(2)	_____	Communicator
	(Name)	(Title)
	_____	Gaston
	(Date) (Time)	(Warning Point)
(3)	_____	Communicator
	(Name)	(Title)
	_____	Iredell
	(Date) (Time)	(Warning Point)
(4)	_____	Communicator
	(Name)	(Title)
	_____	Catawba
	(Date) (Time)	(Warning Point)
(5)	_____	Communicator
	(Name)	(Title)
	_____	Lincoln
	(Date) (Time)	(Warning Point)
(6)	_____	Communicator
	(Name)	(Title)
	_____	Cabarrus
	(Date) (Time)	(Warning Point)
(7)	_____	Communicator
	(Name)	(Title)
	_____	North Carolina
	(Date) (Time)	(Warning Point)

EMERGENCY PLAN MESSAGE FORMAT
(Nuclear Station to Nuclear Production Duty Engineer)

1. This is _____ at McGuire Nuclear Station.
(Name and Title)
2. This is/is not a Drill. An ☐ Unusual Event
☐ Alert
☐ Site Area Emergency
☐ General Emergency
was declared by the Emergency Coordinator at _____ on Unit Number _____.
(Time)
3. Initiating Condition: (Give as close to the emergency procedure description as possible together with station parameters used to determine emergency status)

4. Corrective Measures Being Taken: _____

5. There Have/Have Not been any injuries to plant personnel.
6. Release of radioactivity: Is/Is not taking place, and is/is not affecting the Crisis Management Center.
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 (Unusual Event Only).
9. I can be reached at _____ for follow-up information.
(Telephone Number)
10. Additional Comments: _____

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: RP/0/A/5700/02
Change(s) 0 to
0 Incorporated

(2) STATION: McGuire Nuclear Station

(3) PROCEDURE TITLE: Alert

(4) PREPARED BY: Mike Glover DATE: January 11, 1983

(5) REVIEWED BY: [Signature] DATE: 2-1-83

Cross-Disciplinary Review By: _____ N/R: [Signature]

(6) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____

By: _____ Date: _____

(7) APPROVED BY: [Signature] Date: 2-3-83

(8) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____

Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
McGUIRE 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 Action

2.1 Automatic

None

2.2 Manual

2.2.1 The Shift Supervisor shall be informed of all events initiating this procedure.

3.0 Subsequent Actions

Initial / N/A

- / 3.1 The Shift Supervisor shall assure that the appropriate emergency condition (Notification of Unusual Event, Alert, Site Area Emergency, or General Emergency) is declared by evaluating the actual plant condition with Enclosure 4.1, Emergency Classification Flowchart and Enclosure 4.2, List of Initiating Conditions, Emergency Action Levels, and Associated Emergency Procedure/Document.
- / 3.2 The Shift Supervisor shall ensure that all actions required by the initiating Emergency Procedure will be performed and that all actions necessary for the protection of persons and property are being taken.

NOTE

If at any time in the course of events in this procedure, site evacuation or personnel assembly/accountability appears necessary, refer to Station Directive 3.8.1.

- / 3.3 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 Station Manager or his designee assumes the responsibility of the Emergency Coordinator.

- / 3.4 The Emergency Coordinator shall assure prompt (within about 15 minutes of declaring the emergency) notification of the North Carolina State and Local County Warning Points indicated on Enclosure 4.3. He shall also assure notification of all other personnel listed in Enclosure 4.3.

NOTE 1

Activation of the Technical Support Center (TSC), and Operations Support Center (OSC) shall be in accordance with Station Directive 3.8.2. Activation of the Crisis Management Center (CMC) shall be in accordance with Enclosure 4.6.

NOTE 2

See Enclosure 4.4, Telephone Listing, for notification, telephone numbers/radio codes/pager codes.

NOTE 3

See Enclosure 4.5, Notification of Emergency Conditions, for information to be provided to State/County Warning Points.

- / 3.5 The Emergency Coordinator in direct contact with the Technical Support Center and the Crisis Management Center will assess and respond to the emergency by:
- 3.5.1 Dispatching onsite monitoring teams with associated communications equipment.
 - 3.5.2 Providing periodic plant status updates to offsite authorities (at least every 15 minutes).
 - 3.5.3 Providing periodic meteorological assessments to offsite authorities and, if any releases are occurring, dose estimates for actual releases.

NOTE

In the event a release or potential release of radioactive materials is a threat to plant personnel or members of the general public, the Emergency Coordinator shall request Health Physics personnel to evaluate the consequences utilizing the appropriate Health Physics procedure, HP/O/B/1009/05, HP/O/B/1009/06, HP/O/B/1009/08, HP/O/B/1009/09, or HP/O/B/1009/10.

/ 3.6 The Emergency Coordinator shall provide protective action recommendations as necessary to the affected county warning point(s) and to the North Carolina warning point (Emergency Operations Centers if established) or to the state Radiological Protection Section, Department of Human Resources (See Enclosure 4.4, Telephone Listing) as directed by the state in accordance with the North Carolina Radiological Emergency response plan. If evaluation indicates that a potential for or an actual release of radioactive materials will result in a projected dose (REM) to the population of: (EPA Protective Action Guidelines).

- 3.6.1 Whole body <1, thyroid <5, NO protective action is required. Monitor environmental radiation levels to verify.
- 3.6.2 Whole body 1 to <5, thyroid 5 to <25, recommend seeking shelter and wait for further instructions. Consider evacuation particularly for children and pregnant women. Monitor environmental radiation levels. Control access to affected areas.
- 3.6.3 Whole body 5 and above, thyroid 25 and above, recommend mandatory evacuation of populations in the affected areas. Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. Control access to affected areas.

NOTE

See Enclosure 4.4 for Telephone Listing for notification.

/ 3.7 The Emergency Coordinator in coordination with the Recovery Manager at the Crisis Management Center, will assess the emergency condition and determine the need to remain in an Alert Status, escalate to a more severe class, reduce the emergency class or close out the emergency.

/ 3.8 The Station Manager or his designee will close out the Emergency with a verbal summary to County and State authorities notified in Step 3.4, followed by a written summary within 8 hours.

4.0 Enclosures

- 4.1 Emergency Classification Guide Flowchart
- 4.2 List of Initiating Conditions, Emergency Action Levels, and Associated
Emergency Procedure/Document.
- 4.3 Notification Chart.
- 4.4 Telephone Listing.
- 4.5 Notification of Emergency Conditions.
- 4.6 Emergency Plan Message Format

EMERGENCY CLASSIFICATION GUIDE FLOWCHART



LIST OF INITIATING CONDITIONS, EMERGENCY ACTION LEVELS, AND
ASSOCIATED EMERGENCY PROCEDURE/DOCUMENT

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
4.2.1 Severe loss of fuel cladding, Mechanical Clad Failure.	<p>a. Very high coolant activity sample indicating an increase of 70μCi/ml in 30 minutes or 350 to 1,750μCi/ml total I-131 Coolant Activity.</p> <p>b. Failed fuel monitor (EMF-48) or lab analysis indicates increase greater than 1% fuel failures within 30 minutes or 5% to 25% total fuel failure.</p>	Tech Specs 3/4.6.7
4.2.2 Rapid gross failure of one Steam Generator tube with loss of off-site power.	Pressurizer low pressure alarm and reactor trip <u>and</u> , pressurizer low level alarm <u>and</u> , pressurizer low pressure safety injection signal <u>and</u> , undervoltage alarm on 7KV buses. EMF 32, 33, and 34 Alarm(s).	EP/1/A/5000/04, AP/1/A/5500/07
4.2.3 Rapid failure of Steam Generator tube(s).	<p>Several hundred gpm primary to secondary leak rate indicated by:</p> <p>a. as above in 4.2.2 for pressurizer and EMF indicators.</p> <p>b. Steam generator level increasing in one or more generator(s) and falling in the others/due to reactor trip.</p>	EP/1/A/5000/04

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
4.2.4 Steam line break with significant primary to secondary leak rate.	<p>Greater than 10gpm, rapidly decreasing reactor coolant Tavg, pressurizer pressure and level <u>and</u>,</p> <ol style="list-style-type: none"> 1. Steam line differential pressure safety injection signal and increased containment building pressure/ if break is in containment. 2. High steam flow and Lo Lo Tavg or Low steam pressure safety injection signal for rupture downstream of MSIV's. 	EP/1/A/5000/04, EP/1/A/5000/03
4.2.5 Primary coolant leak rate greater than 50 gpm.	Leak >50gpm as indicated by calculation or other indication. (i.e., sump levels)	EP/1/A/5000/02, AP/1/A/5500/10
4.2.6 High radiation levels or high airborne contamination which indicates a severe degradation in the control of radioactive materials.	Increase by a factor of 1,000 in radiation monitor reading within the station.	HP/0/B/1009/05
4.2.7 Loss of offsite power <u>and</u> loss of all onsite AC power for up to 15 minutes. (See Site Area Emergency RP/0/A/5700/03, for extended loss).	Undervoltage alarm on 7KV buses, <u>and</u> blackout load sequencers actuated.	AP/1/A/5500/07
4.2.8 Loss of all onsite DC power.	DC bus undervoltage alarms on all buses.	Tech Specs 3/4.8.2.3, Tech Specs 3/4.8.2.4

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
4.2.9 Coolant pump seizure leading to fuel failure.	Reactor coolant pump auto trip alarm, <u>and</u> reactor trip on low coolant flow, <u>and</u> failed fuel monitor alarm EMF48.	AP/1/A/5500/04, AP/1/A/5500/08, OP/0/A/6150/14, AP/1/A/5500/05
4.2.10 Complete loss of functions needed for plant cold shutdown.	RIIR not functional and inability to sustain natural or forced circulation.	AP/1/A/5500/17, OP/1/A/6100/04
4.2.11 Failure of the reactor protection system to initiate and complete a scram which brings the reactor subcritical.	Reactor remains critical after all attempts to trip reactor have been completed.	AP/0/A/5500/34
4.2.12 Fuel damage accident with release of radioactivity to containment or fuel handling building.	Observation of damage to spent fuel assembly, <u>and</u> 1. EMF-16 and 17 alarm. 2. EMF-38, 39, 40, or 42 alarm.	AP/1/A/5500/25
4.2.13 Fire potentially affecting safety systems.	Observation of a fire that could affect safety systems.	Station Directive 2.11 Series, Tech Specs 3/4.5
4.2.14 Most or all alarms (annunciators) lost.	As observed.	OP/0/A/6350/01A
4.2.15 Airborne Radiological effluents >10 times Tech Specs instantaneous limits (an instantaneous rate which, if continued over 2 hours, would result in about 1mr at the site boundary under average meteorological conditions or whenever effluent monitors or radiological monitoring detect these levels).	For EMF35 - Low Range offscale High Range 1×10^4 cpm For EMF36 - Low Range 2×10^6 cpm High Range 5×10^2 cpm	HP/0/B/1009/05

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
4.2.16 Ongoing security compromise.	As reported by Security force.	Station Security Plan
4.2.17 Severe natural phenomena being experienced or projected:		RP/0/A/5700/06, RP/0/A/5700/07
a. Earthquake greater than Operational Basis Earthquake Levels	>0.08gH, >.053gV, Annunciator Alarm, (AD-13).	
b. Flood, low water, hurricane surge, seiche near design levels. (Lake tidal wave)	As observed.	
c. Any tornado striking facility.	As observed.	
d. Hurricane winds near design basis level.	As observed (95 mph)/from National Weather Service information.	
4.2.18 Other hazards being experienced or projected.		RP/0/A/5700/08, RP/0/A/5700/09 AP/1/A/5500/23
a. Aircraft crash on facility.	As observed.	
b. Missile impacts from whatever source on facility.	As observed.	
c. Know explosion damage to facility affecting plant operation.	As observed.	
d. Entry into facility environs of toxic or flammable gases.	As observed.	

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
e. Turbine failure causing casing penetration.	Turbine trip and observation of turbine malfunction or failure.	
4.2.19 Other plant conditions exist that in the judgment of the Shift Supervisor, the Operations Duty Engineer, the Superintendent of Operations, or the Plant Manager warrant precautionary activation of the Technical Support Center and near site Crisis Management Center.	As determined by Shift Supervisor/ Emergency Coordinator.	As dictated by Plant Conditions.
4.2.20 Evacuation of control room anticipated or required with control of shutdown systems established from local station.	As determined by Shift Supervisor/ Emergency Coordinator.	AP/1/A/5500/17, OP/1/A/6100/04

NOTIFICATION/ACTIVATION
ALERT

Notify/Activate the following personnel/or Emergency Centers for all Initiating Conditions listed in Enclosure 4.2. (See Enclosure 4.4 for Telephone Listing)

NOTIFY/ACTIVATE	NOTIFICATION COMPLETE-INITIAL
Shift Supervisor	
Operations Duty Engineer	
Station Manager	
Superintendent of Operations	
Superintendent of Technical Services	
Projects and Licensing Engineer	
Station Health Physicist	
North Carolina State Warning Point	
Mecklenburg County Warning Point	
Lincoln County Warning Point	
Catawba County Warning Point	
Iredell County Warning Point	
Gaston County Warning Point	
Cabarrus County Warning Point	
N.R.C. via ENS (Red Phone)	
N.R.C. Station Representative	
Construction Project Manager	
Superintendent of Maintenance	
Superintendent of Administration	
Activate T.S.C. (Station Directive 3.8.2)	
Activate O.S.C. (Station Directive 3.8.2)	
Activate C.M.C. (Enclosure 4.6)	

TELEPHONE LISTING

- 4.4.1 Operations Duty Engineer (PA System)
P&T Pager -
- 4.4.2 Station Manager
Home - System Speed -
Home - - System Speed -
- 4.4.3 Superintendent of Operations -
Home - - System Speed
- 4.4.4 Superintendent of Technical Services -
Home - - System Speed
- 4.4.5 Projects and Licensing Engineer -
Home - System Speed
- 4.4.6 Station Health Physicist -
Home - - System Speed
P&T Pager
- 4.4.7 NC State Warning Point, Raleigh - - System Speed -
- 4.4.8 Mecklenburg County Warning Point - Primary: Ring Down Phone
Back-up: - System Speed
Back-up: Emergency Radio, Code: -
- 4.4.9 Lincoln County Warning Point - Primary: Ring Down Phone
Back-up: - System Speed -
Back-up: Emergency Radio, Code: -
- 4.4.10 Catawba County Warning Point - Primary: Ring Down Phone
Back-up: - System Speed
Back-up: Emergency Radio, Code: -
- 4.4.11 Iredell County Warning Point - Primary: Ring Down Phone
Back-up: - System Speed -
Back-up: Emergency Radio, Code: -
- 4.4.12 Gaston County Warning Point - Primary: Ring Down Phone
Back-up: - System Speed
Back-up: Emergency Radio, Code: -
- 4.4.13 Cabarrus County Warning Point - Primary: Ring Down Phone
Back-up: - System Speed
Back-up: Emergency Radio, Code: -

NOTE

1. Radio Code will activate
all county radio units.
2. P&T Pager, Central Division (Charlotte Area)
Dial -

TELEPHONE LIST

- 4.4.14 N.R.C. Operation Center, Emergency Notification System (ENS Phone)
- 4.4.15 N.R.C. Station Representative (Orders)
Office (MNS) -
Office (ONS)
Home -
P&T Pager -
Page from Central (MNS Area) -
or from Southern (ONS Area) -
- 4.4.16 Construction Project Manager Construction Ext. .
Home : - System Speed - or
- System Speed -
- 4.4.17 Superintendent of Maintenance -
Home - System Speed -
- 4.4.18 Superintendent of Administration -
Home - System Speed -
- 4.4.19 Nuclear Production Duty Engineer - - System Speed -
P&T Pager
- 4.4.20 Radiation Protection Section, Department of Human Resources-
- System Speed -

MCGUIRE NUCLEAR STATION
NOTIFICATION OF EMERGENCY CONDITIONS

4.5.1 Include as a minimum, the following information to the North Carolina State Warning Point, and the six County Warning Points, (Mecklenburg, Catawba, Iredell, Lincoln, Gaston, and Cabarrus).

NOTE 1: See Enclosure 4.4, Telephone Listing

NOTE 2: A. Complete Part I of this format as a minimal first notification of a reportable incident.
B. Complete Part I and II of this format to provide minimal followup information.

PART I: Initial Emergency Message Information

✓ ACKNOWLEDGEMENT

TELEPHONE RESPONSE:

"This is McGuire Nuclear Station.

Please acknowledge when you are

ready to copy Emergency Information."

Mecklenburg

Iredell

Lincoln

Cabarrus

Gaston

Catawba

1. This is McGuire Nuclear Station.

2. My name is: .

3. This message (Number):

 a. Reports a real emergency.

 b. Is an exercise message.

4. My telephone number/extension is: .

5. Message Authentication: .

6. The class of emergency is:

 a. Notification of an Unusual Event

 b. Alert

 c. Site Area Emergency

 d. General Emergency

7. This Classification of Emergency was declared at: / on .

AM/PM

DATE

8. The initiating event causing the Emergency Classification is:

9. The Emergency Condition:

 a. Does not involve the release of radioactive materials from the plant.

 b. Involves the POTENTIAL for a release, but NO release is occurring.

 c. Involves a release of radioactive material.

10. We recommend the following protective action:
- ☐ a. No protective action is recommended at this time.
 - ☐ b. People living in zones _____ remain indoors with doors and windows closed.
 - ☐ c. People in zones _____ EVACUATE their homes and businesses.
 - ☐ d. Pregnant women and children in zones _____ remain indoors with the doors and windows closed.
 - ☐ e. Pregnant women and children in zones _____ evacuate to the nearest shelter/reception center.
 - ☐ f. Other recommendations: _____

11. There will be:
- ☐ a. A followup message
 - ☐ b. No further communications
12. I repeat, this message:
- ☐ a. Reports an actual emergency.
 - ☐ b. Is an exercise message.
13. Relay this information to the persons indicated in your alert procedures for an incident at McGuire Nuclear Station.

NOTE: Record the Name, Title, Date, Time, and Warning Point at end of Part II.

PART II: Followup Emergency Message Information

1. The type of actual or projected release is:
- ☐ a. Airborne
 - ☐ b. Waterborne
 - ☐ c. Surface spill
 - ☐ d. Other
2. The source and description of the release is: _____

3. ☐ a. Release began/will begin at _____ a.m./p.m.; time since reactor trip is _____ hours.
- ☐ b. The estimated duration of the release is _____ hours.

4. Dose projection base data:

Radiological release: _____ curies, or _____ curies/sec.
Wind speed: _____ mph
Wind direction: From _____°
Stability class: _____ (A,B,C,D,E,F, or G)
Release height: _____ Ft.
Dose conversion factor: _____ R/hr/Ci/M³ (whole body)
_____ R/hr/Ci/M³ (Child Thyroid)
Precipitation _____
Temperature at the site: _____ °F

5. Dose projections:

Dose Commitment

Distance	Whole Body Rem/hour	(Child Thyroid) Rem/hour of inhalation
Site Boundary		
2 miles		
5 miles		
10 miles		

Projected Integrated Dose In Rem

Distance	Whole Body	Child Thyroid
Site Boundary		
2 miles		
5 miles		
10 miles		

6. Field measurement of dose rate or contamination (if available):

7. Emergency actions underway at the facility include: _____

8. Onsite support needed from offsite organizations: _____

9. Plant status:

- a. Reactor is: not tripped/tripped
- b. Plant is at: ____% power/hot shutdown/cold shutdown/cooling down
- c. Prognosis is: stable/improving/degrading/unknown.

10. I repeat, this message:
____ a. Reports an actual emergency.
____ b. Is an exercise message.
11. Do you have any questions?

END OF FOLLOW-UP MESSAGE

NOTE: Record the name, title, date, time, and warning point notified.

(1)	_____	Communicator
	(Name)	(Title)
	_____	Macklenburg
	(Date) (Time)	(Warning Point)
(2)	_____	Communicator
	(Name)	(Title)
	_____	Gaston
	(Date) (Time)	(Warning Point)
(3)	_____	Communicator
	(Name)	(Title)
	_____	Iredell
	(Date) (Time)	(Warning Point)
(4)	_____	Communicator
	(Name)	(Title)
	_____	Catawba
	(Date) (Time)	(Warning Point)
(5)	_____	Communicator
	(Name)	(Title)
	_____	Lincoln
	(Date) (Time)	(Warning Point)
(6)	_____	Communicator
	(Name)	(Title)
	_____	Cabarrus
	(Date) (Time)	(Warning Point)
(7)	_____	Communicator
	(Name)	(Title)
	_____	North Carolina
	(Date) (Time)	(Warning Point)

EMERGENCY PLAN MESSAGE FORMAT
(Nuclear Station to Nuclear Production Duty Engineer)

1. This is _____ at McGuire Nuclear Station.
(Name and Title)
2. This is/is not a Drill. An ☐ Unusual Event
☐ Alert
☐ Site Area Emergency
☐ General Emergency
was declared by the Emergency Coordinator at _____ on Unit Number ____.
(Time)
3. Initiating Condition: (Give as close to the emergency procedure description as possible together with station parameters used to determine emergency status)

4. Corrective Measures Being Taken: _____

5. There Have/Have Not been any injuries to plant personnel.
6. Release of radioactivity: Is/Is not taking place, and is/is not affecting the Crisis Management Center.
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 (Unusual Event Only).
9. I can be reached at _____ for follow-up information.
(Telephone Number)
10. Additional Comments: _____

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: RP/O/A/5700/03
Change(s) 0 to
0 Incorporated

(2) STATION: McGuire Nuclear Station

(3) PROCEDURE TITLE: Site Area Emergency

(4) PREPARED BY: Mike Glover DATE: January 11, 1983

(5) REVIEWED BY: A.D. Gilbert DATE: 2-1-83

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

(6) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____

By: _____ Date: _____

(7) APPROVED BY: George Date: 2-3-83

(8) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____

Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
MCGUIRE NUCLEAR STATION
SITE AREA EMERGENCY

1.0 Symptoms

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

2.0 Immediate Action

2.1 Automatic

None

2.2 Manual

- 2.2.1 The Shift Supervisor shall be informed of all events initiating this procedure.

3.0 Subsequent Actions

Initial/N/A

 /

- 3.1 The Shift Supervisor shall assure that the appropriate emergency condition (Notification of Unusual Event, Alert, Site Area Emergency, or General Emergency) is declared by evaluating the actual plant condition with Enclosure 4.1, Emergency Classification Flowchart and Enclosure 4.2, List of Initiating Conditions, Emergency Action Levels, and Associated Emergency Procedure/Document.

 /

- 3.2 The Shift Supervisor shall ensure that all actions required by the initiating Emergency Procedure will be performed and that all actions necessary for the protection of persons and property are being taken.

NOTE

If at any time in the course of events in this procedure, site evacuation or personnel assembly/accountability appears necessary, refer to Station Directive 3.8.1.

 /

- 3.3 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 Station Manager or his designee assumes the responsibility of the Emergency Coordinator.

- / 3.4 The Emergency Coordinator shall assure prompt (within about 15 minutes of declaring the emergency) notification of the North Carolina State and Local County Warning Points indicated on Enclosure 4.3. He shall also assure notification of all other personnel listed in Enclosure 4.3.

NOTE 1

Activation of the Technical Support Center (TSC), Operations Support Center (OSC), shall be in accordance with Station Directive 3.8.2. Activation of the Crisis Management Center (CMC) shall be in accordance with Enclosure 4.6.

NOTE 2

See Enclosure 4.4, Telephone Listing, for notification, telephone numbers/radio codes/pager codes.

NOTE 3

See Enclosure 4.5, Notification of Emergency Conditions to be provided to State/County Warning Points.

- / 3.5 The Emergency Coordinator in direct contact with the Technical Support Center and the Crisis Management Center will assess and respond to the emergency by:
- 3.5.1 Dispatching the Onsite and Offsite Monitoring teams with associated communications.
 - 3.5.2 Providing meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.
 - 3.5.3 Providing release and dose projections based on available plant condition information and foreseeable contingencies to offsite authorities.

NOTE

In the event a release or potential release of radioactive materials is a threat to plant personnel or members of the general public, the Emergency Coordinator shall request Health Physics personnel to evaluate the consequences utilizing the appropriate Health Physics procedure, HP/O/B/1009/05, HP/O/B/1009/06, HP/O/B/1009/08, HP/O/B/1009/09, HP/O/B/1009/10.

/

3.6 The Emergency Coordinator shall provide protective action recommendations as necessary to the affected county warning point(s) and to the North Carolina Warning Point (Emergency Operations Centers if established) or the Radiological Protection Section, Department of Human Resources (see Enclosure 4.4, Telephone Listing) as directed by the state in accordance with the North Carolina Radiological Emergency response plan. If evaluation indicates that a potential for or an actual release of radioactive materials will result in a projected dose (REM) to the population of: (EPA Protective Action Guidelines).

- 3.6.1 Whole body <1, thyroid <5, NO protective action is required. Monitor environmental radiation levels to verify.
- 3.6.2 Whole body 1 to <5, thyroid 5 to <25, recommend seeking shelter and wait for further instructions, consider evacuation particularly for children and pregnant women. Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. Control access to affected areas.
- 3.6.3 Whole body 5 and above, thyroid 25 and above, recommend mandatory evacuation of populations in the affected areas. Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. Control access to affected areas.

NOTE

See Enclosure 4.4, Telephone Listing for notification.

/

3.7 The Emergency Coordinator in coordination with the Recovery Manager, at the Crisis Management Center, will provide or make available:

- 3.7.1 A dedicated individual for plant status updates to offsite authorities and periodic press briefings.
- 3.7.2 Senior technical and management staff onsite available for consultation with the NRC and State on a periodic basis.

- / 3.8 The Emergency Coordinator in coordination with Recovery Manager at the Crisis Management Center, will assess the emergency condition and determine the need to remain in a Site Area Emergency, escalate to a more severe class, reduce the emergency class, or close out the emergency.
- / 3.9 The Recovery Manager at the Crisis Management Center will 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 Emergency Classification Guide Flowchart
- 4.2 List of Initiating Conditions, Emergency Action Levels, and Associated Emergency Procedure/Document.
- 4.3 Notification Chart.
- 4.4 Telephone Listing.
- 4.5 Notification of Emergency Conditions.
- 4.6 Emergency Plan Message Format

EMERGENCY CLASSIFICATION GUIDE FLOWCHART



LIST OF INITIATING CONDITIONS, EMERGENCY ACTION LEVELS, AND
ASSOCIATED EMERGENCY PROCEDURE/DOCUMENT

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
4.2.1 Known loss of coolant accident greater than makeup pump capacity.	Pressurizer low pressure reactor trip and pressurizer low pressure safety injection signal and high containment building pressure, (INSP5040, 5050, 5060, 5070) and high containment building sump level, (INIP5260, 5270) and high containment humidity, (INSP5400, 5410) and EMF 38, 39, and 40 alarm.	EP/1/A/5000/02
4.2.2 Degraded core with possible loss of coolable geometry (indicators should include instrumentation to detect inadequate core cooling, coolant activity and/or containment radioactivity levels).	<u>Inadequate Core Cooling:</u> 5 centrally located thermocouples indicate core exit temperature greater than 1200°F. <u>For Mechanical Clad Failure:</u> Greater than 25% failed fuel indicated by greater than 1,750 μ Ci/ml I-131 concentration. <u>For Severe Fuel Over Temperature:</u> From 1% to 10% failed fuel indicated by 1,300 to 13,000 μ Ci/ml I-131 concentration. <u>For Fuel Melt:</u> From .5% to 5% failed fuel indicated by 1,180 to 11,800 μ Ci/ml I-131 concentration.	AP/1/A/5500/05
4.2.3 Rapid failure of steam generator tubes with loss of offsite power (e.g., several hundred gpm primary to secondary leak rate).	Pressurizer low pressure alarm and reactor trip, and pressurizer low level alarm, and EMF 32, 33, and 34 alarm, and undervoltage alarms on 7KV buses, and steam generator water level rapidly increasing in one or more steam generators falling in the others, and pressurizer level rapidly decreasing, (INCP5151, 5160, 5172) and possible lifting of steam generator PRV's and/or safety valves.	EP/1/A/5000/04, AP/1/A/5500/07

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
4.2.4 Steam line break with greater than 50gpm primary to secondary leakage and indication of fuel damage.	Rapidly decreasing reactor coolant Tavg, pressurizer pressure and level. Steam line differential pressure safety injection signal, <u>and</u> High containment building pressure, if steamline break is in containment (INSP5040, 5050, 5060, 5070) <u>and</u> EMF 51A and/or B alarm, <u>or</u> high steam flow and Lo Lo Tavg or low steam pressure safety injection signal, <u>and</u> EMF 48 alarm.	EP/1/A/5000/03
4.2.5 Loss of offsite power <u>and</u> loss of onsite AC power for more than 15 minutes.	Undervoltage alarms on 7KV buses.	AP/1/A/5500/07
4.2.6 Loss of all vital onsite DC power for more than 15 minutes.	Blackout load sequencers actuated, DC bus undervoltage all buses <u>and</u> indications as in 4.2.5 above.	Tech Specs 3/8.2.3, 3/8.2.4
4.2.7 Complete loss of any function needed for plant hot shutdown.	Inability to establish charging pump injection, <u>and</u> Inability to establish emergency feedwater flow, <u>or</u> Inability to establish service water flow, <u>and</u> Inability to establish component cooling water flow.	OP/1/A/6100/04, AP/1/A/5500/17
4.2.8 Transient requiring operation of shutdown systems with failure to scram (continued power generation but no core damage immediately evident).	Reactor remains critical after all attempts to trip reactor have been completed.	EP/1/A/5000/01, AP/0/A/5500/34

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
4.2.9 Major damage to spent fuel in containment or fuel handling building (e.g., large object damages fuel or water loss below fuel level).	Observation of major damage to one or more spent fuel assemblies, and/or spent fuel pool water below fuel level and EMF 16, 17, 38, 39, 40 or 42 alarms.	AP/1/A/5500/25
4.2.10 Fire compromising the function of safety systems.	Observation of a major fire that defeats redundant safety system or function.	Tech Specs 3/4.5, Station Directive 2.11 Series
4.2.11 Most or all alarms (annunciators) lost and plant transient initiated or in progress.	As determined by the Shift Supervisor/ Emergency Coordinator.	OP/O/A/6350/01A
4.2.12 Airborne radiological effluent monitors detect levels corresponding to greater than 50 mr/hr for 1/2 hour <u>or</u> greater than 500 mr/hr W.B. for two minutes (or five times these levels to the thyroid) at the site boundary <u>for adverse meteorology</u> (See Note 2).	<p>For EMF35 Low Range, offscale High Range 8×10^3 cpm. (See Note 1)⁵</p> <p>For EMF36 Low Range 3×10^5 cpm High Range 7×10^1 cpm (See Note 1)</p> <p>For EMF37 Change of 143 cpm/minute for 30 minutes or a change of 1430 cpm/minute for 2 minutes (See Note 1).</p>	HP/O/B/1009/05, HP/O/B/1009/09

NOTE 1: These values are worst case calculations and may not reflect more favorable weather conditions.

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
4.2.13 Imminent loss of physical control of plant.	Physical attack on the plant involving imminent occupancy of control room and auxiliary shutdown panels.	Station Security Plan
4.2.14 Severe natural phenomena being experienced or projected with plant not in cold shutdown.	<p>NOTE 2: These dose rates are projected based on other plant parameters (e.g., radiation level in containment with leak rate appropriate for existing containment pressure) or are measured in the environs. (EPA Protective Action Guidelines are projected to be exceeded outside the site boundary).</p> <p>(>.15gH, >.1gV) as determined by monitoring seismic instrumentation and recording devices. (SMP-1)</p> <p>As determined by Shift Supervisor/Emergency Coordinator.</p>	RP/0/A/5700/06, RP/0/A/5700/07
4.2.14.1		
Earthquake greater than SSE (Safe Shutdown Earthquake) levels.		
4.2.14.2		
Flood, low water, hurricane surge, seiche greater than design levels (lake tidal waves) or failure of protection of vital equipment at lower levels.		
4.2.14.3		
Sustained winds or tornadoes in excess of design levels.		

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
4.2.15 Other hazards being experienced or projected with plant not in cold shutdown.		RP/0/A/5700/08, RP/0/A/5700/09
4.2.15.1		
Aircraft crash affecting vital structures by impact or fire.	Aircraft crash causing damage or fire to: Containment Building, Control Room, Auxiliary Building, Fuel Building, or Intake Structure.	
4.2.15.2		
Severe damage to safe shutdown equipment from missiles or explosion.	Loss of functions needed for hot shutdown as in 4.2.7.	
4.2.15.3		
Entry of uncontrolled flammable gases into vital areas. Entry of uncontrolled toxic gases into vital areas where lack of access to the area constitutes a safety problem.	Entry of uncontrolled or toxic or flammable gases into: Control Room, Cable Spreading Room, Containment Building, Switchgear Room, Safe Shutdown Panels or Diesel Rooms.	

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
4.2.16 Other plant conditions exist that in the judgment of the Shift Supervisor, the Operations Duty Engineer, the Superintendent of Operations, or the Plant Manager warrant activation of emergency centers and monitoring teams and a precautionary public notification to the public near the site.	As determined by Shift Supervisor/ Emergency Coordinator.	As dictated by Plant Conditions.
4.2.17 Evacuation of control room and control of shutdown systems not established from local stations in 15 minutes.	As determined by Shift Supervisor/	OP/0/A/6350/02, AP/1/A/5500/17

NOTIFICATION/ACTIVATION
GENERAL EMERGENCY

Notify/Activate the following personnel/or Emergency Centers for all Initiating Conditions listed in Enclosure 4.2. (See Enclosure 4.4 for Telephone Listing)

NOTIFY/ACTIVATE	NOTIFICATION COMPLETE-INITIAL
Shift Supervisor	
Operations Duty Engineer	
Station Manager	
Superintendent of Operations	
Superintendent of Technical Services	
Projects and Licensing Engineer	
Station Health Physicist	
North Carolina State Warning Point	
Mecklenburg County Warning Point	
Lincoln County Warning Point	
Catawba County Warning Point	
Iredell County Warning Point	
Gaston County Warning Point	
Cabarrus County Warning Point	
South Carolina State Warning Point	
N.R.C. via ENS (Red Phone)	
N.R.C. Station Representative	
Superintendent of Maintenance	
Superintendent of Administration	
Construction Project Manager	
Activate T.S.C. (Station Directive 3.8.2)	
Activate O.S.C. (Station Directive 3.8.2)	
Activate C.M.C. (Enclosure 4.6)	

TELEPHONE LISTING

4.4.1 Operations Duty Engineer (PA System)
P&T Pager -

4.4.2 Station Manager
Home - System Speed -
Home - System Speed -

4.4.3 Superintendent of Operations -
Home - System Speed

4.4.4 Superintendent of Technical Services -
Home - System Speed

4.4.5 Projects and Licensing Engineer -
Home - System Speed -

4.4.6 Station Health Physicist -
Home - System Speed
P&T Pager

4.4.7 NC State Warning Point, Raleigh - - System Speed -

4.4.8 Mecklenburg County Warning Point - Primary: Ring Down Phone
Back-up: - System Speed
Back-up: Emergency Radio, Code: .

4.4.9 Lincoln County Warning Point - Primary: Ring Down Phone
Back-up: - System Speed
Back-up: Emergency Radio, Code: .

4.4.10 Catawba County Warning Point - Primary: Ring Down Phone
Back-up: - System Speed
Back-up: Emergency Radio, Code: .

4.4.11 Iredell County Warning Point - Primary: Ring Down Phone
Back-up: - System Speed
Back-up: Emergency Radio, Code: .

4.4.12 Gaston County Warning Point - Primary: Ring Down Phone
Back-up: - System Speed
Back-up: Emergency Radio, Code: .

4.4.13 Cabarrus County Warning Point - Primary: Ring Down Phone
Back-up: - System Speed
Back-up: Emergency Radio, Code: .

NOTE

1. Radio Code will activate all county radio units.
2. P&T Pager, Central Division (Charlotte Area)
Dial -

TELEPHONE LIST

- 4.4.14 SC State Warning Point -
- 4.4.15 N.R.C. Operation Center, Emergency Notification System (ENS Phone)
- 4.4.16 N.R.C. Station Representative (Orders)
Office (MNS) -
Office (ONS)
Home -
P&T Pager -
Page from Central (MNS Area) -
or from Southern (ONS Area) -
- 4.4.17 Construction Project Manager Construction Ext.
Home : - System Speed or
System Speed -
- 4.4.18 Superintendent of Maintenance
Home - - System Speed -
- 4.4.19 Superintendent of Administration
Home - System Speed -
- 4.4.20 Nuclear Production Duty Engineer - System Speed -
P&T Pager
- 4.4.21 Radiation Protection Section, Department of Human Resources-
- System Speed -

MCGUIRE NUCLEAR STATION
NOTIFICATION OF EMERGENCY CONDITIONS

4.5.1 Include as a minimum, the following information to the North Carolina State Warning Point, the six County Warning Points, (Mecklenburg, Catawba, Iredell, Lincoln, Gaston, and Cabarrus) and the South Carolina Warning Point.

NOTE 1: See Enclosure 4.4, Telephone Listing

NOTE 2: A. Complete Part I of this format as a minimal first notification of a reportable incident.

B. Complete Part I and II of this format to provide minimal followup information.

PART I: Initial Emergency Message Information

☒ ACKNOWLEDGEMENT

TELEPHONE RESPONSE:

"This is McGuire Nuclear Station.

Please acknowledge when you are

ready to copy Emergency Information."

Mecklenburg _____

Iredell _____

Lincoln _____

Cabarrus _____

Gaston _____

Catawba _____

1. This is McGuire Nuclear Station.

2. My name is: _____.

3. This message (Number ____):

_____ a. Reports a real emergency.

_____ b. Is an exercise message.

4. My telephone number/extension is: _____.

5. Message Authentication: _____.

6. The class of emergency is:

_____ a. Notification of an Unusual Event

_____ b. Alert

_____ c. Site Area Emergency

_____ d. General Emergency

7. The Classification of Emergency was declared at: _____/on _____.

AM/PM

DATE

8. The initiating event causing the Emergency Classification is:

9. The Emergency Condition:

_____ a. Does not involve the release of radioactive materials from the plant.

_____ b. Involves the POTENTIAL for a release, but NO release is occurring.

_____ c. Involves a release of radioactive material.

10. We recommend the following protective action:

- ☐ a. No protective action is recommended at this time.
- ☐ b. People living in zones _____ remain indoors with doors and windows closed.
- ☐ c. People in zones _____ EVACUATE their homes and businesses.
- ☐ d. Pregnant women and children in zones _____ remain indoors with the doors and windows closed.
- ☐ e. Pregnant women and children in zones _____ evacuate to the nearest shelter/reception center.
- ☐ f. Other recommendations: _____

11. There will be:

- ☐ a. A followup message
- ☐ b. No further communications

12. I repeat, this message:

- ☐ a. Reports an actual emergency.
- ☐ b. Is an exercise message.

13. Relay this information to the persons indicated in your alert procedures for an incident at McGuire Nuclear Station.

NOTE: Record the Name, Title, Date, Time, and Warning Point at end of Part II.

PART II: Followup Emergency Message Information

1. The type of actual or projected release is:

- ☐ a. Airborne
- ☐ b. Waterborne
- ☐ c. Surface spill
- ☐ d. Other

2. The source and description of the release is: _____

3. ☐ a. Release began/will begin at _____ a.m./p.m.; time since reactor trip is _____ hours.

☐ b. The estimated duration of the release is _____ hours.

4. Dose projection base data:

Radiological release: _____ curies, or _____ curies/sec.
Wind speed: _____ mph
Wind direction: From _____°
Stability class: _____ (A,B,C,D,E,F, or G)
Release height: _____ Ft.
Dose conversion factor: _____ R/hr/Ci/M³ (whole body)
_____ R/hr/Ci/M³ (Child Thyroid)
Precipitation _____
Temperature at the site: _____°F

5. Dose projections:

Dose Commitment

Distance	Whole Body Rem/hour	(Child Thyroid) Rem/hour of inhalation
Site Boundary		
2 miles		
5 miles		
10 miles		

Projected Integrated Dose In Rem

Distance	Whole Body	Child Thyroid
Site Boundary		
2 miles		
5 miles		
10 miles		

6. Field measurement of dose rate or contamination (if available):

7. Emergency actions underway at the facility include: _____

8. Onsite support needed from offsite organizations: _____

9. Plant status:

- Reactor is: not tripped/tripped
- Plant is at: _____% power/hot shutdown/cold shutdown/cooling down
- Prognosis is: stable/improving/degrading/unknown.

10. I repeat, this message:
____ a. Reports an actual emergency.
____ b. Is an exercise message.
11. Do you have any questions?

END OF FOLLOW-UP MESSAGE

NOTE: Record the name, title, date, time, and warning point notified.

(1)	_____	Communicator
	(Name)	(Title)
	_____	Mecklenburg
	(Date) (Time)	(Warning Point)
(2)	_____	Communicator
	(Name)	(Title)
	_____	Gaston
	(Date) (Time)	(Warning Point)
(3)	_____	Communicator
	(Name)	(Title)
	_____	Iredell
	(Date) (Time)	(Warning Point)
(4)	_____	Communicator
	(Name)	(Title)
	_____	Catawba
	(Date) (Time)	(Warning Point)
(5)	_____	Communicator
	(Name)	(Title)
	_____	Lincoln
	(Date) (Time)	(Warning Point)
(6)	_____	Communicator
	(Name)	(Title)
	_____	Cabarrus
	(Date) (Time)	(Warning Point)
(7)	_____	Communicator
	(Name)	(Title)
	_____	North Carolina
	(Date) (Time)	(Warning Point)
(8)	_____	Communicator
	(Name)	(Title)
	_____	South Carolina
	(Date) (Time)	(Warning Point)

EMERGENCY PLAN MESSAGE FORMAT

(Nuclear Station to Nuclear Production Duty Engineer)

1. This is _____ at McGuire Nuclear Station.
(Name and Title)
2. This is/is not a Drill. An _____ Unusual Event
_____ Alert
_____ Site Area Emergency
_____ General Emergency
- was declared by the Emergency Coordinator at _____ on Unit Number _____.
(Time)
3. Initiating Condition: (Give as close to the emergency procedure description as possible together with station parameters used to determine emergency status)
- _____
- _____
- _____
4. Corrective Measures Being Taken: _____
- _____
- _____
5. There Have/Have Not been any injuries to plant personnel.
6. Release of radioactivity: Is/Is not taking place, and is/is not affecting the Crisis Management Center.
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 (Unusual Event Only).
9. I can be reached at _____ for follow-up information.
(Telephone Number)
10. Additional Comments: _____

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: RP/0/A/5700/04
Change(s) 0 to
0 Incorporated

(2) STATION: McGuire Nuclear Station

(3) PROCEDURE TITLE: General Emergency

(4) PREPARED BY: Mike Glover DATE: January 11, 1983

(5) REVIEWED BY: AD Gilbert DATE: 2-1-83

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

(6) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____

By: _____ Date: _____

(7) APPROVED BY: Mike Glover Date: 2-3-83

(8) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____

Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
McGUIRE NUCLEAR STATION
GENERAL EMERGENCY

1.0 Symptoms

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

2.0 Immediate Action

2.1 Automatic

None

2.2 Manual

- 2.2.1 The Shift Supervisor shall be informed of all events initiating this procedure.

3.0 Subsequent Actions

Initial/N/A

- / 3.1 The Shift Supervisor shall assure that the appropriate emergency condition (Notification of Unusual Event, Alert, Site Area Emergency, or General Emergency) is declared by evaluating the actual plant condition with Enclosure 4.1, Emergency Classification Flowchart and Enclosure 4.2, List of Initiating Conditions, Emergency Action Levels, and Associated Emergency Procedure/Document.
- / 3.2 The Shift Supervisor shall ensure that all actions required by the initiating Emergency Procedure will be performed and that all actions necessary for the protection of persons and property are being taken.

NOTE

If at any time in the course of events in this procedure, site evacuation or personnel assembly/accountability appears necessary, refer to Station Directive 3.8.1.

- / 3.3 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 Station Manager or his designee assumes the responsibility of the Emergency Coordinator.

- / 3.4 The Emergency Coordinator shall assure prompt (within about 15 minutes of declaring the emergency) notification of the North Carolina State and Local County Warning Points indicated on Enclosure 4.3. He shall also assure notification of all other personnel listed in Enclosure 4.3.

NOTE 1

Activation of the Technical Support Center (TSC) and Operations Support Center (OSC) shall be in accordance with Station Directive 3.8.2. Activation of the Crisis Management Center (CMC) shall be in accordance with Enclosure 4.6.

NOTE 2

See Enclosure 4.4, Telephone Listing, for notification, telephone numbers/radio codes/pager codes.

NOTE 3

See Enclosure 4.5, Notification of Emergency Conditions to be provided to State/County Warning Points.

- / 3.5 The Emergency Coordinator in direct contact with the Technical Support Center and the Crisis Management Center will assess and respond to the emergency by:

- 3.5.1 Dispatching the onsite and offsite monitoring teams with associated communications.
- 3.5.2 Provide meteorological and dose estimates to offsite authorities for actual releases via a dedicated individual or automated data transmission.
- 3.5.3 Provide release and dose projections based on available plant condition information and foreseeable contingencies to offsite authorities.

NOTE

In the event a release or potential release of radioactive materials is a threat to plant personnel or members of the general public, the Emergency Coordinator shall request Health Physics personnel to evaluate the consequences utilizing the appropriate Health Physics procedure, HP/O/B/1009/05, HP/O/B/1009/06, HP/O/B/1009/08, HP/O/B/1009/09, or HP/O/B/1009/10.

/ 3.6 The Emergency Coordinator shall provide protective action recommendations as necessary to the affected county warning point(s) and to the North Carolina Warning Point (Emergency Operations Centers if established) or to state Radiological Protection Section, Department of Human Resources (See Enclosure 4.4, Telephone Listing) as directed by the state in accordance with the North Carolina Radiological Emergency Response Plan. If evaluation indicates that a potential for an actual release of radioactive materials will result in a projected dose (REM) to the population of: (EPA Protective Action Guidelines)

3.6.1 Whole body <1, Thyroid <5, No protective action is required. Monitor environmental radiation levels to verify.

3.6.2 Whole body 1 to <5, Thyroid 5 to <25, recommend seeking shelter and wait for further instructions. Consider evacuation particularly for children and pregnant women. Monitor environmental radiation levels. Control access to affected areas.

3.6.3 Whole body 5 and above, Thyroid 25 and above, recommend mandatory evacuation of populations in the affected areas. Monitor environmental radiation levels and adjust area for Mandatory evacuation based on these levels. Control access to affected areas.

NOTE

See Enclosure 4.4 Telephone Listing for notification.

/ 3.7 The Emergency Coordinator in coordination with the Recovery Manager, at the Crisis Management Center, will provide or make available:

3.7.1 A dedicated individual for plant status updates to offsite authorities and periodic press briefings.

3.7.2 Senior technical and management staff onsite available for consultation with the NRC and State on a periodic basis.

- / 3.8 The Emergency Coordinator in coordination with the Recovery Manager at the Crisis Management Center will assess the emergency condition and determine the need to remain in a General Emergency, reduce the emergency class, or close out the emergency.
- / 3.9 The Recovery Manager at the Crisis Management Center will 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 Emergency Classification Guide Flowchart
- 4.2 List of Initiating Conditions, Emergency Action Levels, and Associated Emergency Procedure/Document.
- 4.3 Notification Chart.
- 4.4 Telephone listing.
- 4.5 Notification of Emergency Conditions.
- 4.6 Emergency Plan Message Format

EMERGENCY CLASSIFICATION GUIDE FLOWCHART

EVENT CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
11 ABNORMAL PRIMARY LEAK RATE	EXCEEDING EITHER PRIMARY/SECONDARY LEAK RATE TECHNICAL SPECIFICATION OR PRIMARY SYSTEM LEAK RATE TECHNICAL SPECIFICATION REQUIRING SHUTDOWN BY TECH SPEC	PRIMARY COOLANT LEAK RATE GREATER THAN 50 GPM RAPID GROSS FAILURE OF A STEAM GENERATOR TUBE AND LOSS OF OFF SITE POWER OR RAPID FAILURE OF STEAM GENERATOR TUBE(S)	KNOWN LOSS OF COOLANT ACCIDENT (LOCA) GREATER THAN MAKE-UP CAPACITY RAPID FAILURE OF STEAM GENERATOR TUBES WITH LOSS OF OFFSITE POWER (SEVERAL HUNDRED GPM)	SMALL OR LARGE BREAK LOCA OCCURS AND CONTAINMENT PERFORMANCE IS UNSUCCESSFUL AFFECTING LONGER TERM SUCCESS OF THE ECCS. COULD LEAD TO CORE DEGRADATION OR MELT IN SEVERAL HOURS WITHOUT CONTAINMENT BOUNDARY
21 ABNORMAL CORE CONDITIONS AND FUEL DAMAGE	FUEL DAMAGE INDICATION ABNORMAL COOLANT TEMP AND/OR PRESSURE OR ABNORMAL FUEL TEMPS WHICH EXCEED TECH SPEC LIMITS FAILURE OF A SAFETY OR RELIEF VALVE IN A SAFETY RELATED SYSTEM TO CLOSE FOLLOWING A REDUCTION OF APPLICABLE PRESSURE	SEVERE LOSS OF FUEL CLADDING COOLANT PUMP SEIZURE LEADING TO FUEL FAILURE	DEGRADED CORE WITH POSSIBLE LOSS OF COOLABLE GEOMETRY	LOSS OF 2 OF 3 FISSION PRODUCT BARRIERS WITH POTENTIAL LOSS OF THE THIRD BARRIER
31 STEAM LINE BREAK OR MS RV/SV FAILURE	FAILURE OF A SAFETY OR RELIEF VALVE IN A SAFETY RELATED SYSTEM TO CLOSE FOLLOWING A REDUCTION OF APPLICABLE PRESSURE	STEAM LINE BREAK WITH SIGNIFICANT PRIMARY TO SECONDARY LEAK RATE	STEAM LINE BREAK WITH GREATER THAN 50 GPM P/S LEAKAGE AND INDICATION OF FUEL DAMAGE	SMALL OR LARGE LOCA'S WITH FAILURE OF ECCS TO PERFORM LEADING TO CORE MELT DEGRADATION OR MELT IN MINUTES TO HOURS LOSS OF CONTAINMENT INTEGRITY MAY BE IMMINENT.
41 OTHER ECOS	LOSS OF CONTAINMENT INTEGRITY RESULTING IN IMMEDIATE SHUTDOWN BY TECH SPEC LOSS OF ENGINEERED SAFETY FEATURE OR FIRE PROTECTION FUNCTION REQUIRING SHUTDOWN BY TECH SPEC EMERGENCY CORE COOLING SYSTEM (ECCS) INITIATED AND DISCHARGED TO VESSEL			
51 ABNORMAL RADIOLOGICAL EFFLUENT OR RADIATION LEVELS	RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATION LIMITS EXCEEDED	HIGH RADIATION LEVELS OR HIGH AIRBORNE CONTAMINATION WHICH INDICATES SEVERE DEGRADATION IN CONTROL OF RADIOACTIVE MATERIAL RADIOLOGICAL EFFLUENTS GREATER THAN 10 TIMES TECH SPEC INSTANTANEOUS LIMITS	EFFLUENT MONITORS DETECT LEVELS CORRESPONDING TO GREATER THAN 50 MR/HR FOR K NO-139 OR GREATER THAN 500 MR/HR W.B. FOR TWO MINUTES AT THE SITE BOUNDARY FOR ADVERSE METEOROLOGY THESE DOSE RATES ARE PROJECTED BASED ON OTHER PLANT PARAMETERS OR ARE MEASURED IN THE ENVIRONS EPA PROTECTIVE ACTION GUIDELINES ARE PROJECTED TO BE EXCEEDED OUTSIDE THE SITE BOUNDARY	EFFLUENT MONITORS DETECT LEVELS CORRESPONDING TO 1 REM/HR W.B. OR 5 REM/HR THYROID AT THE SITE BOUNDARY UNDER ACTUAL METEOROLOGICAL CONDITIONS THESE DOSE RATES ARE PROJECTED BASED ON OTHER PLANT PARAMETERS OR ARE MEASURED IN THE ENVIRONS
61 LOSS OF SHUTDOWN FUNCTIONS DECAY HEAT OR REACTIVITY		FAILURE OF REACTOR PROTECTION SYSTEM TO INITIATE AND COMPLETE A SCRAM WHICH BRINGS THE REACTOR SUBCRITICAL COMPLETE LOSS OF ANY FUNCTION NEEDED FOR PLANT COLD SHUTDOWN	TRANSIENT REQUIRING OPERATION OF SHUTDOWN SYSTEMS WITH FAILURE TO SCRAM (CONTINUED POWER GENERATION WITH NO CORE DAMAGE IMMEDIATELY EVIDENT) LOSS OF ANY FUNCTION NEEDED FOR PLANT HOT SHUTDOWN	TRANSIENT REQUIRING OPERATION OF SHUTDOWN SYSTEMS WITH FAILURE TO SCRAM ADDITIONAL FAILURE OF CORE COOLING AND MAKEUP SYSTEM WOULD LEAD TO CORE MELT
71 ELECTRICAL OR POWER FAILURES	LOSS OF OFFSITE POWER OR LOSS OF ONSITE AC POWER CAPABILITY	LOSS OF OFFSITE POWER AND LOSS OF ALL ONSITE AC POWER FOR UP TO 15 MIN LOSS OF ALL ONSITE DC POWER	LOSS OF OFFSITE POWER AND LOSS OF ALL ONSITE AC POWER FOR MORE THAN 15 MIN LOSS OF ALL VITAL ONSITE DC POWER FOR MORE THAN 15 MIN FIRE COMPROMISING THE FUNCTIONS OF SAFETY SYSTEMS	TRANSIENT INITIATED BY LOSS OF PRINCIPLE HEAT REMOVAL SYSTEMS FOLLOWED BY FAILURE OF EMERGENCY FEEDWATER SYSTEM FOR EXTENDED PERIOD. CORE MELT POSSIBLE IN SEVERAL HOURS WITH ULTIMATE FAILURE OF CONTAINMENT LIKELY IF CORE MELTS.
81 FIRE	FIRE WITHIN THE PLANT LASTING MORE THAN 10 MINUTES	FIRE POTENTIALLY AFFECTING SAFETY SYSTEMS EVACUATION OF CONTROL ROOM ANTICIPATED OR REQUIRED WITH CONTROL OF SHUTDOWN SYSTEMS ESTABLISHED FROM LOCAL STATIONS	EVACUATION OF CONTROL ROOM AND CONTROL OF SHUTDOWN SYSTEMS NOT ESTABLISHED FROM LOCAL STATIONS IN 15 MIN. MOST OR ALL ALARMS (ANNUNCIATORS) LOST AND PLANT TRANSIENT INITIATED OR IN PROGRESS	
91 CONTROL ROOM EVACUATION				
101 LOSS OF MONITORS, ALARMS, ETC	INDICATIONS OR ALARMS ON PROCESS OR EFFLUENT PARAMETERS NOT FUNCTIONING IN CONTROL ROOM TO AN EXTENT REQUIRING PLANT SHUTDOWN. OTHER SIGNIFICANT LOSS OF ASSESSMENT OR COMMUNICATION CAPABILITY	MOST OR ALL ALARMS (ANNUNCIATORS) LOST	MOST OR ALL ALARMS (ANNUNCIATORS) LOST AND PLANT TRANSIENT INITIATED OR IN PROGRESS	ANY MAJOR INTERNAL OR EXTERNAL EVENTS (E.G. FIRES, EARTHQUAKES SUBSTANTIALLY BEYOND DESIGN BASIS) WHICH COULD CAUSE MASSIVE COMMON DAMAGE TO PLANT SYSTEMS
111 FUEL HANDLING ACCIDENT		FUEL DAMAGE ACCIDENT WITH RELEASE OF RADIOACTIVITY TO CONTAINMENT OR FUEL HANDLING BUILDING	MAJOR DAMAGE TO SPENT FUEL IN CONTAINMENT OR FUEL HANDLING BUILDING	
121 HAZARDOUS TO PLANT OPERATIONS	HAZARDS BEING EXPERIENCED OR PROJECTED THAT AFFECT PLANT OPERATIONS	SEVERE HAZARDS BEING EXPERIENCED OR PROJECTED POTENTIALLY AFFECTING SAFETY SYSTEMS	OTHER SEVERE HAZARDS BEING EXPERIENCED OR PROJECTED WITH PLANT NOT IN COLD SHUTDOWN	
131 SECURITY THREATS	SECURITY THREAT OR ATTEMPTED ENTRY	ONGOING SECURITY COMPROMISE	IMMINENT LOSS OF PHYSICAL CONTROL OF PLANT	LOSS OF PHYSICAL CONTROL OF THE FACILITY
141 NATURAL EVENTS	NATURAL PHENOMENA BEING EXPERIENCED OR PROJECTED BEYOND USUAL LEVELS	SEVERE NATURAL PHENOMENA BEING EXPERIENCED OR PROJECTED	SEVERE NATURAL PHENOMENA BEING EXPERIENCED OR PROJECTED WITH PLANT NOT IN COLD SHUTDOWN	ANY MAJOR INTERNAL OR EXTERNAL EVENTS (E.G. FIRES, EARTHQUAKES SUBSTANTIALLY BEYOND DESIGN BASIS) WHICH COULD CAUSE MASSIVE COMMON DAMAGE TO PLANT SYSTEMS
151 OTHERS	OTHER PLANT CONDITIONS EXIST THAT WARRANT INCREASED AWARENESS ON THE PART OF PLANT OPERATING STAFF OR STATE AND/OR LOCAL OFFSITE AUTHORITIES OR REQUIRE PLANT SHUTDOWN UNDER TECHNICAL SPECIFICATION REQUIREMENTS AND INVOLVE OTHER THAN NORMAL CONTROLLED SHUTDOWN TRANSPORTATION OF CONTAMINATED INJURED INDIVIDUAL FROM SITE TO OFFSITE HOSPITAL	OTHER PLANT CONDITIONS EXIST WARRANTING PRECAUTIONARY ACTIVATION OF THE TSC AND/OR THE CRISIS MANAGEMENT CENTER	OTHER PLANT CONDITIONS EXIST WARRANTING ACTIVATION OF EMERGENCY CENTERS AND MONITORING TEAMS OR ISSUANCE OF A PRECAUTIONARY NOTIFICATION TO THE PUBLIC NEAR THE SITE	OTHER PLANT CONDITIONS EXIST FROM WHATEVER SOURCE THAT MAKE RELEASE OF LARGE AMOUNTS OF RADIOACTIVITY IN A SHORT TIME PERIOD POSSIBLE (E.G. ANY CORE MELT SITUATION)

LIST OF INITIATING CONDITIONS, EMERGENCY ACTION LEVELS, AND
ASSOCIATED EMERGENCY PROCEDURE/DOCUMENT

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
<p>4.2.1 Effluent monitors detect levels corresponding to 1 rem/hr Whole Body or 5 rem/hr Thyroid at the site boundary under <u>actual meteorological conditions</u>.</p> <p>NOTE 1: These dose rates are projected base on plant parameters (e.g., radiation levels in containment with leak rate appropriate for existing containment pressure with some confirmation from effluent monitors) or are measured in the environs.</p> <p>NOTE 2: Consider evacuation only within about 2 miles of the site boundary unless these levels are exceeded by a factor of 10 or projected to continue for 10 hours or EPA Protective Action Guideline exposure levels are predicted to be exceeded at longer distances.</p>	As observed by control room personnel.	HP/0/B/1009/05
<p>4.2.2 Loss of 2 of 3 fission product barriers with a potential loss of 3rd barrier, (e.g., loss of primary coolant boundary, clad-failure, and high potential for loss of containment integrity).</p>	<ol style="list-style-type: none"> 1. Loss of coolant accident as identified in Site Area Emergency 4.2.1, and incomplete containment isolation. 2. Loss of coolant accident as identified in Site Area Emergency 4.2.1, and Containment Monitor alarms (EMP51A and/or B) greater than 10^4 R/hr and containment pressure greater than 14.8 psig for at least 2 minutes. 	HP/0/B/1009/05, AP/1/A/5500/05

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
<p>4.2.3 Loss of physical control of the facility.</p> <p><u>NOTE:</u> Consider 2 mile precautionary evacuation.</p>	<p>Physical attack of the facility has resulted in occupation of the control room and auxiliary shutdown facility.</p>	<p>Station Security Plan.</p>
<p>4.2.4 Other plant conditions exist, from whatever source, that in the judgment of the shift supervisor, the Operations Duty Engineer, the Superintendent of Operations, or the Plant Manager make release of large amounts of radioactivity in a short time period possible (e.g., any core melt situation).</p> <p>a. For core melt sequences where significant releases are not yet taking place and large amounts of fission products are not yet in the containment atmosphere, consider 2 mile precautionary evacuation. Consider 5 mile downwind evacuation (45° to 90° sector) if large amounts of fission products (greater than Gap activity) are in the containment atmosphere. Recommend sheltering in other parts of the plume exposure Emergency Planning Zone under this circumstance.</p>	<p>As determined by the Shift Supervisor/ Emergency Coordinator and verified by EAL's defined in Implementing Procedures utilized up to this point.</p>	<p>As dictated by plant conditions.</p>

Initiating Conditions

Emergency Action Level (EAL)

Emergency Procedure/Document

- b. For core melt sequences where significant releases from containment are not yet taking place and containment failure leading to a direct atmospheric release is likely in the sequence but not imminent and large amounts of fission products in addition to noble gases are in the containment atmosphere, consider precautionary evacuation to 5 miles and 10 mile downwind evacuation (45° and 90° sector).
- c. For core melt sequences where large amounts of fission products other than noble gases are in the containment atmosphere and containment failure is judged imminent, recommend shelter for those areas where evacuation cannot be completed before transport of activity to that location.

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
-----------------------	------------------------------	------------------------------

d. As release information becomes available adjust these actions in accordance with dose projections, time available to evacuate and estimated evacuation times given current conditions.

e. Example Sequences:

1. Small and large LOCA's with failure of ECCS to perform leading to severe core degradation or melt. Ultimate failure of containment likely for melt sequences. (Several hours likely to be available to complete protective actions unless containment is not isolated).

Safety injection signal plus reactor trip and:

1. Safety injection and RHR pumps not running.
2. Flow indications for safety injection read "0".
3. High containment sump level.

For Severe Fuel Over Temperature:

Greater than 10% failed fuel indicated by greater than 13,000 μ Ci/ml I-131 concentration.

For Fuel Melt Conditions:

Greater than 5% failed fuel indicated by greater than 11,800 μ Ci/ml I-131 concentration.

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
2. Transient initiated by loss of feedwater and condensate systems (principle heat removal system) followed by failure of emergency feedwater system for extended period. (Core melting is possible in several hours with ultimate failure of containment likely if the core melts).	Reactor trip on Lo Lo Steam Generator level and wide range generator levels toward offscale low on all steam generators and emergency feedwater flow indicators indicate "0" flow or emergency feedwater pumps not running and cannot be restored within 30 minutes or >3% reactor power and loss of both main feedwater pumps, manually trip reactor.	AP/1/A/5500/06, EP/1/A/5000/04
3. Transient requiring operation of shutdown systems with failure to scram. Core damage is likely. Additional failure of the core cooling and makeup system would lead to core melt.	Reactor remains critical after all attempts to trip the reactor are complete and flow indicators on safety injection and RHR show "0" flow after initiation (NVP5440, NDP5190, 5191, 5180, 5181, NIP5120, 5450) or safety injection and RHR pumps not running with safety injection initiated.	AP/0/A/5500/34

Initiating Conditions	Emergency Action Level (EAL)	Emergency Procedure/Document
4. Failure of offsite and onsite power along with total loss of emergency feedwater makeup capability for several hours. Would lead to eventual core melt and likely failure of containment.	Undervoltage alarms on 7KV buses and blackout load sequencers actuated and auxiliary feedwater pump(s) fail to start.	AP/1/A/5500/07
5. Small LOCA and initially successful ECCS. Subsequent failure of containment heat removal system over several hours could lead to core melt and likely failure of containment.	Pressurizer low pressure reactor trip and pressurizer low pressure safety injection signal and RHR flow indicators show "0" flow after shift to RHR is attempted and for greater than 2 hours (NDP5190, 5191, 5180, 5181) and Reactor Coolant (NC) T ^O is rising, and containment air handling system fails to function.	EP/1/A/5000/02, AP/1/A/5500/05
NOTE: For melt sequences or for failure of containment isolation systems, the likely failure mode is melt through with release of gases.		
4.2.5 Any major internal or external events (e.g., fires, earthquakes substantially beyond design levels) which could cause massive common damage to plant systems.	As determined by the Shift Supervisor/ Emergency Coordinator.	As dictated by plant conditions.

NOTIFICATION/ACTIVATION
GENERAL EMERGENCY

Notify/Activate the following personnel/or Emergency Centers for all Initiating Conditions listed in Enclosure 4.2. (See Enclosure 4.4 for Telephone Listing)

NOTIFY/ACTIVATE	NOTIFICATION COMPLETE-INITIAL
Shift Supervisor	
Operations Duty Engineer	
Station Manager	
Superintendent of Operations	
Superintendent of Technical Services	
Projects and Licensing Engineer	
Station Health Physicist	
North Carolina State Warning Point	
Mecklenburg County Warning Point	
Lincoln County Warning Point	
Catawba County Warning Point	
Iredell County Warning Point	
Gaston County Warning Point	
Cabarrus County Warning Point	
South Carolina State Warning Point	
N.R.C. via ENS (Red Phone)	
N.R.C. Station Representative	
Superintendent of Maintenance	
Superintendent of Administration	
Construction Project Manager	
Activate T.S.C. (Station Directive 3.8.2)	
Activate O.S.C. (Station Directive 3.8.2)	
Activate C.M.C. (Enclosure 4.6)	

TELEPHONE LISTING

4.4.1	Operations Duty Engineer (PA System) P&T Pager -	
4.4.2	Station Manager Home - Home -	- System Speed - - System Speed -
4.4.3	Superintendent of Operations - Home -	- System Speed
4.4.4	Superintendent of Technical Services - Home -	- System Speed
4.4.5	Projects and Licensing Engineer - Home -	- System Speed
4.4.6	Station Health Physicist Home - P&T Pager	- System Speed -
4.4.7	NC State Warning Point, Raleigh -	- System Speed -
4.4.8	Mecklenburg County Warning Point -	Primary: Ring Down Phone Back-up: - System Speed Back-up: Emergency Radio, Code: _
4.4.9	Lincoln County Warning Point -	Primary: Ring Down Phone Back-up: - System Speed Back-up: Emergency Radio, Code: _
4.4.10	Catawba County Warning Point -	Primary: Ring Down Phone Back-up: - System Speed Back-up: Emergency Radio, Code: _
4.4.11	Iredell County Warning Point -	Primary: Ring Down Phone Back-up: - System Speed Back-up: Emergency Radio, Code: _
4.4.12	Gaston County Warning Point -	Primary: Ring Down Phone Back-up: - System Speed Back-up: Emergency Radio, Code: _
4.4.13	Cabarrus County Warning Point -	Primary: Ring Down Phone Back-up: - System Speed Back-up: Emergency Radio, Code: _

NOTE

1. Radio Code will activate all county radio units.
2. P&T Pager, Central Division (Charlotte Area)
Dial -

TELEPHONE LIST

- 4.4.14 SC State Warning Point -
- 4.4.15 N.R.C. Operation Center, Emergency Notification System (ENS Phone)
- 4.4.16 N.R.C. Station Representative (Orders)
Office (MNS) -
Office (ONS) -
Home -
P&T Pager -
Page from Central (MNS Area) -
or from Southern (ONS Area) -
- 4.4.17 Construction Project Manager Construction
Home : - System Speed - or
System Speed -
- 4.4.18 Superintendent of Maintenance
Home - - System Speed -
- 4.4.19 Superintendent of Administration
Home - System Speed -
- 4.4.20 Nuclear Production Duty Engineer - System Speed -
P&T Pager
- 4.4.21 Radiation Protection Section, Department of Human Resources -
- System Speed -

MCGUIRE NUCLEAR STATION
NOTIFICATION OF EMERGENCY CONDITIONS

4.5.1 Include as a minimum, the following information to the North Carolina State Warning Point, the six County Warning Points, (Mecklenburg, Catawba, Iredell, Lincoln, Gaston, and Cabarrus) and the South Carolina Warning Point.

NOTE 1: See Enclosure 4.4, Telephone Listing

NOTE 2: A. Complete Part I of this format as a minimal first notification of a reportable incident.
B. Complete Part I and II of this format to provide minimal followup information.

PART I: Initial Emergency Message Information

☒ ACKNOWLEDGEMENT

TELEPHONE RESPONSE:

"This is McGuire Nuclear Station.

Please acknowledge when you are

ready to copy Emergency Information."

Mecklenburg	_____
Iredell	_____
Lincoln	_____
Cabarrus	_____
Gaston	_____
Catawba	_____

1. This is McGuire Nuclear Station.
2. My name is: _____.
3. This message (Number ____):
 - _____ a. Reports a real emergency.
 - _____ b. Is an exercise message.
4. My telephone number/extension is: _____.
5. Message Authentication: _____.
6. The class of emergency is:
 - _____ a. Notification of an Unusual Event
 - _____ b. Alert
 - _____ c. Site Area Emergency
 - _____ d. General Emergency
7. The Classification of Emergency was declared at: _____/on _____.

AM/PM DATE
8. The initiating event causing the Emergency Classification is:

9. The Emergency Condition:
 - _____ a. Does not involve the release of radioactive materials from the plant.
 - _____ b. Involves the POTENTIAL for a release, but NO release is occurring.
 - _____ c. Involves a release of radioactive material.

10. We recommend the following protective action:

- ☐ a. No protective action is recommended at this time.
- ☐ b. People living in zones _____ remain indoors with doors and windows closed.
- ☐ c. People in zones _____ EVACUATE their homes and businesses.
- ☐ d. Pregnant women and children in zones _____ remain indoors with the doors and windows closed.
- ☐ e. Pregnant women and children in zones _____ evacuate to the nearest shelter/reception center.
- ☐ f. Other recommendations: _____

11. There will be:

- ☐ a. A followup message
- ☐ b. No further communications

12. I repeat, this message:

- ☐ a. Reports an actual emergency.
- ☐ b. Is an exercise message.

13. Relay this information to the persons indicated in your alert procedures for an incident at McGuire Nuclear Station.

NOTE: Record the Name, Title, Date, Time, and Warning Point at end of Part II.

PART II: Followup Emergency Message Information

1. The type of actual or projected release is:

- ☐ a. Airborne
- ☐ b. Waterborne
- ☐ c. Surface spill
- ☐ d. Other

2. The source and description of the release is: _____

3. ☐ a. Release began/will begin at _____ a.m./p.m.; time since reactor trip is _____ hours.
- ☐ b. The estimated duration of the release is _____ hours.

4. Dose projection base data:

Radiological release: _____ curies, or _____ curies/sec.

Wind speed: _____ mph

Wind direction: From _____°

Stability class: _____ (A,B,C,D,E,F, or G)

Release height: _____ Ft.

Dose conversion factor: _____ R/hr/Ci/M³ (whole body)

_____ R/hr/Ci/M³ (Child Thyroid)

Precipitation _____

Temperature at the site: _____°F

5. Dose projections:

Dose Commitment

Distance	Whole Body Rem/hour	(Child Thyroid) Rem/hour of inhalation
Site Boundary		
2 miles		
5 miles		
10 miles		

Projected Integrated Dose In Rem

Distance	Whole Body	Child Thyroid
Site Boundary		
2 miles		
5 miles		
10 miles		

6. Field measurement of dose rate or contamination (if available):

7. Emergency actions underway at the facility include: _____

8. Onsite support needed from offsite organizations: _____

9. Plant status:

a. Reactor is: not tripped/tripped

b. Plant is at: _____% power/hot shutdown/cold shutdown/cooling down

c. Prognosis is: stable/improving/degrading/unknown.

10. I repeat, this message:

- ___ a. Reports an actual emergency.
___ b. Is an exercise message.

11. Do you have any questions?

END OF FOLLOW-UP MESSAGE

NOTE: Record the name, title, date, time, and warning point notified.

(1)	_____	Communicator
	(Name)	(Title)
	_____	Mecklenburg
	(Date) (Time)	(Warning Point)
(2)	_____	Communicator
	(Name)	(Title)
	_____	Gaston
	(Date) (Time)	(Warning Point)
(3)	_____	Communicator
	(Name)	(Title)
	_____	Iredell
	(Date) (Time)	(Warning Point)
(4)	_____	Communicator
	(Name)	(Title)
	_____	Catawba
	(Date) (Time)	(Warning Point)
(5)	_____	Communicator
	(Name)	(Title)
	_____	Lincoln
	(Date) (Time)	(Warning Point)
(6)	_____	Communicator
	(Name)	(Title)
	_____	Cabarrus
	(Date) (Time)	(Warning Point)
(7)	_____	Communicator
	(Name)	(Title)
	_____	North Carolina
	(Date) (Time)	(Warning Point)
(8)	_____	Communicator
	(Name)	(Title)
	_____	South Carolina
	(Date) (Time)	(Warning Point)

EMERGENCY PLAN MESSAGE FORMAT
(Nuclear Station to Nuclear Production Duty Engineer)

1. This is _____ at McGuire Nuclear Station.
(Name and Title)
2. This is/is not a Drill. An ☐ Unusual Event
☐ Alert
☐ Site Area Emergency
☐ General Emergency
was declared by the Emergency Coordinator at _____ on Unit Number ____.
(Time)
3. Initiating Condition: (Give as close to the emergency procedure description as possible together with station parameters used to determine emergency status)

4. Corrective Measures Being Taken: _____

5. There Have/Have Not been any injuries to plant personnel.
6. Release of radioactivity: Is/Is not taking place, and is/is not affecting the Crisis Management Center.
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 (Unusual Event Only).
9. I can be reached at _____ for follow-up information.
(Telephone Number)
10. Additional Comments: _____

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: RP/0/A/5700/05
Change(s) 0 to
0 Incorporated

- (2) STATION: McGuire Nuclear Station
- (3) PROCEDURE TITLE: Care & Transportation of Contaminated Injured
Individual(s) From Site to Offsite Medical Facility
- (4) PREPARED BY: M.S. Glover DATE: 1/10/83
- (5) REVIEWED BY: [Signature] DATE: 2-1-83
- Cross-Disciplinary Review By: _____ N/R: [Signature]
- (6) TEMPORARY APPROVAL (IF NECESSARY):
- By: _____ (SRO) Date: _____
- By: _____ Date: _____
- (7) APPROVED BY: [Signature] Date: 2-3-83
- (8) MISCELLANEOUS:
- Reviewed/Approved By: _____ Date: _____
- Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
McJUIRE NUCLEAR STATION
CARE AND TRANSPORTATION OF CONTAMINATED INJURED
INDIVIDUAL(S) FROM SITE TO OFF-SITE MEDICAL FACILITY

1.0 Symptoms

- 1.1 An individual in need of offsite medical attention and contaminated to levels greater than 2,000 dpm/100cm² Beta-Gamma (60cpm above background using a thin window "pancake" detector and a count rate meter) or greater than .05 mRad/Hr (measured with a 30mg/cm² GM detector, E-520 or equivalent).

2.0 Immediate Actions

2.1 Automatic

N/A

2.2 Manual

- 2.2.1 Perform any life saving first aid if necessary.
2.2.2 Notify Shift Supervisor.
2.2.3 Notify Health Physics.

3.0 Subsequent Actions

3.1 The Shift Supervisor shall contact any outside services needed:

- 3.1.1 North Mecklenburg Ambulance Service (See Enclosure 4.3)
3.1.2 North Mecklenburg Rescue Squad (See Enclosure 4.3)

3.2 Health Physics shall accompany the contaminated injured individual(s) to the doctor or hospital.

- 3.2.1 Health Physics shall minimize the spread of contamination during transportation by covering the individual(s) with sheets or blankets and lining the stretcher with poly. This is not to interfere with life saving first aid.

- 3.2.2 Health Physics shall ensure that the Medical Decontamination Kit and an RM-14 with HP-210 probe, accompany contaminated injured individuals(s) to the hospital. (Kit is stored in the Auxiliary Building First Aid Room.)

- 3.3 In case of contamination not involving severe injury, decontamination shall be performed in the first aid room in the Radiation Control Area of the station, prior to transportation to a medical facility. However, decontamination shall not interfere with or take precedence over proper medical or surgical care as determined by the Station Nurse or First Aid personnel.

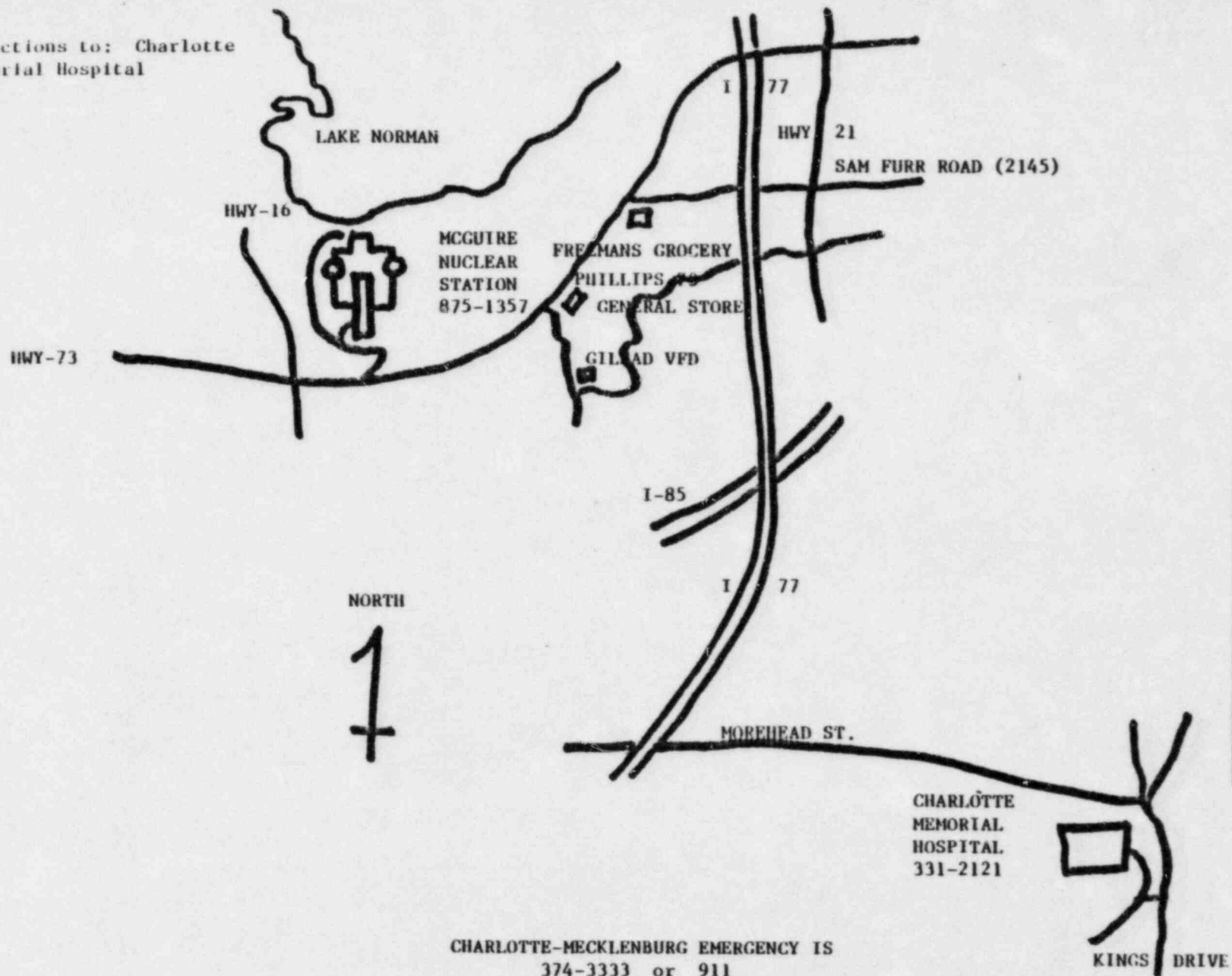
- 3.3.1 Decontamination shall be performed by Health Physics with assistance from the Station Nurse or First Aid Personnel.
 - 3.3.2 Enclosure 4.2, "Contaminated Victim Checklist" shall be completed for all contaminated injured persons. A copy of the completed checklist will be filed with appropriate Health Physics and Medical records.
 - 3.3.3 The requirements of Station Directive 2.10.2, Reporting "On-The-Job" Injuries, shall also be utilized when providing for occupational injury and/or illness at McGuire Nuclear Station.
 - 3.4 Commence "Notification of Unusual Event" as per RP/O/A/5700/01.
 - 3.5 Medical Assistance for Contaminated and Injured persons is provided by Charlotte Memorial Hospital.
 - 3.5.1 The Shift Supervisor shall contact the Emergency Room at Charlotte Memorial Hospital, and shall provide them with information concerning the contaminated injured individual(s) ie: burns, fractures, head injuries, levels of contamination, He shall also inform the emergency room as to the mode of emergency transportation utilized. (See Enclosure 4.3).
 - 3.5.2 Charlotte Memorial Hospital may call back to the station for verification.
 - 3.6 Back-up Medical Facility
 - 3.6.1 In the event that Charlotte Memorial Hospital cannot provide complete assistance or in the event they may request additional expertise in the management of a radiation accident victim(s), the Shift Supervisor/Emergency Coordinator shall contact the Department of Energy, Radiation Emergency Assistance Center Training Site (REACTS), in Oak Ridge Tennessee for assistance. (See Enclosure 4.3).
 - 3.7 Personnel taken to Charlotte Memorial Hospital will be delivered to the Emergency Room except in the case of extreme contamination in which case personnel will be delivered as directed by the hospital.
- NOTE The Ambulance Service or Rescue Squad will maintain radio communications with the medical facility while enroute.

3.8 Upon completion of transportation, McGuire Health Physics personnel will survey the ambulance/rescue vehicle(s), all involved personnel and equipment, and shall assist in any necessary decontamination of vehicles, personnel and equipment. McGuire Health Physics personnel will also assist the hospital in survey and decontamination of hospital equipment, spaces or personnel as may be requested by hospital Radiation Safety personnel.

4.0 Enclosures

- 4.1 Map to Charlotte Memorial Hospital
- 4.2 Contaminated Victim Checklist
- 4.3 Telephone List

Directions to: Charlotte
Memorial Hospital



MAP TO CHARLOTTE MEMORIAL HOSPITAL

RP/O/A/5700/05
ENCLOSURE 4.1
PAGE 1 OF 1

McGUIRE NUCLEAR STATION
CONTAMINATED VICTIM CHECKLIST

VICTIM'S NAME _____ WORK GROUP _____

DATE _____ TIME _____ ANY ALLERGIES _____

LOCATION OF ACCIDENT _____ RADIATION LEVEL _____

WITNESSES _____

APPARENT INJURY _____

CONTAMINATION: YES _____ NO _____

INHALED: YES _____ NO _____ INGESTED: YES _____ NO _____

PART OF BODY CONTAMINATED _____
(RECORD CONTAMINATION LEVELS ON PAGE 2 of 2.)

TYPE OF CONTAMINANT _____

DECONTAMINATION PROCEDURES: ☒

☐ UNDRRESS☐ WOUND IRRIGATION

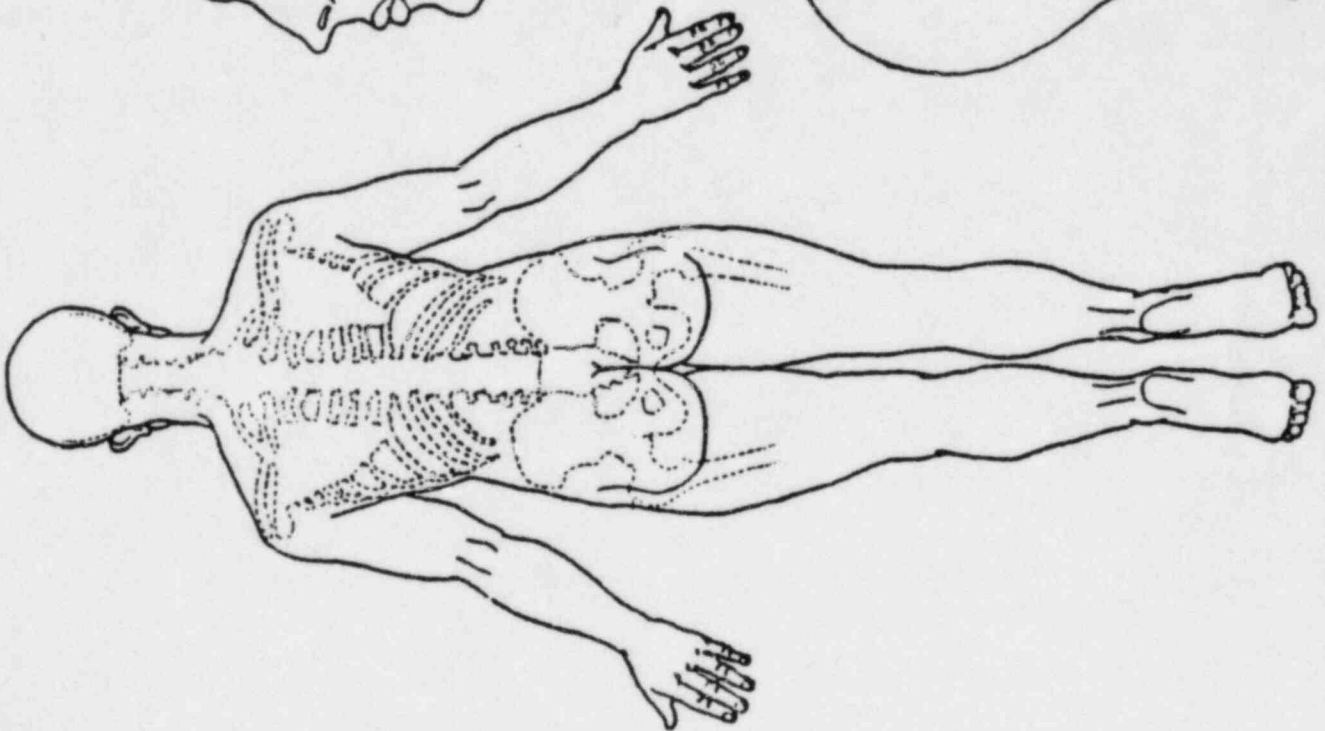
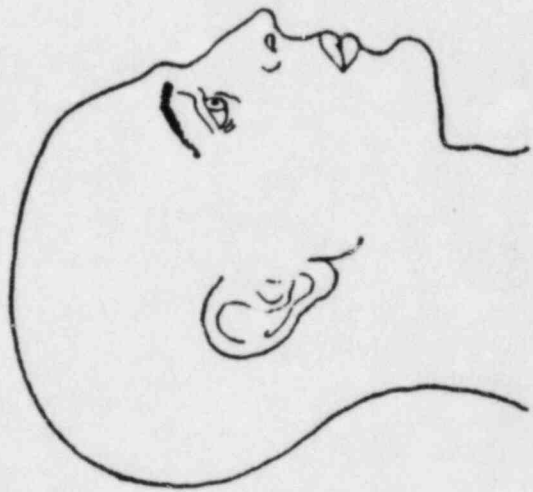
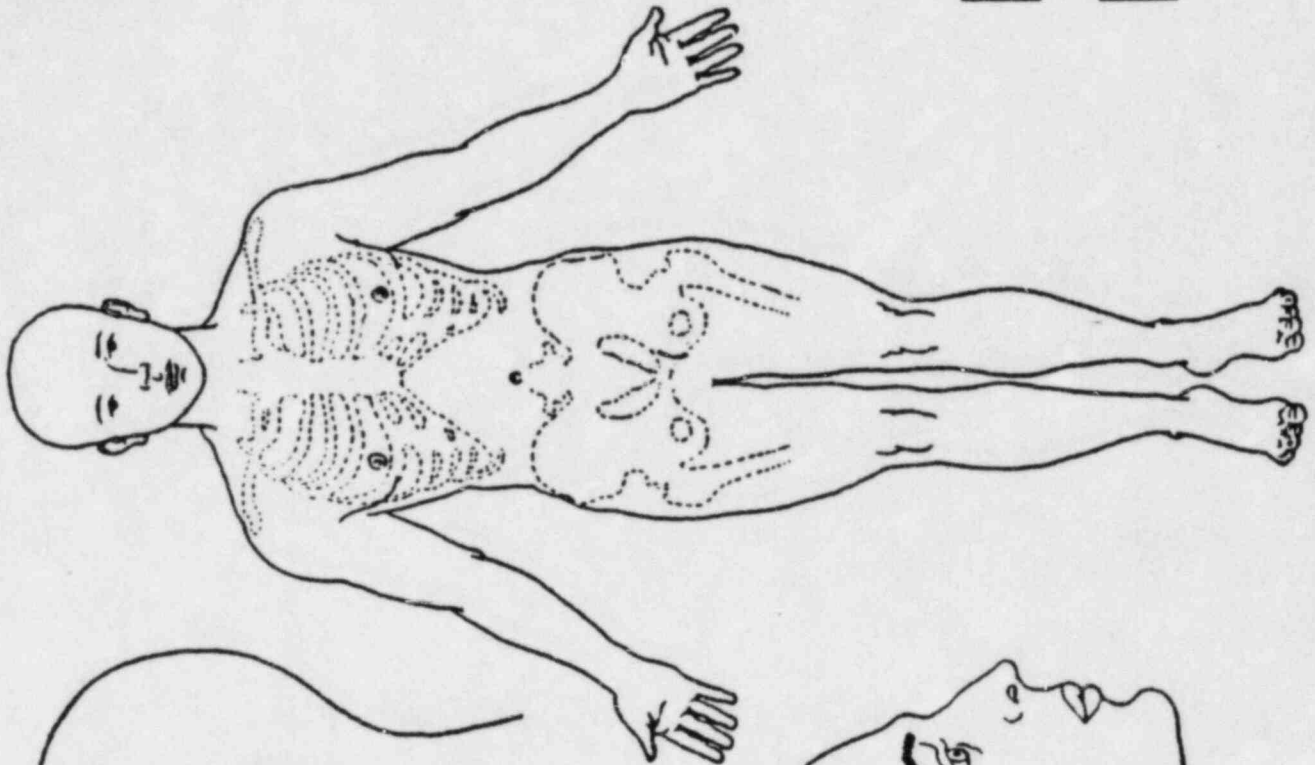
☐ SWABS, ETC.

☐ SHOWER☐ SHAVE (SAVE HAIR)☐ NOT REQUIRED

ADDITIONAL INFORMATION: (i.e., Instrument type and number utilized for survey, survey performed by:, TLD Badge Number of patient, etc.)

TIME	BLOOD PRESSURE	PULSE	COMMENTS
------	----------------	-------	----------

[illegible]



TELEPHONE LIST

- 4.3.1 Health Physics - (Plant Phone)
- 4.3.2 Charlotte Memorial Hospital E.R. -
- 4.3.4 Radiation Emergency Assistance Center Training Site (REACTS)
- 4.3.5 North Mecklenburg Ambulance Service
- 4.3.6 North Mecklenburg Rescue Squad -

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: RP/0/A/5700/06
Change(s) 0 to
0 Incorporated

(2) STATION: McGuire Nuclear Station

(3) PROCEDURE TITLE: Natural Disasters

(4) PREPARED BY: M. S. Glover

DATE: 1/10/83

(5) REVIEWED BY: AD. Gilbert

DATE: 2-1-83

Cross-Disciplinary Review By: _____

N/R: ADG

(6) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____

By: _____ Date: _____

(7) APPROVED BY: M. C. Cox

Date: 2-3-83

(8) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____

Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
McGUIRE NUCLEAR STATION
NATURAL DISASTERS

1.0 Symptoms

- 1.1 Low Water, Flood, Hurricane, Tornado, Seiche (an earthquake induced tidal wave on the lake) is imminent as evidenced by information from radio broadcasts, dispatcher, or U.S. Weather Bureau or evident by observation.

2.0 Immediate Action

- 2.1 Automatic
None
- 2.2 Manual
2.2.1 Notify the Shift Supervisor

3.0 Subsequent Action

- 3.1 The Shift Supervisor shall announce the impending condition over the Station P.A. System as follows:

This is the Operations Shift Supervisor, there is a

(i.e. weather alert, hurricane, tornado alert, flood, etc.)
for /in the McGuire area.

Repeat the Announcement.

- 3.2 For Low Water refer to AP/1/A/5500/20 (Loss of Nuclear Service Water System).
- 3.3 Contact Weather Bureau or U.S. Geological Survey Office as appropriate (See Enclosure 4.1) to obtain the latest forecast/information.
- 3.4 If necessary, and conditions permit, instruct all nonessential visitors to leave the site or assemble as directed.
- 3.5 Advise Station Security Central Alarm Station operator of the impending condition.
- 3.6 If conditions permit, move the emergency vehicle(s) inside the Turbine Building.
- 3.7 Stop use of the Turbine Building Cranes. Park and anchor the cranes furthestmost from the Auxiliary Building.
- 3.8 Check closed all truck doors on the Auxiliary Building, Turbine Building, and Warehouse.
- 3.9 Check closed all personnel access doors.

- 3.10 Minimize or stop all handling of radioactive materials and releases of radioactive waste to the environment for the duration of the emergency.
- 3.11 Coordinate information to and from the System Dispatcher concerning anything that might affect station load. (See Enclosure 4.1).
- 3.12 Monitor the Groundwater Drainage System to insure that sump levels are maintained.
- 3.13 Should conditions develop which jeopardize the safe operation of the reactor, take the unit(s) to hot shutdown per OP/O/A/6100/02, (Controlling Procedure for Unit Shutdown).
 - 3.13.1 Commence RP/O/A/5700/01 (Notification of Unusual Event)
- 3.14 Should conditions degrade to the point of creating a large potential for or actual degradation of Reactor Plant safety (i.e., conditions approaching design basis levels) trip the reactor(s).
 - 3.14.1 Take the unit(s) to Cold Shutdown per OP/O/A/6100/02 (Controlling Procedure for Unit Shutdown).
 - 3.14.2 Commence RP/O/A/5700/02 (Alert).
- 3.15 Should a system failure result due to the effects of the natural disaster, proceed to the applicable emergency procedure.
- 3.16 Should conditions continue to degrade to the point of creating potential or actual major failures of functions needed for protection of the public (i.e., conditions surpass design basis level or loss of vital equipment) trip the reactor(s).
 - 3.16.1 Take the unit(s) to Cold Shutdown per OP/O/A/6100/02 (Controlling Procedure for Unit Shutdown).
 - 3.16.2 Commence RP/O/A/5700/03 (Site Area Emergency).
 - 3.16.3 Activate Standby Shutdown Facility should Control Room evacuation become imminent.
 - 3.16.4 Should core degradation or melting occur or become imminent, commence RP/O/A/5700/04 (General Emergency).

4.0 Enclosures

- 4.1 Emergency Plan Implementing Procedures Telephone List.

EMERGENCY PLAN IMPLEMENTING PROCEDURES TELEPHONE LIST

- 4.1.1 Weather Bureau
- 4.1.2 U.S. Geological Survey Office
- 4.1.3 Station Security Central Alarm Station Operator -
- 4.1.4 System Dispatcher

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: RP/Q/A/5700/07
Change(s) 0 to
0 Incorporated

(2) STATION: McGuire Nuclear Station

(3) PROCEDURE TITLE: Earthquake

(4) PREPARED BY: M. S. Glover

DATE: 1/10/83

(5) REVIEWED BY: A. D. Gilbert

DATE: 2-1-83

Cross-Disciplinary Review By: _____

N/R: 4/24

(6) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____

By: _____ Date: _____

(7) APPROVED BY: GLW

Date: 2-4-83

(8) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____

Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
McGUIRE NUCLEAR STATION
EARTHQUAKE

- CASE A - Earthquake less than Operating Basis Earthquake
Acceleration: $<.08g$ Horizontal, $<.053g$ Vertical
- CASE B - Earthquake greater than Operating Basis Earthquake but less than
Safe Shutdown Earthquake
Acceleration: $.08g$ $<.15g$ Horizontal, $.053g$ $<.1g$ Vertical
- CASE C - Earthquake greater than Safe Shutdown Earthquake
Acceleration: $>.15g$ Horizontal, $>.1g$ Vertical

EARTHQUAKE - CASE A
Less than Operating Basis Earthquake

1.0 Symptoms

- 1.1 Seismic computer alarm.
- 1.2 Effects of an earthquake may be seen, heard or felt.
- 1.3 Horizontal acceleration $<.08g$, Vertical acceleration $<.053g$
as indicated on accelerograph recorder.

2.0 Immediate Actions

- 2.1 Automatic
 - 2.1.1 Seismic Recorders actuated.
- 2.2 Manual
 - 2.2.1 Trip the reactor(s) if effects of an earthquake are seen,
heard, or felt.

3.0 Subsequent Actions

- 3.1 For manual trip in 2.0 above, take the unit(s) to Hot Shutdown per
OP/O/A/6100/02 (Controlling Procedure for Unit Shutdown).
NOTE: Should horizontal acceleration exceed $.08g$ or vertical
acceleration exceed $.053g$ as indicated on the accelerograph
recorder, proceed to Case B of this procedure.
- 3.2 All accelerographs and recorders shall be monitored to evaluate
extent of earthquake (Enclosure 4.1).
 - 3.2.1 Seismic verification may be obtained by calling U.S.
Geological Survey Office (Enclosure 4.2).
 - 3.2.2 Request the I & E shift technician to evaluate the seismic
equipment for verification and classification of the event
in accordance with IP/O/B/3150/01, IP/O/B/3150/02, and
IP/O/B/3150/04.
- 3.3 All normally monitored plant parameters shall be closely observed to
ensure stable plant status.
NOTE: Should a system failure result from the earthquake,
refer to the applicable Emergency Procedure.
- 3.4 Commence RP/O/A/5700/01 (Notification of Unusual Event).
- 3.5 Tour the station for damages being particularly observant for wall
cracks, bent/broken hangers, pipe ruptures, bends or cracks, etc.
Include in the tour, but do not limit it to:

- 3.5.1 Reactor Building (outside).
- 3.5.2 Auxiliary and Turbine Buildings.
- 3.5.3 Auxiliary Liquid Waste Processing Building.
- 3.5.4 Gas and oil storage areas.
- 3.5.5 Refueling Water Storage Tanks.
- 3.5.6 Reactor Makeup Water Storage Tanks.
- 3.5.7 Fuel Pool.
- 3.6 After evaluating the extent of the earthquake and the results of station tour, the Station Manager shall decide whether or not to preclude startup in order to inspect the following:
 - 3.6.1 Structures Inside Containment.
 - 3.6.2 Reactor Coolant System.
 - 3.6.3 Control Rod Drive Mechanisms.
- 4.0 Enclosures
 - 4.1 Seismic Instrument Locations.
 - 4.2 Emergency Plan Implementing Procedures Telephone List.

EARTHQUAKE - CASE B
Greater than Operating Basis Earthquake
But less than Safe Shutdown Earthquake

1.0 Symptoms

- 1.1 Seismic Computer Alarm.
- 1.2 Effects of an earthquake can be seen, heard, or felt.
- 1.3 Horizontal acceleration between .08g <.15g, vertical acceleration between .053 <.10g as indicated on accelerograph recorder.

2.0 Immediate Actions

- 2.1 Automatic
 - 2.1.1 Seismic Recorders actuated.
- 2.2 Manual
 - 2.2.1 Trip the reactor(s).

3.0 Subsequent Actions

- 3.1 Take the Unit(s) to Cold Shutdown per OP/O/A/6100/02 (Controlling Procedure for Unit Shutdown).
- 3.2 All normally monitored plant parameters shall be closely observed to ensure safe shutdown and stable plant status.
NOTE: Should a system failure result from the earthquake, refer to applicable Emergency Procedure.
- 3.3 All accelerographs and recorders shall be monitored to evaluate the extent of the earthquake (Enclosure 4.1).
 - 3.3.1 Seismic verification may be obtained by calling U.S. Geological Survey Office (Enclosure 4.2).
 - 3.3.2 Request the I & E shift technician to evaluate the seismic equipment for verification and classification of the event in accordance with IP/O/B/3150/01, IP/O/B/3150/02, and IP/O/B/3150/04.
- 3.4 Commence RP/O/A/5700/02 (Alert).
- 3.5 Tour the station for damages being particularly observant for wall cracks, bent/broker hangers, pipe ruptures, bends or cracks, etc. Include in the tour, but do not limit it to:
 - 3.5.1 Reactor, Auxiliary and Turbine Buildings, inside and out.
 - 3.5.2 Auxiliary Liquid Waste Processing Building.
 - 3.5.3 Gas and oil storage areas.
 - 3.5.4 Refueling water and Reactor makeup water storage tanks.

- 3.5.5 Fuel Pool.
- 3.5.6 Reactor Coolant System.
- 3.5.7 Emergency Core Cooling Systems.
- 3.5.8 Control Rod Drive Mechanisms.
- 3.5.9 Switch Gear, MCC and cable rooms.
- 3.5.10 Underground piping such as RC, RF, RL, RN.

3.6 Health Physics shall survey Reactor, Auxiliary and Fuel Pool Buildings to ensure shielding integrity.

3.7 A thorough evaluation of the extent of earthquake damage shall be made prior to startup.

4.0 Enclosures

- 4.1 Seismic Instrument Locations.
- 4.2 Emergency Plan Implementing Procedures Telephone List.

EARTHQUAKE - CASE C
Greater than Safe Shutdown Earthquake

1.0 Symptoms

- 1.1 Seismic Computer Alarms.
- 1.2 Severe effects of an earthquake are seen, heard, or felt.
- 1.3 Horizontal acceleration $>.15g$, vertical acceleration $>.1g$ as indicated on accelerograph recorder.

2.0 Immediate Actions

- 2.1 Automatic
 - 2.1.1 Seismic Recorders actuated.
- 2.2 Manual
 - 2.2.1 Trip the reactor(s).

3.0 Subsequent Actions

- 3.1 Promptly take the unit(s) to Cold Shutdown per OP/O/A/6100/02 (Controlling Procedure for Unit Shutdown).
- 3.2 Closely monitor plant parameters to ensure safe shutdown and cooldown and prevent/minimize potential casualties.
NOTE: Should a system failure result from the earthquake, refer to applicable Emergency Procedure.
- 3.3 Monitor all accelerographs and recorders to evaluate extent of earthquake.
 - 3.3.1 Seismic verification may be obtained by calling the U.S. Geological Survey Office (Enclosure 4.2).
 - 3.3.2 Request the I & E shift technician to evaluate the seismic equipment for verification and classification of the event in accordance with IP/O/B/3150/01, IP/O/B/3150/02, and IP/O/B/3150/04.
- 3.4 Activate Standby Shutdown Facility should Control Room evacuation become imminent.
- 3.5 Commence RP/O/A/5700/03 (Site Area Emergency).
- 3.6 Should actual core degradation or melting occur or become imminent commence RP/O/A/5700/04 (General Emergency).
- 3.7 Make an extensive tour of the station being particularly observant for wall cracks, bent/broken hangers, pipe ruptures, bends or cracks, etc. Include in the tour, but do not limit to:
 - 3.7.1 Reactor, Auxiliary, and Turbine Buildings (inside and out).
 - 3.7.2 Auxiliary Liquid Waste Processing Building.

- 3.7.3 Gas and Oil Storage Areas.
- 3.7.4 Refueling Water and Reactor makeup Water Storage Tanks.
- 3.7.5 Fuel Pool.
- 3.7.6 Reactor Coolant System.
- 3.7.7 Emergency Core Cooling Systems.
- 3.7.8 Control Rod Drive Mechanisms.
- 3.7.9 Switch Gear, MCC and Cable Rooms.
- 3.7.10 Underground piping such as RC, RF, RL, RN.
- 3.7.11 Acid and Caustic Storage Tanks.
- 3.8 Health Physics shall survey Reactor, Auxiliary and Fuel Pool Buildings to ensure shielding integrity.
- 3.9 A thorough evaluation of the extent of the earthquake damage shall be made prior to startup.
- 4.0 Enclosures
 - 4.1 Seismic Instrument Locations.
 - 4.2 Emergency Plan Implementing Procedures Telephone List.

SEISMIC INSTRUMENT LOCATIONS
EARTHQUAKE

- 4.1.1 Time-History accelerograph recorder - on LMC-9.
- 4.1.2 The seismic switch (MIMT5060), the time-history accelerograph starter unit (MIMT 5020), one of the time-history accelerograph sensor units (MIMT 5000), and the response spectrum recorder to be coupled with the peak shock annunciator (MIMT 5070), all located on the Containment basement slab, in the annulus under the first ring girder at azimuth 0° , (El. $725 \pm 0''$).
- 4.1.3 The second time-history accelerograph sensor unit (MIMT 5010) is located directly above the first at azimuth 0° , (El. $786 \pm 5''$) and bolted to the ring girder at this position.
- 4.1.4 One Response Spectrum Recorder, instrument number MIMT 5070, on the Pressurizer Lower Support Structure at Elevation $751' 3 \frac{1}{4}''$.
- 4.1.5 One Response Spectrum Recorder, instrument number MIMT 5090, in the Auxiliary Building at Elevation $750' 0''$, column lines QQ and 56.
- 4.1.6 Peak Recording Accelerometer, MIMT 5030, strap mounted near the top of Steam Generator 1D at Elevation $799' 9 \frac{9}{16}''$.
- 4.1.7 Peak Recording Accelerometer, MIMT 5040, on a pipe hanger for the Pressurizer Surge Line at Elevation $746' 2 \frac{1}{2}''$.
- 4.1.8 Peak Recording Accelerometer, MIMT 5050, at base of NI Pump 1A at Elevation $716' 6''$.

EMERGENCY PLAN IMPLEMENTING PROCEDURES TELEPHONE LIST
EARTHQUAKE

4.2.1 U.S. Geological Survey Office

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: RP/0/A/5700/08
Change(s) 0 to
0 Incorporated

(2) STATION: McGuire Nuclear Station

(3) PROCEDURE TITLE: Release of Toxic or Flammable Gases

(4) PREPARED BY: M.S. Glover DATE: 1/10/83

(5) REVIEWED BY: [Signature] DATE: 2-1-83

Cross-Disciplinary Review By: _____ N/R: [Signature]

(6) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____

By: _____ Date: _____

(7) APPROVED BY: [Signature] Date: 2-4-83

(8) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____

Reviewed/Approved By: _____ Date: _____

DUKE POWER COMPANY
McGUIRE NUCLEAR STATION
RELEASE OF TOXIC OR FLAMMABLE GASES

1.0 Symptoms

This condition exists when toxic or flammable gases released nearsite or onsite, (verified by chemistry analysis if deemed necessary) present a hazard to station personnel or property.

2.0 Immediate Action

2.1 Automatic

None

2.2 Manual

2.2.1 Evacuate the affected area

2.2.2 Notify the Shift Supervisor

3.0 Subsequent Action

3.1 The Shift Supervisor will request the Station Chemistry Section to evaluate the hazardous condition.

3.2 The Shift Supervisor will take appropriate actions to ensure the safety of all persons and property in the potentially affected areas, including notification of outside services if deemed necessary (see Enclosure 4.1).

3.3 Refer to RP/O/A/5700/01, Notification of Unusual Event, upon verification by chemistry of the existence of nearsite or onsite toxic or flammable gases in concentrations presenting a hazard to station personnel or property.

3.4 Refer to RP/O/A/5700/02, Alert, upon verification by chemistry of the entry into facility environs (buildings/structures) of toxic or flammable gases in concentrations presenting a hazard to station personnel or property.

3.4.1 In the event evacuation of the control room is imminent, refer to AP/1/A/5500/17, Loss of Control Room.

3.5 Refer to RP/O/A/5700/03, Site Area Emergency, upon verification by chemistry of the entry of uncontrolled concentrations of flammable gases into vital areas presenting a hazard to station personnel or property or entry of uncontrolled concentrations of toxic gases into vital areas where lack of access to the area constitutes a safety problem to personnel or equipment.

3.5.1 In the event evacuation of the control room is imminent,
refer to AP/1/A/5500/17, Loss of Control Room.

3.6 In the event the gas release should result in a system failure due
to operator evacuation or explosion, fire, etc., refer to the appli-
cable Emergency Procedure.

3.6.1 Should system failure involve actual or imminent sub-
stantial core damage or melt, refer to RP/0/A/5700/04,
General Emergency.

4.0 Enclosures

4.1 Emergency Plan Implementing Procedure Telephone List

4.1 Emergency Plan Implementing Procedure Telephone List

4.1.1 North Mecklenburg Ambulance Service

4.1.2 North Mecklenburg Rescue Squad

4.1.3 Gilead/Cornelius Fire Department

4.1.4 Chemistry Shift Technician

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: RP/0/A/5700/09
Change(s) 0 to
0 Incorporated

(2) STATION: McGuire Nuclear Station

(3) PROCEDURE TITLE: Collisions/Explosions

(4) PREPARED BY: M. S. Glover

DATE: 1/10/83

(5) REVIEWED BY: AD [Signature]

DATE: 2-1-83

Cross-Disciplinary Review By: _____

N/R: [Signature]

(6) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO)

Date: _____

By: _____

Date: _____

(7) APPROVED BY: [Signature]

Date: 2-3-83

(8) MISCELLANEOUS:

Reviewed/Approved By: _____

Date: _____

Reviewed/Approved By: _____

Date: _____

DUKE POWER COMPANY
McGUIRE NUCLEAR STATION
COLLISIONS/EXPLOSIONS

Case A - Collision/Explosion near or on-site.

Case B - Collision/Explosion into or inside the facility.

Case C - Collision/Explosion into or inside vital structures within the facility.

Collisions/Explosions - Case A
Near or On-Site

1.0 Symptoms

- 1.1 Aircraft cras'. or unusual aircraft activity (i.e. malfunction or threatening maneuvers) over facility.
- 1.2 Train derailment, vehicular or watercraft collision jeopardizing plant safety.
- 1.3 Any explosion.

2.0 Immediate Actions

- 2.1 Automatic
 - None
- 2.2 Manual
 - 2.2.1 Notify Shift Supervisor

3.0 Subsequent Actions

- 3.1 Commence RP/O/A/5700/01 (Notification of Unusual Event).
- 3.2 Perform emergency first aid as necessary.
- 3.3 Ensure any fire is extinguished, any gas or fluid leakage is contained.
- 3.4 Notify applicable outside services deemed necessary (Enclosure 4.1).
- 3.5 Notify Health Physics if there are any radiological implications (Enclosure 4.1).
- 3.6 Notify Chemistry if there are any chemical implications (Enclosure 4.1).

4.0 Enclosures

- 4.1 Emergency Plan Implementing Procedures Telephone List

Collisions/Explosions - Case B
Into or Inside the Facility

1.0 Symptoms

- 1.1 Any aircraft or missile impacts on the facility.
- 1.2 Train or vehicular collisions severely jeopardizing plant safety.
- 1.3 Explosion damage affecting plant operation.

2.0 Immediate Actions

- 2.1 Automatic
 - None
- 2.2 Manual
 - 2.2.1 Notify Shift Supervisor

3.0 Subsequent Actions

- 3.1 Trip the reactor of the affected unit.
 - 3.1.1 Take the unit(s) to Hot Shutdown condition per OP/O/A/6100/02 (Controlling Procedure for Unit Shutdown).
 - 3.1.2 Consider taking the unit(s) to Cold Shutdown condition per OP/O/A/6100/02 (Controlling Procedure for Unit Shutdown) depending on the extent of damage.
- 3.2 Commence RP/O/A/5700/02 (Alert).
- 3.3 Perform emergency first aid as necessary.
- 3.4 Ensure any fire is extinguished, any gas or liquid leakage is contained.
- 3.5 Notify applicable outside services deemed necessary (Enclosure 4.1).
- 3.6 Notify Health Physics if there are any radiological implications. (Enclosure 4.1).
- 3.7 Notify Chemistry if there are any chemical implications. (Enclosure 4.1).
- 3.8 Should the collision/explosion cause damage affecting plant operation (i.e., system failure), refer to the applicable Emergency Procedure.

4.0 Enclosures

- 4.1 Emergency Plan Implementing Procedures Telephone List

Collisions/Explosions - Case C
Into or Inside Vital Structures within Facility

1.0 Symptoms

- 1.1 Any collision or explosion which may or has reduced capability for protection of the public.

2.0 Immediate Actions

- 2.1 Automatic
None
- 2.2 Manual
 - 2.2.1 Notify Shift Supervisor

3.0 Subsequent Action

- 3.1 Trip the reactor of the affected unit.
 - 3.1.1 Take the unit(s) to Cold Shutdown per OP/O/A/6100/02
(Controlling Procedure for Unit Shutdown).
- 3.2 Commence RP/O/A/5700/03 (Site Area Emergency).
- 3.3 Perform emergency first aid as necessary.
- 3.4 Ensure any fire is extinguished, any gas or liquid leakage is contained.
- 3.5 Notify applicable outside services deemed necessary (Enclosure 4.1).
- 3.6 Notify Health Physics if there are any radiological implications
(Enclosure 4.1).
- 3.7 Notify Chemistry if there are any chemical implications (Enclosure 4.1).
- 3.8 Should the collision/explosion cause damage affecting plant operation
(i.e., system failure), refer to applicable Emergency Procedure.
- 3.9 Should any collision/explosion or resulting system failure involve
actual or imminent core damage or melting with potential for a loss of
containment integrity, commence RP/O/A/5700/04 (General Emergency).

4.0 Enclosures

- 4.1 Emergency Plant Implementing Procedures Telephone List

4.1 Emergency Plan Implementing Procedures Telephone List

4.1.1 Federal Aviation Administration -

4.1.2 Frank Hayworth (Duke Railroads) - General Office
- Home -

4.1.3 North Carolina Highway Patrol

4.1.4 Mecklenburg County Police -

4.1.5 North Mecklenburg Ambulance Service

4.1.6 North Mecklenburg Rescue Squad -

4.1.7 Gilead Fire Department -

4.1.8 Health Physics - McGuire or page

4.1.9 Chemistry - McGuire or page