



**HARRIS NUCLEAR PLANT**

**PLANT OPERATING MANUAL**

**VOLUME 1**

**PART 2**

**PROCEDURE  
TYPE:**

**PLANT PROGRAM**

**NUMBER:**

**PLP-201**

**TITLE:**

**EMERGENCY PLAN**

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## **1.0 INTRODUCTION**

### **1.1 Authority/Requirements**

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The Harris Nuclear Plant (HNP) Emergency Plan and Plant Emergency Procedures have been prepared in accordance with the following requirements and guidelines:

- A. Code of Federal Regulations, 10 CFR 50, Section 50.47, "Emergency Plans."
- B. Code of Federal Regulations, 10 CFR 50, Section 50.54(q) and Section 50.54 (t), "Conditions of Licenses."
- C. Code of Federal Regulations, 10 CFR 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities."
- D. NUREG-0654, FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980.
- E. NUREG-0737, Supplement 1, "Requirements for Emergency Response Capability", December 17, 1982.
- F. NUREG/CR-4831, "State of the Art in Evacuation Time Estimate Studies for Nuclear Power Plants," March 1992.
- G. FEMA Guidance Memorandum MS-1, "Medical Services," Federal Emergency Management Agency, November 13, 1986.
- H. RTM-92, "Response Technical Manual" Volume 1, Revision 2, U.S. Nuclear Regulatory Commission, Washington, D.C., October 1992.
- I. IE Information Notice 85-55, "Revised Emergency Exercise Frequency Rule," July 15, 1985.
- J. EPA-400-R-92-001, "Manual of Protective Action Guidelines and Protective Actions for Nuclear Incidents," U.S. Environmental Protection Agency, May 1992.
- K. EPPOS No. 1, "Emergency Preparedness Position (EPPOS) on Acceptable Deviations from Appendix 1 of NUREG-0654 Based Upon the Staff's Regulatory Analysis of NUMARC/NESP-007, 'Methodology for Development of Emergency Action Levels'", June 6, 1995.
- L. EPPOS No. 2, "Emergency Preparedness Position (EPPOS) on Timeliness of Classification of Emergency Conditions", August 17, 1995.
- M. EPPOS No. 3, "Emergency Preparedness Position (EPPOS) on Requirement for On-shift Dose Assessment Capability", November 8, 1995.
- N. NRC Correspondence: SECY 88-147, SECY 89-012, Generic Letter 88-20.
- O. Safety Evaluation by the Office of Nuclear Reactor Regulation Related to WCAP-14986, "Westinghouse Owners Group Post Accident Sampling System Requirements" Westinghouse Owners Group Project No. 694.
- P. NRC Order, Implementation guidance For Interim Safeguards and Security Compensatory Measures for the order dated February 25, 2002.

- Q. RIS 2002-21, "National Guard and Other Emergency Responders Located in the Licensee's Controlled Area"

## **1.2 Purpose of HNP Emergency Plan and Implementing Procedures**

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The purpose of the HNP Emergency Plan (E-Plan) and Implementing Procedures (Plant Emergency Procedures) is to assure that the state of on-site and off-site emergency preparedness provides reasonable assurance that adequate corrective and protective measures can and will be taken in the event of a radiological emergency at the plant. The HNP E-Plan and Implementing Procedures outline the Emergency Preparedness Program which has the following objectives:

- A. Protection of plant personnel and the general public.
- B. Prevention or mitigation of property damage.
- C. Effective coordination of emergency activities among all organizations having a response role.
- D. Early warning and clear instructions to the population-at-risk in the event of a serious radiological emergency.
- E. Continued assessment of actual or potential consequences both on site and off site.
- F. Effective and timely implementation of emergency measures.
- G. Continued maintenance of an adequate state of emergency preparedness.

The HNP Emergency Preparedness Controlled Documents are contained in the HNP Plant Operating Manual (POM) and consist of the following parts:

- Volume 1, Part 2, Emergency Plan (PLP-201)
- Volume 2, Part 5, Plant Emergency Procedures (PEP)
- Volume 2, Part 10, Emergency Program Maintenance (EPM)

The Emergency Phone List, EPL-001, is an HNP document controlled outside the POM.

A list of documents which implement and maintain this plan can be found in Annex E.



### **1.3 Responsibility for Plan Development and Review**

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Responsibility for the HNP Emergency Plan development, review, and periodic update is assigned to the Supervisor - Emergency Preparedness who serves as the HNP Emergency Planning Coordinator.

Procedures are in place to ensure changes to the Emergency Preparedness Program are evaluated to determine whether the changes do or do not decrease the effectiveness of the plan and the plan, as changed, continues to meet the standards of 10CFR50.47(b) and the requirements of Appendix E. Changes which do result in an evaluated decrease in program effectiveness will not be implemented without prior NRC approval.

### **1.4 Emergency Classes**

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Off-normal plant conditions are classified according to four emergency classes which in order of increasing severity are Unusual Event; Alert; Site Area Emergency; and General Emergency. The emergency classes are defined in NUREG-0654, Appendix 1, as follows:

#### **1.4.1 Unusual Event**

Unusual events are in process or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring off-site response or monitoring are expected unless further degradation of safety systems occurs. Unusual Event is equivalent to the NRC designated class "Notification of Unusual Events."

#### **1.4.2 Alert**

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of EPA Protective Action Guideline exposure levels. The Alert class may correspond to failure or jeopardy of one Fission Product Barrier.

#### **1.4.3 Site Area Emergency**

Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to exceed EPA Protective Action Guideline exposure levels except near site boundary. The Site Area Emergency Class may correspond to failure or jeopardy of two Fission Product Barriers.

#### **1.4.4 General Emergency**

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels off site for more than the immediate site area. The General Emergency class may correspond to failure or jeopardy of three Fission Product Barriers.

Events that could lead to any of these emergency classifications are described in Section 4.0, "Emergency Measures and Operations."

## **1.5 Severe Accident Management Guidelines (SAMGs)**

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Severe Accident Management Guidelines are put into use when plant conditions are beyond design basis. The primary goal is to protect fission product barriers and mitigate any ongoing fission product releases, with secondary goals to mitigate severe accident phenomena and return the plant to a stable condition. The implementation of SAMGs invokes the provisions of 10 CFR 50.54(x) and (y).

## **1.6 Plant Site Description**

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The Harris Nuclear Plant (HNP) site is located in the extreme southwest corner of Wake County, North Carolina, approximately 16 miles southwest of Raleigh, which is the largest population center, and approximately 15 miles northeast of Sanford, North Carolina, in Lee County (See Figures 1.5-1 and 1.5-2). Approximate coordinates of the plant centerline are latitude 35° 38' 01" N and longitude 78° 57' 23" W. The Harris Nuclear Plant consists of one pressurized water reactor (PWR) of Westinghouse Corporation manufacture, licensed to operate at 2900 megawatts thermal (MWt). The associated net electrical output is approximately 900 megawatts electric (MWe). The major structures of HNP which contain radioactive materials are the Containment Building, Reactor Auxiliary Building, Fuel Handling Building, and the Waste Processing Building. Figure 1.5-3 shows the principle site buildings.

Figure 1.5-2 shows the Exclusion Area Boundary (EAB) and the location of the Harris Energy & Environmental Center (HE&EC) in which the Emergency Operations Facility (EOF) is located.

## **1.7 Plume Exposure Emergency Planning Zone (EPZ)**

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The Plume Exposure Emergency Planning Zone (EPZ) is defined as the area within an approximate 10-mile radius of the HNP and is referred to as the 10-Mile EPZ.

Principal exposure sources from the plume exposure pathway are (a) external exposure to gamma and beta radiation from the plume and from deposited materials and (b) exposure of the internal organs to gamma and beta radiation from inhaled radioactive gases and/or radioactive particulates. The time of potential exposure can range in length from hours to days.

Figure 1.5-2 shows the Plume Exposure EPZ in relation to the location of HNP. The Plume Exposure EPZ includes portions of the North Carolina counties of Chatham, Harnett, Lee, and Wake. Annex H, attached, shows evacuation routes and local emergency planning zone boundaries in the 10-mile EPZ.

The prevailing winds around the plant are from the southwest.

## **1.8 Ingestion Exposure Emergency Planning Zone**

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The Ingestion Exposure Emergency Planning Zone (EPZ) is defined as the area within an approximate 50-mile radius of the HNP and is referred to as the 50-Mile EPZ.

The ingestion exposure sources from the ingestion pathway are contaminated water or food, such as milk or fresh vegetables. The time of potential exposure can range in length from hours to months. The region within a 50-mile radius of the HNP site contains both urban and rural areas with industry, farming, business, education, research, and military interests. Figure 1.5-1 shows the 50-mile Ingestion Exposure EPZ in relation to the location of the Shearon Harris Plant. The Ingestion Exposure EPZ includes the North Carolina counties of Alamance, Caswell, Chatham, Cumberland, Durham, Franklin, Granville, Guilford, Harnett, Hoke, Johnston, Lee, Montgomery, Moore, Nash, Orange, Person, Randolph, Robeson, Sampson, Vance, Wake, Wayne and Wilson.

## **1.9 Demographic Information**

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The distribution of resident population in the 10-Mile Emergency Planning Zone is presented in Table 1.8-1 and Figure 1.8-1. Special facilities within the Plume Exposure Emergency Planning Zone are depicted in Figure 1.8-2 and Table 1.8-3. The 10-Mile Emergency Planning Zone evacuation time estimates are provided in Table 1.8-2.

## **1.10 Supporting Emergency Plans**

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Emergency Plans which support this Plan are:

- A. North Carolina Emergency Response Plan in Support of Shearon Harris Nuclear Power Plant, Division of Emergency Management, Department of Crime Control and Public Safety.
- B. U.S. Nuclear Regulatory Commission, NUREG-0728, NRC Incident Response Plan.
- C. Federal Radiological Emergency Response Plan.
- D. Southern Mutual Radiological Assistance Plan.

Figure 1.5-1

**Ingestion Exposure Emergency Planning Zone (50-Mile EPZ)**

### Plume Exposure Emergency Planning Zone (10-Mile) EPZ

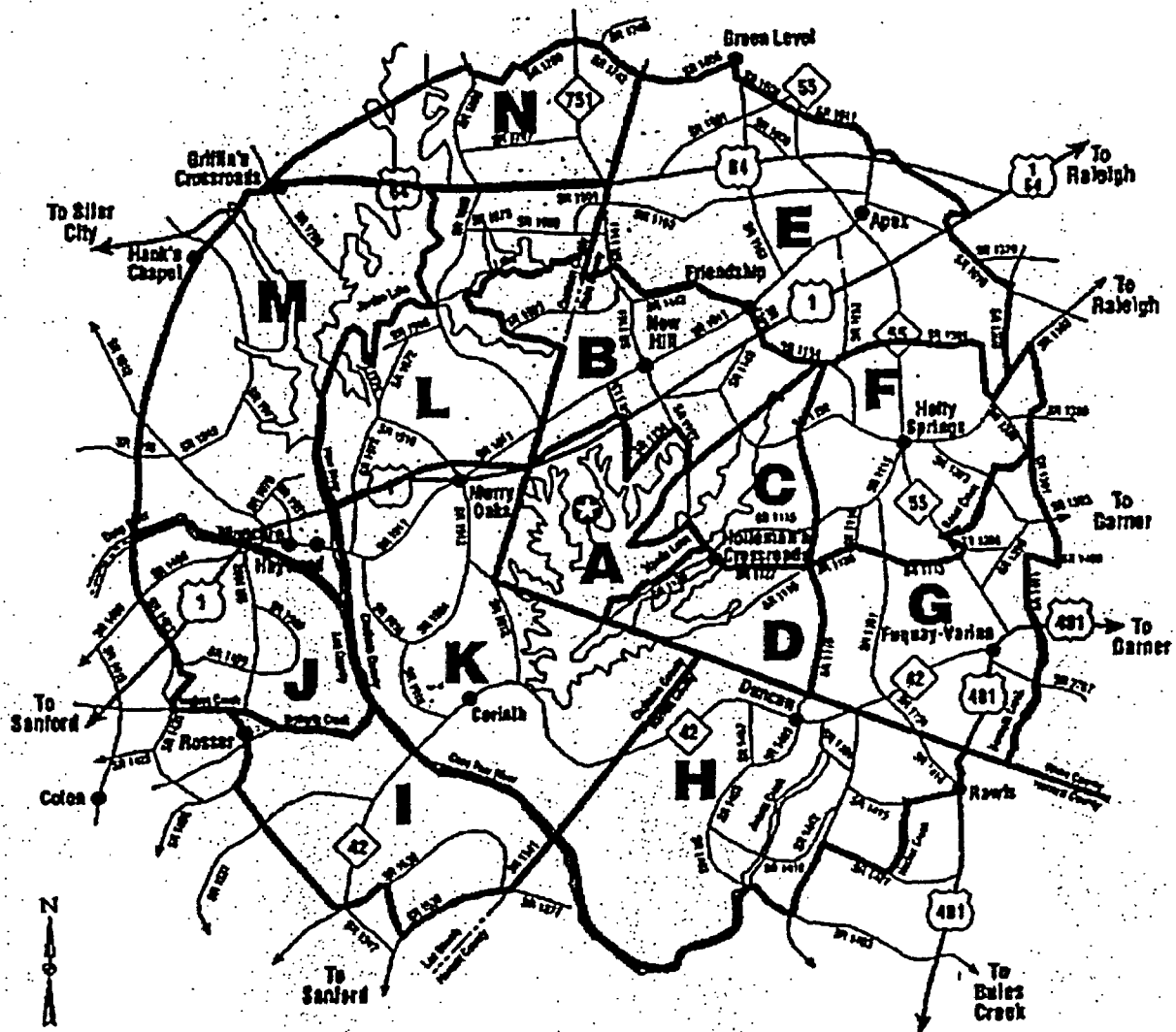
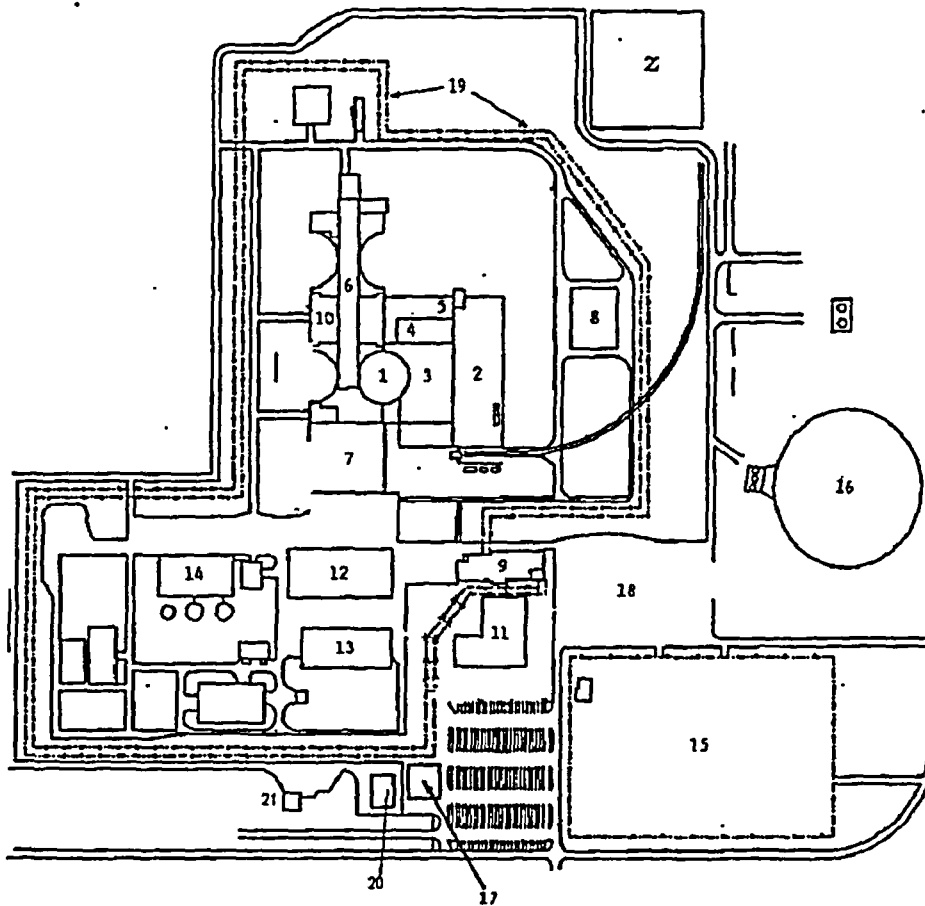


Figure 1.5-3  
HNP Site Plan and Emergency Facilities



- 1 Reactor Containment Building
- 2 Turbine Building
- 3 Reactor Auxiliary Building
- 4 Operations Building
- 5 Main Control Room
- 6 Fuel Handling Building
- 7 Waste Processing Building (OSC in HP Tech Work Area; First Aid Room 261')
- 8 Diesel Generator Building
- 9 Security Building (Normal Evacuation)
- 10 K Building (TSC on 4th Floor)
- 11 Administration Building (Admin Building Assembly Area)
- 12 Service Building
- 13 Bulk Warehouse
- 14 Water Treatment Building
- 15 Switchyard
- 16 Cooling Tower
- 17 Helicopter Landing Zone
- 18 Evacuation Monitoring Area
- 19 Protected Area Boundary
- 20 Plant Access Facility
- 21 Mobile Equipment Shop
- 22 Warehouse 6

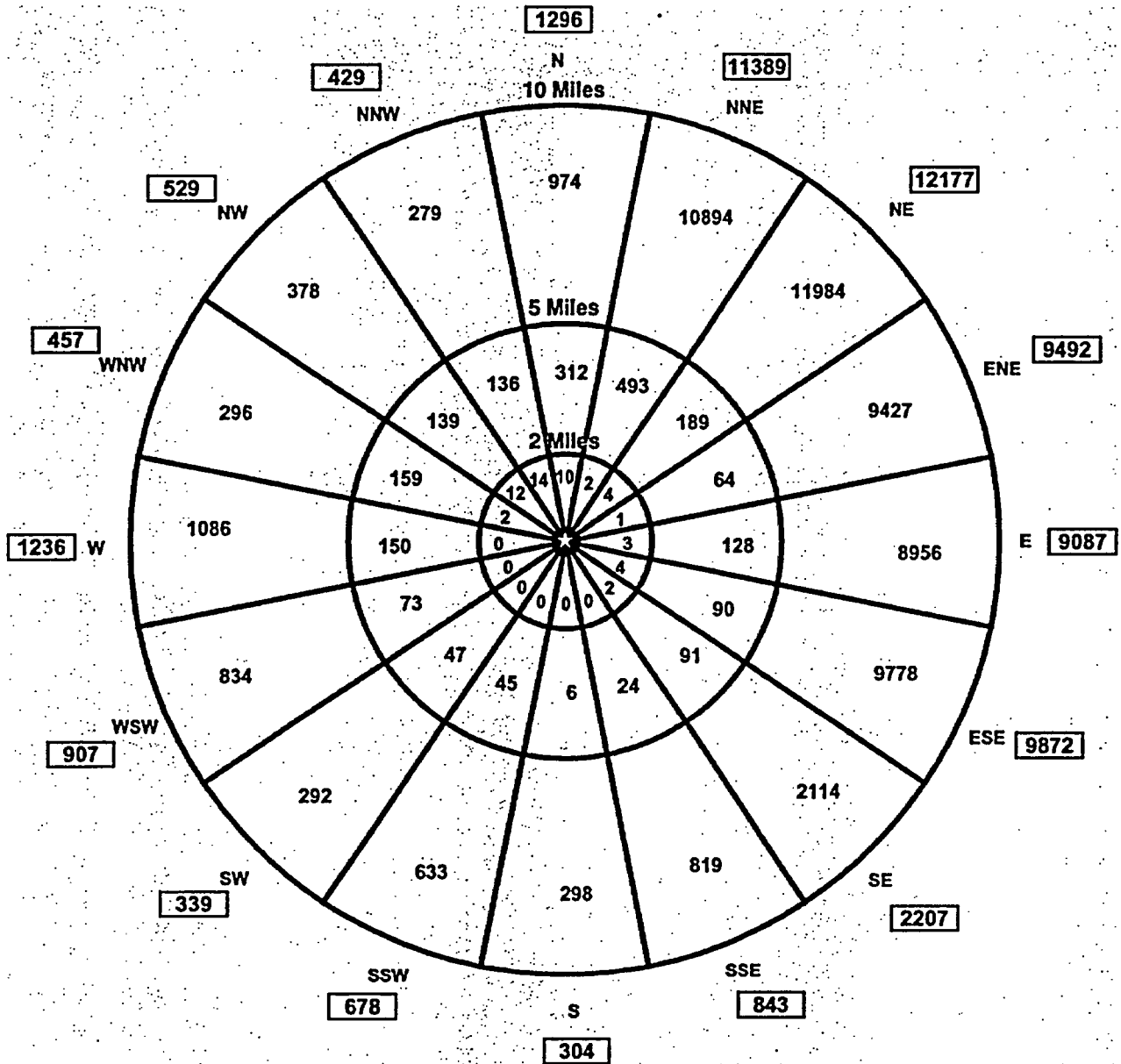
**Table 1.8-1**  
**Population Data by Sub-Zone - Summer Weekend Weather\*\***

Subzone	Permanent Resident		Seasonal	Transient	Special Facility	Total Population
	Auto-Owning	Non Auto-Owning				
<b>A</b>	0	0	0	450	0	450
<b>B</b>	1,234	25	0	1,090	12	2,361
<b>C</b>	192	18	2	603	0	815
<b>D</b>	171	15	0	2	0	188
<b>E</b>	25,277	868	17	2,075	124	28,361
<b>F</b>	12,613	716	19	256	22	13,626
<b>G</b>	11,420	1,088	18	1,149	154	13,829
<b>H</b>	2,777	194	24	129	0	3,124
<b>I</b>	691	111	12	2	0	816
<b>J</b>	899	99	8	4	0	1,010
<b>K</b>	547	74	11	213	0	845
<b>L</b>	641	68	7	5,965	0	6,681
<b>M</b>	1,386	124	14	4,427	0	5,951
<b>N</b>	597	10	0	3,829	0	4,436
<b>Full EPZ</b>	<b>58,445</b>	<b>3,410</b>	<b>132</b>	<b>20,194</b>	<b>312</b>	<b>82,493</b>

\*\* This scenario represents the largest population present within the 10-mile EPZ during an analyzed evacuation situation. This is based on the "Evacuation Time Estimates for the Harris Nuclear Plant, October 29, 2002".

Figure 1.8-1

**Demographic Information by Sector**



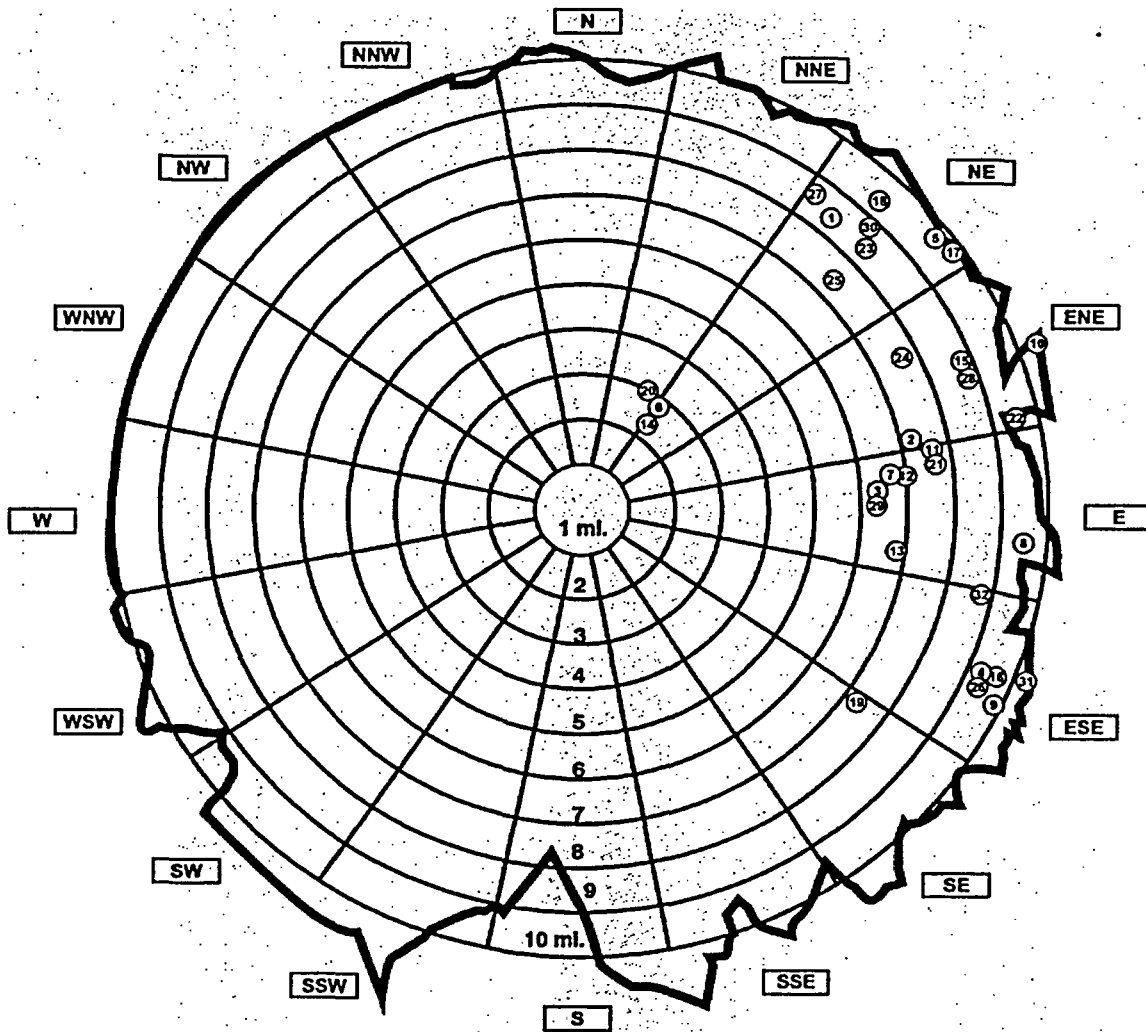
**POPULATION TOTALS**

Distance (Miles)	Population	Total Miles	Total Population
0-2	54	0-2	54
2-5	2,146	0-5	2,200
5-10	59,042	0-10	61,242

NOTE: Data is based on the "Evacuation Time Estimates for the Harris Nuclear Plant, October 29, 2002."



**Figure 1.8-2**  
**Hospital and Family Care Facilities Located in the HNP 10-Mile EPZ**



1	Atwater Rest Home
2	Autumn Green Adult Care Home
3	Avent Ferry Home
4	Brighton Manor
5	Blanche Drive
6	Brown's Family Care Home
7	Country Lake Group Home
8	Evans-Watson Home
9	Fugazy-Varina Homes Elderly
10	Harrison Home
11	Herbert Reid Home

12	Hickory St. Group Home
13	Hood Family Care Home
14	James' Rest Home
15	Johnson's Home
16	Kinton Court
17	Lifespan Services of Wake Co.
18	Mason Street Group Home
19	Mims Family Care Home
20	Morrison's Family Care Home
21	Murchison Adult Family Living
22	Peace Haven

23	Rex Nursing Care Ctr of Apex
24	Rose Haven Rest Home
25	Seagroves Family Home
26	Southern Wake Hospital
27	Spring Arbor of Apex
28	St. Mark's Manor
29	Trotters Bluff
30	VOCA Olive Home
31	VOCA-Creekway
32	Windsor Point

**HNP Plume Exposure EPZ Evacuation Time Estimates**

Wind Direction (Degrees From)	Evacuation Area	Sub-zones Impacted	Summer Weekday (Good Weather)	Summer Weekend (Good Weather)	Late Fall Weekday (Adverse Weather)	Summer Evening (Good Weather)
2-Mile Radius	2-mile	A	91	76	91	46
5-mile Radius	5-mile	A, B, C, D, K, L	151	212	151	151
348-10	2-Mile + 5 Mile	A, D, K	91	91	96	76
	2-Mile + 10 Mile	A, D, K, H, I	151	151	151	151
11-34	2-Mile + 5 Mile	A, K	91	91	91	76
	2-Mile + 10 Mile	A, K, H, I, J	151	151	151	151
35-56	2-Mile + 5 Mile	A, K	91	91	91	76
	2-Mile + 10 Mile	A, K, I, J, M	151	151	151	151
57-79	2-Mile + 5 Mile	A, K, L	151	212	151	151
	2-Mile + 10 Mile	A, K, L, I, J, M	151	279	151	151
80-101	2-Mile + 5 Mile	A, K, L	151	212	151	151
	2-Mile + 10 Mile	A, K, L, J, M	151	279	151	151
102-124	2-Mile + 5 Mile	A, K, L	151	212	151	151
	2-Mile + 10 Mile	A, K, L, J, M, N	176	297	151	151
125-146	2-Mile + 5 Mile	A, B, L	151	212	151	151
	2-Mile + 10 Mile	A, B, L, M, N	176	305	151	151
147-169	2-Mile + 5 Mile	A, B, L	151	212	151	151
	2-Mile + 10 Mile	A, B, L, E, M, N	189	295	318	252
170-191	2-Mile + 5 Mile	A, B, L	151	212	151	151
	2-Mile + 10 Mile	A, B, L, E, M, N	189	295	318	252
192-214	2-Mile + 5 Mile	A, B	151	151	151	151
	2-Mile + 10 Mile	A, B, E, N	189	257	318	252
215-236	2-Mile + 5 Mile	A, B, C	151	151	151	151
	2-Mile + 10 Mile	A, B, C, E, F	253	317	375	360
237-259	2-Mile + 5 Mile	A, B, C	151	151	151	151
	2-Mile + 10 Mile	A, B, C, E, F, G	253	338	375	347
260-281	2-Mile + 5 Mile	A, B, C, D	151	151	151	151
	2-Mile + 10 Mile	A, B, C, D, F, G, H	152	289	249	272
282-304	2-Mile + 5 Mile	A, C, D	91	91	91	76
	2-Mile + 10 Mile	A, C, D, F, G, H	152	278	249	272
305-326	2-Mile + 5 Mile	A, C, D, K	91	91	91	76
	2-Mile + 10 Mile	A, C, D, K, F, G, H	152	278	249	272
327-347	2-Mile + 5 Mile	A, D, K	91	91	96	76
	2-Mile + 10 Mile	A, D, K, G, H, I	151	159	204	157
Full EPZ	10 Mile	Full EPZ	253	346	375	360

Evacuation times include notification and alerting of the public via primary means (15 minutes), mobilization and preparation of the public for evacuation, and evacuation to the outer boundary of all the local planning zones being evacuated.

Source: Evacuation Time Estimates for the Plume Exposure Pathway Emergency Planning Zone: Shearon Harris Nuclear Power Plant, October 2002.

**Schools Located in the HNP 10-Mile EPZ**

<b>School</b>	<b>Quadrant</b>	<b>Distance from Plant (miles)</b>
Apex Elementary	NE	8.8
Apex High	NE	10.4
Apex Middle	NE	8.8
Baucom Elementary	NE	9.1
Community Partners High School	ENE	7.1
Fuquay-Varina Middle	ESE	9.8
Fuquay-Varina High	ESE	9.2
Holly Ridge Elementary	ENE	8.2
Holly Ridge Middle	ENE	8.2
Holly Springs Elementary	ENE	7.6
Lincoln Heights Elementary	ESE	8.9
Lufkin Road Middle	NE	8.7
Moncure Elementary	W	6.8
Montessori Center for Children	NNE	9.5
Olive Chapel Elementary	NNE	7.3
Salem Elementary	NNE	10.2
St. Mary Magdalene	NNE	7.7

## **2.0 ORGANIZATION AND RESPONSIBILITIES**

### **2.1 General**

---

There are requirements for actions in an emergency that go beyond those encountered during routine operations. To meet these additional demands and provide an effective response to the emergency, the HNP Emergency Plan employs an organizational concept that has four features.

- A. Whenever the Plan is activated, a single individual is charged with the responsibility for and the authority to direct all actions necessary to respond to the emergency.
- B. The primary responsibility of the individual in charge is to assure that all emergency response functions are carried out. Upon activation of the Plan, this individual is freed of all other responsibilities and thus able to focus on managing the emergency response.
- C. Specific individuals are assigned the responsibility of carrying out predefined critical actions and emergency measures.
- D. There is a mechanism established to provide additional resources as necessary to respond to the emergency, which provides continuity of response on each critical action.

This concept of organization is compatible with and integrated into the normal mode of operation. The shift operating crew is routinely required to correct minor malfunctions of equipment and to diagnose the consequences of radioactivity releases. There are a number of procedures to guide operators in responding to equipment malfunctions and instrument alarms. There are also procedures to maintain effective control over contamination and radiation exposures. Emergency procedures basically involve an extension of these existing plant procedures.

### **2.2 Emergency Organization**

---

The emergency response resources available to respond to an emergency consist of the personnel at the plant, at Corporate Headquarters, at other Company nuclear plants, the Harris Energy & Environmental Center and, in the longer term, at other organizations involved in the nuclear industry. Throughout Progress Energy there exists a staff of well-trained and experienced engineers, scientists, and technicians. These personnel represent a pool of technical expertise that can be called upon to provide additional support to the corporate emergency response and recovery organizations, if required. Corporate emergency response personnel do not receive specific training for emergency response and do not take actions which implement this emergency plan.

The plant Emergency Response Organization (ERO) is composed of a broad spectrum of personnel with specialties in operations, maintenance, engineering, radiochemistry, health physics, material control, fire protection, security, and emergency planning. The greatest numbers of personnel with these specialties are available during day shift operations; however, needed specialists can be recalled to the site at any time.

The first line of defense in responding to an emergency lies with the normal on-duty operating shift when the emergency begins. Shift members are assigned defined emergency response roles, as shown in Table 2.2-1 that are to be assumed whenever an emergency is declared. As additional personnel are called in to the plant, a smooth transition occurs since each individual knows ahead of time what their responsibilities will be. A current call list of ERO members is maintained in the Main Control Room and procedures are available to activate the ERO automatically or manually.

The Company is committed to providing staffing to effectively contain any emergency which might occur at its nuclear facilities. Depending on the emergency at hand, personnel with required expertise will be contacted on a priority basis as shown in Table 2.2-1. Additional personnel will be available to provide communications, on-site and off-site radiological assessment, repair and corrective actions, and technical support within a short period of time. Depending on weather conditions, 30-45 minutes should provide enough time to make the appropriate staff available to augment the plant on-shift organization. The plant ERO will continue to be augmented such that within 60-75 minutes after notification, additional personnel will be added to provide the necessary support. Additional personnel will continue to supplement the on-site ERO as necessary to meet the requirements of this Plan.

The fully augmented on-site ERO is shown in Figure 2.2-1 and personnel assignments are provided in Table 2.2-1 and/or procedures. The on-site ERO utilizes the basic plant organization structure as the principle guideline in emergency assignments. This philosophy assures whenever possible, that personnel will be performing emergency functions that are similar to their normal operating duties. Each emergency position has a succession of command from assigned, trained alternates.

### **2.3 Command and Control**

---

The position of Site Emergency Coordinator is activated for command and control purposes upon declaration of an emergency. Until relieved by the Emergency Response Manager, the Site Emergency Coordinator is delegated the authority to act on behalf of the Company to manage and direct all emergency operations involving the facility. Upon activation of the Emergency Operations Facility, the Emergency Response Manager assumes responsibility of overall emergency response and performs those requirements for all off-site related activities. The Site Emergency Coordinator maintains overall on-site emergency responsibilities including emergency classification and, after EOF activation, reports to the Emergency Response Manager.

The Superintendent - Shift Operations on duty at the time the emergency is declared shall initially assume the position of Site Emergency Coordinator from the Main Control Room.

The following conditions for command and control apply:

- A. If the Site Emergency Coordinator becomes incapacitated for any reason, a designated alternate shall assume the position of Site Emergency Coordinator.
- B. Once the Technical Support Center is activated the position of Site Emergency Coordinator is transferred from the Main Control Room to a qualified individual in the TSC.

- C. The Site Emergency Coordinator, or Emergency Response Manager after the EOF is activated, may not delegate the responsibility for notification of and making recommendations to authorities responsible for off-site measures.
- D. The Site Emergency Coordinator may consult with others, but may not delegate the responsibility to determine the appropriate emergency action level for the conditions.
- E. The Site Emergency Coordinator is authorized to request Federal and State assistance until the EOF is activated, whereupon such requests are made under the direction of the Emergency Response Manager.

**NOTE:** If deemed prudent in order to ensure an adequate response to the emergency, the Site Emergency Coordinator-MCR may direct that the TSC and/or EOF assume responsibility for any/all discrete functions prior to reaching full staffing levels or to activate only those functions which the SEC-MCR feels are necessary for an adequate emergency response.

- F. The conditions for transfer of designated responsibilities from the Superintendent-Shift Operations (Site Emergency Coordinator-MCR) to the Site Emergency Coordinator-TSC and the Emergency Response Manager (EOF) are:
  - 1) The TSC and EOF are ready to be activated and to assume emergency functions.
  - 2) The Site Emergency Coordinator-TSC and the Emergency Response Manager have received a briefing on the status of the emergency.

## **2.4 Assignment of Responsibilities**

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All emergency response personnel with responsibilities listed in 2.4.1 through 2.4.5 will:

- Be trained and qualified to perform the assigned responsibilities as specified in Section 5.2.
- Be formally relieved by a qualified alternate trained for duty in the particular position before leaving that position.
- Maintain a record of activities where appropriate.

### **2.4.1 Main Control Room**

- A. Superintendent-Shift Operations: Until an emergency is declared, the Superintendent-Shift Operations has the following responsibilities relating to the Emergency Plan:
  - 1) Direct the activities of the Operations staff (USCOs, COs, and NLOs).
  - 2) Recognize an off-normal condition as indicated by instrument readings or observation.
  - 3) Implement any Emergency Operating Procedures.

- 4) Determine when an Emergency Action Level has been met or exceeded, declare an emergency, and assume the position of Site Emergency Coordinator-MCR.

B. Site Emergency Coordinator-MCR: The primary person assigned to the position of Site Emergency Coordinator-MCR during the initial stages of an emergency is the Superintendent-Shift Operations. The assigned alternates are on-shift Licensed Senior Control Operators as designated in accordance with operations procedures. Once the Technical Support Center is activated the responsibilities of Site Emergency Coordinator-MCR are turned over to the Site Emergency Coordinator-TSC and the Emergency Response Manager in accordance with the implementing procedures.

The Site Emergency Coordinator-MCR, shall not delegate the following responsibilities:

- 1) Classification of the emergency.
- 2) Approval of required notifications made to the State/Counties and the NRC.
- 3) Establishment of on-site mission priorities in response to the emergency.
- 4) Approval of planned radiation exposures for HNP personnel in excess of 5 Rem TEDE or entry into radiation fields greater than 25 Rem/hr.
- 5) Review and approval of deviations from Technical Specifications or license conditions.
- 6) Authorization of the administration of Potassium Iodide to on-site emergency workers.
- 7) Approval of Protective Action Recommendations made to the State/Counties.
- 8) Termination of the emergency.

C. Plant Operations Director: The Plant Operations Director, located in the Main Control Room after activation of the Technical Support Center, is responsible to the Site Emergency Coordinator-TSC for providing direction to the Main Control Room Staff, the Fire Brigade, and the First Aid Teams. The POD is trained as a SAMG decision maker whose focus is on the operational aspect of the strategy developed by the TSC.

D. Fire Brigade Team Leader: A Fire Brigade Team Leader is established on all shifts. When a fire occurs, the Fire Brigade Team Leader is the on-scene commander for fighting the fire and directs the activities of the Fire Brigade. The Fire Brigade Team Leader reports to the Site Emergency Coordinator-MCR or to the Plant Operations Director after activation of the Technical Support Center.

- E. **Fire Brigade:** When a fire is announced, the Fire Brigade reports to the Fire Brigade Team Leader. If a fire occurs, the Fire Brigade reports to the Fire Staging Area where fire-fighting equipment is located, and then responds to the fire scene. The fire brigade is composed of on-shift personnel trained in fighting fires as described in Section 5.2.
- F. **First Aid Team:** A First Aid Team is established on all shifts. The First Aid Team performs/coordinates emergency first aid and search and rescue activities. The First Aid Team reports to the Site Emergency Coordinator-MCR or to the Plant Operations Director after activation of the Technical Support Center.
- G. **Emergency Communicator-MCR:** Initially filled with on-shift personnel, is appointed by and reports to the Site Emergency Coordinator-MCR and is responsible for communicating with:
- 1) Off-site authorities (County, State, NRC, and so forth) to perform required notifications of the declaration, upgrading, termination of an emergency prior to the activation of the TSC and EOF.
  - 2) The plant Emergency Response Organization (during off-hours) when HNP emergency facilities are being activated.
  - 3) Local Immediate Response Organizations (medical, fire, law enforcement, and so forth) if their assistance is needed.

#### 2.4.2 Technical Support Center

- A. **Site Emergency Coordinator-TSC:** The Site Emergency Coordinator-TSC is responsible for overall command and control of the on-site response to the emergency. The Site Emergency Coordinator is also responsible for providing guidance to the Technical Analysis Director, Radiological Control Director, Communications Director, Security Director, Plant Operations Director and the Emergency Repair Director.

Upon activation of the Technical Support Center the Site Emergency Coordinator-TSC relieves the Site Emergency Coordinator-MCR of the following major responsibilities:

- 1) Classification of the emergency.
- 2) Establishment of on-site mission priorities in response to the emergency.
- 3) Approval of planned radiation exposures for on-site personnel in excess of 5 Rem TEDE or entry into radiation fields greater than 25 Rem/hr.
- 4) Review and approval of deviations from Technical Specifications or license conditions if the Site Emergency Coordinator-TSC is a Superintendent-Shift Operations, or ensure that such deviations are approved by a Superintendent-Shift Operations.
- 5) Authorization of the administration of Potassium Iodide to on-site emergency workers.



- 6) A trained SAMG decision maker whose focus is on the development and prioritization aspect of the SAMG strategy.
  - 7) Termination of the emergency.
- B. TSC-Senior Reactor Operator: The TSC-Senior Reactor Operator is located in the Technical Support Center and reports to the Site Emergency Coordinator-TSC and directs the TSC-ERFIS Operator. The TSC-Senior Reactor Operator is responsible for providing technical assistance related to plant conditions and operations and to perform monitoring and evaluations required for Severe Accident Management Guidelines.
- C. TSC-ERFIS Operator: The Technical Support Center ERFIS Operator reports to the TSC-SRO and is located in the Technical Support Center. The position is responsible for providing/displaying any information from ERFIS requested by Technical Support Center personnel.
- D. Technical Analysis Director: The Technical Analysis Director reports to the Site Emergency Coordinator-TSC and is located in the Technical Support Center. The Technical Analysis Director is responsible for providing direction to the Technical Support Center Accident Assessment Team, perform monitoring and evaluation required for Severe Accident Management Guidelines and to direct AAT members to evaluate strategies that implement Severe Accident Management Guidelines.
- E. TSC-Accident Assessment Team: The TSC-Accident Assessment Team reports to the Technical Analysis Director and is located in the Technical Support Center. The team is composed of a Shift Technical Advisor, Core Performance Engineer, Electrical/I&C Engineer, and Mechanical Engineer. They are responsible for providing recommendations to the Technical Analysis Director on problems as assigned.
- F. Communications Director: The Communications Director, located in the Technical Support Center, reports to the Site Emergency Coordinator TSC. The Communications Director is responsible for providing direction to the Emergency Communicator-NRC, TSC-Telecomm/Computer Support, TSC Logkeeper and the Admin Team.
- G. Emergency Communicator-NRC: The Emergency Communicator-NRC is located in the Technical Support Center and reports to the Communications Director. The Emergency Communicator-NRC is responsible for:
- 1) Generating required written notifications to the NRC in a timely manner.
  - 2) Establishing contact with the NRC via the Emergency Telecommunications System and providing any requested information of the status of the emergency.

- H. TSC-Telecomm/Computer Support: TSC-Telecomm/Computer Support personnel are located in the Technical Support Center and report to the Communications Director. They are responsible for providing technical assistance required in the areas of telecommunications or computer support.
- I. TSC Admin Team: The TSC Admin Team is located in the Technical Support Center and is composed of a Librarian and Admin Support personnel. They report to the Communications Director and are responsible for providing any documents, prints or other clerical services as requested by personnel in the Technical Support Center.
- J. TSC Logkeeper: The TSC Logkeeper is located in the Technical Support Center and reports to the Communications Director. The TSC Logkeeper is responsible for recording the major activities that occur in the Technical Support Center during an emergency.
- K. Radiological Control Director: The Radiological Control Director is located in the Technical Support Center and reports to the Site Emergency Coordinator-TSC. The Chemistry Coordinator and the Radiological Control Coordinator, both located in the Operations Support Center, report to the Radiological Control Director. The Radiological Control Director is responsible for:
- 1) Providing direction to onsite health physics and chemistry emergency response actions.
  - 2) Ensuring that the Site Emergency Coordinator and other Directors in the Technical Support Center are kept informed of radiological/chemical conditions on and off site.
- L. TSC HP Technician: The TSC HP Technician, normally located in the Technical Support Center, reports to the Radiological Control Director and is responsible for providing radiological support and monitoring activities within the TSC.
- M. Security Director: The Security Director, normally located in the Technical Support Center, reports to the Site Emergency Coordinator-TSC and has the following major responsibilities:
- 1) Maintaining plant security in accordance with the provisions of the HNP Security Plan and Safeguards Contingency Plan.
  - 2) Coordinating the accountability of personnel inside the Protected Area.
  - 3) Providing Security Force personnel in support of emergency activities.

#### 2.4.3 Operations Support Center

- A. Emergency Repair Director: The Emergency Repair Director, located in the Operations Support Center, reports to the Site Emergency Coordinator-TSC. The Emergency Repair Director is responsible for providing direction to the total on-site maintenance and equipment restoration effort from the Operations Support Center.

- B. Damage Control Coordinator: The Damage Control Coordinator, located in the Operations Support Center, reports to the Emergency Repair Director. The Damage Control Coordinator is responsible for providing direction to the Damage Control Team Leaders, Maintenance Planners, and OSC Logkeeper.
- C. Damage Control Team Leaders: The Damage Control Team Leaders are appointed by the Damage Control Coordinator. They are responsible to the Damage Control Coordinator for on-the-scene supervision of the Damage Control Teams to which they are assigned.
- D. Damage Control Teams: The Damage Control Teams are dispatched by the Damage Control Coordinator, from their initial assembly point in the Operations Support Center, to the scene of an emergency repair or damage assessment requirement. The Damage Control Teams report to the on-scene Damage Control Team Leader and are composed of mechanical, instrument and control, and electrical maintenance personnel.
- E. Maintenance Planners: Maintenance Planners, located in the Operations Support Center, report to the Damage Control Coordinator. The Maintenance Planners are responsible for developing plans for emergency repair, determining spare parts needed to make the repairs and estimating the amount of time required to perform the emergency repairs.
- F. OSC Logkeeper: The OSC Logkeeper, located in the Operations Support Center, reports to the Damage Control Coordinator. The OSC Logkeeper is responsible for recording the major activities that occur in the Operations Support Center during an emergency.
- G. Radiological Control Coordinator: The Radiological Control Coordinator, located in the Operations Support Center, is responsible to the Radiological Control Director for providing direction to the Radiological Control Teams during an emergency.
- H. Radiological Control Teams: Radiological Control Teams report to the Radiological Control Coordinator and are composed of health physics personnel. They assemble initially in the Operations Support Center and are subsequently dispatched wherever personnel radiation control and decontamination functions are needed.
- I. Chemistry Coordinator: The Chemistry Coordinator, located in the OSC, is responsible to the Radiological Control Director for providing direction to the Chemistry Team during an emergency.
- J. Chemistry Team: Chemistry Teams report to the Chemistry Coordinator and are composed of plant chemistry personnel. They assemble initially in the Operations Support Center and are subsequently dispatched to sampling stations and the laboratory.

#### 2.4.4 Emergency Operations Facility

- A. Emergency Response Manager: The Emergency Response Manager, located in the Emergency Operations Facility, is responsible for overall command and control of the HNP response to the emergency. The Emergency Response Manager is also responsible for providing guidance to the Technical Analysis Manager, Radiological Control Manager, Communications Manager, and the Admin and Logistics Manager.

Upon activation of the Emergency Operations Facility the Emergency Response Manager relieves the Site Emergency Coordinator-MCR of the following major responsibilities:

- 1) Approval of required notifications to the State/Counties.
- 2) Approval of planned radiation exposures for off-site HNP personnel in excess of 5 Rem TEDE or entry into radiation fields greater than 25 Rem/hr.
- 3) Approval of the administration of Potassium Iodide to off-site HNP emergency workers.
- 4) Approval of Protective Action Recommendations.
- 5) Direct interface with offsite authorities.
- 6) Coordination of Dose Projection and Environmental Monitoring activities.
- 7) A trained SAMG decision maker whose focus is on the offsite consequences of the strategy recommended by the TSC. The ERM has the ultimate approval authority for strategy implementation.

- B. EOF-Senior Reactor Operator: The EOF-Senior Reactor Operator is located in the Emergency Operations Facility and reports to the Emergency Response Manager. The EOF-Senior Reactor Operator is responsible for providing technical information and assistance related to plant conditions and operations.
- C. EOF ERFIS Operator: The EOF ERFIS Operator reports to the EOF Senior Reactor Operator and is located in the Emergency Operations Facility. The position is responsible for providing/displaying any information from ERFIS requested by Emergency Operations Facility personnel.
- D. Emergency Preparedness Advisor: The Emergency Preparedness Advisor, located in the Emergency Operations Facility, reports to the Emergency Response Manager in the EOF and advises the Emergency Response Manager and other Emergency Response Organization personnel on implementation of the Emergency Plan and implementing procedures.
- E. News Coordinator: The News Coordinator, located in the Emergency Operations Facility, reports to the Emergency Response Manager. The News Coordinator has the responsibility for preparing and coordinating the approval of news releases.

- F. Administrative and Logistics Manager: The Administrative and Logistics Manager, located in the Emergency Operations Facility, reports to the Emergency Response Manager and is responsible for direction of activities of the Administrative Team Leader and Admin Building Assembly Area Leader.
- G. EOF Telecomm/Computer Support: EOF Telecommunications/Computer Support personnel are located in the EOF and report to the Administrative and Logistics Manager. They are responsible for providing technical assistance required in the areas of telecommunications or computer support.
- H. Admin Team Leader: The Admin Team Leader, located in the Emergency Operations Facility, reports to the Administrative and Logistics Manager and is responsible for directing the actions of the Admin Team.
- I. Admin Team: The Admin Team, located in the Emergency Operations Facility, consists of a Setup Leader, Librarian and Admin Support personnel. They report to the Admin Team Leader and are responsible for providing any documents, prints or other clerical services as requested by personnel in the Emergency Operations Facility.
- J. EOF Logkeeper: The EOF Logkeeper is located in the Emergency Operations Facility and reports to the Admin Team Leader. The EOF Logkeeper is responsible for recording the major activities that occur in the Emergency Operations Facility during an emergency.
- K. Assembly Area Leader: The Assembly Area Leader is responsible to the Admin and Logistics Manager, or prior to activation of this position, the Site Emergency Coordinator, for coordinating the activities in the Admin Building Assembly Area.
- L. Technical Analysis Manager: The Technical Analysis Manager reports to the Emergency Response Manager and is responsible for direction of activities of the Emergency Operations Facility Accident Assessment Team.
- M. EOF Accident Assessment Team: The EOF Assessment Team reports to the Technical Analysis Manager and is located in the Emergency Operations Facility. The team is composed of a Civil Engineer, Electrical Engineer, I&C Engineer, and Mechanical Engineer. They are responsible for providing recommendations to the Technical Analysis Manager on problems as assigned.
- N. Radiological Control Manager: The Radiological Control Manager, located in the Emergency Operations Facility, reports to the Emergency Response Manager. The Radiological Control Manager is responsible for providing direction to the Dose Projection Team Leader, Technical Advisor and the EOF Health Physics Technician. The Radiological Control Manager is also responsible for:
- 1) Providing direction to offsite health physics emergency response actions.
  - 2) Ensuring that the Emergency Response Manager and other Managers in the EOF are kept informed of radiological/chemical conditions on and off site.

- O. EOF HP Technician: The EOF HP Technician, normally located in the Emergency Operations Facility, reports to the Radiological Control Manager and is responsible for providing radiological support and monitoring activities within the EOF.
- P. Technical Advisor: The Technical Advisor, located in the Emergency Operations Facility, reports to the Radiological Control Manager. The Technical Advisor assists the Radiological Control Manager and staffs the HPN Line when requested by the NRC.
- Q. Dose Projection Team Leader: The Dose Projection Team Leader, located in the Emergency Operations Facility, reports to the Radiological Control Manager. The Dose Projection Team Leader provides guidance to the Environmental Field Coordinator and the Dose Projection Team.
- R. Dose Projection Team: The Dose Projection Team reports to the Dose Projection Team Leader and is located in the Emergency Operations Facility. The Dose Projection Team is responsible for performing source term and offsite dose calculations.
- S. Environmental Field Coordinator: The Environmental Field Coordinator, located in the Emergency Operations Facility, is responsible to the Dose Projection Team Leader. The Environmental Field Coordinator is responsible for providing direction to the Environmental Monitoring Teams.
- T. Environmental Monitoring Teams: Environmental Monitoring Teams report to the Environmental Field Coordinator after activation of the Emergency Operations Facility, or, prior to activation of the Emergency Operations Facility, to the Site Emergency Coordinator -MCR. Teams assemble at HE&EC and are subsequently dispatched in vehicles to the surrounding area. They are responsible for offsite plume tracking, monitoring and other sampling activities.
- U. Communications Manager: The Communications Manager, located in the Emergency Operations Facility, reports to the Emergency Response Manager. The Communications Manager is responsible for providing direction to the Emergency Communicator-State/County and the Representatives to the State and County EOCs.
- V. Emergency Communicator-State/Counties: The Emergency Communicator-State/Counties, located in the Emergency Operations Facility, reports to the Communications Manager. The Emergency Communicator-State/Counties is responsible for conducting timely notification and transfer of emergency information to the State and Counties.
- W. Emergency Communicator-Corporate Comm/JIC: The Emergency Communicator-Corporate Comm/JIC, located in the Emergency Operations Facility, reports to the Communications Manager. The Emergency Communicator-Corporate Comm/JIC is responsible for providing information to support public information emergency response activities.
- X. Representatives to the State/County EOCs: The Representatives to the State/County EOCs are located at the following:

N.C. State EOC	State Administrative Building in Raleigh, N.C., and is the principle Emergency Operations Center.
Wake County EOC	Wake County Courthouse, Raleigh, N.C.
Chatham County EOC	Law Enforcement Center, Pittsboro, N.C.
Hamett County EOC	Law Enforcement Center, Lillington, N.C.
Lee County EOC	Sanford Municipal Center, Sanford, N.C.

These representatives act as technical liaisons to facilitate communications and the coordination of information flow between the Site Emergency Coordinator or Emergency Response Manager and State/local authorities. They report to the Communications Manager in the Emergency Operations Facility.

#### 2.4.5 Joint Information Center

- A. Company Spokesperson: The Company Spokesperson, located in the Joint Information Center, reports to the Emergency Response Manager. The Company Spokesperson is responsible for providing guidance to the JIC Director, Admin Coordinator and Public Information Coordinator. The Company Spokesperson also has the following major responsibilities:
  - 1) Maintain command and control of the Joint Information Center.
  - 2) Coordinates and directs responses to media inquiries.
  - 3) Ensure that the composition and timeliness of Progress Energy News Releases are adequate.
  - 4) Conduct periodic briefings with the news media.
  - 5) Provide for timely exchange of information between other spokespersons.
- B. Technical Specialist: The Technical Specialist, located in the Joint Information Center, reports to the Company Spokesperson. The Technical Specialist is responsible for obtaining and developing technical emergency information.
  - 1) Gather information from the EOF for Progress Energy news media briefings.
  - 2) Provide timely and accurate technical information to the media during formal briefings.
- C. JIC Director: The JIC Director, located in the Joint Information Center, reports to the Company Spokesperson. The JIC Director is responsible for the development and coordination of news releases and dissemination of information.
- D. Administrative Coordinator: The Administrative Coordinator, located in the Joint Information Center, reports to the Technical Specialist. The Administrative Coordinator provides guidance to the Administrative Assistants and Media Badging Specialist.

- E. Administrative Assistant: The Administrative Assistant, located in the Joint Information Center, reports to the Administrative Coordinator. The Administrative Assistant is responsible for providing administrative services and supplies to Joint Information Center personnel.
- F. Media Badging Specialist: The Media Badging Specialist, located in the Joint Information Center, reports to the Administrative Coordinator. The Media Badging Specialist is responsible for controlling access to the Media Briefing Area and distributing information.
- G. Public Information Coordinator: The Public Information Coordinator, located in the Joint Information Center, reports to the Company Spokesperson and directs the activities of the Public Information Specialists.
- H. Public Information Specialist: The Public Information Specialist, located in the Joint Information Center, reports to the Public Information Coordinator. The Public Information Specialist is responsible for staffing telephone lines to respond to calls from the media and public.

## **2.5 Outside Organization Support**

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Outside organizations that support HNP in an emergency are described in Annex G.



On-Shift Staffing For Emergencies

Functional Area	Major Tasks	Emergency Positions	Minimum Shift Size	Capability for Additions	
				30-45 min	60-75 min
1. Plant Operations and Assessment of Operational Aspects	Control Room Staff	SSO <sup>(c)</sup>	1	--	--
		USCO	1	--	--
		Control Operators	2	--	--
		Non-Licensed Operators	2 <sup>(d)</sup>	--	--
2. Emergency Direction and Control	--	SEC-MCR (SSO <sup>(b)</sup> )	1	--	--
		ERM <sup>(a)</sup>	--	--	1
		SEC-TSC <sup>(a)</sup>	--	--	1
3. Notification & Communication	Emergency Communicator	Plant Personnel	1	1	2
4. Radiological Assessment	Offsite Dose Assessment	Dose Projection Team Leader	--	1	--
	Offsite Surveys	Environmental Monitoring Team Personnel	--	2	2
	Onsite Surveys	Environmental Monitoring Team Personnel	--	1	1
	In-plant Surveys	Radiological Control Team Personnel	1	1	1
	Chemistry	Chemistry Team Personnel	1	--	1

(Continued on next page)

## NOTES:

- (a) Overall direction of facility response is assumed by the ERM when all facilities are activated. The direction of minute-to-minute facility operations remains with the SEC-TSC.
- (b) On shift responsibility prior to activation of the EOF and TSC.
- (c) After Activation of the EOF and TSC.
- (d) One of the two non-licensed operators may be assigned to the Fire Brigade.

TABLE 2 (continued)

**On-Shift Staffing For Emergencies**

Functional Area	Major Tasks	Emergency Positions	Minimum Shift Size	Capability for Additions	
				30-45 min	60-75 min
5. Plant Engineering Repair and Corrective Actions	Technical Support	Shift Technical Advisor	1	--	--
		Core Performance Engineering	--	1	--
	Repair and Corrective Actions	Mechanical Engineering	--	--	1
		Electrical Engineering	--	--	1
		Mechanical Maintenance	1 <sup>(e)</sup>	--	2
		Electrical/I&C Maintenance	1 <sup>(e)</sup>	2	1
6. In-Plant Protective Actions	Radiation Protection	Radiological Control Team Personnel	1 <sup>(e)</sup> 1	2	2
7. Fire Fighting	--	--	5 <sup>(f)</sup>	Local Support	
8. First Aid and Rescue Operations	--	Plant Personnel	2 <sup>(e)</sup>	--	--
9. Site Access Control	Security & Accountability	Security Team Personnel	(g)	(g)	(g)
<b>HNP TOTAL (Less Security):</b>			<b>15</b>	<b>11</b>	<b>16</b>

## NOTES:

(e) May be provided by shift personnel assigned other functions.

(f) Fire Brigade per FSAR 9.5.1

(g) Per Security Plan.

Figure 2.2-1

**On-Site Emergency Response Organization**

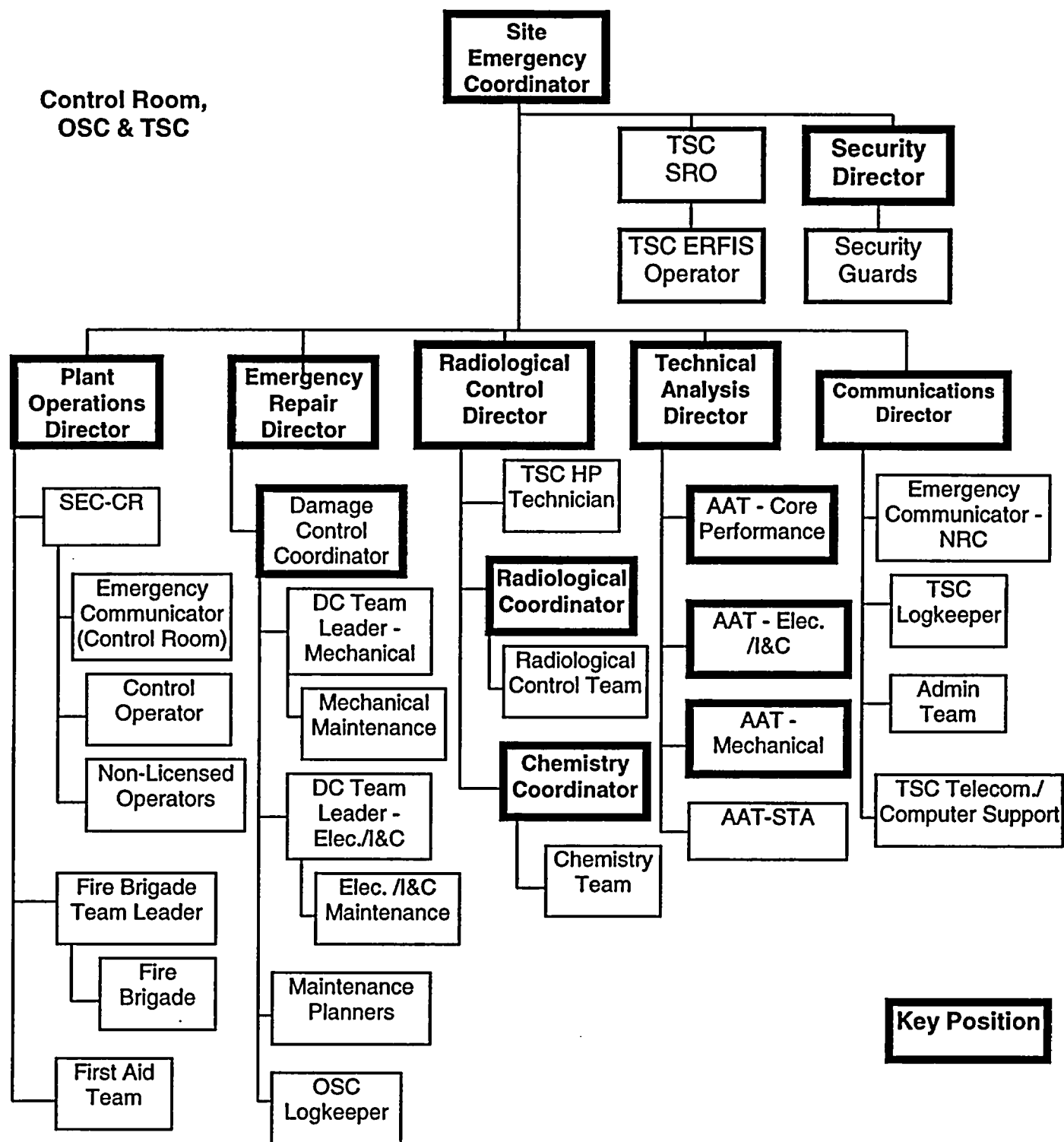
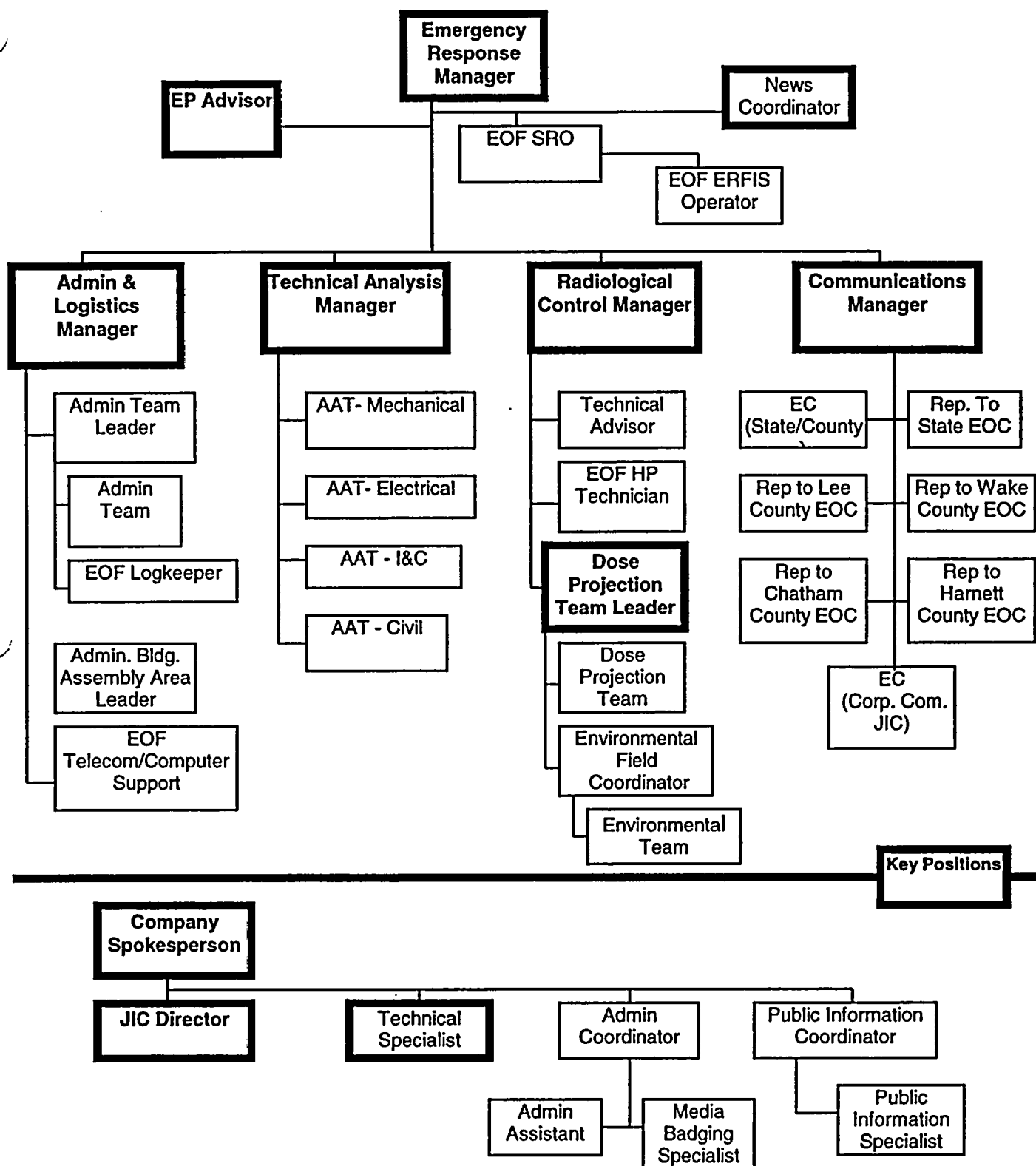


Figure 2.4-1

**Off-Site Emergency Response Organization**



## **3.0 EMERGENCY FACILITIES, COMMUNICATIONS, AND EQUIPMENT**

### **3.1 General**

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The purpose of emergency response facilities is to provide centralized locations for organized command and control of on-site activities and off-site activities performed by the Company such as environmental monitoring. Different groups within the Emergency Response Organization are provided with a location from where they may direct or perform the activities for which they are responsible while providing for coordination of activities with other organizations.

Adequate emergency facilities, communications, and equipment to support emergency response are provided and maintained. Progress Energy Emergency Plans include provision for emergency response facilities as follows:

- Main Control Room (MCR)
- Technical Support Center (TSC)
- Operations Support Center (OSC)
- Emergency Operations Facility (EOF)
- Joint Information Center (JIC)

The Main Control Room is an emergency response facility that is operational on a day-to-day basis. Initially the emergency actions and in plant response would be directed by the Site Emergency Coordinator from the Main Control Room. Operations personnel would be dispatched from their work area located immediately north of the Main Control Room with assistance from on-shift health physics, maintenance, and security personnel as needed.

The facilities, other than the Main Control Room, are unmanned or used for other purposes on a day-to-day basis. In the event of an emergency, the TSC, OSC, EOF, and JIC would be activated in accordance with Section 4 of this Plan, "Emergency Measures and Operations."

In addition to the emergency response facilities, provision is made for on-site and off-site geophysical phenomena monitors (meteorological and seismic); radiological monitors; process monitors; and fire and combustion products detectors for use in initiating emergency measures and assessing the emergency. Each of these is described in subsequent paragraphs of this Chapter. Typical emergency supplies available for emergency facilities are indicated in Table 3.1-1.

### **3.2 Main Control Room (MCR)**

---

#### **3.2.1 Characteristics**

- A. Located in the Reactor Auxiliary Building as shown in Figure 1.5-3.
- B. Main Control Room habitability and radiation protection is as described in Section 6.4 of the FSAR.

#### **3.2.2 Functions**

- A. Reactor and plant control.
- B. Interim location for Site Emergency Coordinator.
- C. Accident recognition, classification, and mitigation.
- D. Notification of off-site agencies.
- E. Alerting of on-site personnel.
- F. Initial dose projections.
- G. Recommendations for immediate protective actions for the public.
- H. Activation of HNP/Progress Energy emergency response facilities and recall of emergency personnel.

#### **3.2.3 Emergency Equipment and Supplies**

- A. Main Control Board.
- B. Emergency Response Facility Information System (ERFIS).
- C. Safety Parameter Display System (SPDS is part of ERFIS).
- D. Measurement and Indication of Regulatory Guide 1.97 (Rev. 2) variables (ERFIS).
- E. Radiation Monitoring System (RMS).
- F. Fire Detection System (adjacent room).
- G. Seismic Monitoring Cabinet.
- H. Gross Failed Fuel Detector Console.
- I. Kitchen and sanitary facilities.
- J. Reliable voice communications with the TSC, OSC, EOF, NRC Operations Centers, and State and local government 24-hour warning points and State EOC.
- K. See Table 3.1-1.

### **3.3 Technical Support Center (TSC)**

---

#### **3.3.1 Characteristics**

- A. Located within the Protected area at Elevation 324'-0" in the Fuel Handling Building, Section "K," approximately 400 feet walking distance from the Main Control Room (MCR) (primary route).
- B. Protective clothing and portable breathing apparatus are kept in both the TSC and Main Control Room for personnel who must traverse between the two. Alternative paths are available that can be used based upon radiological conditions as determined by monitoring teams.
- C. Exterior walls, roof, and floor are built to Seismic Category I, tornado, wind, and missile safety-related criteria.
- D. Provided with radiation protection equivalent to Main Control Room habitability requirements such that the dose to an individual in the TSC for the duration of a design basis accident is less than 5 Rem TEDE. The Emergency Ventilation System includes HEPA and carbon filtration.
- E. Environmentally controlled to provide room air temperature, humidity and cleanliness appropriate for personnel and equipment.
- F. Reliable power for habitability systems and battery pack emergency lighting are provided.
- G. Equipment is nonsafety-related and nonredundant.
- H. Designed taking into account good human factors engineering principles.

#### **3.3.2 Functions**

- A. Command center for Site Emergency Coordinator and assigned staff upon TSC activation. The TSC is officially activated by the Site Emergency Coordinator (SEC) when the necessary personnel and equipment are assembled at the TSC to carry out an emergency response function required by the emergency conditions.
- B. Receives and displays plant status and parameters data on ERFIS.
- C. Provides notifications to the NRC via Emergency Telecommunications System.
- D. Provides plant management and technical support to plant operations personnel.
- E. Directs emergency response teams in the plant.
- F. Assists the Main Control Room in accident assessment.
- G. Performs emergency classification.

### **3.3.3 Emergency Equipment and Supplies**

- A. Reliable voice communications with the Main Control Room, EOF, OSC, NRC Operations Center and State and local government 24-hour warning points and State EOC as described in Section 3.8 which follows.
- B. Video System capable of displaying ERFIS information (such as, plant data, SPDS, and RMS) as discussed in Section 3.9.1.
- C. All reference materials, including Mechanical and Electrical Systems Drawings; Plant Operating Manual; FSAR; Corporate, Plant, State, and Local Emergency Plans, are available in hardcopy or online.
- D. Decontamination and monitoring area.
- E. Survey meter and area radiation monitor.
- F. Fax and photocopier equipment.
- G. See Table 3.1-1.

## **3.4 Operations Support Center (OSC)**

---

### **3.4.1 Characteristics**

- A. Located in the Waste Processing Building inside the Protected Area (Figure 1.5-3).
- B. The total area is approximately 1500 square feet in the Waste Processing Building HP Tech Work Area. This area includes a separate Command and Control area for coordinating and planning of OSC activities in addition to sufficient area for team members to standby for activities. Additional space in excess of 8500 square feet is available in adjacent offices and locker rooms to accommodate additional personnel as may be required.
- C. Alternate locations include the Turbine Building 261' North and Technical Support Center.

### **3.4.2 Functions**

- A. Assembly location for emergency teams for receipt of special equipment and assignments.
- B. Dispatching of emergency teams.

### **3.4.3 Emergency Equipment and Supplies**

- A. Reliable voice communications with the Main Control Room, EOF, and TSC.
- B. Supplies and equipment as shown in Table 3.1-1.



### **3.5 Emergency Operations Facility (EOF)**

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#### **3.5.1 Characteristics**

- A. Located at Harris Energy & Environmental Center within 10 miles of the plant (see Figure 1.5-2).
- B. Approximately 4800 square feet of space for approximately 70 persons including 14 NRC personnel.
- C. Shielded to a protection factor (PF) of 5 and ventilated with an Emergency Ventilation System, with HEPA and carbon filtration, such that the total 30 day dose from all sources of a design basis accident for an individual in the EOF does not exceed 5 Rem TEDE or its equivalent to any other part of the body.
- D. Structurally built in accordance with Uniform Building Code.
- E. Environmentally controlled to provide room air temperature, humidity, and cleanliness appropriate for personnel and equipment.
- F. Backup power for habitability systems and battery pack emergency lighting are provided.
- G. Provided with security to maintain readiness and to exclude unauthorized personnel when activated.
- H. Designed taking into account good human factors engineering principles.
- I. Alternate assembly area location for EOF staff is the 11th floor of Progress Energy Building in Raleigh, N.C.

#### **3.5.2 Functions**

- A. Command center for Emergency Response Manager and assigned staff.
- B. Upon activation, performs off-site notification, protective action recommendations, environmental monitoring, and dose projection.
- C. Emergency communications systems monitoring and control.
- D. Provides technical analysis and support.
- E. Receives and displays plant status and parameters data on ERFIS.
- F. Serves as the Recovery Center during recovery operations.
- G. Primary location for writing technical news releases. The EOF may provide space for the media on a case-by-case basis, when authorized by the ERM.

#### **3.5.3 Emergency Equipment and Supplies**

- A. Reliable voice communications with the TSC, Main Control Room, OSC, NRC Operations Centers and State and local government 24-hour warning points and State EOC as described in Section 3.8.

- B. Video system capable of displaying ERFIS information (such as, plant data, SPDS, and RMS) as discussed in Section 3.9.1.
- C. All Reference materials, including Mechanical and Electrical Systems Drawings; Plant Operating Manual; FSAR; Corporate, Plant, State, and Local Emergency Plans, are available in hardcopy or online.
- D. Decontamination and monitoring area.
- E. Survey meter and dosimetry.
- F. Maps showing evacuation routes, evacuation areas, preselected radiological sampling and monitoring points, relocation centers in host areas, and shelter areas.
- G. Fax and photocopier equipment.
- H. Additional equipment as discussed in Section 3.8.2.
- I. See Table 3.1-1.

### **3.6 Joint Information Center (JIC)**

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- A. Located at the Progress Energy Building (11th floor) in downtown Raleigh, approximately 21 miles from the plant, with a media briefing room available for press conferences (located in the Raleigh Convention and Conference Center, also in downtown Raleigh).
- B. Serves as the primary location for accumulating accurate and current information regarding the emergency conditions and writing non-technical news releases.
- C. Provides work space and phones for public information personnel from the state, counties, NRC, FEMA, and industry-related organizations.
- D. Provides telephones for use by the news media personnel.
- E. Provides responses to media inquiries through media communicators who staff telephones that the media can call for information about an emergency.
- F. Implements provisions for rumor control by providing a number of telephones which members of the public, who hear rumors, can call for factual information.

### **3.7 Non-Progress Energy Facilities**

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#### **3.7.1 North Carolina-State Emergency Facilities**

- A. **North Carolina State Emergency Operations Center (SEOC)**
  - 1) Assembly location for Governor, State Emergency Response Team and other officials as described in the State of North Carolina Emergency Response Plan.
  - 2) Primary location for the coordination with federal, state, local authorities, and HNP as described in the State of North Carolina Emergency Response Plan.

- 3) Primary facility located at the Division of Emergency Management Headquarters, 116 W. Jones Street, Raleigh, North Carolina.
- 4) Alternate facility located at the Disaster Recovery Operations Center, 1830-B Tillery Place, Raleigh, North Carolina.

**B. State Emergency Response Team (SERT)**

- 1) A designated staff of specialists who assist State officials as described in the State of North Carolina Emergency Response Plan.
- 2) Located at the Division of Emergency Management Headquarters, 116 W. Jones Street, Raleigh, North Carolina.

**3.7.2 County Emergency Operations Centers**

**A. Chatham County Emergency Operations Center (EOC)**

- 1) Located in the Law Enforcement Center in Pittsboro
- 2) Functions are described in the State of North Carolina Emergency Response Plan

**B. Harnett County Emergency Operations Center (EOC)**

- 1) Located in the Harnett County Law Enforcement Building in Lillington.
- 2) Functions are described in the State of North Carolina Emergency Response Plan.

**C. Lee County Emergency Operations Center (EOC)**

- 1) Located in the Police Department of the Sanford Municipal Center, Sanford, N.C.
- 2) Functions are described in the State of North Carolina Emergency Response Plan.

**D. Wake County Emergency Operations Center (EOC)**

- 1) Located in the Wake County Courthouse in Raleigh.
- 2) Functions are described in the State of North Carolina Emergency Response Plan.

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**3.8 Communications Systems**

**3.8.1 Plant Communications System**

A description of the plant communications systems is contained in Section 9.5.2 of the FSAR and consists of the following:

- A. Private Automatic Branch Exchange (PABX) Telephone System covering the Main Control Room, TSC, EOF, and OSC.**

- B. Site paging system (accessed by Telephone System).
- C. Sound-powered telephone system.
- D. Two radio communications networks, one for security and one for operations.
- E. Dedicated radio system from security center to local law enforcement agencies.
- F. Plant PABX telephone system is powered from batteries charged by a rectifier.
- G. Backup power is provided to fixed radio equipment.

### 3.8.2 Harris E&E Center PABX Telephone and Other Radio Systems

- A. The Harris E&E Center (HE&EC) PABX telephone system includes:
  - 1) The HE&EC Private Automatic Branch Exchange (PABX) telephone system covers the Main Control Room, TSC, EOF, and OSC.
  - 2) An off-site Notification System (Selective Signaling System) provides communications to State and County warning points and Emergency Operations Centers from the Main Control Room, TSC, EOF, and Auxiliary Control Panel.
  - 3) The HE&EC PABX telephone system is powered from batteries charged by a rectifier.
- B. Other radio system includes:
  - 1) Radio communications (separate from plant radios) with mobile and portable units used by the Environmental Monitoring Teams.
  - 2) Radio communications on the State Environmental Monitoring and Area B Channels.
  - 3) Mobile and portable radios are battery-powered.

### 3.8.3 Off-Site Communications Systems

- A. Corporate Telephone Communications System is interconnected with plant PABX and utilizes microwave transmission equipment.
- B. Commercial telephone connections to PABX, emergency telephone system, dedicated lines to emergency facilities, and lines to the Joint Information Center.
- C. Load Dispatcher Radio Communications.
- D. NRC Emergency Telecommunications System (ETS) Phone.
- E. NRC Health Physics Network (HPN) Phone.

### 3.8.4 Dialogic Communicator Automated Notification System

A computerized emergency response personnel call out computer is available to notify the HNP Emergency Response Organization personnel and the NRC resident inspector

of emergency declarations at the plant. The system provides instructions for activation of the on-site emergency facilities and the near site Emergency Operations Facility. Provisions are provided for remote activation of the system via telephone lines and for password protection from unauthorized use of the system.

### **3.9 Assessment Equipment**

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Use of the equipment described in this section during an emergency is detailed in Plant Procedures.

#### **3.9.1 Emergency Response Facilities Information System (ERFIS) and Safety Parameter Display System (SPDS)**

ERFIS receives raw data from sensors in the field and processes the data to provide meaningful information for the user. The ERFIS system consists of the following major parts: Field input multiplexer, ERFIS Host Computer, Plant Process Network, Plant Server, and ERFIS-EDS personal computer work-stations. ERFIS-EDS work-stations are located in the Main Control Room, Technical Support Center (TSC), Emergency Operations Facility (EOF) and the ERFIS Computer Room. Some designated work-stations will have the capability to access the Site Business Local Area Network (LAN) when not in ERFIS-EDS mode. The TSC and EOF work-stations can be configured to run from the Simulator during drills and exercises.

The field input multiplexer obtains analog, digital, and sequence-of-events inputs from field sensors. The ERFIS Host receives these inputs, converts the raw analog inputs to engineering units, and updates the Current Value Table (CVT) at rates of 0.1 to 30 seconds. Processing consists of alarming points that exceed predefined limits, archiving input data, and performing various calculations and reports on a periodic or on-demand basis.

The ERFIS-EDS Plant Servers contain a copy of the CVT that is updated over shared memory with the ERFIS Host. The ERFIS-EDS work-stations are connected to the servers via dedicated Ethernet LANs. The work-stations communicate with the server in EDS Mode or over a serial link to the ERFIS Host in Emulation Mode. User functions use one of these two methods of communication. EDS tasks are those that run on the local work-station and get CVT data from the server. Emulation tasks use serial communication with the ERFIS Host and receive the entire display over the serial link.

There is a Primary and Backup ERFIS Host computer and a Primary and Backup ERFIS-EDS Plant Server. When a failure occurs on a primary system, an automatic failover occurs to the backup system. Failover of the ERFIS Host and ERFIS-EDS Server occur independently of each other.

The Safety Parameter Display System (SPDS) is a software subsystem of the ERFIS. The SPDS consists of a top-level display showing the status of Critical Safety Function Parameters at all times and a general display area for a summary display, graphic display of status trees, or plots of key parameters. An assigned SPDS display is provided in the Main Control Room and ERFIS terminals in any location can display SPDS.

The SPDS will access all-available signals and will display information related to:

#### **A. Subcriticality**

- B. Core Cooling
- C. Heat Sink
- D. (Reactor Vessel) Integrity
- E. Containment
- F. (Reactor Coolant System) Inventory

Secondary displays will consist of graphic representations of the above critical safety functions and their status.

Additional detail and design criteria for the SPDS are provided in Item I.D.2 of the FSAR TMI Appendix.

### 3.9.2 Seismic and Hydrological Data

HNP has two distinct and separate seismic monitoring systems for the site. A seismic monitoring system, described in Section 3.7.4 of the FSAR and PLP-114, is located inside safety-related structures and measures horizontal and vertical acceleration. A second system, consisting of two free field strong motion detectors, is located at points on-site and must be read locally at each location. The recorded analog signal can be put on tape playback in the Main Control Room.

Offsite seismic monitoring information can be obtained from the United States Geological Survey's National Earthquake Information Center.

The design basis flood, probable maximum precipitation, and other improbable, conceivable extremes in hydrologic natural phenomena are well below any design limits for this site. Refer to FSAR Sections 2.4.2 and 2.4.3.

### 3.9.3 Radiological Monitoring

The Radiation Monitoring System (RMS) is a plant-wide radiation information gathering and control system encompassing the process and effluent monitors and the area and airborne monitors. Radiological monitors are provided for plant systems as described in the FSAR Sections 11.5 and 12.3.4

Effluent radiological monitors are provided for:

- Plant Vent Stacks
- Turbine Building Drains
- Tank Area Drain Transfer Pumps
- Treated Laundry and Hot Shower Tank Pumps
- Secondary Waste Sample Tank
- Main Steam Lines

The types, ranges, and locations of monitors are listed in Tables 11.5.2-1, 11.5.2-2 and 12.3.4-1 of the FSAR.

Typical portable radiation monitors and laboratory equipment are described in Section 12.5 of the FSAR.

The locations of the normal off-site and on-site environmental monitoring stations and the location of the TLD monitoring stations are described in the Off-Site Dose Calculation Manual. Additional predetermined emergency off-site monitoring locations are contained in environmental monitoring procedures.

The Radiation Monitoring System, (RMS) provides the necessary activity or radiation levels required for determining source terms in dose projection procedures. The RMS is data linked to the ERFIS and radiation monitoring channel values are available in the TSC and EOF via ERFIS. The isotopic mix is based upon the mix discussed in NUREG-1741. Grab samples and on-site or off-site monitoring samples can then be analyzed to determine the true isotopic mix and the results used in the computerized dose projection software.

#### 3.9.4 Normal and Post-Accident Sampling Systems

The Primary Sampling System and the Secondary Sampling System are available to collect routine fluid and gaseous samples as described in FSAR 9.3.2.

The post-accident sampling system is designed to collect and analyze targeted fluid and gaseous samples under accident conditions. The system consists of two major components, the liquid sample system and the remote sample dilution panel, or RSDP. The RSDP's purpose is to obtain containment atmosphere samples and it relies on the containment hydrogen monitoring system (FSAR 6.2.5) to be in service to provide a pathway for sample collection.

Samples results are one of several methods used to provide information in support of core damage and offsite dose assessment activities.

#### 3.9.5 Meteorological Instrumentation

The plant has a permanent meteorological monitoring station located within the exclusion area boundary for display and recording of wind speed, wind direction, and differential temperature for use in making off-site dose projections. Meteorological information is presented in the Main Control Room, the TSC, and the EOF by means of a computer. Additional information on the on-site meteorological monitoring system can be found in Section 2.3.3 of the FSAR.

Progress Energy has the capability to access the National Weather Service on a 24-hour-per-day basis to provide backup should the on-site system fail. This backup source of meteorological data is the closest location which can provide reliable representative meteorological information.

Contracted weather services may be contacted during severe weather periods. They analyze national and local weather in order to provide localized weather forecasts for the System or for the HNP area as appropriate. The meteorologists can provide forecasts and current data reflecting conditions corresponding to their evaluation of weather data received from the National Weather Service and other sources. The NRC

and State agencies may contact the weather service for appropriately formatted information and check meteorology data (current and forecasted) for the HNP area.

In the event that the on-site meteorological tower or monitoring instrumentation becomes inoperative and the meteorologists cannot be contacted, meteorological data may be obtained directly from the National Weather Service in Raleigh, North Carolina.

#### **3.9.6 Field Monitoring Equipment**

Field monitoring equipment will have at least the capability to detect and measure radioiodine in the vicinity of the plant site as low as  $1 \times 10^{-7} \mu\text{Ci}/\text{cm}^3$ . An individual exposed to this concentration for a period of one hour would receive an exposure of about 0.2 Rem or less, a value well below Protective Action Guideline (PAG) levels (See Section 4). A standard air sampler can collect about 0.03  $\mu\text{Ci}$  of I-131 in 10 minutes at a concentration of  $1 \times 10^{-7} \mu\text{Ci}/\text{cm}^3$ , which can easily be measured by hand survey meters that utilize probes such as the HP-210. This is a simple test that can serve as an initial check of projected releases based on plant data and can confirm that significant quantities of elemental iodine have been released (the chemical form that would pose a health hazard). More detailed measurements (such as, Sodium Iodide scintillation counters) can be brought into service to provide the longer term higher capabilities to detect and measure very low levels of contamination in the environment, as would be planned for subsequent radiation monitoring efforts.

#### **3.9.7 Laboratory Facilities**

Support of the on-site radiation monitoring and analysis effort is provided by HNP's chemistry and counting room facility. This laboratory is the central point for receipt and analysis of in-plant samples and includes equipment for chemical and radioactive analyses. Section 12.5 of the FSAR provides information on laboratory facilities. Additional facilities for counting and analyzing HNP samples can be provided by the H.B. Robinson Nuclear Plant and the Brunswick Nuclear Plant. These laboratories can act as backup facilities in the event that the plant's counting room and laboratory become unusable during an emergency.

Support of the off-site environmental radiation monitoring and analysis effort is provided by the N.C. Radiation Protection Section's laboratory facility, both mobile and fixed and the HE&EC's chemistry and counting room facility. The State's laboratories are the central point for receipt and analysis of off-site samples when HNP is acting as a support agency to the State for ingestion pathway functions. Each lab includes equipment for chemical analyses and for analysis of radioactivity.

#### **3.9.8 Other Plant Assessment Equipment**

- A. Fire Detection System (FSAR Sections 9.5.1 and 9.5.A)
- B. Gross Failed Fuel Detection System
- C. Security Systems (Security Plan)
- D. Metal Impact Monitoring System (FSAR Section 5.4.6.4)



Table 3.1-1

**Typical Emergency Supplies Available For Emergency Facilities**

Supplies	MCR	TSC	JIC	OSC	EOF
7 Day supply of food and water.	✓				
Protective Clothing (Anti-Cs)	✓	✓		✓	✓
Air Sampling equipment	✓	✓		✓	✓
Full face respirators	✓	✓		✓	✓
Self-contained breathing equipment	✓	✓		✓	
High and low range portable radiation survey instruments	✓	✓		✓	✓
Emergency personnel monitoring dosimetry	✓	✓		✓	✓
Contamination control supplies such as signs, tags, rope, tape, various forms	✓	✓		✓	✓
Decontamination supplies		✓		✓	✓
Portable Communications Equipment	Radio Remotes	Radio <sup>(a)</sup> Remotes	(a)	✓	Radio <sup>(a)</sup> Remotes
Battery-Powered Lanterns		✓	✓	✓	✓
Polaroid Camera				✓	
Mechanical and electrical systems drawings, Plant Operations Manual, FSAR, Corporate, State & Local Emergency Plans		✓			✓
10-mile EPZ Area maps <sup>(c)</sup>	✓	✓	✓		✓
Copy of Plant Emergency Plan and Procedures	✓	✓	✓	✓ <sup>(d)</sup>	✓
Environmental Monitoring Kits					(b)
Potassium Iodide Tablets	✓	✓		✓	✓

✓ Indicates equipment/supplies available in this facility

<sup>(a)</sup> Portable radio transceivers can be supplied to any emergency facility

<sup>(b)</sup> Stored near the Harris E&E Center

<sup>(c)</sup> Annex H of Emergency Plan in the MCR, wall maps in other facilities.

<sup>(d)</sup> Procedures Only

## **4.0 EMERGENCY MEASURES AND OPERATIONS**

Execution of the HNP Emergency Plan involves a variety of functions including emergency classification, notification, activation, assessment, protective response actions, and recovery. Recovery is discussed in Section 6 of this Plan.

State and local governments and other agencies provide support in implementing the emergency measures in this section as shown in Table 4.0-1 and Annex G.

### **4.1 Emergency Classification**

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The four classes of emergency are Unusual Event (equivalent to NRC Notification of Unusual Event), Alert, Site Area Emergency, and General Emergency. The operating staff is provided formal training to recognize off-normal plant conditions and categorize them within the parameters of the four emergency classes.

Emergency action levels are based upon the fission product barrier concept. The three barriers that protect the public from a release of radioactive fission products (fission product barriers) are the fuel cladding, the reactor coolant system boundary, and the containment. This concept has its basis in NUREG-0654, Appendix 1 where emergency events are found that correspond to failures or jeopardy of the three basic fission product barriers. The concept used is that if any one of the fission product barriers are in jeopardy or breached, an Alert will be declared. If any combinations of two barriers are either in jeopardy or breached, a Site Area Emergency is declared. If all three are in any combination of jeopardy or breach, a General Emergency is declared. The categorizations of events in NUREG-0654, Appendix 1 for Unusual Events are separately evaluated as they do not directly correspond with failure or jeopardy of a fission product barrier. In addition to looking at the status of fission product barriers, the emergency action levels include the NUREG-0654 emergency action level events that are external to the plant, (natural or man-made disaster phenomena), or are not directly attributable to the condition of the reactor, (shutdown systems, fire, dose projections).

The categorization of events according to one of the four emergency classes is implemented through the Emergency Action Level (EAL) system. The system is composed of two subsystems: The Unusual Event Action Level Matrix and the EAL Network/Flow Path. The Unusual Event Action Level Matrix provides a set of plant conditions and events which coincide with the conditions associated with the Unusual Event. The Unusual Event Action Level Matrix is presented at the bottom of Figure 4.1-2. For the upper three emergency classes, the Emergency Action Level (EAL) System uses an integrated set of flowchart instructions. As with the Unusual Event Action Levels, the EAL System also associates plant conditions and events with the three upper classes of emergency, but it does so through a symptomatic (vice diagnostic) methodology using critical safety function status trees.

This allows the EAL System to interface smoothly with the Emergency Operating Procedure (EOP) Network, thus assuring the rapid and correct classification of emergencies. Figures 4.1-1 and 4.1-2 are the flowcharts which together form the EAL Network. Abnormal Operating Procedures, Functional Restoration Procedures, End Path Procedures, and Flow Path Procedures contain specific direction for using the EAL Network whenever conditions warrant. A Plant Emergency Procedure provides the Unusual Event Action Levels, the EAL Network, the EAL Flow Path, as well as instructions for using them.

The Site Emergency Coordinator (or the Superintendent-Shift Operations when no emergency has been declared) will declare any one of the four emergency classes where EALs have been exceeded, or in their judgment, the status of the plant warrants such a declaration.

#### **4.2 Notification**

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- A. The warning message form to the State and Counties is contained in PEP-310 and provides information required by NUREG-0654, II.E.3 and 4. The form is approved by the Site Emergency Coordinator-MCR or Emergency Response Manager after EOF activation and provided to the appropriate Emergency Communicator (EC-Control Room or EC-State/County) as a message text.
- B. The Emergency Communicator will use the electronic Notification Form on OSI soft/Plant Information System (OSI/PI) or the Selective Signaling System phone to simultaneously notify the 24-hour-per-day, manned, State Warning Point, State EOC and County Warning Points with the notification message. Emergency Operations Centers will be notified upon activation at the State and Counties in lieu of the Warning Points. This message will be initiated to all Counties and the State within 15 minutes for all emergency classifications.
- C. The North Carolina Emergency Response Plan in Support of the Harris Nuclear Power Plant describes procedures for State and Local officials to make a public notification decision promptly (within about 15 minutes) on being informed by the plant of an emergency.
- D. Event notifications to the NRC will be made as soon as possible and within one hour using a Reactor Plant Event Notification worksheet or other notification message approved by the SEC-CR/ERM.
- E. Plant personnel designated on the Emergency Response Organization are notified of an emergency condition by the Emergency Communicator using a computer-based automated duty roster system and a system of pagers. These personnel are requested to be available on site to respond as directed by the Site Emergency Coordinator. During a Security Threat alternate assembly areas may be used to protect the responding ERO.
- F. Personnel on site are notified by the Main Control Room using a plant Public-Address System announcement that an emergency has been declared and what actions should be taken.
- G. Corporate personnel on the Emergency Response Organization will be notified of an emergency at HNP in accordance with plant emergency procedures.
- H. The off-site agencies that will be notified of an emergency condition at HNP are shown in Tables 4.2-1 through 4.2-4.
- I. Notifications to off-site agencies shall include a means of verification or authentication such as the use of dedicated communications networks, verification code words, or providing callback verification phone numbers.

### **4.3 Activation**

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- A. Facilities are to be activated for each emergency class in accordance with Tables 4.2-1 through 4.2-4. The facilities can be declared activated when minimum staffing levels (as specified in the implementing procedures) have been met.
- B. The Communications Director will verify the readiness and operability of emergency facilities in the Technical Support Center (TSC) and the Administrative and Logistics Manager will verify the readiness and operability of the Emergency Operations Facility (EOF).
- C. The Emergency Repair Director will verify the readiness of the Operations Support Center.
- D. The Company Spokesperson will verify the readiness of the Joint Information Center.
- E. Security measures will be established for the Emergency Operations Facility upon its activation.
- F. Personnel in the Emergency Response Organization will report to their preassigned locations in the emergency facilities.

### **4.4 Assessment Actions**

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#### **4.4.1 Evaluation of Plant Conditions**

- A. Evaluation of plant conditions by Operations personnel is accomplished through observation of the control boards, monitoring panels, ERFIS data displays, the SPDS displays, and information provided by the Accident Assessment Teams in the TSC and EOF.
- B. The Accident Assessment Teams evaluate plant conditions by using ERFIS displays, damage assessment reports, seismic data, fire reports, dose projections, and monitoring data.
- C. Core damage assessment methodology is applied by the TSC Accident Assessment Team utilizing data provided from the ERFIS, the Main Control Room, the Radiation Monitoring System, and the Chemistry Team.

#### **4.4.2 Plant Radiological Monitoring**

- A. The Radiation Monitoring System (RMS) will be used by Operations personnel and Radiological Control Team members to determine radiological conditions within the plant or abnormal radioactive effluents.
- B. The Radiological Control Team will provide in-plant radiological measurements to supplement and confirm the RMS.

- C. The Primary and Post-Accident Sampling is performed by the Chemistry Teams, to provide radiochemistry samples for analysis. The location for sampling is dependent on the anticipated radioactivity of the sample. Both the primary sample sink and the post accident sample panel may be used. Results of the samples will assist in the determination of core damage and dose assessment activities.

#### 4.4.3 Dose Projection

- A. Dose projections will be made to determine the off-site doses that might result from an accident and the possible need for protective action (see 4.5.1).
- B. The dose projection capability on the computer can use source term data from the Radiation Monitoring System and meteorological data from the on-site meteorological station. This system will aid personnel in the Main Control Room or EOF in determining recommendations for protective action for the public.
- C. Data from the Radiation Monitoring System that is used to determine the source term for dose projections is quality tagged. If the data is off-scale, then it is suspect or bad, and the effluent radiation levels must be determined by sampling at the radiation monitor test points. The results from analyzing the samples can be entered into the dose projection program as a substitute value.
- D. Radionuclide mix assumptions (the accident source term) are contained in the computerized dose projection program as default values for use until actual sampling data can be substituted.
- E. The National Weather Service and contracted weather sources will be contacted as needed to forecast atmospheric conditions affecting the site.

#### 4.4.4 Environmental Monitoring

- A. Environmental sampling and monitoring points are specified in environmental monitoring procedures.
- B. Environmental Monitoring Teams will be activated in accordance with Table 2.2-1 and the appropriate implementing procedures. Additional teams can be called upon for support as needed.
- C. The Environmental Monitoring Teams will track the plume from any radiological release by monitoring radiation levels as indicated on radiological measuring instruments and by obtaining and analyzing air samples.
- D. The Environmental Monitoring Teams will aid in assessing liquid release pathways by sampling liquid effluents, such as the cooling tower blowdown.
- E. Additional TLDs will be placed at various locations near the site and be periodically replaced throughout an emergency to ensure that a cumulative dose record is obtained.

## 4.5 Protective Actions for the Public

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### 4.5.1 Protective Action Guides

- A. Exposure guidelines for the plume pathway are based on the Environmental Protection Agency Protective Action Guides (PAGs) discussed in EPA-400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents" as follows:

**IF:**

Projected dose is:  
< 1 Rem TEDE  
and  
< 5 Rem CDE Thyroid

**THEN:**

No actions are necessary.

Projected dose is:  
≥ 1 Rem TEDE  
or  
≥ 5 Rem CDE Thyroid

Evacuate unless constraints make it impractical. Shelter as a minimum.

- B. If projected doses exceed minimum EPA PAGs and timely evacuation is practical, then evacuation is recommended. If timely evacuation is not practical then sheltering may be recommended.
- 1) HNP personnel normally do not have the necessary information to determine whether off site conditions would require sheltering instead of evacuation. An effort to base Protective Action Recommendations on external factors (such as road conditions, traffic/traffic control, weather or offsite emergency response capabilities) is usually performed by the State.
  - 2) The State may consider sheltering for doses up to 5 Rem TEDE for hazardous environmental conditions, and for doses up to 10 Rem TEDE for special populations. Hazardous environmental conditions may include the presence of severe weather or competing disasters. Special populations may include institutionalized or infirm persons.
- C. The State may consider the use of KI (potassium iodide) for doses equal to or greater than 5 REM CDE adult thyroid. This PAG dose trigger is referenced in the North Carolina Radiological Emergency Response Plan, Annex K - RADIOLOGICAL PROTECTIVE DRUGS

### 4.5.2 Protective Action Recommendations (PARs)

- A. Protective action guidelines for the plume pathway EPZ are based on NUREG-0654 Supplement 3, "Criteria for Protective Action Recommendations for Severe Accidents."

- B. Plant conditions, projected dose and dose rates, and/or field monitoring data are evaluated to develop PARs for the purpose of preventing or minimizing exposure to the general public. PARs are made to the State and County agencies that are responsible for implementing protective actions for the general public within the plume exposure EPZ. PARs are approved by the Emergency Response Manager. In an emergency which requires immediate protective actions be taken prior to activation of the emergency facilities, notification approval is given by the SEC-CR directly to the State and County agencies.
- C. Possible recommendations issued by HNP at a General Emergency include:
- 1) Evacuation of the general public within the two (2) mile radius and five (5) miles downwind. All other areas within the EPZ are sheltered (minimum PAR issued).
  - 2) Evacuation of the general public within the five (5) mile radius and ten (10) miles downwind. All other areas within the EPZ are sheltered.
  - 3) Consideration of the use of KI (potassium iodide).

#### 4.5.3 Ingestion Pathway Protective Measures

The responsibility for specifying protective measures to be used for the ingestion pathway rests with the State. These measures include the methods for protecting the public from exposure due to deposited radioactive materials and the consumption of contaminated water and foodstuffs.

#### 4.5.4 Public Alerting, Warning, and Notification

Alerting, warning, and notification of the public are steps taken by government agencies to advise the public that protective actions are necessary. Alerting, warning, and notification will be provided by sounding sirens, activation of tone-activated radios within five miles of the plant, and supplemented by announcements made through radio and television (EAS), sound trucks, bullhorns, and knocking on doors. Patrol boats will be used in alerting people on Jordan Lake and Harris Lake in accordance the North Carolina Emergency Response Plan in support of the Shearon Harris Nuclear Power Plant Annex G. Supplemental sirens are provided for alerting boaters on Harris Lake. Public warning when deemed necessary will be accomplished as described in the North Carolina Emergency Response Plan in Support of the Shearon Harris Nuclear Power Plant. Preplanned emergency messages and emergency instructions have been prepared and included as Annex D to that plan.

Civil defense sirens mounted on 50-foot utility poles have been installed by Progress Energy at various locations within a 10-mile radius of the HNP.

Activation of the sirens for warning of the public will be accomplished from the county Warning Points or county Emergency Operations Centers: the Public Safety Communications Centers of Harnett and Lee Counties, the Emergency Operations Center of Chatham County, and the Raleigh Communications Center or the Emergency Operations Center for Wake County. The sirens in each county are independently controlled by radio. The outdoor warning system provides the capability for providing an alerting signal within the 10-mile EPZ, within 15 minutes from the time the decision is made to notify the public of an emergency situation.

Activation of the tone alert radios by the National Weather Service will be accomplished after they receive a request from Wake County or the State of North Carolina. The tone alert radios provide an indoor alerting signal within a 5-mile radius of the plant.

#### **4.6 Protective Actions for On-Site Personnel**

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##### **4.6.1 On-Site Alerting, Warning, and Notification**

The Plant Public-Address (PA) System will be used to alert and notify on-site personnel of an emergency condition within 15 minutes. Security personnel with portable loudspeakers may be used to augment the PA system and/or check evacuation of outlying areas, as available. The Plant PA System has the capability to transmit recognizable alarms which will alert personnel of an emergency situation, and to transmit voice communications which will notify personnel of those actions which should be taken. The Plant PA System is supplemented by the use of the normal and emergency communication systems located on site as described in Section 3.8 of this Plan.

##### **4.6.2 Evacuation and Personnel Accountability**

All personnel on-site will be accounted for within 30 minutes of the declaration of a Site Area Emergency or General Emergency and continuously thereafter during the emergency (accountability may be accomplished at any time prior to the declaration of a Site Area Emergency, if deemed appropriate). Accountability may be delayed during a security event if the SEC (in consultation with Security) determines that performing accountability could be detrimental to the safety of plant personnel. If accountability is delayed, then accountability should be performed immediately when conditions warrant.

Personnel within the Protected Area will be accounted for and missing individual(s) will be identified by Security. Continuous accountability of personnel remaining inside the protected area will be maintained throughout the event. PEP-350 describes the accountability methodology. Search procedures will be implemented to locate unaccounted for persons.

Evacuation of on-site personnel can be accomplished, in accordance with PEP-350, for the Site or the Exclusion Area.

- A. A Site Evacuation involves evacuation of all nonessential personnel within the Protected Area, Admin Building, parking lots, cooling tower area, sewage treatment plant, landfill, and intake structures. The site evacuation alarm will be sounded on the Plant PA system. Nonessential personnel (that is, personnel not on the ERO or assisting with the emergency) within the Protected Area will normally exit the Protected Area via the security building in accordance with normal Security procedures. Evacuating personnel may be monitored for contamination by the portal monitors as they exit the Protected Area or with portable friskers in the evacuation monitoring area, based on the situation. ERO personnel not assigned to emergency duties will travel to the HE&EC auditorium. Personnel not on the ERO or assisting with the emergency shall depart the site using personal transportation and follow established evacuation routes.

Personnel without transportation will arrange for a ride from others who have space in their vehicles.



Nonessential personnel exiting the site will be directed to either proceed to their homes or if radiological conditions warrant, reassemble at a selected off-site assembly area until off-site monitoring and decontamination stations are in place. Personnel exiting evacuated areas will be monitored and decontaminated, if necessary, at county monitoring stations.

- B. An Exclusion Area Evacuation involves evacuation of all nonessential personnel and the public within the Protected Area and the site, as well as the surrounding areas controlled by Progress Energy within the Exclusion Area Boundary. In addition to sounding the plant evacuation alarm, personnel in outlying areas can be notified by patrol vehicles. If conditions warrant, evacuating personnel will be instructed to reassemble at the selected remote assembly area until county monitoring and decontamination stations are established.
- C. Local evacuations relating to Radiation Control Areas and fire protection are conducted in accordance with plant procedures.

#### 4.6.3 Radiological Exposure Control

##### A. Radiological and Contamination Control Facilities

Radiation safety controls are established 24 hours per day to contain the spread of loose surface radioactive contamination and monitor personnel exposure. HNP contamination control limits are shown in Table 4.6-1. Emergency exposure guidance is given in Section 4.6.3.D of this plan. The radiation control facilities located in the Waste Processing Building include a contaminated laundry and storage area, clean laundry and storage area, personnel and equipment decontamination area. Additional areas where equipment is decontaminated are located in the Reactor Auxiliary Building (on the 236' and 261' levels) and at the north end of the Fuel Handling Building (on the 261' level). Radiation control and radiation control procedures are described in Section 12.5 of the FSAR.

Temporary facilities to limit contamination and exposure will be established as necessary during an emergency situation. As an example, facilities which can be used for personnel decontamination during an emergency are located in the Turbine Building and at the Harris Energy & Environmental Center. Radiation Control Areas can be expanded by roping off areas and/or establishing access control points to maintain personnel exposure As Low As Reasonably Achievable (ALARA).

##### B. Exposure Records for Emergency Workers

Emergency workers will receive self reading pocket dosimeters (SRPDs) or equivalent and TLD badges. Dose records will be maintained by the Radiological Control Coordinator in accordance with PEP-330. TLDs are read at the Harris Energy & Environmental Center. They are capable of staffing 24-hour a day.

##### C. Use of Protective Equipment and Supplies

During the course of an emergency, protective actions will be considered to minimize the effects of radiological exposures or contamination problems

associated with personnel who must work within the affected Radiation Control Area. Measures that will be considered are:

- Use of process or engineering controls.
- Distribution of respirators.
- Use of protective clothing.
- Use of thyroid blocking agents (Potassium Iodide).

The criteria for issuance of respiratory protection and protective clothing are described in plant radiological protection procedures.

Procedures for the administration of radioprotective drugs to employees are described in the plant emergency procedures.

**D. Emergency Worker Exposure**

- 1) Dose Limits for workers in an emergency are taken from EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," U.S. Environmental Protection Agency, May 1992. Much of the discussion in this section is taken in whole from that document.
- 2) In emergency situations, workers may receive exposure under a variety of circumstances in order to assure protection of others and of valuable property. These exposures will be justified if the maximum risks or costs to others that are avoided by their actions outweigh the risks to which the workers are subjected (or collective dose avoided by the emergency operation is significantly larger than that incurred by the workers involved).
- 3) Emergency Worker Dose Limits are as follows:

Dose Limit (Rem TEDE)	Activity	Condition
5	All	
10	Protecting valuable property	Lower dose not practicable
25	Lifesaving or protection of large populations	Lower dose not practicable
> 25	Lifesaving or protection of large populations	Only on a voluntary basis to persons fully aware of the risks involved.

- 4) Limit dose to the lens of the eye to three (3) times the above values and doses to any other organ (including thyroid, skin and body extremities) to ten (10) times the above values.
- 5) Routine dose limits shall not be extended to emergency dose limits for declared pregnant individuals. As in the case of normal occupational exposure, doses received under emergency conditions should be maintained as low as reasonably achievable.

- 6) Entry into radiation fields of greater than 25 Rem/hour or emergency exposures in excess of 5 Rem TEDE shall not be permitted unless specifically authorized by the Site Emergency Coordinator for on-site emergency workers and by the Emergency Response Manager for EOF or EOF dispatched personnel.
- 7) Persons undertaking any emergency operation in which the dose will exceed 25 Rem TEDE should do so only on a voluntary basis and with full awareness of the risks involved including the numerical levels of dose at which acute effects of radiation will be incurred and numerical estimates of the risk of delayed effects.
- 8) Personnel who will receive emergency related exposure should be selected and controlled in accordance with guidelines contained in the implementing procedures.

E. Decontamination and First Aid

1) Treatment of Injured and Contaminated Persons

Personnel decontamination supplies are located near the WPB 261' First Aid Station. Personnel showers are located in the general area of the main RCA entrance (WPB 261'). Chemical decontamination agents are available from Radiation Control personnel and, except in cases of severe or life-threatening injury, established decontamination procedures should be employed on site prior to medical treatment.

2) Initial First Aid

In cases of severe injury, lifesaving first aid or medical treatment will take precedence over personnel decontamination. In general, the order of medical treatment will be:

- Care of severe physical injuries or illness.
- Personnel decontamination.
- First aid to other injuries.
- Definitive medical treatment and subsequent therapy as required.

Definitive medical treatment, therapy, and evaluation may include radioprotective drugs, urinary bioassays, or whole body counts on persons suspected of inhaling or ingesting a significant amount of radioactive material or may include surveillance and therapy for persons receiving a large whole body dose.

Emergency first aid personnel are available on all shifts. Personnel who are contaminated and who require medical treatment may be treated by these personnel on the scene or at other appropriate locations.

It is anticipated that contaminated personnel will not leave the facility for medical treatment except for cases that require immediate hospitalization. Emergency treatment of contaminated personnel will normally be handled at the plant First Aid Room by personnel on the First Aid Team(s).

First Aid kits are located in various areas of the plant (see ORT-3002). The First Aid Stations/Kits contain various equipment/items necessary to treat injured personnel until off-site agencies can transport patient to appropriate treatment center, if applicable.

3) Decontamination

Radiation safety controls are established to contain the spread of loose surface radioactive contamination. Personnel and equipment leaving contaminated areas are monitored to ensure that equipment, personnel or their clothing are not contaminated. If contaminated above acceptable levels (see Table 4.6-1), they will be decontaminated in accordance with plant procedures. Supplies, instruments and equipment that are in contaminated areas or have been brought into contaminated areas will be monitored for contamination. If found to be contaminated, they will be decontaminated using normal plant decontamination techniques and facilities (discussed in Section 4.6.3.A) or may be disposed of as radwaste.

During emergency conditions, normal plant contamination control criteria will be adhered to as much as possible. Contamination control criteria for returning areas and items to normal use are contained in the plant Health Physics Procedures. These criteria are summarized in Table 4.6-1.

4) Medical Transportation

The Apex Rescue Squad, Inc. has agreed to respond to emergency calls from the plant, including transporting persons with injuries involving radioactive contamination. This service is available on a 24-hour-per-day basis. In cases not involving severe injury, one of the plant vehicles may be used to transport injured individuals. The Apex Rescue Squad, Inc. is included in Annex A, "Agreements".

In cases involving severe injury, the Superintendent - Shift Operations or Site Emergency Coordinator may bypass the Apex Rescue Squad, Inc. and directly call Carolina Air Care or Duke Life Flight and request helicopter transport provided the injured is free of radioactive contamination.

Contaminated injured persons will be accompanied to a medical facility by a Radiation Control Team member carrying survey instrument. If possible, contaminated clothing and equipment may be removed from the patient or the patient may be wrapped in clean sheets or clothing to prevent contamination of the transporting personnel and vehicle.

Rescue vehicles have mobile communications with the Raleigh Communications Center and local receiving hospitals. The plant first aid

team can communicate directly with the rescue vehicles by dialing the cellular phone located in the rescue vehicles.

F. Medical Treatment

1) Hospital Facilities

A specially designated emergency area is maintained in readiness at Rex Hospital for HNP's use for the treatment of contaminated or overexposed patients from the plant. Although this area will be utilized by the hospital when not required by HNP, it will be made available to HNP when required. Equipment is available in the hospital for the emergency treatment of patients. With the facilities and equipment available, extensive decontamination and treatment of an injured patient could be performed, including any surgical treatment that may be required.

WakeMed Raleigh and WakeMed Cary serve as backup medical facilities for HNP personnel should Rex Hospital become unavailable. WakeMed Raleigh serves as the primary medical facility for trauma patients from HNP. WakeMed Raleigh, and Betsy Johnson Regional Hospital, in Dunn, N.C., also possesses the capability for the treatment of contaminated and/or overexposed members of the public.

An emergency kit is maintained at Rex Hospital, WakeMed Raleigh and WakeMed Cary containing supplies and equipment for personnel monitoring and the control of radioactive contamination. These kits contain the following:

- Low-range radiation monitoring instruments for determining contamination levels.
- Personnel monitoring equipment such as self-reading pocket dosimeters and TLDs.
- Decontamination equipment and supplies for both personnel and facility.
- Contamination control equipment and supplies such as protective clothing, signs, ropes, tags, plastic bags.

Agreements with Rex Hospital, WakeMed Raleigh and WakeMed Cary are maintained on file by HNP Emergency Preparedness. These three hospitals are listed in Annex A, "Agreements".

2) Medical Consultants

Medical assistance is available in the Raleigh area from general practitioners who have agreed to provide medical assistance for contaminated patients (See Annex A). Also, the DOE Radiological Assistance Team will provide medical assistance, if required.

#### **G. Contamination Control of Drinking Water and Food**

Measures will be taken to control access to potentially contaminated potable water and food supplies on site. Under emergency conditions when a release of activity has occurred, eating, drinking, smoking, and chewing will be not permitted until the facility manager has determined that it is safe to do so. If the drinking water is contaminated above acceptable levels, uncontaminated water will be brought into the plant for the personnel to drink. Emergency food supplies are stored in a secure manner (See Table 3.1-1). Packaged food is located in vending machines in lunch rooms or office areas in the Administration Building, Fuel Handling Building "K" area, Operations Building, or Service Building. If these areas become contaminated because of a release of activity, the machines will be disabled or emptied until it can be verified that the food is not contaminated or the food will be discarded. Food located in the Service Building cafeteria would be verified uncontaminated prior to use.

#### **4.7 Fire-Fighting Assistance**

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Off-site fire departments will provide support as described in Annex A and Annex G.

#### **4.8 Security Measures**

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Security measures during an emergency will be employed in accordance with the Plant Security Plan, implementing Security procedures, and Plant Emergency Procedures dealing with personnel accountability, egress, and ingress. Accountability may be delayed during a security event if the SEC (in consultation with Security) determines that performing accountability could be detrimental to the safety of plant personnel. If accountability is delayed, then accountability should be performed immediately when conditions warrant.

HNP has a letter of agreement with the North Carolina National Guard. This letter of agreement specifies that the National Guard will be in communication with HNP security should they be deployed to HNP during a security event. The location of the National Guard on-site personnel will be known and maintained by HNP security. HNP security will be responsible for any evacuation or relocation of National Guard units in the event of a radiological release.

Table 4.0-1

**Off-Site Agency Support Summary**

<b>Function (NUREG-0654, II.A)</b>	<b>Primary Responsibility</b>	<b>Support Responsibility</b>
<b><u>Command and Control</u></b>		
On site	HNP	Progress Energy
Off site	State, County	FEMA
<b><u>Accident Classification</u></b>		
On site	HNP	N/A
Off site	N/A	N/A
<b><u>Warning</u></b>		
On site	HNP	N/A
Off site	County	State
<b><u>Notification, Officials</u></b>		
On site	HNP	Progress Energy
Off site	HNP	State, County, Media
<b><u>Notification, Public</u></b>		
On site (such as Visitors)	HNP	N/A
Off site	State, County	State
<b><u>Communications</u></b>		
On site	HNP	Progress Energy
Off site	State, County	Phone Company, Progress Energy
<b><u>Transportation</u></b>		
On site	HNP/Employees	N/A
Off site	Local Residents	State, County
<b><u>Traffic Control/Security</u></b>		
On site	HNP	County
Off site	County	State
<b><u>Accident Assessment</u></b>		
On site	HNP	Progress Energy, W
Off site	State	County, Progress Energy, FEMA, DOE
<b><u>Public Information/Education</u></b>		
On site	HNP, Corp Comm	NRC
Off site	State	County, Corp Comm, Media, FEMA
<b><u>Protective Response</u></b>		
On site	HNP	Progress Energy
Off site	State, County	Progress Energy, FEMA
<b><u>Radiological Exposure Control</u></b>		
On site	HNP	Progress Energy
Off site	State	County, FEMA, Progress Energy
<b><u>Fire and Rescue</u></b>		
On site	HNP	Local Fire & Rescue
Off site	County	State

Table 4.0-1

**Off-Site Agency Support Summary (continued)**

<b>Function (NUREG-0654, II.A)</b>	<b>Primary Responsibility</b>	<b>Support Responsibility</b>
<u>Medical</u>		
On site	HNP	Rescue, Hospital
Off site	County	State
<u>Public Health &amp; Sanitation</u>		
On site	HNP	N/A
Off site	County	State
<u>Social Services</u>		
On site	N/A	N/A
Off site	County	State
<u>Training</u>		
On site	HNP	Progress Energy
Off site	County, State, Progress Energy	State, Progress Energy
<u>Exercises</u>		
On site	HNP	Progress Energy
Off site	State	County, Progress Energy
<u>Reentry</u>		
On site	Progress Energy	HNP, W, Wash. Group
Off site	State	FEMA, County, Progress Energy, DOE

**Notes:**

NRC - U.S. Nuclear Regulatory Commission

HNP - Harris Nuclear Plant

DHHS - U.S. Department of Health &amp; Human Services

DOE - U.S. Department of Energy

N/A - Not applicable

W - Westinghouse Electric Corporation

FEMA - U.S. Federal Emergency Management Agency



Table 4.2-1

**Execution of Unusual Event**

A. **CLASS DESCRIPTION**

This class involves events which indicate a potential degradation of the level of safety at a nuclear station.

B. **RELEASE POTENTIAL**

No releases of radioactive material requiring off-site response or monitoring are expected unless further degradation of safety systems occurs.

C. **NOTIFY**

Time frames noted below are from the time the emergency is declared.

**Required Notifications**

- State of North Carolina Emergency Warning Point or EOC (fifteen minutes)
- Chatham County Emergency Warning Point (fifteen minutes)
- Harnett County Emergency Warning Point (fifteen minutes)
- Lee County Emergency Warning point (fifteen minutes)
- Wake County Emergency Warning Point (fifteen minutes)
- On-site Emergency Response Organization (as specified by procedure)
- Off-site Emergency Response Organization (as specified by procedure)
- Nuclear Regulatory Commission Operations Center (one hour)

**Additional Notifications as Necessary**

- Washington Group
- Westinghouse Electric Corporation
- Institute of Nuclear Power Operations
- American Nuclear Insurers
- Nuclear Electric Insurance Limited (NEIL) (Fire Only)
- Department of Energy, Savannah River Operations Office

D. **ACTIVATE**

On-site ERO (not required, but may be staffed for support as necessary)

- Technical Support Center
- Operations Support Center

Off-site ERO (not required, but may be staffed for support as necessary)

- Emergency Operations Facility
- Joint Information Center

Request Assistance (if necessary)

- Rex Hospital
- WakeMed Raleigh
- WakeMed Cary
- Fire and Rescue Departments

Table 4.2-2

**Execution of Alert**

A. **CLASS DESCRIPTION**

This class describes events which involve actual or potential substantial degradation of the level of safety at a nuclear station.

B. **RELEASE POTENTIAL**

Off-site doses expected to be limited to small fractions of EPA Protective Action Guideline exposure levels.

C. **NOTIFY**

Time frames noted below are from the time the emergency is declared.

**Required Notifications**

- State of North Carolina Emergency Warning Point or EOC (Fifteen minutes)
- Chatham County Emergency Warning Point or EOC (Fifteen minutes)
- Harnett County Emergency Warning Point or EOC (Fifteen minutes)
- Lee County Emergency Warning Point or EOC (Fifteen minutes)
- Wake County Emergency Warning Point or EOC (Fifteen minutes)
- On-site Emergency Response Organization
- Off-site Emergency Response Organization
- Nuclear Regulatory Commission Operations Center (One hour)
- American Nuclear Insurers (Four hours)
- Nuclear Electric Insurance Limited (NEIL) (Fire Only)
- Institute of Nuclear Power Operations (Four hours)

**Additional Notifications as Necessary**

- Washington Group
- Westinghouse Electric Corporation
- Department of Energy, Savannah River Operations Office

D. **ACTIVATE**

**On-site ERO**

- Technical Support Center
- Operations Support Center

**Off-site ERO**

- Emergency Operations Facility
- Joint Information Center

**Request Assistance (if necessary)**

- Rex Hospital
- WakeMed Raleigh
- WakeMed Cary
- Fire and Rescue Departments

Table 4.2-3

**Execution of Site Area Emergency**

A. **CLASS DESCRIPTION**

This class describes events which involve major failures of plant functions needed for the protection of the public.

B. **RELEASE POTENTIAL**

Off-site doses not expected to exceed EPA Protective Action Guidelines exposure levels except near site boundary.

C. **NOTIFY**

Time frames noted below are from the time the emergency is declared.

**Required Notifications**

- State of North Carolina Emergency Warning Point or EOC (Fifteen minutes)
- Chatham County Emergency Warning Point or EOC (Fifteen minutes)
- Harnett County Emergency Warning Point or EOC (Fifteen minutes)
- Lee County Emergency Warning Point or EOC (Fifteen minutes)
- Wake County Emergency Warning Point or EOC (Fifteen minutes)
- On-site Emergency Response Organization
- Off-site Emergency Response Organization
- Nuclear Regulatory Commission Operations Center (One hour)
- American Nuclear Insurers (Four hours)
- Nuclear Electric Insurance Limited (NEIL) (Fire Only)
- Institute of Nuclear Power Operations (Four hours)

**Additional Notifications as Necessary**

- Washington Group
- Westinghouse Electric Corporation
- Department of Energy, Savannah River Operations Office

D. **ACTIVATE**

**On-site ERO**

- Technical Support Center
- Operations Support Center

**Off-site ERO**

- Emergency Operations Facility
- Joint Information Center

**Request Assistance (if necessary)**

- Rex Hospital
- WakeMed Raleigh
- WakeMed Cary
- Fire and Rescue Departments

Table 4.2-4

**Execution of General Emergency**

**A. CLASS DESCRIPTION**

This class involves events which involve actual or imminent substantial core degradation or melting with the likelihood of a related release of appreciable quantities of fission products to the environment.

**B. RELEASE POTENTIAL**

Doses expected to be greater than the upper EPA Protective Action Guideline exposure levels off-site for more than the immediate site area.

**C. NOTIFY**

Time frames noted below are from the time the emergency is declared.

**Required Notifications**

- State of North Carolina Emergency Warning Point or EOC (Fifteen minutes)
- Chatham County Emergency Warning Point or EOC (Fifteen minutes)
- Harnett County Emergency Warning Point or EOC (Fifteen minutes)
- Lee County Emergency Warning Point or EOC (Fifteen minutes)
- Wake County Emergency Warning Point or EOC (Fifteen minutes)
- On-site Emergency Response Organization
- Off-site Emergency Response Organization
- Nuclear Regulatory Commission Operations Center (One hour)
- American Nuclear Insurers (Four hours)
- Nuclear Electric Insurance Limited (NEIL) (Fire Only)
- Institute of Nuclear Power Operations (Four hours)

**Additional Notifications as Necessary**

- Washington Group
- Westinghouse Electric Corporation
- Department of Energy, Savannah River Operations Office

**D. ACTIVATE**

**On-site ERO**

- Technical Support Center
- Operations Support Center

**Off-site ERO**

- Emergency Operations Facility
- Joint Information Center

**Request Assistance (if necessary)**

- Rex Hospital
- WakeMed Raleigh
- WakeMed Cary
- Fire and Rescue Departments

Table 4.5-2

**Protective Action Guides for the Ingestion Pathway**

Protective Action Guide (PAG)	Projected Dose Commitment to Whole Body, Bone Marrow or any other Organ (Rem)	Projected Dose Commitment to the Thyroid (Rem)
Preventive PAG <sup>(a)</sup>	0.5	1.5
Emergency PAG <sup>(b)</sup>	5.0	15.0
<p><sup>(a)</sup> Preventive PAG - The projected dose commitment value at which responsible officials should take protective actions having minimal impact to prevent or reduce the radioactive contamination of human food or animal feed.</p> <p><sup>(b)</sup> Emergency PAG - The projected dose commitment value at which responsible officials should isolate food containing radioactivity to prevent its introduction into commerce and at which the responsible officials should determine whether condemnation or other disposition is appropriate.</p>		

From: Federal Register, Vol. 47, No. 205, October 22, 1982, U.S. Food and Drug Administration, Accidental Radioactive Contamination of Human Food and Animal Feeds, Recommendations for State and Local Agencies

Table 4.6-1

**HNP Area Radiation and Contamination Limits**

A.	<u>Radiation Control Area</u>	<u>Radiation Levels</u>
	1. Radiation Area	5 to $\leq 100$ mrem/hr
	2. High Radiation Area	$>100$ mrem/hr to $\leq 1000$ mrem/hr
	3. Locked High Radiation Area	1000 mrem/hr to $\leq 500$ rad/hr
	4. Very High Radiation Area	$>500$ rad/hr @ 1 meter
	5. Airborne Radioactivity Area	Airborne Conc. $\geq 25\%$ of 10CFR20, App. B, Table 1 Column 3
B.	<u>Contamination Limits</u>	
	1. Skin contamination or personal clothing	< 100 net cpm $\beta\gamma$ with HP210 probe or equivalent sensitivity  no measurable $\alpha$ count rate above background
	2. Unconditional release from site for tools and equipment	No detectable $\alpha$  No detectable $\beta\gamma$ above background
	3. Contamination Area	$> 1000$ dpm/100cm <sup>2</sup> $\beta\gamma$ smearable  and/or $> 20$ dpm/100cm <sup>2</sup> $\alpha$

Figure 4.1-1

**Emergency Action Level Flow Path, Side 1**

Folded copy of Emergency Action Level Flowpath, Side 1, (Rev. 03-1) is contained in the plastic sleeve following this page.

Figure 4.1-2

**Emergency Action Level Flow Path, Side 2**

Folded copy of Emergency Action Level Flowpath, Side 2 (Rev. 03-1) is contained in the plastic sleeve following this page.



## **5.0 MAINTAINING EMERGENCY PREPAREDNESS**

Emergency preparedness at HNP will be maintained by:

- Maintaining planning documents through review, updates, audits, and annual PNSC review.
- Preparing Emergency Response Organization members for proper response actions through training and retraining.
- Testing the adequacy of emergency preparedness through the use of drills and exercises.
- Inventorying and calibrating emergency equipment, supplies, and instrumentation.
- Ensuring that the public notification and alerting system is tested and maintained.
- Ensuring that the Evacuation Time Estimate is periodically reviewed for adequacy.

Each periodic requirement in this section and elsewhere in the plan and plant emergency procedures shall be performed within the specified time below:

- Annually - At least once per 366 days
- Biennially - At least once per 731 days
- Monthly - At least once per 31 days
- Quarterly - At least once per 92 days
- Semiannually - At least once per 184 days

For the above intervals, a maximum allowable extension which shall not exceed 25% of the specified interval is allowable.

This definition for periodic requirements applies to all intervals in the emergency plan and plant emergency procedures except for the biennial exercise, which is conducted every other calendar year.

### **5.1 Emergency Plan and Plant Emergency Procedures**

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#### **5.1.1 Responsibility for the Planning Effort**

The HNP Emergency Planning Coordinator is responsible for coordinating on-site and selected off-site radiological emergency response planning. The EP Coordinator is also responsible for performing the following planning functions:

- A. Interfacing with federal, state, county, and local planners.

- B. Revising and updating the Plan in response to action items identified during appraisals, audits, exercises, drills, and changes in regulations, hardware, and personnel.
- C. Coordinating the biennial exercise and the periodic drills.
- D. Identifying off-site training needs of state and local emergency support personnel and arranging for training to meet the identified needs.
- E. Identifying corrective actions needed following drills and exercises, appraisals, and audits; coordinating responsibility for implementing these actions; coordinating a schedule for completion of these actions; and evaluating the adequacy of the actions taken.
- F. Maintaining and negotiating agreements with state and county response agencies, federal assistance agencies, and medical and fire support agencies.

#### **5.1.2 Emergency Plan and Plant Emergency Procedures Update and Changes**

The Emergency Planning Coordinator will coordinate the updating of the Plant Emergency Plan, Plant Emergency Procedures, and Supporting Agreements as needed and will review and certify them to be current on an annual basis. The EALs shall be discussed and agreed upon by the State of North Carolina and Wake, Chatham, Hamett, and Lee Counties. The EALs are reviewed by the State of North Carolina and Wake, Chatham, Hamett, and Lee Counties annually. Plan and Procedure revisions shall be reviewed and approved in accordance with an approved plant procedure. Approved changes to the Plan will be distributed in accordance with the distribution list for the plan and procedures in a plant procedure. Revised pages will be indicated in accordance with plant procedures.

Changes to the E-Plan or PEPs shall be forwarded to the NRC within 30 days after approval.

#### **5.1.3 Updating Telephone Listings**

Updating of emergency phone listings or personnel listings is not a change to the Plan. Emergency phone listings and personnel listings shall be updated at least quarterly.

#### **5.1.4 Plant Emergency Procedures**

A list of emergency preparedness documents that support this Plan is provided in Annex E.

#### **5.1.5 NUREG-0654 Cross-Reference**

The criteria for radiological emergency response plans contained in NUREG-0654 are cross-referenced to the applicable sections of this Plan and supporting Plans in Annex D.

#### **5.1.6 Independent Audit**

An independent audit of the HNP Emergency Preparedness Program will be conducted by the Nuclear Assessment Section at a frequency specified in 10 CFR 50.54(t). The Nuclear Assessment Section will audit the Plan, Plant Emergency Procedures, Training, Drills and Exercise, facilities and equipment for conformance with 10 CFR 50.47, 10

CFR 50.54, and 10 CFR 50 Appendix E. Written reports of the findings of these audits and reviews will be provided to corporate and plant management. Written notification will be provided to the State of North Carolina and Counties of Chatham, Harnett, Lee, and Wake of the performance of the audit and the availability of the audit records for review at HNP facilities. Each report will address the adequacy of interfaces with state and local governments, of drills and exercises, and of emergency response capabilities and procedures. The reports will be retained for five years. Corrective actions deemed necessary from the audit will be implemented in accordance with Section 5.1.1.E of this Plan and the site Corrective Action Program.

## **5.2 Emergency Response Organization Training Program**

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### **5.2.1 General Requirements**

HNP ensures the training of appropriate company personnel to support the Harris Plant Emergency Plan. Initial training and annual retraining is provided for the following categories of personnel:

- A. Directors, Coordinators, and Manager in the Emergency Response Organization.
- B. Personnel responsible for accident assessment.
- C. Radiological monitoring teams and radiological analysis personnel
- D. Damage Control Teams
- E. First Aid, Search and Rescue, and Fire Brigade Teams
- F. Personnel responsible for transmission of emergency information and instruction
- G. Personnel responsible for communicating with the media and public
- H. Offsite medical support personnel
- I. Local support services personnel, including emergency management personnel
- J. Police, security and offsite fire-fighting personnel who may be required to assist at the plant

Company personnel not assigned to the site are utilized and trained as members of the program.

Individuals assigned to First Aid Teams will include courses equivalent to the Red Cross Multimedia First Aid Course.

Designated ERO positions are also required to be qualified in the use of appropriate respiratory equipment.

Plant Access Training is provided to all personnel before they have unrestricted access to the Protected Area. This training includes general knowledge of alarms and actions required for non-ERO member during a declared emergency.

Site specific emergency response training shall be offered to offsite emergency organizations and local support services individuals who may be called upon to provide assistance to HNP in the event of an emergency. Training will include site access procedures and the identity (by position and title) of the individual in the HNP ERO who will control their organizations' support activities. Training for hospital personnel, ambulance/rescue, police and fire departments shall also include the procedures for notification, basic radiation protection, and their expected roles.

#### **5.2.2 Conduct of Training**

The Emergency Preparedness Unit Supervisor is responsible for the overall content and administration of the emergency plan training program.

EPM-200, ERO Training Program will include knowledge based and/or performance based training and evaluation components.

- A. Knowledge based training may be provided in a classroom setting or self directed study modules and document reviews. Examination and/or interviews will be given for initial qualifications to ensure trainee has a good base knowledge of the ERO and their assigned responsibilities.
- B. Performance based training and evaluations will be conducted for most ERO members (exceptions are made for pool personnel whose normal job functions closely matches their emergency functions and they are directed by qualified ERO Managers or Coordinators, such as operations, E&RC, maintenance, administrative and security pool personnel). This is done during conduct of exercises, drills or walkthroughs and documented on ERO qualification record forms.

#### **5.2.3 Off-Site Organizations**

Training of off-site organizations is described in their respective radiological emergency plans. Additional training is provided by HNP for hospital, rescue, local law enforcement agencies, and fire personnel. Such training will include the procedures for notification, basic radiation protection, and their expected roles. For those Immediate Response Organizations who may enter the site, training by HNP will also include site access procedures and the identity (by position and title) of the individual in the HNP organization who will control the organization's support activities. HNP will assist these off-site organizations in performing their radiological emergency response training as related to HNP as requested.

Training of medical support personnel at the agreement hospitals will include basic training on the nature of radiological emergencies, diagnosis and treatment, and follow-up medical care.

#### **5.2.4 Emergency Planning Coordinator and Staff Training**

Training of plant emergency preparedness personnel involved in the planning effort may consist of either of the following:

- A. Observing exercises at other plants.
- B. Participation in emergency preparedness workshops; seminars and/or courses.

### **5.2.5 Public Education and Information - HNP**

Occupants in the Plume Exposure Pathway Emergency Planning Zone (EPZ) will be provided information prepared by HNP in conjunction with the state and county agencies. This public education and information program is intended to ensure that members of the public are (1) aware of the potential for an occurrence of a radiological emergency; (2) able to recognize a radiological emergency notification; and (3) knowledgeable of the proper, immediate actions to be taken upon notification.

This will be accomplished by (1) distribution of the annual safety information brochure which contains educational information on emergency preparedness, sheltering, sirens, and radiation including telephone numbers of agencies to contact for more information; (2) annual distribution of a school brochure to school bus drivers and students; (3) availability of qualified personnel to address civic, religious, social, and occupational organizations; (4) distribution of news material to the media; and (5) periodic publication of the 10-mile EPZ newsletter, periodic not to exceed annual.

Emergency information will be made available to transient populations through the distribution of safety information brochures to commercial establishments in the 10-mile EPZ. A supply of these brochures is maintained at motels within the 10-mile EPZ.

Lake warning signs are posted at boat ramps, or access roads to boat ramps, at Harris and Jordan Lakes. These signs describe the activities which would be taken to initiate an evacuation of the lake and actions which should be taken in response to the evacuation. The posting of these signs is verified semiannually.

During an actual emergency, provisions will be established through the Joint Information Center to make available and distribute information to the news media. Provisions for a number of telephones which members of the public, who hear rumors, can call for factual information will also be implemented in the JIC when activated.

### **5.2.6 Public Education - State of North Carolina**

The North Carolina Department of Crime Control and Public Safety has overall responsibility for maintaining a continuing disaster preparedness public education program. Such a program, prepared by the state of North Carolina, with the cooperation of the local governments and HNP, is intended to ensure the members of the public are:

- A. Aware of the potential threat of a radiological emergency;
- B. Able to recognize a radiological emergency notification; and
- C. Knowledgeable of the proper immediate actions (return to home, close windows and tune to an Emergency Alert System station) to be taken.

A program of this type includes education on protective actions to be taken if shelter is prescribed and the general procedures to follow if an evacuation is required. It also includes general educational information on radiation and how to learn more about emergency preparedness.

## 5.3 Drills and Exercises

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### 5.3.1 Drills

Drill scenarios will be varied from year to year such that major elements of the plans and emergency organizations are tested within a 6-year period. One drill shall start between 6 p.m. and 4 a.m. once every 6 years.

EPM-210 prescribes policies and procedures for conducting the following drills:

#### A. Communication Drills

- 1) Communication from the Plant to the State warning point, State EOC and local government warning points within the plume exposure pathway Emergency Planning Zone shall be tested monthly. This shall include the transmittal of the information on an Emergency Notification Form.
- 2) Communications from the Main Control Room, Technical Support Center, and the Emergency Operations Facility to the NRC Headquarters Operations Center shall be tested monthly.
- 3) Communications between the nuclear facility, state, and local emergency operations centers, and environmental monitoring teams shall be tested annually.
- 4) Communications between the Main Control Room, the Technical Support Center and the Emergency Operations Facility shall be tested annually.

#### B. Fire Drills

Fire drills shall be conducted in accordance with Section 13.2 of the FSAR.

#### C. Medical Emergency Drills

A medical emergency drill involving a simulated contaminated individual with provision for participation by the local support services agencies (that is, ambulance, and off-site medical treatment facility) shall be conducted annually. The off-site portions of the medical drill may be conducted once per calendar year.

#### D. Environmental Monitoring Drills

Plant environs and radiological monitoring drills (on site and off site) shall be conducted annually. These drills shall include collection and analysis of all sample media (such as water, vegetation, soil, and air), and provisions for communications and record keeping.

#### E. Radiological Control Drills

- 1) Radiological Control drills shall be conducted semiannually which involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.

- 2) Analysis of in-plant liquid samples with actual elevated radiation levels shall be included in Radiological Control drills annually.

F. Integrated Drills

- 1) Integrated training drills are conducted between biennial exercises to ensure adequate emergency response capability is maintained. An integrated drill combines principle functional areas of the on-site response which includes the management and coordination of the response, accident assessment, protective action decision-making, and plant system repair and corrective actions. Activation of all of the emergency response facilities is not necessary. Integrated drills may provide the opportunity for training for the staff.
- 2) At least one integrated drill is to be performed between the biennial exercises and some drills may be unannounced.
- 3) Critiques and evaluation of drills will be conducted by a qualified individual. The degree of participation by outside agencies in conducting these drills may vary and their action may actually be simulated.

5.3.2 Exercises

An exercise is an event that tests the integrated capability of major response organizations. Exercises shall test the adequacy of timing and content of implementing procedures and methods, test emergency equipment and communications networks, and ensure that emergency organization personnel are familiar with their duties. Procedures for the conduct of exercises are described in EPM-210. An emergency exercise involving on-site participation will be conducted at least once every other calendar year.

Partial participation exercises involving off-site agencies will be conducted at least once every other calendar year (IE Information Notice 85-55). Partial participation means appropriate off-site authorities shall actively take part in the exercise sufficient to test direction and control functions to include protective action decision making related to emergency action levels and communication capabilities among affected state and local authorities and HNP.

Every sixth year the exercise will include the full participation of the State. These full participation exercises will include appropriate off-site local and state authorities and HNP personnel physically and actively taking part in testing the integrated capability to adequately assess and respond to an accident at the plant. "Full participation" includes testing the major observable portions of the on-site and off-site emergency plans and mobilization of state, local, and HNP personnel and other resources in sufficient numbers to verify the capability to respond to the accident scenario.

Exercises involving off-site agencies will simulate an emergency that results in an off-site radiological release.

The biennial exercises should be conducted during different seasons of the year.

Advance knowledge of the scenarios will be kept to a minimum to allow "free-play" decision making and to ensure a realistic participation by those involved.

Each biennial exercise plan should include the following:

- The basic objective(s) of the exercise.
- The date(s), time period, place(s), and participating organizations.
- The simulated events.
- A time schedule of real and simulated initiating events.
- A narrative summary describing the conduct of the exercise to include such things as simulated casualties, off-site fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities.
- Arrangements for qualified Evaluators and Controllers.
- Critique and Evaluation Reports.

Prior to the exercise, an exercise plan will be distributed to the exercise controllers and evaluators that will include a list of performance objectives, the scenario, and a description of the expected responses.

Qualified observers from Progress Energy, federal, state, or local governments will observe and critique each biennial exercise in which the state and counties participate. A critique will be scheduled at the conclusion of each exercise to evaluate the ability of all participating organizations to respond. The critique will be held as soon as possible after the exercise. A formal written evaluation of the exercise will be prepared by the Emergency Planning Coordinator following the critique.

The Plant Emergency Planning Coordinator or assigned designee will determine those critique items that require corrective actions. Plant administrative controls will be utilized to ensure that corrective actions are implemented.

## **5.4 Maintenance and Inventory of Emergency Equipment and Supplies**

### **5.4.1 Emergency Equipment and Supplies**

A resource list of emergency equipment and supplies to be inventoried for the TSC, OSC, EOF and JIC is referenced in the emergency program maintenance procedures. This listing provides information on location and availability of emergency equipment and supplies.

An inventory of all emergency equipment and supplies is held on a quarterly basis and after use in an emergency or drill. During this inventory, radiation monitoring equipment is to be checked to verify that required calibration and location are in accordance with the inventory lists.



#### **5.4.2 Medical Equipment and Supplies**

Respiratory protection equipment, maintained for emergency purposes, is to be inspected and inventoried monthly.

At least twice each year and after use in an emergency or drill, emergency medical equipment and supplies located in the First Aid Station/Kits throughout the plant are to be inventoried, inspected, replaced, and replenished and/or resterilized as necessary. First Aid Team personnel inspect and inventory emergency medical supplies required to support a medical emergency at the plant, and plant personnel use the checklist in the applicable procedures to inspect other emergency items located in the First Aid Station/Kits.

#### **5.4.3 Meteorological Instrumentation**

Calibration of and channel checks on meteorological instrumentation are performed in accordance with PLP-114.

### **5.5 Testing and Maintenance of the Public Notification and Alerting System**

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#### **5.5.1 General Description**

The Public Notification and Alerting System consist of sirens located throughout the 10-mile EPZ and Tone Alert Radios distributed to households within a 5-mile radius of the HNP.

#### **5.5.2 Siren System Testing**

The sirens are tested as follows:

- A. A silent test should be performed every two weeks.
- B. A growl test should be performed at least once per calendar quarter.
- C. A full-scale test of the system shall be conducted annually.

#### **5.5.3 Siren System Maintenance**

Maintenance of the Siren System is an ongoing process and is performed as needed based on the results of each test of the system. Records of siren maintenance are reviewed by HNP Emergency Preparedness.

#### **5.5.4 Siren System Operability**

- A. The loss of all sirens within one county or the loss of 20% of the total number of sirens requires notification of the NRC within eight hours.
- B. The annual operability of the siren system is considered acceptable when averages of at least 90% of the siren tests for a calendar year are successful.

#### **5.5.5 Tone Alert Radio Distribution**

Tone Alert Radios are distributed to households within a 5-mile radius of the plant. The radios are tested prior to distribution and provided to each residence by a trained HNP representative.

#### **5.5.6 Tone Alert Radio Maintenance**

- A. Residences receiving a Tone Alert radio are provided with information on who to contact if the radio malfunctions.
- B. Progress Energy annually distributes a new battery to each residence possessing a Tone Alert Radio.
- C. Progress Energy annually distributes guidance to each residence on the purpose and operation of the Tone Alert radio.

#### **5.5.7 Tone Alert Radio System Testing**

- A. The Tone Alert Radio System is tested annually.
- B. An independent contractor is retained by Progress Energy to develop and conduct a survey to assess the effectiveness of the Tone Alert Radio System.

#### **5.5.8 Tone Alert Radio System Operability**

- A. The Tone Alert Radio System is considered effective if at least 66% of those households surveyed received the test signal during the annual test.
- B. The loss of either of the two National Weather Service Tone Alert Radio signal transmitters requires notification of the NRC within one hour.

### **5.6 Evacuation Time Estimate**

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The HNP Evacuation Time Estimate (ETE) (See Table 1.8-2) will be considered valid until the population within the 10-mile EPZ has increased by greater than 10% since the last ETE was determined. If the population is found to have increased by greater than 10% then a revised ETE will be established using appropriate guidance in NUREG/CR-4831, "State of the Art in Evacuation Time Estimate Studies for Nuclear Power Plants."

An ETE update should be performed every five years to ensure the adequacy of other evacuation assumptions.

## **6.0 RECOVERY**

### **6.1 Recovery Planning**

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Recovery is defined as those steps taken to return the plant to its pre-accident condition. The overall goals of the recovery effort are to assess the in-plant consequences of the emergency and perform cleanup and repair operations. This effort includes the utilization of Progress Energy Corporate resources and interfacing with outside agencies. All recovery actions will be pre-planned in order to minimize radiation exposure or other hazards to recovery personnel.

Recovery from an emergency situation is guided by the following principles:

- A. The protection of the public health and safety is the foremost consideration in formulating recovery plans.
- B. Public officials are kept informed of recovery plans so that they can properly carry out their responsibilities to the public.
- C. Periodic briefings of media representatives are held to inform the public of recovery plans and progress made.
- D. Periodic status reports are given to company employees at other locations and to government and industry representatives.
- E. The radiation doses to employees and other radiation workers are kept As Low As Reasonably Achievable (ALARA).
- F. Necessary adjustments in the size and makeup of the Recovery Manager's staff are made as deemed necessary by the Recovery Manager.

The recovery organization may begin to develop plans for recovery of the facility while the emergency is still in progress. However, these efforts will not be permitted to interfere with or detract from the efforts to control the emergency situation. During the emergency phases of the incident, the recovery organization resources will be available to assist and provide support for the Site Emergency Coordinator.

### **6.2 Recovery Plan Activation**

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The Site Emergency Coordinator, with concurrence from the Emergency Response Manager, has the responsibility for determining when an emergency situation is stable and the plant is ready to enter the recovery phase. Prior to terminating an emergency and entering the recovery phase, the following conditions are considered:

- A. Do conditions still meet an Emergency Action Level? If so, does it appear unlikely that conditions will deteriorate?
- B. Radioactive releases are under control and are no longer in excess of Technical Specification limits.
- C. The radioactive plume has dissipated and plume tracking is no longer required. The only environmental assessment activities in progress are those necessary to assess the extent of deposition resulting from passage of the plume.

- D. In-plant radiation levels are stable or decreasing, and acceptable, given the plant conditions.
- E. The potential for uncontrolled radioactive release is acceptably low.
- F. The reactor is in a stable shutdown condition and long-term core cooling is available.
- G. Containment pressure is within Technical Specification limits.
- H. Any fire, flood, earthquake or similar emergency condition no longer exists.
- I. All required notifications have been made.
- J. Discussions have been held with Federal, State and local agencies and agreement has been reached to terminate the emergency.
- K. At an Alert or higher classification, the Emergency Response Organization is in place and emergency facilities are activated.

It is not necessary that all conditions listed above be met; however, all items must be considered prior to entering the recovery phase. For example, it is possible after a severe accident that some conditions remain which exceed an Emergency Action Level, but entry into the recovery phase is appropriate.

Decisions to relax protective actions for the public will be made in accordance with the North Carolina Radiological Emergency Plan. The Recovery Manager will provide information to the appropriate state agencies to facilitate the decision.

Once the decision is made to enter the recovery phase, the extent of the staffing required for the HNP Recovery Organization is determined.

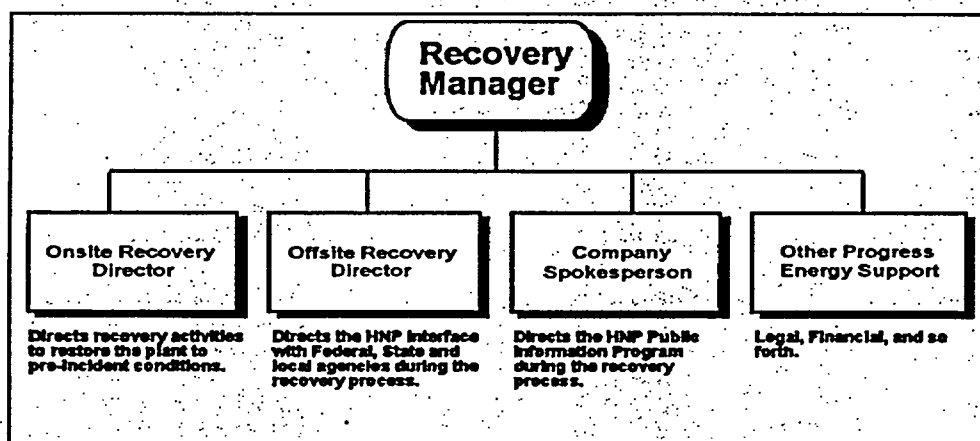
- A. For events of a minor nature, (that is, for UNUSUAL EVENT classifications) the normal on shift organization is normally adequate to perform necessary recovery actions.
- B. For events where damage to the plant has been significant, but no offsite releases have occurred and/or protective actions were not performed, (that is, for Alert classifications) the HNP Emergency Response Organization, or portions thereof, should be adequate to perform the recovery tasks prior to returning to the normal plant organization.
- C. For events involving major damage to systems required to maintain safe shutdown of the plant and offsite radioactive releases have occurred, (that is, for Site Area Emergency or General Emergency classifications) the Recovery Organization is put in place.

When the decision is made to enter the recovery phase, all members of the HNP Emergency Response Organization are informed of the change. All appropriate personnel are instructed of the Recovery Organization and their responsibilities to the recovery effort. Notification of off-site organizations that the Recovery Organization is to be activated will be initiated by the Emergency Response Manager and will follow plant emergency notification procedures summarized in Section 4.2 of the Plan (except that the notification message will state that the Recovery Plan has been initiated, will list the new positions of the Recovery Organization, and the notification time limits will not be applicable).

### 6.3 Recovery Organization

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The specific members of the Recovery Organization are selected based on the sequence of events that preceded the recovery activities as well as the requirements of the recovery phase. The basic framework of the Recovery Organization is as follows:



This organization may be modified during the recovery process to better respond to the conditions at the plant.

The state will be the lead organization for off-site recovery operations. The state's recovery organization will be in accordance with the North Carolina Emergency Response Plan.

### 6.4 Assignment of Responsibilities

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#### 6.4.1 Recovery Manager

The Recovery Manager is charged with the responsibility for directing the activities of the HNP Recovery Organization. These responsibilities include:

- A. Ensuring that sufficient personnel from Progress Energy and other organizations are available to support recovery.
- B. Directing the development of a recovery plan and procedures.

Ensuring that adequate engineering activities to restore the plant are properly reviewed and approved.

- C. Deactivating any of the HNP Emergency Response Organization which was retained to aid in recovery, in the appropriate manner.
- D. Coordinating the integration of available Federal and State assistance into onsite recovery activities.
- E. Coordinating the integration of Progress Energy support with Federal, State and local authorities into required offsite recovery activities.
- F. Approving information released by the public information organization which pertains to the emergency or the recovery phase of the accident.
- G. Determining when the recovery phase is terminated.
- H. The Vice President-HNP or a designated alternate is the Recovery Manager.

#### 6.4.2 Onsite Recovery Director

The Onsite Recovery Director reports to the Recovery Manager and is responsible for:

- A. Coordinating the development and implementation of the recovery plan and procedures.
- B. Directing all onsite activities in support of the recovery of HNP.
- C. Designating other Progress Energy recovery positions required in support of onsite recovery activities.

The Onsite Recovery Director position will normally be filled by the General Manager-Harris Plant or designee.

#### 6.4.3 Offsite Recovery Director

The Offsite Recovery Director reports to the Recovery Manager and is responsible for:

- A. Providing liaison with offsite agencies and coordinating HNP assistance for offsite recovery activities.
- B. Coordinating HNP ingestion exposure pathway EPZ sampling activities.
- C. Developing a radiological release report.
- D. Designating other HNP recovery positions required in support of offsite recovery activities.

The Offsite Recovery Director position will normally be filled by the Manager Plant Support Services or designee.

#### 6.4.4 Company Spokesperson

The Company Spokesperson reports to the Recovery Manager and is responsible for:

Functioning as the official spokesperson to the press for Progress Energy on all matters relating to the accident or recovery.

- A. Coordinating non-Progress Energy public information groups (Federal, State, County, and so forth).
- B. Coordinating media monitoring and rumor control.
- C. Determining what public information portions of the HNP Emergency Response Organization will remain activated.

The Company Spokesperson position will normally be filled by the Manager Communications-HNP or designee.

#### **6.4.5 The Remainder of the HNP Recovery Organization**

The remainder of the HNP Recovery Organization is established and an initial recovery plan developed at the end of the emergency phase or just after entry into the recovery phase. Consideration is given to recovery activity needs and use of the normal HNP organizations. Individual recovery supervisor may be designated in any or all of the following areas:

- A. Maintenance
- B. Engineering/Technical Support
- C. Radiation Protection
- D. Operations
- E. Chemistry
- F. Security
- G. Quality Assurance
- H. Training
- I. Special Offsite Areas (Community Representatives, Environmental Samples, Investigations, and so forth)

#### **6.5 Reentry Planning**

The plans and procedures for area reentry will be developed at the time and will consider existing as well as potential conditions inside affected areas.

Prior to reentry, the Recovery Manager and staff shall:

- A. Review all available radiation survey data and determine plant areas potentially affected by radiation exposure and contamination.
- B. Review the radiation exposure records of personnel participating in the recovery operation and determine the need for additional personnel.

- C. Review the adequacy of the radiation sampling and survey instrumentation to be used by the team (type, ranges, number, calibration, and so forth).
- D. Review protective clothing, dosimetry, and respiratory protection needs.
- E. Ensure appropriate communications are available.
- F. Ensure all team members are briefed concerning areas to be entered, anticipated radiation levels, access control procedures, and methods and procedures that will be employed during the entry. The initial entry into the affected area should encompass the following actions:
  - Conduct a comprehensive radiation survey of the plant facilities and define all radiological problem areas.
  - Isolate and post with appropriate warning signs all radiation and contamination areas.
  - Identify potential hazards associated with the recovery operation.

## **6.6 Total Population Exposure Estimates**

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The Radiological Control Manager will periodically update the estimate of total population exposure. The estimate will be determined from data collected in cooperation with the State.

The North Carolina Radiation Protection Section (RPS), Department of Environment, Health and Natural Resources will be the lead state agency in the collection and analysis of radiation monitoring reports and of environmental air, foliage, food, and water samples. The RPS will be assisted by qualified personnel from HNP.

Total population exposure will be periodically determined through a variety of procedures including:

- A. Examination of prepositioned TLDs.
- B. Bioassay
- C. Estimates based on release rates and meteorology.
- D. Estimates based on environmental monitoring of food, water, and ambient dose rates.

## **6.7 Recovery Termination and Reporting Requirements**

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Responsibility for providing a closeout verbal summary and written summary to off-site authorities after the accident is the responsibility of the General Manager - Harris Plant. These summaries should be simple and in sufficient detail only to define that the accident situation is ended.

Reports to the NRC are in accordance with 10CFR50.72, 10CFR20, Subpart M, and the HNP Technical Specifications, Section 6.9.



## 7.0 REFERENCES

- A. HNP Plant Operating Manual.
- B. Progress Energy Radiation Control and Protection Manual.
- C. Final Safety Analysis Report (FSAR), Progress Energy, Shearon Harris Nuclear Power Plant.
- D. EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," U.S. Environmental Protection Agency.
- E. EPPOS No. 1, "Emergency Preparedness Position (EPPOS) on Acceptable Deviations from Appendix 1 of NUREG-0654 Based Upon the Staff's Regulatory Analysis of NUMARC/NESP-007, 'Methodology for Development of Emergency Action Levels'", June 5, 1995.
- F. EPPOS No. 2, "Emergency Preparedness Position (EPPOS) on Timeliness of Classification of Emergency Conditions", August 17, 1995.
- G. EPPOS No. 3, "Emergency Preparedness Position (EPPOS) on Requirement for Onshift Dose Assessment Capability", November 8, 1995.
- H. NUREG-0654/FEMA-REP-1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, October 1980, Revision 1.
- I. NUREG-0737, Clarification of TMI Action Plan Requirements, dated October 1980.
- J. NUREG-0737, Supplement 1, Requirements for Emergency Response Capability, December 1982.
- K. NUREG-0696, Functional Criteria for Emergency Response Facilities, Final Report, February 1981.
- L. Title 10, Code of Federal Regulations; Part 20, Standards for Protection Against Radiation and Part 50, Licensing of Production and Utilization Facilities
- M. Federal Register, Vol. 43, No. 242, December 15, 1978, U.S. Food and Drug Administration, Accidental Radioactive Contamination of Human Food and Animal Feeds.
- N. Evacuation Time Estimates for the Plume Exposure Pathway Emergency Planning Zone, Shearon Harris Nuclear Power Plant, January, 2002.
- O. RTM-92.

## ANNEX A

### LETTERS OF AGREEMENT

This Annex contains a list of written agreements between Progress Energy and other organizations that may be required to provide support to the Harris Nuclear Plant in the event of an on-site radiological emergency. Copies of the original agreements are kept on file by HNP Emergency Preparedness or Progress Energy Contract Services.

#### Agreement Organization

1. Apex Volunteer Fire Department
2. Town of Holly Springs Dept. Of Public Safety Division of Municipal Fire Services
3. Apex Rescue Squad, Inc.
4. Rex Hospital
5. WakeMed Raleigh
6. WakeMed Cary
7. Douglas I. Hammer, M.D.
8. Robert A. Brownstein, M.D.
9. Institute of Nuclear Power Operations
10. National Weather Service
11. State of North Carolina - supporting emergency plan - see Annex G
12. Chatham County - supporting emergency plan - see Annex G
13. Harnett County - supporting emergency plan - see Annex G
14. Lee County - supporting emergency plan - see Annex G
15. Wake County - supporting emergency plan - see Annex G
16. Framatome
17. Atlantic Group
18. Washington Group
19. Murray and Trettel - on demand services
20. Raleigh Convention and Conference Center
21. Westinghouse Electric Corporation
22. Weather Services International (WSI) - on demand services

These agreements are maintained current through annual reconfirmation, where required, or through personal verification of current applicability where reconfirmation is not required. A copy of the EP Supervisor's annual certification that the agreements are applicable and have been reconfirmed when necessary is kept on file by HNP Emergency Preparedness.

## ANNEX B

### Technical Basis Of Emergency Dose Projection Program

The technical basis for the dose projection program is located in EPM-600 until December 23, post December 23, 2004, 2004. The technical basis for the dose projection program will be located in NUREG-1741 RASCAL 3.0: Description of Models and Methods post December 23, 2004.

## ANNEX C

### Glossary Of Terms

Accident Assessment - Accident assessment consists of a variety of actions taken to determine the nature, effects, and severity of an accident and includes evaluation of reactor operator status reports, damage assessment reports, meteorological observations, seismic observations, fire reports, radiological dose projections, in-plant radiological monitoring, and environmental monitoring.

Activate - To formally put on active duty with the necessary personnel and equipment to carry out the function required, such as to activate the Technical Support Center (TSC) or the Emergency Operations Facility (EOF).

Alerting/Warning, Public - The process of signaling the public, as with sirens, to turn on their TVs or radios and listen for information or instructions broadcast by state or local government authorities on the Emergency Alert System (EAS).

Assessment Actions - Those actions taken during or after an accident to obtain and process information which is necessary to make decisions to implement specific emergency measures.

Command and Control - Exercising the authority to coordinate and utilize an organization's resources to respond to an emergency condition.

Committed Dose Equivalent (CDE) - The Dose Equivalent to organs or tissues of reference that will be received from an intake of radioactive material by an individual during the 50-year period following the intake.

Corrective Action - Those emergency measures taken to lessen or terminate an emergency situation at or near the source of the problem, to prevent an uncontrolled release of radioactive material, or to reduce the magnitude of a release. Corrective action includes equipment repair or shutdown, installation of emergency structures, fire fighting, repair, and damage control.

County(ies) - When used in the context of the HNP 10-mile EPZ means Chatham, Lee, Harnett, and/or Wake County(ies).

Damage Assessment - Estimates and descriptions of the nature and extent of damages resulting from an emergency or disaster; of actions that can be taken to prevent or mitigate further damage; and of assistance required in response and recovery efforts based on actual observations by qualified engineers and inspectors.

Damage Control - The process of preventing further damage to occur and preventing the increase in severity of the accident.

Decontamination - The reduction or removal of contaminated radioactive material from a structure, area, material, object, or person. Decontamination may be accomplished by (1) treating the surface so as to remove or decrease the contamination, (2) letting the material stand so that the radioactivity is decreased as a result of natural decay, and (3) covering the contamination.

## ANNEX C

### Glossary Of Terms

DEM - An abbreviation standing for North Carolina Division of Emergency Management. DEM is the State agency responsible for preparing and maintaining a State Radiological Emergency Response Plan and for assembling and dispatching a State Emergency Response Team (SERT) to the scene of an emergency.

Dose Projection - The calculated estimate of a radiation dose to individuals at a given location (normally off site), determined from the source term/quantity of radioactive material (Q) released, and the appropriate meteorological dispersion parameters ( $\chi/Q$ ).

Dose Rate - The amount of ionizing (or nuclear) radiation to which an individual would be exposed per unit of time. As it would apply to dose rate to a person, it is usually expressed as Rem per hour or in submultiples of this unit, such as millirem per hour. The dose rate is commonly used to indicate the level of radioactivity in a contaminated area.

Dosimeter - An instrument such as a thermoluminescent dosimeter (TLD), self-reading pocket dosimeter (SRPD), or electronic dosimeter (ED) for measuring, registering, or evaluating total accumulated dose or exposure to ionizing radiation.

Drill - A supervised instruction period aimed at testing, developing, and maintaining skills in a particular operation.

Early Phase - The period at the beginning of a nuclear incident when immediate decisions for effective use of protective actions are required and must be based primarily on predictions of radiological conditions in the environment. This phase may last from hours to days. For the purposes of dose projections it is assumed to last four days.

Emergency Action Levels (EALs) - Plant conditions used to determine the existence of an emergency and to classify its severity. The conditions include specific instrument readings, alarms, and observations that in combination indicate that an emergency initiating event has occurred and therefore an appropriate class of emergency should be declared. EALs cover a broad range of events such as radioactive releases to the environment, loss of all on-site and off-site power, security threats, fire, and strikes of operating employees.

Emergency Alert System (EAS) - A network of broadcast stations and interconnecting facilities which have been authorized by the Federal Communications Commission to operate in a controlled manner during a war, state of public peril or disaster, or other national emergency - as provided by the Emergency Alert System Plan. In the event of a nuclear reactor accident, instructions/notifications to the public on conditions or protective actions would be broadcast by state or local government authorities on the EAS.

Emergency Operating Procedures (EOPs) - EOPs are step-by-step procedures for direct actions taken by licensed reactor operators to mitigate and/or correct an off normal plant condition through the control of plant systems.

## ANNEX C

### Glossary Of Terms

Emergency Operations Center (EOC) - A facility designed and equipped for effective coordination and control of emergency operations carried out within an organization's jurisdiction. The site from which civil government officials (Municipal, County, State, and Federal) exercise direction and control in a civil defense emergency.

Emergency Operations Facility (EOF) - The EOF is an HNP facility near the plant that is provided for the management of overall HNP emergency response in the event of a nuclear accident at the plant. Upon activation of the EOF, it assumes for the Technical Support Center (TSC) the function of providing support to the state on off-site radiological and environmental assessments, coordination with Federal, State, and Local Government officials on recommendations for public protective actions and direction of recovery operations.

Emergency Planning Zones (EPZ) - A generic area defined about a nuclear plant to facilitate emergency planning off site. The plume exposure EPZ is described as an area with approximately a 10-mile radius and the ingestion exposure EPZ is described as an area with approximately a 50-mile radius, both of which are centered at the plant site.

Emergency Preparedness - A state of readiness that provides reasonable assurance that adequate protective measures can and will be taken upon implementation of the emergency plan in the event of a radiological emergency.

Evacuation - The urgent removal of people from an area to avoid or reduce high-level, short-term exposure usually from the plume or from deposited activity.

Evacuation, Exclusion Area - The evacuation of nonessential personnel from the Exclusion Area.

Evacuation, Local - The evacuation of personnel from a particular area, such as a room or building.

Evacuation, Site - The evacuation of nonessential personnel from the plant site.

Exercise - An event that tests the integrated capability of a major portion of the basic elements existing within emergency preparedness plans and organizations.

Exclusion Area - An Exclusion Area is an area specified for the purpose of reactor site evaluation in accordance with 10CFR100. It is an area of such size that an individual located at any point on its boundary for two hours immediately following onset of the postulated release would not receive a total radiation dose to the whole body in excess of 25 Rem or a total radiation dose of 300 Rem to the thyroid from iodine exposure. The exclusion area around HNP is Progress Energy-owned property with a radius of approximately 7000 feet.

Fission Product Barrier - The fuel cladding, reactor coolant system boundary, or the containment boundary.

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Glossary Of Terms

Fission Product Barrier Status -

- a. Breached - The fission product barrier is incapable of sufficiently retaining radioactive materials to protect the public.
- b. Jeopardy - Conditions exist that are likely to result in fission product barrier breach, but the barrier is intact at the present time.
- c. Intact - The fission product barrier retains the ability to protect the public from a harmful release of radioactive materials.

Health Physics Network (HPN) Line - In the event of a Site Area Emergency, the NRC HPN line will be activated by the NRC Operations center in Bethesda, Maryland. This phone is part of a network that includes the NRC Regional Office and the NRC Operations Headquarters in Bethesda, Maryland. This system is dedicated to the transmittal of radiological information by plant personnel to NRC Operations Center and the Regional office. HPN phones are located in the TSC and EOF.

Ingestion Exposure Pathway - The potential pathway of radioactive materials to the public through consumption of radiologically contaminated water and foods such as milk or fresh vegetables. Around a nuclear power plant this is usually described in connection with the 50-mile radius Emergency Planning Zone (50-mile EPZ).

Intermediate Phase - The period beginning after the source and releases have been brought under control and reliable environmental measurements are available for use as a basis for decisions on additional protective actions.

Joint Information Center (JIC) - An Emergency Facility activated by Progress Energy and staffed by Progress Energy, State, and County Public Information personnel. This facility serves as the single point of contact for the media and public to obtain information about an emergency.

Late Phase - The period beginning when recovery action designed to reduce radiation levels in the environment to acceptable levels for unrestricted use are commenced and ending when all recovery actions have been completed. This period may extend from months to years (also referred to as the recovery phase).

Main Control Room - The operations center of a nuclear power plant from which the plant can be monitored and controlled.

Monitoring, Environmental - The use of radiological instruments or sample collecting devices to measure and assess background radiation levels and/or the extent and magnitude of radiological contamination in the environment around the plant. This may be done in various stages such as pre-operational, operational, emergency, and post operational.

Monitoring, Personnel - The determination of the degree of radioactive contamination on individuals, using standard survey meters, and/or the determination of dosage received by means of dosimetry devices.

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### Glossary Of Terms

Notification, Public - Public notification means to communicate instructions on the nature of an incident that prompted the public alerting/warning and on protective or precautionary actions that should be taken by the recipients of the alert. A state and local government process for providing information promptly to the public over radio and TV at the time of activating the alerting (warning) signal (sirens). Initial notifications of the public might include instructions to stay inside, close windows, and doors, and listen to radio and TV for further instructions. Commercial broadcast messages are the primary means for advising the general public of the conditions of any nuclear accident. (See Emergency Alert System.)

NRC Emergency Telecommunications System (ETS) - The NRC Emergency Telecommunications System hot line is a dedicated telephone system that connects the plant with NRC headquarters in Bethesda, Maryland. It is directly used for reporting emergency conditions to NRC personnel. The system has seven essential telecommunications functions; Emergency Telecommunications System (ETS), Health Physics Network (HPN), Reactor Safety Counterpart Link (RSCL), Protective Measures Counterpart Link (PMCL), Management Counterpart Link (MCL), Operations Center Local Area Network (LAN) line, (OCL), and the Emergency Response Data System (ERDS).

Off-Site - The area outside of an approximate 2500-foot radius from the plant centerline, exclusive of the area cleared for plant construction.

On-Site - The area inside of an approximate 2500-foot radius from the plant centerline, inclusive of the area cleared for plant construction, and including all permanent and temporary buildings, and the parking lots.

Operations Support Center (OSC) - An emergency response facility at the Plant to which support personnel report and stand by for deployment in an emergency situation.

Plume Exposure Pathway - The potential pathway of radioactive materials to the public through (a) whole body external exposure from the plume and from deposited materials, and (b) inhalation of radioactive materials.

Population-at-Risk - Those persons for whom protective actions are being or would be taken. In the 10-mile EPZ the population-at-risk consists of resident population, transient population, special facility population, and industrial population.

Potassium Iodide - (Symbol KI) A chemical compound that readily enters the thyroid gland when ingested. If taken in a sufficient quantity prior to exposure to radioactive iodine, it can prevent the thyroid from absorbing any of the potentially harmful radioactive iodine-131.



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### Glossary Of Terms

Procedure, Plant Emergency (PEP) - Plant emergency procedures implement the HNP Emergency Plan and are published in Volume 2, Part 5 of the Plant Operations Manual. PEPs define the specific, step-by-step actions to be followed by the emergency organization in the process of recognizing and assessing an emergency condition, and mitigating the condition through the use of corrective and protective actions. PEPs do not include those actions taken by licensed control operators to directly control plant systems (see Emergency Instructions).

Projected Dose - An estimate of the potential radiation dose which affected population groups could receive.

Protected Area - An area of the plant site encompassed by physical barriers to which access is controlled.

Protection Factor (PF) - The relation between the amounts of radiation which would be received by a completely unprotected person compared to the amount which would be received by a protected person such as a person in a shielded area.  $PF = \text{Unshielded dose rate} \div \text{shielded dose rate}$ .

Protective Action - Sometimes referred to as protective measure. An activity conducted in response to an incident or potential incident to avoid or reduce radiation dose to members of the public.

Protective Action Guide (PAG) - The projected dose to reference man or other defined individual from an accidental release of radioactive material at which a specific protective action to reduce or avoid that dose is warranted.

Recovery - The process of reducing radiation exposure rates and concentrations of radioactive material in the environment to levels acceptable for unconditional occupancy or use.

Release - Escape of radioactive materials into the uncontrolled environment.

Restricted Area - Any area, access to which is controlled by Progress Energy Company for purposes of protection of individuals from exposure to radiation and radioactive materials.

Safety Analysis Report, Final (FSAR) - The FSAR is a comprehensive report that a utility is required to submit to the NRC as a prerequisite and as part of the application for an operating license for a nuclear power plant. The multivolume report contains detailed information on the plant's design and operation, with emphasis on safety-related matters.

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### Glossary Of Terms

Safety-related - As used in this plan and in Plant Emergency Procedures when describing areas, equipment, systems or components, safety-related means:

1. Forming a part of the Reactor Coolant System pressure boundary, or
2. Used to mitigate the consequences of an abnormal condition, or
3. Necessary to achieve or maintain safe shutdown of the plant.

SERT - State Emergency Response Team (North Carolina). (See also DEM).

Shelter - A habitable structure or space used to protect its occupants from radiation exposure. The radiation protection factor (PF) of the shelter will vary as a function of the density of structural materials located between its occupants and the source of radiation.

Shielding - Any material or barrier that attenuates (stops or reduces the intensity of) radiation.

Source Term - Radioisotope inventory of the reactor core, or amount of radioisotope released to the environment, often as a function of time.

State - The State of North Carolina.

Technical Support Center (TSC) - A center outside of the Main Control Room in which information is supplied on the status of the plant to those individuals who are knowledgeable or responsible for engineering and management support of reactor operations in the event of an emergency, and to those persons who are responsible for management of the on-site emergency response.

Total Effective Dose Equivalent (TEDE) - The sum of external and internal ionizing radiation exposure.

Unrestricted Area - Any area to which access is not controlled by the licensee for protecting individuals from exposure to radiation and radioactive materials, and any area used for residential quarters.

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### NUREG-0654 REV. 1 Cross-Reference

<b>NUREG-0654, Criterion Paragraph</b>	<b>EP Section Number</b>
<b><u>A. Assignment of Responsibility</u></b>	
A.1.a Identify response organizations	Annex G
A.1.b Concept of operations	2.0, 4.1, Table 4.0-1
A.1.c Illustrate interrelationships	Figures G-1, G-2, Table 2.2 -1, Figure 2.2 -1, Figure 2.4-1
A.1.d Individual responsible for emergency response	2.3, 2.4.1.B, 2.4.2.A, 2.4.4.A
A.1.e Provision for 24 hours per day response	2.2, Table 2.2-1
A.3 Agreements	Annex A, Annex G
A.4 Individual responsible for resources	2.4.1.B, 2.4.2.A, 2.4.4.A
<b><u>B. On-site Emergency Organization</u></b>	
B.1 Plant Emergency Organization	2.0, Table 2.2-1, Figure 2.2-1, Figure 2.4-1
B.2 Assignment of Site Emergency Coordinator	2.4.1.B, 2.3, 2.4.2.A, 2.4.4.A
B.3 Line of succession	2.3, 2.4.1.B, 2.4.2.A, 2.4.4.A
B.4 Responsibilities	2.3, 2.4.1.B, 2.4.2.A, 2.4.4.A
B.5 Emergency organization and assignments	2.2, 2.4, Table 2.2-1
B.6 Interfaces - Plant, State, Local, Corp.	Figures 2.2-1, 2.4-1, Table 4.0-1, Annex G
B.7 Corporate Emergency Organization	2.2
B.7.a Logistics support for emergency personnel	2.4.4.F
B.7.b Technical Support - planning reentry, recovery	2.2, 6.4.5.
B.7.c Management to Government interface	2.4.1.B, 2.4.4.A, Figures G-1 and G-2

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<b>NUREG-0654, Criterion Paragraph</b>	<b>EP Section Number</b>
B.7.d Corporate news media coordination	2.4.4.E, 2.4.5
B.8 Contractor and private assistant	Annex G
B.9 Local agency services	Annexes A & G

#### C. Emergency Response Support and Resources

C.1.a Titles authorized to request federal assistance	2.3.E
C.1.b Specific federal resources expected and delivery time.	Annex G
C.1.c Airports, EOC, telephones, radios, available to assist federals	3.7, 3.8
C.2.b Licensee representative to principal government EOCs	2.4.4.X
C.3 Description of available radiological labs	3.9.7
C.4 Nuclear and other facilities or organizations	2.5, Annex G

#### D. Emergency Classification System

D.1 Emergency classification system and EALS, parameter values and equipment status.	4.1, Figure 4.1-1, Figure 4.1-2
D.2 Initiating conditions and FSAR accidents.	4.1, Figure 4.1-1, Figure 4.1-2

#### E. Notification Methods and Procedures

E.1 Establish procedures for notification of response organization and verification.	4.2
E.2 Establish procedures for alerting, notifying, and mobilizing response personnel.	4.2, 4.3, Table 4.2-1-4
E.3 Establish content of message.	4.2
E.4 Make provision for follow-up message.	4.2
E.6 Provide for alerting and notifying public.	4.5.4, Annex H

## ANNEX D

### **NUREG-0654 REV. 1 Cross-Reference**

	<b>NUREG-0654, Criterion Paragraph</b>	<b>EP Section Number</b>
E.7	Provide narrative for public messages on protective actions.	4.5.4

#### **F. Emergency Communications**

F.1	Establish organizational titles and alternate means of primary and backup communications	2.4.1.G, 2.4.2.F-G, 2.4.4.U-W, 3.8, 4.1
F.1.a	Provide Telephone link and alternate for 24-hour notification to state and local agencies	2.4.1.8, 2.4.4.V, 3.8, 4.2, Annex G
F.1.b	Provide for communications with contiguous state/local agencies	2.4.1.G, 2.4.4.V, 3.8
F.1.c	Provide for communications with Federal agencies	2.4.1.G, 2.4.2.G, 3.8
F.1.d	Communication between plant, EOF, state and local EOCs and RM teams	3.8
F.1.e	Provide for alerting and activating emergency personnel	3.8, 4.2
F.1.f	Communication between NRC, EOF and environmental monitoring teams	3.8
F.2	Communication link for fixed and mobile medical	3.8, 4.6.3.E.4)
F.3	Conduct periodic testing of communication system	5.3.1.A

#### **G. Public Education and Information**

G.1	Disseminate, annually, educational information to public	5.2.5
G.2	Disseminate, annually, educational information for transient population	5.2.5
G.3.a	Designate contacts and space for media	3.6
G.3.b	Provide space for media at the EOF	3.5.2.
G.4.a	Designate a spokesperson	2.4.5.A
G.4.b	Provide for timely exchange of information between spokespersons	2.4.5.A

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<b>NUREG-0654, Criterion Paragraph</b>	<b>EP Section Number</b>
G.4.c Provide for coordinated rumor control	3.6.F
G.5 Provide annual training for media	5.2.5
<b><u>H. Emergency Facilities and Equipment</u></b>	
H.1 Establish TSC and OSC	3.3, 3.4
H.2 Establish EOF	3.5
H.4 Provide for timely activation of facilities	4.2, 4.3
H.5.a Identify & establish on-site geophysical phenomena monitors	3.9.2, 3.9.5
H.5.b On-site radiological monitors: process, area, emergency.	3.9.3, 3.9.6
H.5.c On-site Process monitors: reactor coolant pressure, temperature, and so forth	3.9.1
H.5.d On-site fire and combustion products detectors	3.9.8
H.6.a Provide access to off-site geophysical monitors	3.9.2, 3.9.5
H.6.b Access to off-site radiological monitors and sampling	3.9.3, 3.9.6, 3.9.7
H.6.c Access to off-site laboratories: fixed or mobile	3.9.7
H.7 Provide for radiological monitoring equipment off-site	3.5.3, 3.9.3, Table 3.1-1, 4.4.4
H.8 Provide meteorological instrumentation and procedures	3.9.5
H.9 Provide for OSC and special equipment in the OSC	3.4, Table 3.1-1
H.10 Inspect emergency equipment and supplies	5.4.1
H.11 Identify emergency kits by general category	Table 3.1-1
H.12 Establish point near EOF for receipt of environmental monitoring data	3.9.7

## ANNEX D

### NUREG-0654 REV. 1 Cross-Reference

NUREG-0654, Criterion Paragraph		EP Section Number
<b><u>I. Accident Assessment</u></b>		
I.1	Identify plant system and effluent parameters and instruments values	3.91, 4.1, Figures 4.1-1, Figure 4.1.-2
I.2	Post-accident sampling, radiation monitors, and so forth	3.9.3, 4.4.2.
I.3.a	Establish methods and techniques to determine source terms	4.4
I.3.b	Methods to determine magnitude of release	4.4
I.4	Establish relationships for effluent monitor readings	4.4
I.5	Capability to acquire and evaluate meteorological data	3.9.5
I.6	Procedure for assessment when instruments off-scale	4.4.3
I.7	Describe capability and resources for environmental monitoring	2.4.4.T, Table 2.2-1, Table 3.1-1, 4.4.4
I.8	Assessment of (radiological) environmental hazards from liquid or gas	2.4.4.T, 3.9.6, 3.9.7, 4.2, 4.4.4, Table 2.2-1
I.9	Detect and measure radioiodine in the 10-Mile EPZ.	3.9.6, 4.4.4
I.10	Procedure for dose or dose rate projection	4.4.3
<b><u>J. Protective Response</u></b>		
J.1.a	Establish means and time to warn on-site employees and individuals in the exclusion area not on the ERO	4.6.1, 4.6.2
J.1.b	Establish means and time to warn on-site visitors or visitors in the exclusion area	4.6.1, 4.6.2
J.1.c	Establish means and time to warn contractor/construction personnel	4.6.1
J.1.d	Est. means and time to warn others	4.5.4, 4.6.1

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### NUREG-0654 REV. 1 Cross-Reference

	<b>NUREG-0654, Criterion Paragraph</b>	<b>EP Section Number</b>
J.2	Evacuation routes and transportation for on-site people	4.6.2
J.3	Provide radiation monitoring for people in J.2	4.6.2
J.4	Provide decon capability at J.3 location	4.6.2, 4.6.3.A
J.5	Account for personnel, ascertain missing individuals within 30 minutes of start of emergency and account for on-site persons continuously thereafter.	4.6.2
J.6.a	For individuals remaining or arriving - respiratory protection	Table 3.1-1, 4.6.3.C
J.6.b	For individuals remaining or arriving - protective clothing	Table 3.1-1, 4.6.3.C
J.6.c	For individuals remaining or arriving - radioprotective drugs	Table 3.1-1, 4.6.3.C
J.7	Recommendations To Local Government	4.5
J.8	Evacuation time estimates - 10-Mile EPZ	1.7, Table 1.8-2
J.10.a	Maps-Evac. routes, areas, rad. Sampling and monitoring points, reception and shelter areas	Annex H, 4.4.4, Annex G
J.10.b	Map-Population by Sectors and local zones	1.8, Table 1.8-1, Figure 1.8-1
J.10.c	Means for notifying transient and resident population	4.5.4
J.10.m	Bases for recommended protective actions; shelter, evac. time	4.5.1, 4.5.2, Table 4.5-2
<b><u>K. Radiological Exposure Control</u></b>		
K.1.a	Exposure guidelines - removal of injured persons	4.6.3.D
K.1.b	Exposure guidelines - performing corrective actions	4.6.3.D
K.1.c	Exposure guidelines - performing assessment actions	4.6.3.D
K.1.d	Exposure guidelines - providing first aid	4.6.3.E



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<b>NUREG-0654, Criterion Paragraph</b>	<b>EP Section Number</b>
K.1.e Exposure guidelines - personnel decontamination	4.6.3.E
K.1.f Exposure guidelines - providing ambulance service	4.6.3.B, 4.6.3.E
K.1.g Exposure guidelines - medical treatment	4.6.3.F, 4.6.3.E
K.2 On-site radiation protection program- emergency	4.6.3.D
K.3.a Dosimetry - 24-hour capability	4.6.3.B
K.3.b Emergency worker dosimeters and dose records	4.6.3.B
K.5.a Decontamination guides - action levels	4.6.3.E., Table 4.6-1
K.5.b Means for decontamination and waste disposal	4.6.3.A, 4.6.3.E, Table 4.6-1
K.6.a Contamination control - access control	4.6.3.E, Table 4.6-1
K.6.b Contamination control - drinking water and food	4.6.3.G
K.6.c Criteria for return to normal use- areas, items	4.6.3.E.3
K.7 Decontamination - relocated on-site personnel	4.6.2, 4.6.3.A, 4.6.3.E.3

#### **L. Medical and Public Health Support**

L.1 Local and backup hospital for evaluation of radiation exposure - adequately prepared	4.6.3.F.1, Annex A
L.2 On-site first aid capability	2.4.1.F, 4.6.3.E.2
L.4 Transportation - victims of radiation accident	4.6.3.E.4, Annex A

#### **M. Recovery and Reentry Planning and Post-Accident Operations**

M.1 Plans and procedures - relaxation of protective measures	6.4, 6.5, 6.6
M.2 Recovery organization	6.2, 6.3
M.3 Means for alerting recovery personnel	4.2, 6.4
M.4 Method for periodically estimating population dose	6.6

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<b>NUREG-0654, Criterion Paragraph</b>	<b>EP Section Number</b>
<b><u>N. Exercises and Drills</u></b>	
N.1.a Conduct annual exercise - off-site release	5.3.2
N.1.b Verify capability to respond - Evaluate, Critique	5.3.2
N.2.a Conduct communication drills to test communications with: State & local in 10-mi. EPZ monthly; Federal & State in 50-mi. EPZ quarterly; plant, State & local EOCs and field assessment teams annually.	5.3.1.A
N.2.b Conduct fire drills per plant tech specs	5.3.1.B
N.2.c Medical emergency drill, contaminated individual & participation by local ambulance & off-site medical facility annually.	5.3.1.C
N.2.d Plant environs and radiological monitoring drills - annually	5.3.1.D
N.2.e.(1) HP drill, semi-annual, response to , analysis of, simulated airborne and liquid	5.3.1.E
N.2.e.(2) HP drill, annual, analysis of actual elevated liquid samples	5.3.1.E
N.3.a Plans/Scenario content - objectives and evaluation criteria	5.3.2
N.3.b. Plans/Scenario content -dates, time period, place, and participating organization	5.3.2
N.3.c Plans/Scenario content - simulated events	5.3.2
N.3.d Plans/Scenario content - time	5.3.2
N.3.e Plans/Scenario content - narrative summary	5.3.2
N.3.f Plans/Scenario content - official observers	5.3.2
N.4 Provision for critiques	5.3.2
N.5 Provision for identifying areas of improvement and assigning responsibility for corrective action	5.3.2

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### NUREG-0654 REV. 1 Cross-Reference

NUREG-0654, Criterion Paragraph	EP Section Number
<b><u>O. Radiological Emergency Response Training</u></b>	
0.1 Assure the training of individuals who maybe called on to assist in an emergency	5.2
0.1.a Provide training for off-site emergency organizations	5.2.1, 5.2.3
0.2 Training to include practical drills - on-site organization	5.2.1
0.3 First aid team training to include Multimedia	5.2.1
0.4.a Training of response organization directors	5.2.1
0.4.b Training of accident assessment personnel	5.2.1
0.4.c Training of radiological monitoring and analysis personnel	5.2.1
0.4.d Training of police, security, fire-fighting personnel	5.2.1
0.4.e Training of repair and damage control teams	5.2.1
0.4.f Training of first aid and rescue personnel	5.2.1
0.4.g Training of local support service/CD	5.2.1, 5.2.3
0.4.h Training of medical support personnel	5.2.1, 5.2.3
0.4.i Training of headquarters support personnel	5.2.2
0.4.j Training of emergency communicators	5.2.1
0.5 Provide initial and annual retraining	5.2.1
<b><u>P. Responsibility for the Planning Effort</u></b>	
P.1 Provide training for emergency planners	5.2.4
P.2 Identify titles responsible for planning	1.3, 5.1.1
P.3 Designate Emergency Planning Coordinator	1.3, 5.1.1
P.4 Annually review and update plans and agreements	5.1.2
P.5 Distribute emergency plan; identify revisions	5.1.2

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	<b>NUREG-0654, Criterion Paragraph</b>	<b>EP Section Number</b>
P.6	List other supporting plans	1.10
P.7	List and cross-reference procedures for implementing the plan	5.1.4, Annex E
P.8	Provide Table of Contents and NUREG cross-reference	pgs. 2-7, 5.1.5, Annex D
P.9	Arrange independent review every 12 months	5.1.6
P.10	Provide for quarterly updating of telephone numbers	5.1.3

## ANNEX E

### List Of Emergency Preparedness Documents

Document Type	Plan Section
<b><u>Emergency Plan Implementing Procedures (PEPs)</u></b>	
PEP-110 Emergency Classification and Protective Action Recommendations	4.1, 4.5, 4.5.1-2
PEP-230 Control Room Operations	2.4.1, 4.6.1
PEP-240 Activation and Operation of the Technical Support Center	2.4.2, 4.8
PEP-250 Activation and Operation of the Joint Information Center	2.4.5
PEP-260 Activation and Operation of the Operations Support Center	2.4.3
PEP-270 Activation and Operation of the Emergency Operations Facility	2.4.4
PEP-310 Notifications and Communications	4.2, 4.3
PEP-330 Radiological Consequences	2.4.3.I, 2.4.4.T, 4.4.2, 4.4.4, 4.6.3, 4.6.3 E-F, 4.7
PEP-340 Dose Assessment	2.4.4.Q, 4.4.3
PEP-342 Core Damage Assessment	1.4.4, 2.4.2, 3.9.4, 4.4.1, 4.4.2
PEP-350 Protective Actions	2.4.1.E-G, 4.6.1-2,
PEP-500 Recovery	6.1-5
<b><u>Emergency Program Maintenance and Administration (EPMs)</u></b>	
EPM-100 EP Program Administration	5.0, 5.1.1-2, 5.1.6, 5.3.1-2
EPM-200 ERO Training Program	5.2.1-3
EPM-201 EP Staff Training Program	5.2.4
EPM-210 EP Drill and Exercise Program	5.3
EPM-211 EP Scenario Development Guidelines	5.3
EPM-400 Public Notification and Alerting System	5.5
EPM-410 Communication and Facility Performance Tests	5.0, 5.5.1-4
EPM-420 Emergency Equipment Inventory	5.0, 5.4.1
EPM-500 Public Education and Information Program	5.2.5
EPM-600 Dose Assessment Technical Basis	2.4.4Q and R, 4.4..3
EPM-601 Core Damage Assessment Technical Basis	1.4.4, 2.4.2, 3.9.4, 4.4.1, 4.4.2
EPM-602 Routine Maintenance and Testing of the Dialogic System	4.2.e
<b><u>Other Documents</u></b>	
EPL-001 Emergency Phone List	5.1.3, Annex G

## ANNEX F

The warning message form used to notify the State and Counties is provided in Annex F of the North Carolina Emergency Response Plan and is included as a form in PEP-310, "Notifications and Communications."

## **ANNEX G**

### **Interfacing Information From Supporting Emergency Plans**

#### **1.0 General**

The material in this Annex is included as general information on how supporting emergency plans interface with the HNP Emergency Plan. The information is presented in a similar format as the basic Plan. Emergency organization interfaces, based on levels of activation, are depicted in Figures G-1 and G-2. A summary of organizations expected to support emergency response is contained in Table G.1-1.

#### **2.0 Coordination with Participating State and Local Government Agencies**

##### **2.1 State of North Carolina Governor's Office**

The Governor has the authority to direct and control the State Emergency Management Program. During a declared State of Disaster, the Governor has the authority to utilize all available state resources reasonably necessary to cope with emergencies. The Governor's representatives coordinate as necessary with Progress Energy and with local government officials.

##### **2.2 North Carolina Department of Crime Control and Public Safety**

The Department of Crime Control and Public Safety functions as the State of North Carolina Emergency Planning Coordinator. In that capacity, the Department has overall management responsibility for North Carolina's radiological emergency response planning, development, updating, and coordination with Progress Energy. The Department coordinates emergency response activities for the State of North Carolina and other government emergency response agencies.

The Department, through its State Highway Patrol, in conjunction with the North Carolina Division of Emergency Management provides the initial 24-hour emergency notification point for the State.

##### **2.3 North Carolina Division of Emergency Management**

The Division of Emergency Management (DEM) is the responsible organization within the N.C. Department of Crime Control and Public Safety to prepare and maintain a State Radiological Emergency Response Plan for HNP in coordination with the Department of Environment, Health and Natural Resources and other interested agencies. The DEM is the lead response agency within State government and coordinates the activities of the State Emergency Response Team (SERT) at the State Emergency Operations Center (SEOC) in Raleigh. Personnel within the SEOC will confer with Progress Energy to determine appropriate emergency response activities which should be taken to protect the health and safety of the public.

The DEM in conjunction with the North Carolina Department of Crime Control and Public Safety provides the initial 24-hour emergency notification point for the State.

## **ANNEX G**

### **Interfacing Information From Supporting Emergency Plans**

#### **2.4 Radiation Protection Section**

The Radiation Protection Section (RPS), within North Carolina Department of Environment, Health and Natural Resources, will be the lead agency in the collection and analysis of radiation monitoring reports and of environmental air, foliage, food, and water samples. The RPS will be assisted by qualified personnel from HNP.

#### **2.5 Chatham County Emergency Operations**

Chatham County Emergency Operations has the following responsibilities:

- Develop and maintain Chatham County's Plan to Support the Harris Nuclear Power Plant.
- Coordinate emergency response matters between the State, County, Progress Energy, and local government agencies.
- Operate the county warning point (Communications Center) on a 24-hour basis. The Communications Center is manned continuously by a Public Safety Dispatcher.
- Coordinate the protective response operations required by the Chatham County Plan to Support the Harris Nuclear Power Plant during an emergency.

#### **2.6 Harnett County Emergency Services**

Harnett County Emergency Services has the following responsibilities:

- Develop and maintain the Harnett County's Plan to Support the Harris Nuclear Power Plant.
- Coordinate emergency response matters between the State, County, Progress Energy, and local government agencies.
- Coordinate the protective response operations required by the Harnett County Plan to Support the Harris Nuclear Power Plant during an emergency.

#### **2.7 Harnett County Sheriff's Department**

The Sheriff's Department operates the county warning point on a 24-hour basis. The county warning point is the Sheriff's Department communications center which is manned continuously by a Public Safety Dispatcher.



## **ANNEX G**

### **Interfacing Information From Supporting Emergency Plans**

#### **2.8 Lee County Emergency Services**

Lee County Emergency Services has the following responsibilities:

- Develop and maintain the Lee County Plan to Support the Harris Nuclear Power Plant.
- Coordinate emergency response matters between the State, County, Progress Energy, and local governmental agencies.
- Coordinate the protective response operations required by the Lee County Plan to Support the Harris Nuclear Power Plant during an emergency.

#### **2.9 Lee County Sheriff's Department**

The Sheriff's Department operates the county warning point on a 24-hour basis.

The county warning point is the Lee County communications center which is manned continuously by a Public Safety Dispatcher.

#### **2.10 Wake County Emergency Management**

The Wake County Emergency Management has been assigned the following responsibilities:

- Develop and maintain Wake County's Plan to Support the Harris Nuclear Power Plant.
- Coordinate emergency response matters between the State, County, Progress Energy, and local government agencies.
- Coordinate the protective response operations required by the Wake County Plan to Support the Harris Nuclear Power Plant during an emergency.

#### **2.11 Raleigh Communications Center**

The Raleigh City Communications Center provides emergency telephone notification service and serves Wake County and all municipalities within the county as the 24-hour warning point. The warning point is manned continuously by a Public Safety Dispatcher.

### **3.0 Coordination With Federal Agencies and Other States**

#### **3.1 Department of Energy, Savannah River Operations Office**

The role of the Department of Energy is described in the Federal Radiological Emergency Response Plan published in the Federal Register, Volume 50, No. 217, November 8, 1985.

## ANNEX G

### Interfacing Information From Supporting Emergency Plans

#### 3.2 Federal Emergency Management Agency (FEMA)

The role of the Federal Emergency Management Agency (FEMA) is described in the Federal Radiological Emergency Response Plan.

#### 3.3 Nuclear Regulatory Commission (NRC)

The NRC provides at least one resident inspector at HNP. Upon notification by Progress Energy, the NRC provides additional technical advice, technical assistance, and personnel per NUREG-0728, "Report to Congress, NRC Incident Response Plan," and NUREG-0845, "Agency Procedures for the NRC Incident Response Plan." The NRC Operations Center will be notified of radiation incidents in accordance with 10 CFR 50.72 using the Emergency Telecommunications System (ETS) phone.

#### 3.4 Weather Service

The National Weather Service at the Raleigh-Durham International Airport, Raleigh, North Carolina, will provide meteorological information during emergency situations, if required. Data available will include existing and forecasted surface wind directions, wind speed with azimuth variability, and ambient surface air temperature.

#### 4.0 Contracted Services

A number of active contracts are maintained in order to ensure continuing access to qualified personnel when and if they are needed to supplement Progress Energy resources. These contracts provide the capability of obtaining, on an expedited basis, additional maintenance support personnel (such as mechanics, electricians, and I&C Technicians), other technical personnel (such as HP and Chemistry Technicians), and engineering and consulting services. For example, contracts are maintained with Westinghouse, Atlantic Group, and Washington Group. A contract is maintained with the Framatome Technologies for analysis of in-plant radioactive samples and one is maintained with Murray and Trettel Weather Services, Inc. and Weather Services International which provide localized weather forecasts for the system or for HNP area as requested. A contract is maintained with the Raleigh Convention and Conference Center to provide a location for news media briefings when the Joint Information Center is activated.

**Interfacing Information From Supporting Emergency Plans**

**5.0 Industry Resource Support**

American Nuclear Insurers (ANI) would assist the affected utility by managing the insurance claims generated by the public who may be affected by an offsite radiological event.

Nuclear Electric Insurance Limited (NEIL) would assist the affected utility in determining the damage to equipment on site and managing the insurance claims made by the utility for the loss of the generation of power due to an emergency.

One of INPO's roles is to assist the affected utility in applying the resources of the nuclear industry to meet the needs of the emergency. When notified of an emergency situation, INPO will provide emergency response in accordance with the INPO Emergency Response Plan at the request of the utility. Utility emergency response planning includes notification to INPO, via the emergency telephone number, of events classified Alert or higher.

INPO is able to provide the following emergency support functions:

- Identifying sources of emergency manpower
- Dissemination of technical information concerning the incident to member utilities and participants
- Analysis of operational aspects of the incident.
- To support these functions, INPO maintains the following emergency support capabilities:
  - Dedicated emergency call number capable of reaching INPO staff and activating INPO support functions 24 hours per day.
  - Designated INPO representative(s) who can be dispatched to the utility to coordinate INPO support activities and information flow.
  - An Emergency Response Center available for operation 24 hours per day.

An INPO duty person will respond to the call, and the Emergency Response Center at INPO will be activated as necessary.

## ANNEX G

### **Interfacing Information From Supporting Emergency Plans**

If requested by the utility or when deemed appropriate, one or more suitably qualified members of the INPO staff will report to the Emergency Response Manager and assist in coordinating INPO's response to the emergency, as follows:

- Staffing a position responsible to the appropriate utility manager as liaison for all INPO matters.
- Working with INPO personnel in Atlanta to coordinate requests for assistance, INPO response, and related communications.
- Assisting the utility as requested in the use of industry information systems (such as NETWORK) concerning accident status and related information of interest to other utilities.
- Ensuring that emergency information released by the INPO liaison is cleared through appropriate utility channels.

An INPO representative could be dispatched on approximately a four-hour notice. On-site activities, when undertaken, will be approved by the President of INPO and coordinated with the affected utility through the on-site INPO representative.

Progress Energy Company is a signatory to the mutual assistance agreement developed by INPO for utilities in the nuclear industry.

### **6.0 Local Services Support**

HNP is equipped and staffed to cope with many types of emergency situations. However, if a fire, medical, or other type of incident occurs that requires outside assistance, such assistance is available as shown on Table 4.0-1.

#### **6.1 Medical Assistance**

Medical assistance is available through agreements with the following organizations as described in Section 4.6.3.7 of this plan. HNP agreements with the listed agencies are on file at Progress Energy. Annex A lists each agreement:

- Local area physicians
- Rex Hospital
- WakeMed Raleigh
- WakeMed Cary

#### **6.2 Ambulance Service**

HNP maintains a contract for support services with Apex Rescue Squad, Inc. as described in Section 4.6.3.6.4 of this plan. Annex A lists this agreement.

## ANNEX G

### Interfacing Information From Supporting Emergency Plans

#### 6.3 Fire Assistance

Agencies with fire protection resources in the vicinity of HNP are as follows:

- Apex Volunteer Fire Department
- Town of Holly Springs Dept of Public Safety Division of Municipal Fire Services
- Other Wake County Fire Departments

The Apex Volunteer Fire Department is the primary fire protection response agency for HNP and will coordinate assistance activities, through a County-wide Mutual Aid Agreement of the other area Fire Departments. HNP agreement with Holly Springs is on file at Progress Energy. Annex A lists each agreement.

#### 7.0 General Public

Protective actions which should be taken by the general public will be provided by State and local government agencies. Progress Energy Company will make recommendations to these government agencies as discussed in Section 4 of this Plan.

#### 7.1 Evacuation

In the event that evacuation of the plume exposure pathway EPZ is required, the evacuation routes shown in Annex H will be used by on-site personnel and the public.

The time required to evacuate personnel from the plume exposure pathway EPZ varies depending on whether a part of the EPZ is to be evacuated or all of it, or prevailing weather conditions, as provided in Table 1.8-2.

#### 7.2 Shelter

The decision to evacuate or remain (in shelter) should be based on an evaluation of many factors including the protection afforded by dwellings, public fallout shelters, and other structures that might provide protection from surface deposited radionuclides and from a gamma cloud source in the plume exposure pathway EPZ.

The locations of public shelters are depicted in Annex H.

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**Organizations Participating in Emergency Response**

Organization	Contact	Location for Response	Approximate Response Time	Agent for Initial Notification
HNP	Site Emergency Coordinator	Control Room	5 Minutes	Superintendent - Shift Operations
Corporate Communications	On-call Corporate Communications	14th floor, PEB	1-2 Hours	On-call Corp. Communications
Nuclear Regulatory Commission	1. Emergency Office (HQ) 2. Base Team Mg (Reg.)	NRC Ops. Ctr Incident Response Center	Immediate Immediate	HQ Duty Officer Regional Duty Officer
Nuclear Regulatory Comm. (Site Team)	1. Director-Site Team OPs 2. Interim Director	EOF, New Hill EOF, New Hill	5-8 Hours 60-75 Minutes	Dir. of Site Team OPs Resident Inspector
State Emergency Response Team	SERT Coordinator	Division Emer. Management Hqtrs, Raleigh	2 Hours	Highway Patrol Communications Center
Chatham County EOC	County Board Chairman	County Law Enforcement Center	1 1/4 - 2 Hours	County Communications Center, Pittsboro
Harnett County EOC	County Board Chairman	County Law Enforcement Bldg.	1 1/4 - 2 Hours	Sheriff's Department, Lillington
Lee County EOC	County Board Chairman	Sanford Municipal Center, Sanford	1-3 Hours	Lee County Sanford Municipal Center, Sanford
Wake County EOC	County Board Chairman	County Courthouse, Raleigh	1-2 Hours	Raleigh Comm. Center
Apex Rescue Squad	Captain	HNP	30-45 Minutes	Raleigh Comm. Center
Apex Volunteer Fire Department	Captain	HNP	20 minutes	Raleigh Comm. Center

**Organizations Participating in Emergency Response**

Organization	Contact	Location for Response	Approximate Response Time	Agent for Initial Notification
Holly Springs Dept. Of Public Safety Division of Municipal Fire Services	Fire Chief	HNP	30-45 Minutes	Raleigh Comm. Center
Atlantic Group	Designated Staff	HNP	3-5 Hours	District Manager
Framatome Technologies	Designated Staff	Alliance Research Center, Indiana	24 hour	Lynchburg, VA
National Weather Service	Designated Staff	Raleigh, NC	phone contact	Raleigh, NC
Murray and Trettel Weather Service International (WSI)	Designated Staff	North Field, Illinois	phone contact	North Field, Illinois
	Designated Staff	Landover, Maryland	phone contact	Corporate Headquarters Landover, Maryland
Washington Group	Manager of Projects	HNP	3-5 Hours	District Manager
Rex Hospital	Emergency Room	Rex Hospital, Raleigh	30-45 Minutes	Rex Emergency Room or Raleigh Comm. Center
WakMed Raleigh (WMR)	Emergency Room	WMR, Raleigh	30-45 Minutes	WMR Emergency Room or Raleigh Comm. Center
WakeMed Cary (WMC)	Emergency Room	WMC, Cary	20-30 Minutes	WMC Emergency Room or Raleigh Comm. Center
Westinghouse Electric Corporation	Emergency Response Director	Command Center Monroeville, PA	8-16 Hours	Regional Service Manager, Southern Service Region, Atlanta

Figure G-1

**ERO Interfaces, TSC and EOF Not Activated**

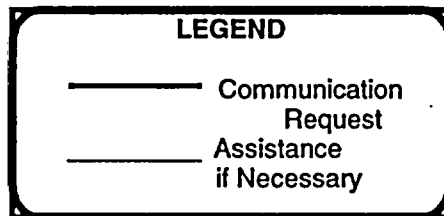
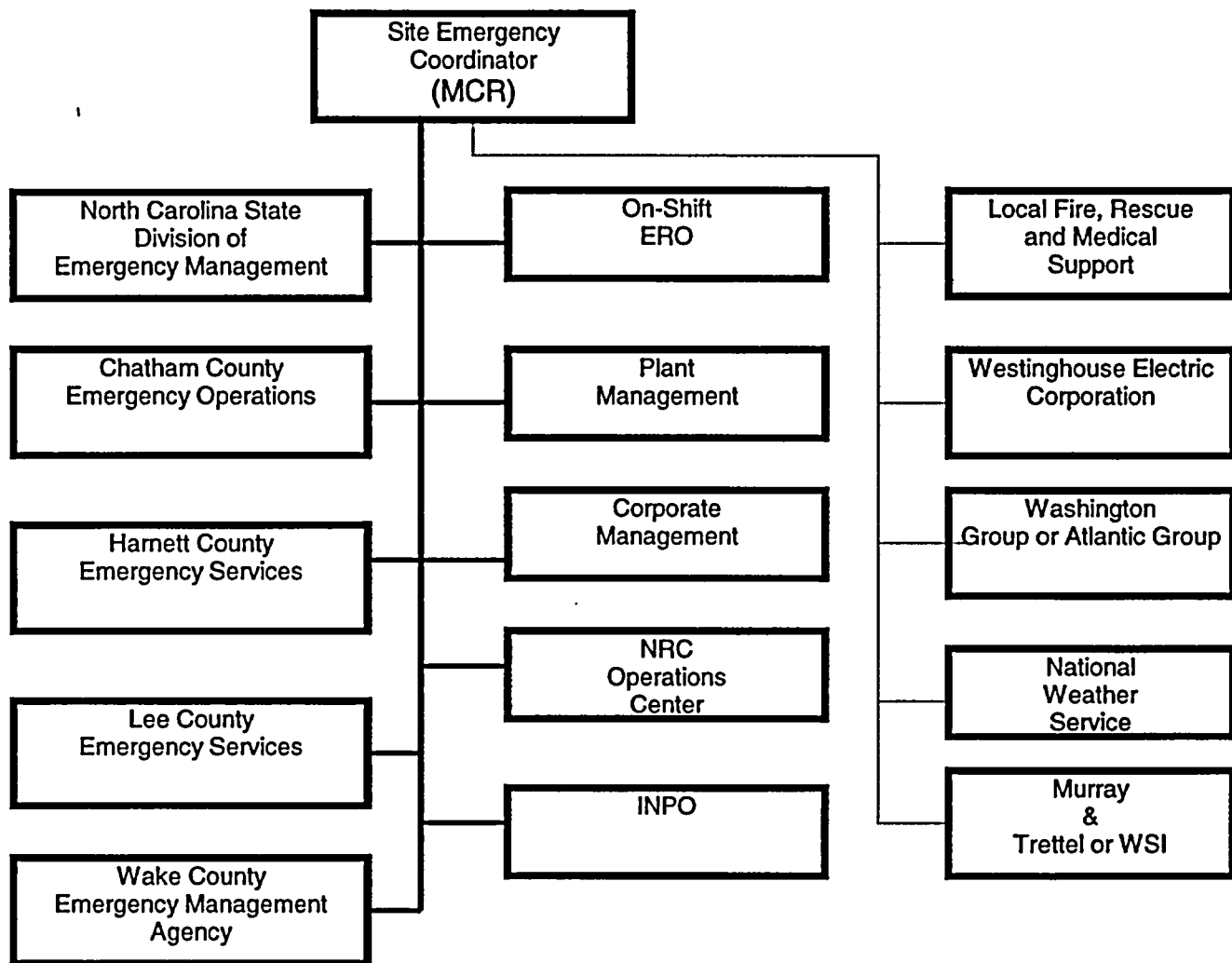
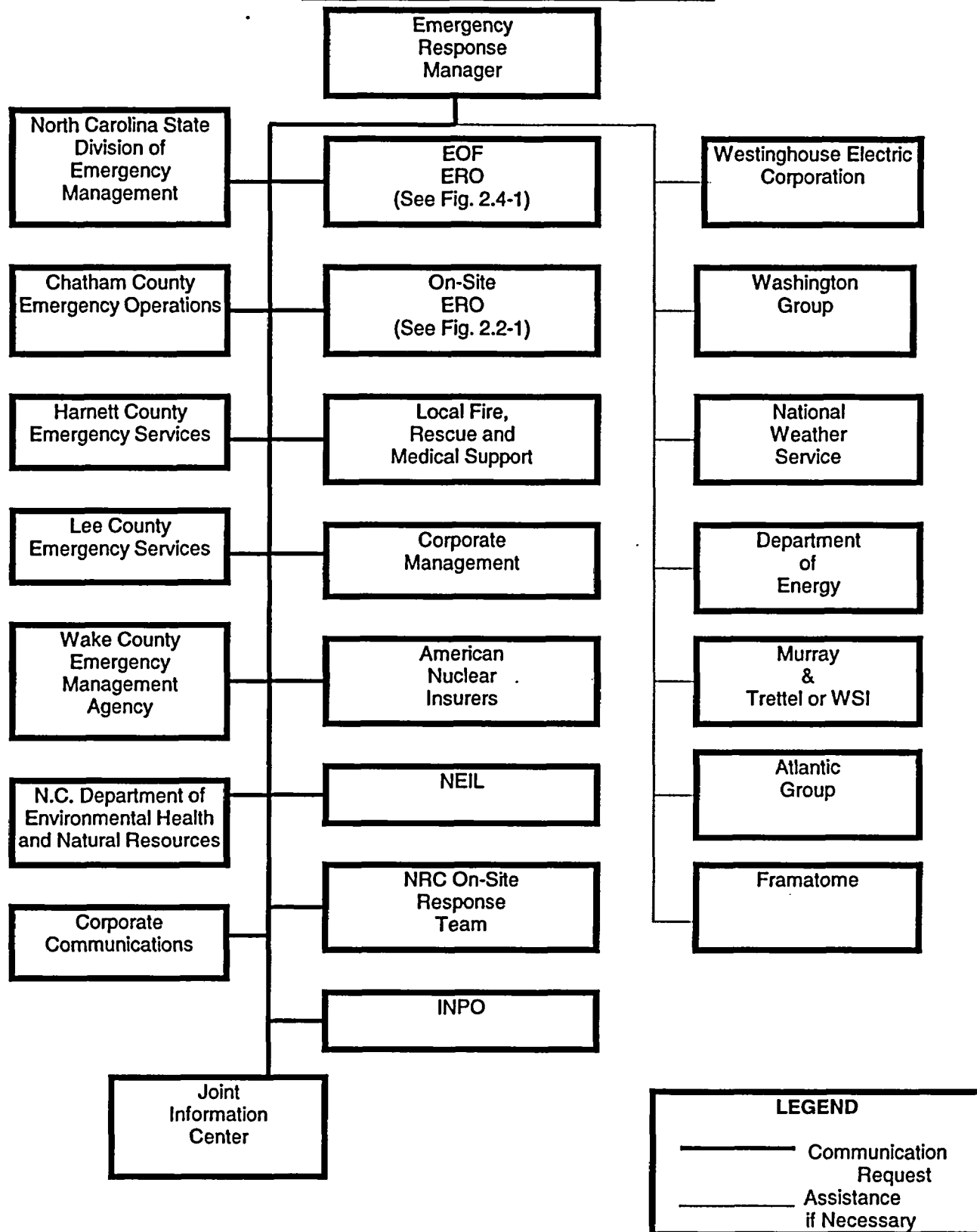




Figure G-2

**ERO Interfaces, TSC and EOF Activated**



Annex H

**Harris Nuclear Plant - Operations Map**

A folded copy of the "Harris Nuclear Plant - Operations Map", from Annex I of the "North Carolina Emergency Response Plan in Support of the Shearon Harris Nuclear Power Plant", is contained in the plastic sleeve following this page.

**Revision 48**

<b><u>Section</u></b>	<b><u>Description Of Change</u></b>
3.3.3 and 3.5.3	Eliminated the wording of, "and a document services library" and replaced it with documents being available in hardcopy or online.
3.9.1	Deleted reference to display of SPDS "with a single keystroke."
3.9.1	Renamed RTIN (real time information network) to Plant Process Network
4.2.B	Removed references to RTIN (real time information network) and added that OSI/PI ENF may be used to notify offsite authorities.
4.4.2.A	Changed the words "high radiation areas" to "radiological conditions."
4.4.2. C	Reworded the sentence "Both the primary sample sink may be used or the post accident sample panel." to "Both the primary sample sink and post accident sample panel may be used."
4.5	Added KI PAG to list of Protective Action Guides.
4.5.2	Added KI PAG to list of possible recommendations issued by HNP during a General Emergency.
4.5.4	Changed "Lake Jordan" to "Jordan Lake".  Deleted reference to Annex J because Annex J combined with Annex G in the revised NC Emergency Response Plan.  Added "or Emergency Operations Center" after "Raleigh Communications Center" to make consistent with the rest of the paragraph.
4.6.3.A	Deleted reference to "first aid room" in the Turbine Building.

4.6.3.E.1	Changed "Health Physics" to "Radiation Control" due to organizational name change.
4.6.3.E.4	Changed "Radiological Control Team" to "Radiation Control Team" due to organizational name change.
Annex B Annex E	Added NUREG-1741, RASCAL 3.0 – Description of Models and Methods
Annex H	Updated Harris Nuclear Plant – Operation's Map for reception and decontamination center modifications and overflow shelter areas.