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10 CFR 50, Appendix E, Section V
10 CFR 50.54(q)(5)

February 4, 2015
Serial: HNP-15-009

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Shearon Harris Nuclear Power Plant, Unit 1
Docket No. 50-400/Renewed License No. NPF-63

Subject: Revision to Emergency Plan and Summary of 10 CFR 50.54(q) Evaluation

Ladies and Gentlemen:

As required by 10 CFR 50, Appendix E, Section V and 10 CFR 50.54(q)(5), Duke Energy Progress, Inc. is submitting a revision to the Harris Nuclear Plant Emergency Plan and a summary of the associated 10 CFR 50.54(q) evaluation.

Enclosure 1 provides a summary of the 10 CFR 50.54(q) evaluation. Enclosure 2 contains a copy of the revised Emergency Plan procedure.

This submittal contains no regulatory commitments. Please refer any questions regarding this submittal to Dave Corlett, Manager – Regulatory Affairs, at (919) 362-3137.

Sincerely,

Benjamin C. Waldrep

Enclosures: 1 - Summary of 10 CFR 50.54(q) Evaluation
2 - Copy of Revised Emergency Plan Procedure

cc: Mr. J. D. Austin, NRC Sr. Resident Inspector, HNP
Ms. M. Barillas, NRC Project Manager, HNP
Mr. V. M. McCree, NRC Regional Administrator, Region II

AX45
NRH

Harris Nuclear Plant
Summary of 10 CFR 50.54(q) Evaluation

1. PLP-201, Revision 63, Emergency Plan

PLP-201 was revised to incorporate changes that were required to be evaluated by the 10 CFR 50.54(q) process. A list of changes made by this revision is provided below.

Section	Change Description
3.8.2	Step A.2 revised From: An off-site Notification System (Selective Signaling System) provides communications To: An off-site Notification System [Selective Signaling System or Duke Emergency Management Network (DEMNET)] provides communications
4.2	Step B revised From: or the Selective Signaling System phone to simultaneously notify To: or the Selective Signaling System or Duke Emergency Management Network (DEMNET) phone to simultaneously notify
7.0	Step Q revised From: EMG-NGGC-0002 Offsite Dose Assessment To: AD-EP-ALL-0202 Emergency Response Offsite Dose Assessment
Annex B	Revised From: The technical basis for the dose projection program is located in NUREG-1887 RASCAL 3.0.5: Description of Models and Methods. To: The technical basis for the dose projection program is located in NUREG 1940 RASCAL 4.0: Description of Models and Methods.
Annex E	Emergency Plan Implementing Procedures revised From: PEP-340 Dose Assessment To: AD-EP-ALL-0202 Emergency Response Offsite Dose Assessment
Annex E	Emergency Plan Implementing Procedures deleted PEP-344 HNP Offsite Dose Assessment Based on Monitored Releases and Plan Sections 2.4.4.Q, 4.4.3
Annex E	Fleet Emergency Preparedness Procedures revised From: EMG-NGGC-0002, Offsite Dose Assessment To: AD-EP-ALL-0202, Emergency Response Offsite Dose Assessment

The 10 CFR 50.54(q) evaluation concluded that the revision does not reduce the effectiveness of the Emergency Plan. The revision does not constitute a reduction in

effectiveness or change in the current Emergency Action Level (EAL) scheme. The changes support the planning standards listed in:

- 10 CFR 50.47(b)(5)
- and, comply with the functions identified in:
- 10 CFR 50, Appendix E, Section IV.D.3

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Serial: HNP-15-009
Enclosure 2

Harris Nuclear Plant
Copy of Revised Emergency Plan Procedure

<u>Procedure Number</u>	<u>Title</u>	<u>Effective Date</u>
PLP-201, Revision 63 (127 pages)	Emergency Plan	01/06/15



I
INFORMATION
USE

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

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." **[7.0.U, Recommendation 5g]**
- 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. **[7.0.U, Recommendation 5g]**
- 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"
- R. CSP-NGGC-0007, Plant Digital Systems Cyber Security.

- S. NEI 99-01 Rev. 5 Final, Methodology for Development of Emergency Action Levels, February 2008, ADAMS Accession Number ML080450149

1.2 Purpose of HNP Emergency Plan and Implementing Procedures

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) and EP-EAL
- 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

[7.0.U, Recommendation 5g]

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 reduce 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 reduction in program effectiveness will not be implemented without prior NRC approval.

1.4 Emergency Classes

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 NRC Bulletin 2005-02, Emergency Preparedness and Response Actions for Security-Based Events, as follows:

1.4.1 Unusual Event

Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection. No releases of radioactive material requiring offsite 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 or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of intentional malicious dedicated efforts of a hostile act. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

1.4.3 Site Area Emergency

Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or security events that result in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) prevents effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

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 or security events that result in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

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)

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

The Harris Nuclear Plant (HNP) site is located near New Hill, NC in the extreme southwest corner of Wake County, North Carolina, approximately 22 miles southwest of Raleigh, which is the largest population center, and approximately 22 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 2948 megawatts thermal (MWt). The associated net electrical output is approximately 930 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.

1.7 Plume Exposure Emergency Planning Zone (EPZ)

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

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

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.

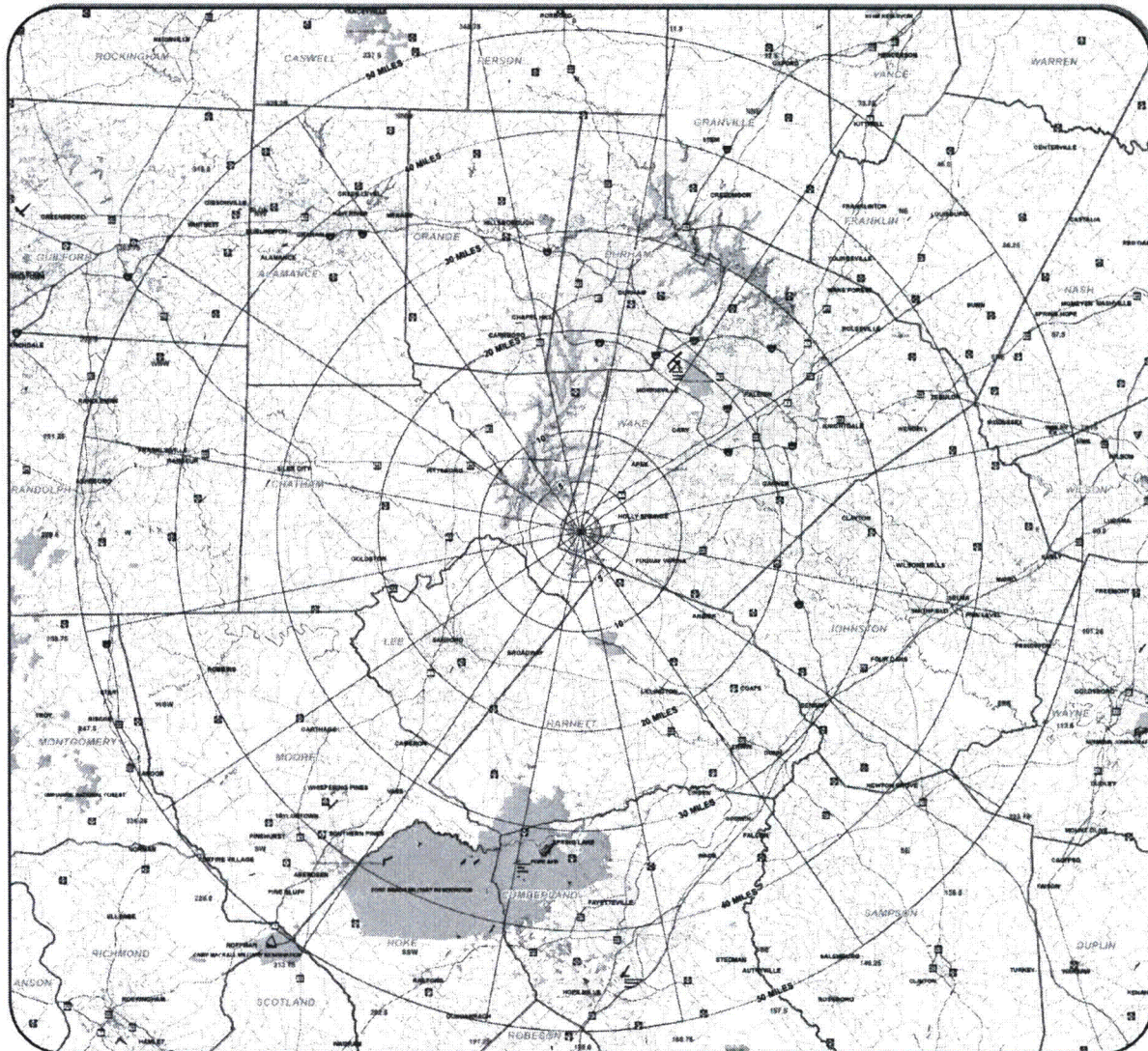
1.10 Supporting Emergency Plans

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)



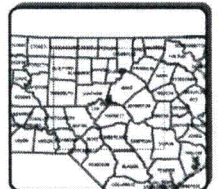
**HARRIS
NUCLEAR
PLANT
50 MILE MAP**



Legend

STREETS

- INTERSTATE
- US HIGHWAY
- NC HIGHWAY
- STATE ROAD
- COUNTY
- CITY LIMITS



Map Information:

Updated: 10/1/2011
10/1/2011
Map created by: 10/1/2011
10/1/2011

WAKE COUNTY

0 2 4 8 12 16
Miles

Information depicted hereon is derived from best available sources. Wake County assumes no responsibility for errors arising from misuse of this map.

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Plume Exposure Emergency Planning Zone (10-Mile EPZ)



Figure 1.5-3
HNP Site Plan and Emergency Facilities

HNP SITE MAP

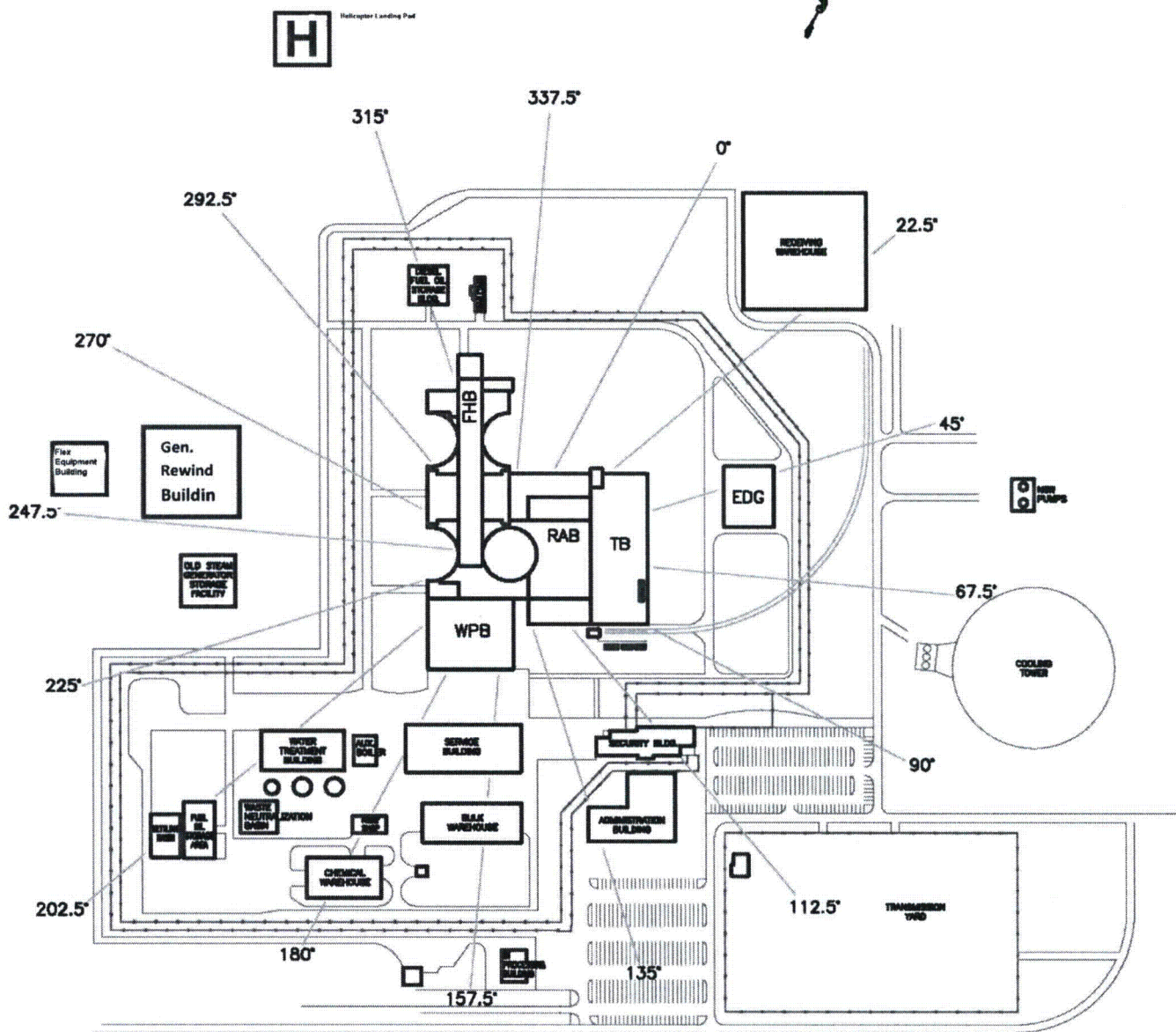


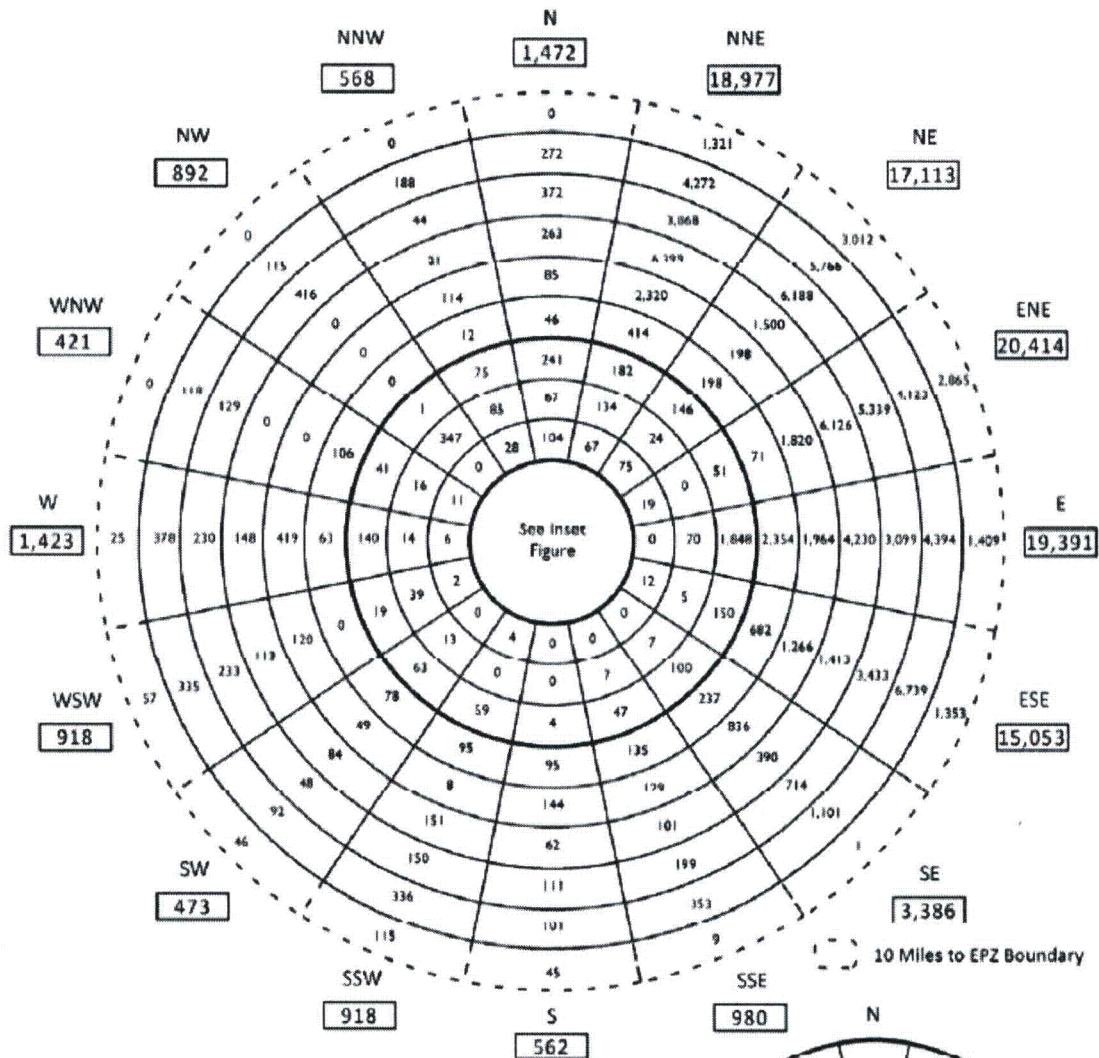
Table 1.8-1
Summary of Population Data by Sub-Zone

Sub-Zone	Residents	Transit-Dependent	Transients	Employees	Special Facilities	Schools	External Traffic	Total
A	134	4	401	519	44	0	0	1,102
B	1,257	42	289	0	0	0	0	1,588
C	2,086	69	70	0	3	0	0	2,228
D	346	11	224	0	0	0	0	581
E	45,269	1,504	1,230	1,228	261	8,889	0	58,376
F	22,342	743	703	789	44	7,936	0	32,552
G	21,463	713	824	582	407	5,002	0	28,991
H	3,868	128	80	0	0	0	0	4,076
I	963	32	0	0	0	0	0	995
J	1,126	37	0	57	137	0	0	1,357
K	688	23	440	247	0	0	0	1,398
L	815	27	2,767	45	0	0	0	3,654
M	1,753	58	2,306	0	0	285	0	4,402
N	851	28	2,108	0	0	0	0	2,987
Total	102,961	3,419	11,442	3,467	896	22,112	0	144,287

This is based on Revision 1 of the "2012 Harris Nuclear Plant Evacuation Time Estimates Report".

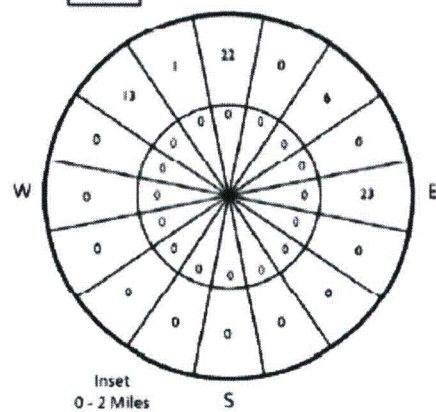
Figure 1.8-1

Demographic Information by Sector



Resident Population

Miles	Subtotal by Ring	Cumulative Total
0 - 1	0	0
1 - 2	65	65
2 - 3	328	393
3 - 4	828	1,221
4 - 5	3,167	4,388
5 - 6	4,586	8,974
6 - 7	9,472	18,446
7 - 8	21,001	39,447
8 - 9	24,573	64,020
9 - 10	28,683	92,703
10 - EPZ	10,258	102,961
Total:		102,961



NOTE: Data is based on Revision 1 of the "2012 Harris Nuclear Plant Evacuation Time Estimates Report".

Figure 1.8-2
Medical Facilities within the EPZ

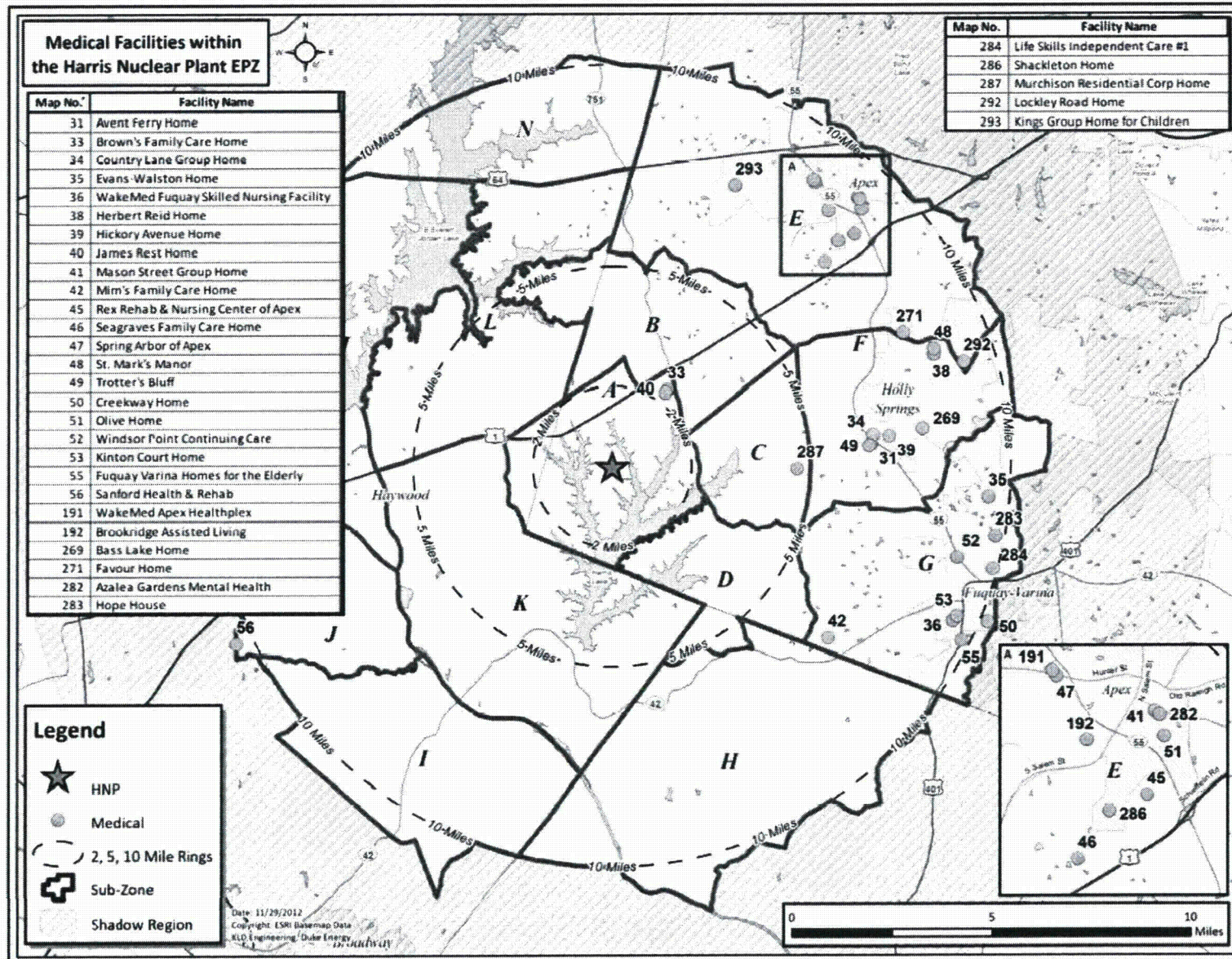


Table 1.8-2

HNP Plume Exposure EPZ Evacuation Time Estimates

Sheet 1 of 3

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: Revision 1 of the "2012 Harris Nuclear Plant Evacuation Time Estimates Report".

Region	Description	Site PAR Description	Sub-Zone													
			A	B	C	D	E	F	G	H	I	J	K	L	M	N
R01	2-Mile Radius	2-Mile Radius	x													
R02	5-Mile Radius	5-Mile Radius	x	x	x	x							x	x		
R03	Full EPZ	10-Mile Radius	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Evacuate 2-Mile Radius and Downwind to 5 Miles																
Region	Wind Direction From:	Site PAR Description	Sub-Zone													
			A	B	C	D	E	F	G	H	I	J	K	L	M	N
R04	NNW, N	327° - 010°	x			x							x			
R05	NNE, NE	011° - 056°	x										x			
R06	ENE, E, ESE	057° - 124°	x										x	x		
R07	SE, SSE, S	125° - 191°	x	x										x		
R08	SSW	192° - 214°	x	x												
R09	SW, WSW	215° - 259°	x	x	x											
R10	-	260° - 281°	x		x											
R11	W, WNW	282° - 304°	x		x	x										
R12	NW	305° - 326°	x			x										
Evacuate 5-Mile Radius and Downwind to the EPZ Boundary																
Region	Wind Direction From:	Site PAR Description	Sub-Zone													
			A	B	C	D	E	F	G	H	I	J	K	L	M	N
R13	N	348° - 034°	x	x	x	x				x	x		x	x		
R14	NNE	-	x	x	x	x				x	x	x	x	x		
R15	NE	-	x	x	x	x					x	x	x	x		
R16	ENE	035° - 079°	x	x	x	x					x	x	x	x	x	
R17	E, ESE	080° - 101°	x	x	x	x						x	x	x	x	
R18	-	102° - 124°	x	x	x	x							x	x	x	
R19	SE	125° - 146°	x	x	x	x							x	x	x	x
R20	SSE	147° - 191°	x	x	x	x	x						x	x	x	x
R21	S, SSW	-	x	x	x	x	x						x	x		x
R22	-	192° - 236°	x	x	x	x	x						x	x		
R23	SW	237° - 259°	x	x	x	x	x	x					x	x		
R24	WSW, W	-	x	x	x	x	x	x	x				x	x		
R25	WNW	260° - 326°	x	x	x	x		x	x	x			x	x		
R26	NW, NNW	327° - 347°	x	x	x	x			x	x			x	x		

Table 1.8-2

HNP Plume Exposure EPZ Evacuation Time Estimates

Sheet 2 of 3

Time to Clear the Indicated Area of 90% of the Affected Population

	Summer		Summer		Summer	Winter			Winter			Winter	Summer	Summer
	Midweek		Weekend		Midweek Weekend	Midweek			Weekend			Midweek Weekend	Weekend	Midweek
Scenario:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Region	Midday		Midday		Evening	Midday			Midday			Evening	Evening	Midday
	Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Ice	Good Weather	Rain	Ice	Good Weather	Special Event	Roadway Impact
Entire 2-Mile Region, 5-Mile Region, and EPZ														
R01	1:05	1:05	1:00	1:00	1:10	1:05	1:05	1:05	1:00	1:00	1:00	1:15	1:10	1:05
R02	1:45	1:45	1:30	1:30	1:45	1:50	1:50	1:50	1:35	1:35	1:35	1:55	1:40	1:45
R03	2:50	3:00	2:40	2:50	2:40	2:50	3:00	3:10	2:40	2:50	3:05	2:40	2:40	2:55
2-Mile Region and Keyhole to 5 Miles														
R04	1:35	1:35	1:30	1:30	1:45	1:40	1:40	1:40	1:35	1:35	1:35	1:55	1:45	1:35
R05	1:30	1:30	1:30	1:30	1:45	1:30	1:35	1:35	1:35	1:35	1:35	1:50	1:45	1:30
R06	1:20	1:20	1:15	1:15	1:30	1:20	1:20	1:20	1:15	1:15	1:15	1:40	1:25	1:20
R07	1:30	1:30	1:20	1:20	1:35	1:30	1:30	1:30	1:20	1:20	1:20	1:40	1:30	1:30
R08	1:45	1:45	1:35	1:35	1:45	1:45	1:45	1:45	1:35	1:35	1:35	1:50	1:45	1:45
R09	2:00	2:00	1:45	1:45	1:55	2:05	2:05	2:05	1:50	1:50	1:50	2:00	1:55	2:00
R10	1:50	1:50	1:40	1:40	1:50	1:55	1:55	1:55	1:40	1:40	1:40	1:55	1:50	1:50
R11	1:55	1:55	1:40	1:40	1:50	1:55	1:55	1:55	1:45	1:45	1:45	1:55	1:50	1:55
R12	1:20	1:20	1:15	1:15	1:25	1:20	1:20	1:20	1:15	1:15	1:15	1:30	1:25	1:20
5-Mile Region and Keyhole to EPZ Boundary														
R13	2:00	2:00	1:40	1:40	1:55	2:00	2:00	2:00	1:45	1:45	1:45	2:00	1:45	2:00
R14	2:00	2:00	1:40	1:40	1:55	2:05	2:05	2:05	1:45	1:45	1:45	2:00	1:50	2:00
R15	1:55	1:55	1:35	1:35	1:50	1:55	1:55	1:55	1:40	1:40	1:40	2:00	1:45	1:55
R16	1:55	1:55	1:35	1:35	1:50	2:00	2:00	2:00	1:45	1:45	1:45	2:00	1:40	1:55
R17	1:50	1:50	1:35	1:35	1:50	2:00	2:00	2:00	1:40	1:40	1:40	2:00	1:40	1:50
R18	1:50	1:50	1:30	1:30	1:45	1:55	1:55	1:55	1:40	1:40	1:40	1:55	1:40	1:50
R19	1:50	1:50	1:35	1:35	1:45	1:55	1:55	1:55	1:40	1:40	1:40	1:55	1:40	1:50
R20	2:25	2:30	2:20	2:25	2:20	2:30	2:35	2:45	2:20	2:25	2:30	2:20	2:20	2:30
R21	2:25	2:35	2:20	2:25	2:20	2:30	2:35	2:40	2:25	2:25	2:30	2:20	2:20	2:30
R22	2:25	2:35	2:20	2:25	2:20	2:30	2:35	2:40	2:25	2:25	2:30	2:20	2:20	2:30
R23	2:35	2:40	2:30	2:35	2:30	2:35	2:40	2:50	2:30	2:35	2:40	2:30	2:30	2:40
R24	2:40	2:55	2:35	2:45	2:35	2:45	2:55	3:05	2:35	2:45	2:55	2:35	2:35	2:50
R25	2:55	3:15	2:50	3:05	2:45	3:00	3:15	3:30	2:50	3:00	3:20	2:45	2:50	3:00
R26	3:00	3:20	2:55	3:15	2:50	3:05	3:20	3:40	2:55	3:10	3:30	2:50	2:55	3:00

Table 1.8-2
HNP Plume Exposure EPZ Evacuation Time Estimates

Sheet 3 of 3

Time to Clear the Indicated Area of 100% of the Affected Population

	Summer		Summer		Summer	Winter			Winter			Winter	Summer	Summer
	Midweek		Weekend		Midweek Weekend	Midweek			Weekend			Midweek Weekend	Weekend	Midweek
Scenario:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Region	Midday		Midday		Evening	Midday			Midday			Evening	Evening	Midday
	Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Ice	Good Weather	Rain	Ice	Good Weather	Special Event	Roadway Impact
Entire 2-Mile Region, 5-Mile Region, and EPZ														
R01	4:30	4:30	4:30	4:30	4:30	4:30	4:30	4:30	4:30	4:30	4:30	4:30	4:30	4:30
R02	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
R03	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40
2-Mile Region and Keyhole to 5 Miles														
R04	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
R05	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
R06	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
R07	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
R08	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
R09	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
R10	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
R11	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
R12	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35	4:35
5-Mile Region and Keyhole to EPZ Boundary														
R13	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40
R14	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40
R15	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40
R16	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40
R17	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40
R18	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40
R19	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40
R20	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40
R21	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40
R22	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40
R23	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40
R24	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40
R25	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40
R26	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40	4:40

Table 1.8-3

Schools Located in the HNP 10-Mile EPZ

Sub-Zone	Distance (miles)	Direction	School Name	Street Address	Municipality	Phone	Enrollment	Staff
CHATHAM COUNTY								
M	6.8	W	Moncure Elementary School	600 Moncure School Rd	Moncure	(919) 542-3725	285	45
<i>Chatham County Subtotals:</i>							285	45
HARNETT COUNTY								
S.R. ¹	12.5	SE	Lafayette Elementary School	108 Lafayette School	Fuquay-Varina	(919) 552-4353	780	80
<i>Harnett County Subtotals:</i>							780	80
LEE COUNTY								
S.R. ¹	11.1	WSW	Deep River Elementary School	4000 Deep River Rd	Sanford	(919) 776-2722	638	100
<i>Lee County Subtotals:</i>							638	100
WAKE COUNTY								
E	9.2	NE	A.V. Baucom Elementary School	400 Hunter St	Apex	(919) 387-2168	962	100
E	8.3	NE	Apex Elementary School	700 Tingen Rd	Apex	(919) 387-2150	670	83
E	8.8	NE	Apex Middle School	400 E Moore St	Apex	(919) 387-2181	1,086	150
E	10.1	NE	Apex Senior High School ²	1501 Laura Duncan Rd	Apex	(919) 387-2208	2,300	200
E	9.3	NE	Lufkin Road Middle School	1002 Lufkin Rd	Apex	(919) 387-4465	1,010	100
E	7.8	NNE	Olive Chapel Elementary School	1751 Olive Chapel Rd	Apex	(919) 387-4440	933	130
E	7.7	NE	St. Mary Magdalene Catholic School	625 Magdala Pl	Apex	(919) 657-4800	704	65
E	9.6	NE	Thales Academy	1177 Ambergate St	Apex	(919) 303-3108	319	30
F	5.9	E	Holly Grove Elementary School	1451 Avent Ferry Rd	Holly Springs	(919) 577-1700	980	115
F	6.1	E	Holly Grove Middle School	1401 Avent Ferry Rd	Holly Springs	(919) 567-4177	1,136	100
F	8.0	E	Holly Ridge Elementary School	900 Holly Springs Rd	Holly Springs	(919) 577-1300	724	80
F	8.0	E	Holly Ridge Middle School	950 Holly Springs Rd	Holly Springs	(919) 557-2660	1,033	100
F	7.4	E	Holly Springs Elementary School	401 Holly Springs Rd	Holly Springs	(919) 557-2660	1,121	126
F	6.0	E	Holly Springs High School	5329 Cass Holt Rd	Holly Springs	(919) 463-8606	2,108	150
F	9.6	E	New School, Inc. Montessori	5617 Sunset Lake Rd	Holly Springs	(919) 303-3636	180	35
G	9.7	ESE	Fuquay-Varina Middle School	109 N Ennis St	Fuquay-Varina	(919) 557-2727	903	98
G	9.2	ESE	Fuquay-Varina Senior High School	201 Bengal Dr	Fuquay-Varina	(919) 557-2511	1,925	150
G	8.7	E	Herbert Akins Road Elementary School	2255 Herbert Akins Rd	Fuquay-Varina	(919) 567-4100	867	98
G	8.8	ESE	Lincoln Heights Elementary School	307 Bridge St	Fuquay-Varina	(919) 557-2587	474	95
G	7.8	E	Southern Wake Academy High School	5108 Old Powell Rd	Holly Springs	(919) 567-9955	119	15
<i>Wake County Subtotals:</i>							19,554	2,020
TOTAL:							21,257	2,245

Note: 1 - S.R. is Shadow Region. County plans evacuate these 2 facilities due to their close proximity to the EPZ boundary.

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 [7.0.R, Recommendation 3a]

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 Duke 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, specialists who are needed 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. Minimum staffing requirements for activation of each facility are indicated in Figures 2.2-1 and 2.4-1. 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. [R1]

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

[7.0.U, Recommendation 5i]

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 Shift Manager (SM) 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 Shift Manager (SM) (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

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. Shift Manager (SM): Until an emergency is declared, the Shift Manager (SM) has the following responsibilities relating to the Emergency Plan:
 - 1) Direct the activities of the Operations staff.
 - 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 Shift Manager (SM). The assigned alternates are on-shift Licensed Senior Reactor 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. Site Incident Commander: A Site Incident Commander is established on all shifts. When a fire occurs, the Site Incident Commander is the on-scene commander for fighting the fire and directs the activities of the Fire Brigade. The Site Incident Commander 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 Site Incident Commander. 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. **[7.0.U, Recommendation 5i]**
- 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 ensuring notification and communications to Offsite Authorities including the NRC and 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 ensuring notification and communication to offsite authorities and 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 Joint Force Headquarters (JFHQ) building, 1636 Gold Star Drive, Raleigh North Carolina and is the principle Emergency Operations Center.

Wake County EOC Wake County Courthouse, Raleigh, N.C.

Chatham County EOC Emergency Operations Center, Pittsboro, N.C.

Harnett County EOC Emergency Operations Center, Lillington, N.C.

Lee County EOC Lee County Courthouse, Sanford, N.C.

Chatham County Alternate EOC 3760 Alston Bridge Rd., Siler City, NC

Harnett County Alternate EOC 126 Alexander Dr., Lillington, NC

Lee County Alternate EOC, 225 E. Weatherspoon, Sanford, NC

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 Duke 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 Duke 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 interfaces with the Customer Service Center.
- H. Customer Service Center: The Customer Service Center is responsible for staffing telephone lines to respond to calls from the media and public.

2.5 Outside Organization Support

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

TABLE 2.2-1 [7.0.R, Recommendation 3b]

On-Shift Staffing For Emergencies⁽¹⁾

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	SM ^(c)	1	--	--
		CRS	1	--	--
		Licensed Operators	2	--	--
		Non-Licensed Operators	7 ^(f)	--	--
2. Emergency Direction and Control	--	SEC-MCR (SM ^(b))	1	--	--
		ERM ^(a)	--	--	1
		SEC-TSC ^(a)	--	--	1
3. Notification & Communication	Emergency Communicator	Plant Personnel	1 ^(g)	1	2
4. Radiological Assessment	Offsite Dose Assessment	Dose Projection Team Leader	--	1	--
	Offsite Surveys	Environmental Monitoring Team Personnel	--	2	2
	Onsite Surveys	Radiological Control Team Personnel	--	1	1
	In-plant Surveys	Radiological Control Team Personnel	1 ^(e)	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) Deleted

(e) During fuel handling operations in containment with equipment hatch open, three (3) additional RP Technicians and four (4) additional Mechanical Maintenance personnel are required to support emergency response activities, including on-site surveys and equipment hatch closure.

(f) Non-Licensed Operators also responsible for Notifications and Communications (1) and Firefighting (4)

(g) Included in census of Non-Licensed Operators above.

TABLE 2.2-1 (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	--
		Mechanical Engineering	--	--	1
	Repair and Corrective Actions	Electrical Engineering	--	--	1
		Mechanical Maintenance	1 ^{(e)(h)}	--	2
		Electrical/I&C Maintenance	1 ^(h)	2	1
6. In-Plant Protective Actions	Radiation Protection	Radiological Control Team Personnel	1 ^(h) 1	2	2
7. Fire Fighting	--	--	5 ^{(f)(h)}	Local Support	
8. First Aid and Rescue Operations	--	Plant Personnel	2 ^(h)	--	--
9. Site Access Control	Security & Accountability	Security Team Personnel	(i)	(i)	(i)
HNP TOTAL (Less Security):			17	11	16

NOTES:

(e) During fuel handling operations in containment with equipment hatch open, three (3) additional RP Technicians and four (4) additional Mechanical Maintenance personnel are required to support emergency response activities, including on-site surveys and equipment hatch closure.

(f) Non-Licensed Operators also responsible for Notifications and Communications (1) and Firefighting (4)

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

(i) Per Security Plan

(1) The on-shift staffing complement provided in this table is based on the "Harris Nuclear Plant On-Shift Staffing Analysis", which is incorporated by reference into this Emergency Plan.

Figure 2.2-1

On-Site Emergency Response Organization

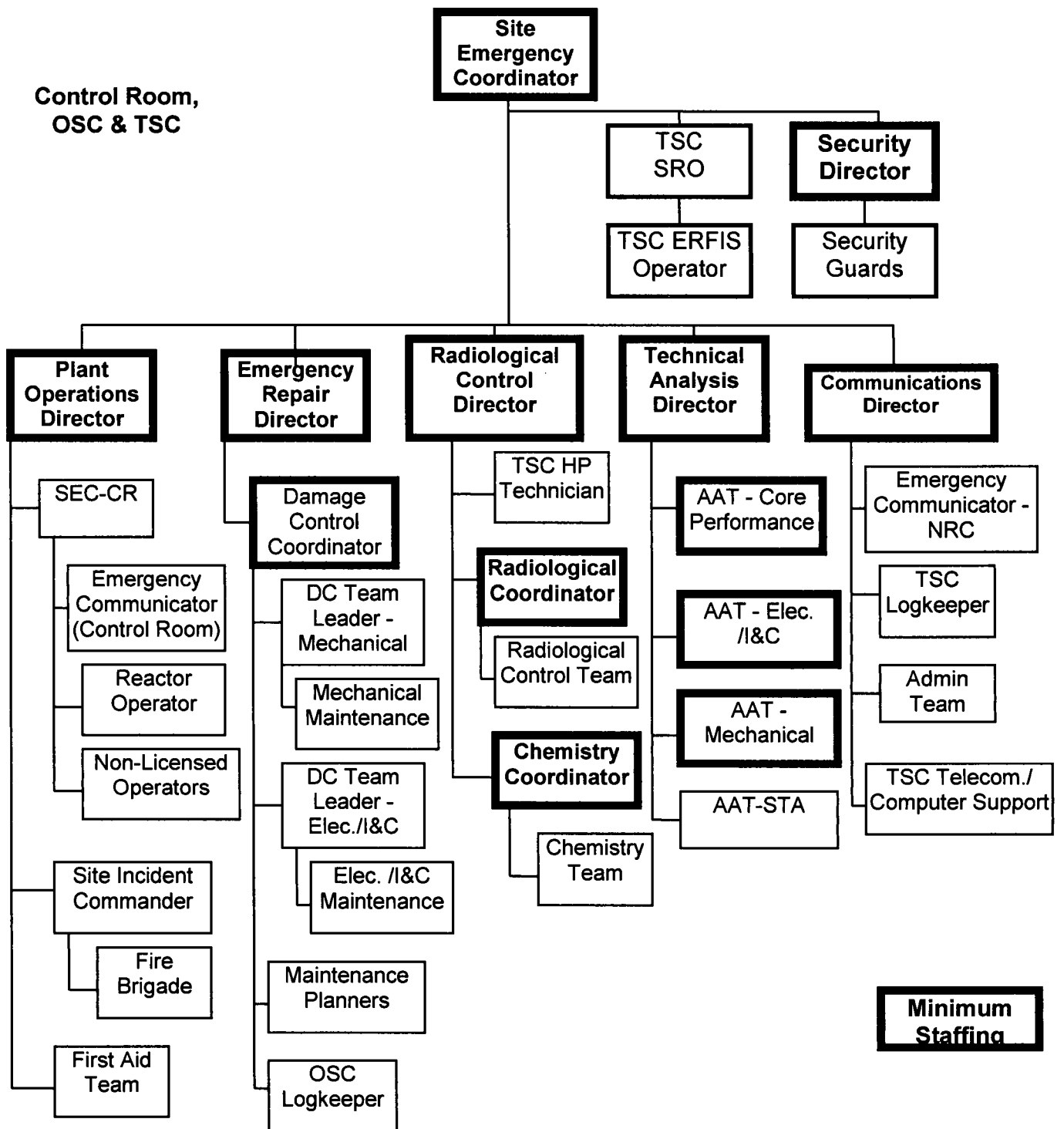
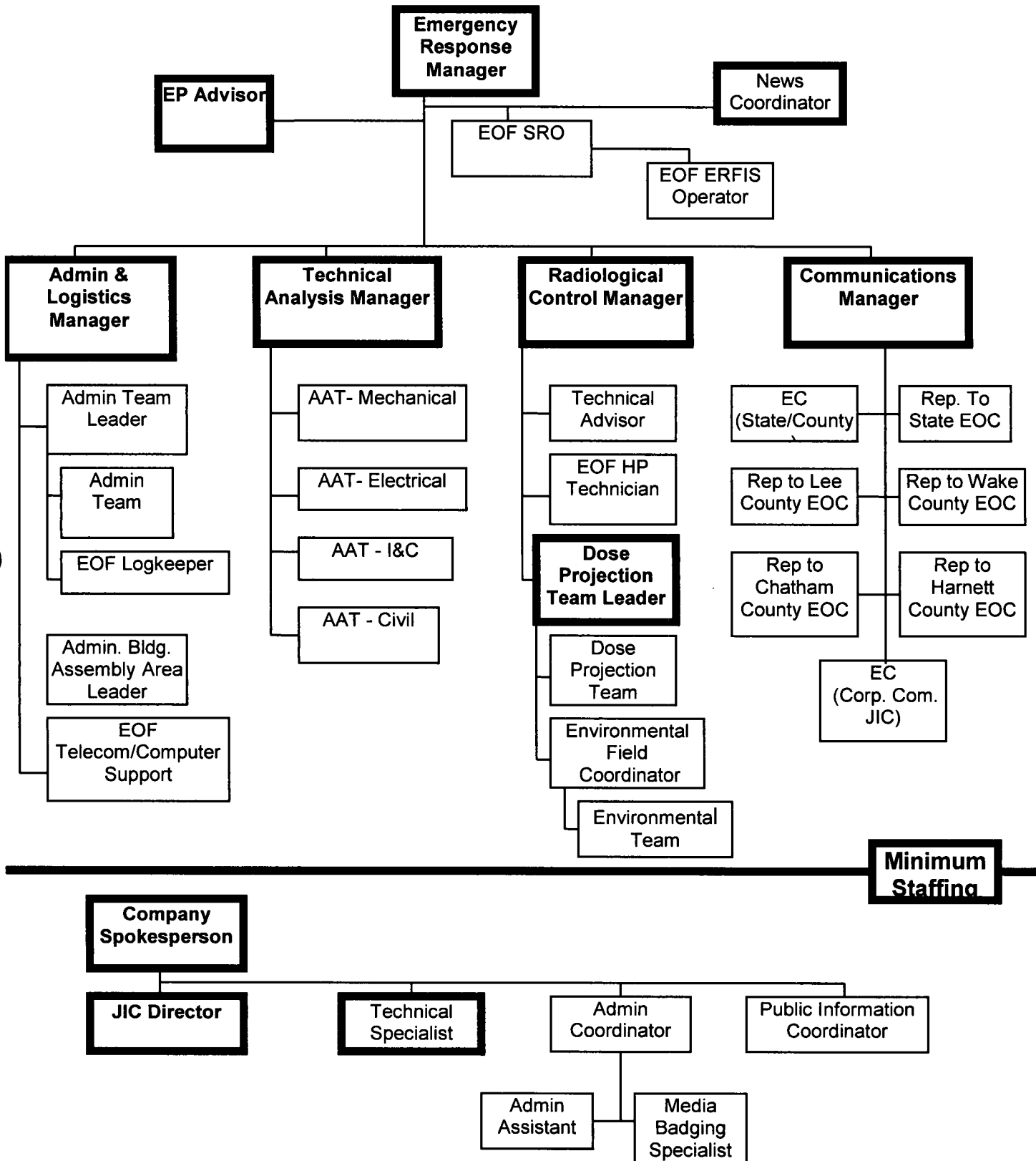


Figure 2.4-1

Off-Site Emergency Response Organization

[7.0.U, Recommendation 4]



3.0 EMERGENCY FACILITIES, COMMUNICATIONS, AND EQUIPMENT

3.1 General

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. Duke 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 unstaffed 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 shown in Figure 1.5-3.
- B. Main Control Room habitability and radiation protection are 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/Duke 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.
- I. Alternate location is the 305' Shift Manager, Shift Technical Advisor, and the Auxiliary Operator office area." [7.0.U, Recommendation 5h]

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.
- D. Decontamination and monitoring area.
- E. Survey meter and area radiation monitor.
- F. Photocopier equipment and reliable facsimile transmission capability to the EOF and NRC Operations Center.
- 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 location is in the Fuel Handling Building, Section "K," near the Technical Support Center. **[7.0.U, Recommendation 5h]**

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)

3.5.1 Characteristics

- A. Located at Harris Energy & Environmental Center within 10 miles of the plant.
- 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 location for EOF staff is the Duke Energy Customer Service Center, 160 Rush Street, Raleigh NC. **[7.0.U, Recommendation 5h]**

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. Deleted
- 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.
- H. Coordinate emergency response activities with Federal, State, and local agencies.

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. ERFIS HMI Display terminals are continuously disconnected from ERFIS except during drills and emergencies to meet the cyber security rule. Procedure PEP-240, Activation and Operation of the Technical Support Center, directs telecommunications and computer support to connect and verify ERFIS is communicating to the EOF when the TSC is activated. This configuration helps eliminate potential cyber threats when the EOF is not activated.
- C. All Reference materials, including Mechanical and Electrical Systems Drawings; Plant Operating Manual; FSAR; Corporate, Plant, State, and Local Emergency Plans, are available.
- 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. Photocopier equipment and reliable facsimile transmission capability to the TSC and NRC Operations Center.
- H. Additional equipment as discussed in Section 3.8.2.
- I. See Table 3.1-1.

3.6 Joint Information Center (JIC)

- A. Located at the Duke Energy Customer Service Center in Raleigh, North Carolina, approximately 21 miles from the plant.
- 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 responses to media inquiries through media communicators who staff telephones that the media can call for information about an emergency.
- E. 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-Duke Energy Facilities

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 Joint Force Headquarters (JFHQ) building, 1636 Gold Star Drive, Raleigh North Carolina
- 4) Alternate facility located at the Administrative Building, 116 W. Jones Street, 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 Emergency Services 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 Emergency Operations 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.

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. HNP PABX is the primary communication system and the secondary is the HEEC PABX systems. Directions for use are in procedure EPL-001, Emergency Phone List.
- B. Site paging system (accessed by Telephone System).
- C. Sound-powered telephone system. (All, except WPB Circuits 1-5) (NCR 272042)
- 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.
- H. The commercial telephone system is provided by a common carrier.

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 or Duke Emergency Management Network (DEMNET)] 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) 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 ERO Notification System

A web-based, 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 backup, alternate activation of the system.

3.8.5 WebEOC®

WebEOC® is a web-enabled collaborative information management system that provides real-time information sharing to facilitate decision making.

3.9 Assessment Equipment

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 Local Host Computers (Primary and Backup), Plant Process Network, and ERFIS Display Terminals. ERFIS Display Terminals are located in the Main Control Room, Technical Support Center (TSC), Emergency Operations Facility (EOF), Operation Support Center (OSC), ERFIS Computer Room, and the Administrative and Service Buildings. The TSC, EOF and OSC Display Terminals can be configured to run from the Simulator during drills and exercises.

The field input multiplexer obtains analog, digital, pulse and sequence-of-events inputs from field sensors. The ERFIS Local 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 Local Host Computer contains a copy of the CVT that is updated over shared memory with the ERFIS Local Host. The ERFIS Display Terminals are connected to the Local Hosts via dedicated Ethernet LANs.

There is a Primary and Backup ERFIS Local Host computer. When a failure occurs on a primary system, an automatic failover occurs to the backup system.

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. A dedicated SPDS display is provided in the Main Control Room and ERFIS display 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.

Duke 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 μCi 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 other Duke Energy Nuclear Plants. 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 McGuire Island EnRad Laboratories. 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)
- B. Gross Failed Fuel Detection System
- C. Security Systems (Security Plan)
- D. Metal Impact Monitoring System (FSAR Section 4.4.4.4)

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 ^(a) Remotes	(a)	√	Radio ^(a) Remotes
Battery-Powered Lanterns		√	√	√	√
Camera				√	
Mechanical and electrical systems drawings, Plant Operations Manual, FSAR, Corporate, State & Local Emergency Plans		√			√
10-mile EPZ Area maps ^(b)	√	√	√		√
Copy of Plant Emergency Plan and Procedures	√	√	√	√ ^(c)	√
Environmental Monitoring Kits					(d)
Potassium Iodide Tablets	√	√		√	√

√ Indicates equipment/supplies available in this facility

(a) Portable radio transceivers can be supplied to any emergency facility

(b) Figure 1.5-2 of Emergency Plan in the MCR, wall maps in other facilities.

(c) Procedures Only

(d) Stored near the Harris E&E Center

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

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 (EALs) are the plant-specific indications, conditions or instrument readings that are utilized to classify emergency conditions defined in the HNP Emergency Plan.

NUREG-0654, Appendix 1, originally provided the basis for the HNP Emergency Action Level network.

In 1992, the NRC endorsed NUMARC/NESP-007 "Methodology for Development of Emergency Action Levels" as an alternative to NUREG-0654 EAL guidance.

NEI 99-01 (NUMARC/NESP-007) Revision 4 was subsequently issued for industry implementation. Enhancements over earlier revisions included:

- Consolidating the system malfunction initiating conditions and example emergency action levels which address conditions that may be postulated to occur during plant shutdown conditions.
- Initiating conditions and example emergency action levels that fully address conditions that may be postulated to occur at permanently Defueled Stations and Independent Spent Fuel Storage Installations (ISFSIs).
- Simplifying the fission product barrier EAL threshold for a Site Area Emergency.

Subsequently, Revision 5 of NEI 99-01 Final (February 2008) has been issued which incorporates resolutions to numerous implementation issues including the NRC EAL FAQs. The current HNP Emergency Plan EAL scheme is based on NEI 99-01 Revision 5.

Many of the EALs derived from the NEI 99-01 methodology are fission product barrier (FPBs) based. That is, the conditions that define the EALs are based upon loss or potential loss of one or more of the three fission product barriers. "Loss" and "Potential Loss" signify the relative damage and threat of damage to the barrier. "Loss" means the barrier no longer assures containment of radioactive materials; "potential loss" infers an increased probability of barrier loss and decreased certainty of maintaining the barrier.

The primary fission product barriers are:

- A. Reactor Fuel Clad (FC): The Fuel Clad barrier consists of the zircalloy or stainless steel fuel bundle tubes that contain the fuel pellets.
- B. Reactor Coolant System (RCS): The RCS Barrier includes the RCS primary side and its connections up to and including the pressurizer safety and relief valves, and other connections up to and including the primary isolation valves.
- C. Containment (CNMT): The Containment Barrier includes the containment building and connections up to and including the outermost containment isolation valves. This barrier also includes the main steam, feedwater, and blowdown line extensions outside the containment building up to and including the outermost secondary side isolation valve.

In addition to looking at the status of fission product barriers, the Emergency Action Levels include the NEI 99-01 emergency action level events that are external to the plant, i.e., natural or man-made disaster phenomena, or are not directly attributable to the condition of the reactor, i.e., shutdown systems, fire, dose projections. These events based on Emergency Action Levels (EAL) are direct precursors to loss or jeopardy of the FPBs.

HNP decision-makers responsible for implementation of PEP-110, Emergency Classification and Protective Action Recommendations, may use EP-EAL, Emergency Action Levels as a technical reference in support of EAL interpretation. HNP shall establish and maintain the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and shall promptly declare the emergency condition following identification of the appropriate emergency classification level.

Where possible, the EALs have been made consistent with and utilize the conditions defined in the HNP Emergency Operating Procedures (EOPs), Abnormal Operating Procedures (AOPs), Functional Restoration Procedures (FRPs), and Flow Path Procedures. Although some of the EALs are based on conditions defined in the EOPs, classification of emergencies using these EALs is not dependent upon EOP entry or execution. The EALs can be utilized independently or in conjunction with the EOPs.

The Site Emergency Coordinator (or the Shift Manager (SM) 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

- 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 Emergency Notification Form (ENF) on WebEOC®, hard copy ENF contained in PEP-310, or the Selective Signaling System or Duke Emergency Management Network (DEMNET) phone to simultaneously notify the 24-hour-per-day, staffed, 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 immediately after notifying state and counties and no later than 60 minutes after the time of declaration using a Reactor Plant Event Notification worksheet or other notification message approved by the SEC-MCR/ERM.
- E. Plant personnel designated on the Emergency Response Organization are notified of an emergency condition using a computer-based, automated ERO Notification System. 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 [7.0.R, Recommendation 3d]

- 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.
[7.0.R, Recommendation 3a]
- B. The Communications Director will verify the readiness and operability of emergency facilities in the Technical Support Center (TSC).
- C. The Administrative and Logistics Manager will verify the readiness and operability of the Emergency Operations Facility (EOF).
- D. The Emergency Repair Director will verify the readiness of the Operations Support Center.

- E. The Company Spokesperson will verify the readiness of the Joint Information Center.
- F. Security measures will be established for the Emergency Operations Facility upon its activation.
- G. Personnel in the Emergency Response Organization will report to their assigned locations in the emergency response facilities (ERFs).
- H. An alternate ingress/egress route may be established based on plume direction to limit exposure to ERO personnel entering and leaving the site.

4.4 Assessment Actions

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

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

Projected dose is:

≥ 1 Rem TEDE

or

≥ 5 Rem CDE Thyroid

THEN:

No actions are necessary.

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 wherever PAGs are exceeded. 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, but are not limited to:
- 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

HNP is required to issue PARs wherever PAGs are exceeded, but the State is responsible for specifying long term protective measures to be used throughout the ingestion pathway. 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.

Sirens mounted on 50-foot utility poles have been installed by Duke 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 Wake County Emergency Operations Center or the Wake County Warning Points. The sirens can also be activated from the Harris Nuclear Plant or the Public Safety Communications Centers of Harnett, Lee and Chatham Counties. 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

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 Duke 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 McGuire Island. 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' Decon Showers. 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 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 is included in Annex A, "Agreements".

In cases involving severe injury, the Shift Manager (SM) or Site Emergency Coordinator may bypass the Apex Rescue Squad 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 Healthcare 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 Healthcare become unavailable.

WakeMed Raleigh serves as the primary medical facility for trauma patients from HNP. 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 Healthcare, 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 Healthcare, 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

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

4.8 Security Measures

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 plan with the North Carolina National Guard that 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

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

Table 4.0-1

Off-Site Agency Support Summary (continued)

Function (NUREG-0654, II.A)	Primary Responsibility	Support Responsibility
<u>Medical</u>		
On site	HNP	Rescue, Hospital
Off site	County	State
<u>Public Health & 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	Duke Energy
Off site	County, State, Duke Energy	State, Duke Energy
<u>Exercises</u>		
On site	HNP	Duke Energy County,
Off site	State	Duke Energy
<u>Reentry</u>		
On site	Duke Energy	HNP, W, URS Energy
Off site	State	and Construction, FEMA, County, Duke Energy, DOE

Notes:

NRC - U.S. Nuclear Regulatory Commission

HNP - Harris Nuclear Plant

DHHS - U.S. Department of Health & 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 (immediately after notifying state and counties and no later than one hour)

Additional Notifications as Necessary

- URS Energy and Construction, Inc.
- Westinghouse Electric Corporation
- Institute of Nuclear Power Operations
- American Nuclear Insurers
- Nuclear Electric Insurance Limited (NEIL)
- 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 Healthcare
- 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 (immediately after notifying state and counties and no later than one hour)

Additional Notifications as Necessary

- URS Energy and Construction, Inc.
- Westinghouse Electric Corporation
- American Nuclear Insurers
- Nuclear Electric Insurance Limited (NEIL)
- Institute of Nuclear Power Operations [7.0.T]
- 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 Healthcare
- 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 (immediately after notifying state and counties and no later than one hour)

Additional Notifications as Necessary

- URS Energy and Construction, Inc.
- Westinghouse Electric Corporation
- American Nuclear Insurers
- Nuclear Electric Insurance Limited (NEIL)
- Institute of Nuclear Power Operations [7.0.T]
- 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 Healthcare
- 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 (immediately after notifying state and counties and no later than one hour)

Additional Notifications as Necessary

- URS Energy and Construction, Inc.
- Westinghouse Electric Corporation
- American Nuclear Insurers
- Nuclear Electric Insurance Limited (NEIL)
- Institute of Nuclear Power Operations [7.0.T]
- 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 Healthcare
- 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 ^(a)	0.5	1.5
Emergency PAG ^(b)	5.0	15.0
^(a) 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. ^(b) 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.		

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 ≤ 100 mrem/hr
2. High Radiation Area	>100 mrem/hr to ≤ 1000 mrem/hr
3. Locked High Radiation Area	1000 mrem/hr to ≤ 500 rad/hr
4. Very High Radiation Area	>500 rad/hr @ 1 meter
5. Airborne Radioactivity Area	Airborne Conc. $\geq 30\%$ 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 α count rate above background
2. Unconditional release from site for tools and equipment	No detectable α No detectable $\beta\gamma$ above background
3. Contamination Area	> 1000 dpm/100 cm ² $\beta\gamma$ smearable and/or > 20 dpm/100 cm ² α

5.0 MAINTAINING EMERGENCY PREPAREDNESS

Emergency preparedness at HNP will be maintained by:

- Maintaining planning documents through review, updates, audits, and 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 |
| • Every 5 years - | At least once per 1825 days. |
| • Every eight years or per cycle - | At least once per 2920 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, and programs / requirements governed by the calendar year.

5.1 Emergency Plan and Plant Emergency Procedures

5.1.1 Responsibility for the Planning Effort

The HNP Emergency Preparedness Supervisor is responsible for coordinating on-site and selected off-site radiological emergency response planning. The HNP EP Supervisor 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 Preparedness Supervisor 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, Harnett, and Lee Counties. The EALs are reviewed by the State of North Carolina and Wake, Chatham, Harnett, 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 and procedures will be distributed in accordance with the distribution list maintained in Passport (Controlled Documents Module). Revised pages will be indicated in accordance with plant procedures.

Changes to the E-Plan, EP-EAL, 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

[7.0.U, Recommendation 5g]

An independent audit of the HNP Emergency Preparedness Program will be conducted by Nuclear Oversight at a frequency specified in 10 CFR 50.54(t). Nuclear Oversight 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

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 Managers 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 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 Preparedness Supervisor 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

5.3.1 Drills

Scenarios used in drills and exercises must vary challenges and avoid preconditioning or anticipatory responses through the use of a wide spectrum of scenario elements. Scenarios must be kept confidential from participants (players). The ERO shall be provided the opportunity to develop and maintain key emergency response skills in response to the following scenario elements during the conduct of drills and exercises over the course of an exercise planning cycle (8 years) beginning in the year of the Hostile Action Based Exercise (2015):

1. Demonstration of all functions in each ERF (e.g., all ERFs that are responsible for dose assessment perform those duties in response to a radiological release)
2. Response to hostile action including interface with Local Law Enforcement Agencies (LLEA)
3. Engineering assessment, repair plan development, and physical repair of critical equipment damaged by hostile action after the active attack but before the site is secured by LLEAs
4. Response to a scenario with no radiological release or an unplanned minimal radiological release that does not require public protective actions. The scenario selected for this objective will vary from cycle to cycle
5. Response to a scenario that begins with a Site Area Emergency or General Emergency or escalates rapidly (within 30 minutes) to a Site Area Emergency or General Emergency
6. The ability to implement mitigation strategies using equipment and procedures developed to respond to the loss of large areas of the plant (i.e., 10.CFR.50.54(hh) mitigating strategies – actual operation not expected)
7. The successful repair of simulated damaged equipment to prevent or mitigate core damage, reactor vessel loss, and/or containment loss (twice per exercise schedule)
8. The use of alternative facilities to stage the ERO for rapid activation during a hostile action event
9. Real time staffing of facilities during off-hours (1800-0400) This need not be performed during an exercise
10. The ability to provide medical care for injured contaminated personnel
11. The use of essentially 100 percent of initiating conditions identified in the site emergency plan implementing procedure for classification of emergencies
12. The use of wind direction and persistence relative to the site.

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.

G. Security Drills

Mitigative measures in hostile action based scenarios should commence after the simulated active attack has ceased but before LLEAs have swept the site for safe entry or declared the site secure. Securing the site may take days. It is important that licensees train personnel to respond in the aftermath of hostile action events and demonstrate the planning and prioritization of mitigative action team personnel. Mitigative actions may prevent or ameliorate core damage or containment failure.

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.

Once every eight years the exercise will demonstrate an emergency response to a security-based threat.

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 Duke 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

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 (Bi-weekly).
- 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 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. Duke Energy annually distributes a new battery to each residence possessing a Tone Alert Radio.
- C. Duke 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 Duke 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.

5.6 Evacuation Time Estimate

HNP shall have a current Evacuation Time Estimate (ETE) study (See Table 1.8-2). The HNP ETE Study is considered valid until the permanent EPZ population increases such that it causes the longest ETE value for the 2-mile zone or 5-mile zone, including all affected subzones, or for the entire 10-mile EPZ to increase by 25 percent or 30 minutes, whichever is less, from the nuclear power reactor licensee's currently NRC approved or updated ETE.

Annual population estimates shall be completed once a year, but no later than 365 days from the previous estimate, and kept on file in between decennial censuses. An ETE update shall be performed in conjunction with every decennial census or when the trigger criteria listed above are met.

If an ETE update is required in between decennial censuses, annual population estimates shall be submitted to the NRC with the updated ETE study. ETE studies and annual estimates are considered QA records and must be submitted accordingly.

6.0 RECOVERY

6.1 Recovery Planning

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 Duke 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

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.

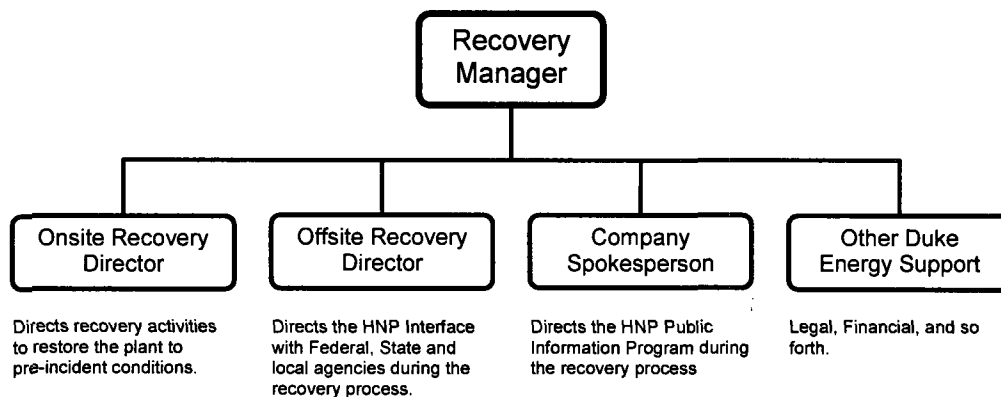
Once the decision is made to enter the recovery phase, the extent of the staffing required for the HNP Recovery Organization is determined.

- 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

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

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 Duke Energy and other organizations are available to support recovery.
- B. Directing the development of a recovery plan and procedures.
- C. Ensuring that adequate engineering activities to restore the plant are properly reviewed and approved.

- D. Deactivating any of the HNP Emergency Response Organization which was retained to aid in recovery, in the appropriate manner.
- E. Coordinating the integration of available Federal and State assistance into onsite recovery activities.
- F. Coordinating the integration of Duke Energy support with Federal, State and local authorities into required offsite recovery activities.
- G. Approving information released by the public information organization which pertains to the emergency or the recovery phase of the accident.
- H. Determining when the recovery phase is terminated.
- I. 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 Duke 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 Director Nuclear Organizational Effectiveness or designee.

6.4.4 Company Spokesperson

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

- A. Functioning as the official spokesperson to the press for Duke Energy on all matters relating to the accident or recovery.
- B. Coordinating non-Duke Energy public information groups (Federal, State, County, and so forth).
- C. Coordinating media monitoring and rumor control.
- D. Determining what public information portions of the HNP Emergency Response Organization will remain activated.

The Company Spokesperson position will normally be filled by the Communications Consultant-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

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

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. Duke 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. Revision 1 of the 2012 Harris Nuclear Plant Evacuation Time Estimates Report.
- O. RTM-92.
- P. NRC Bulletin 2005-02, Emergency Preparedness and Response Actions for Security-Based Events.
- Q. AD-EP-ALL-0202 Emergency Response Offsite Dose Assessment (NCR 292138-16)
- R. CR 489031- IER L2 11-39 Lack of Timely ERO and ERF Activation, Recommendations 3a, 3b and 3d
- S. NEI 10-05, Assessment of On-Shift Emergency Response Organization Staffing and Capabilities, September 2010
- T. Letter to Chief Nuclear Officers from Bill Webster, Senior Vice President, Industry Evaluation
- U. IER-L1-13-10, Nuclear Accident at Fukushima Daiichi Nuclear Power Station (OPEX 599017)

ANNEX A

LETTERS OF AGREEMENT

This Annex contains a list of written agreements between Duke 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 Duke 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
4. Rex Healthcare
5. WakeMed Raleigh
6. WakeMed Cary
7. Douglas I. Hammer, M.D.
8. Raleigh Emergency Medicine Associates Medical Director – Rex Healthcare
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. DZ Atlantic
17. URS Energy and Construction, Inc.
18. Murray and Trettel, Inc.
19. Westinghouse Electric Corporation
20. Raleigh Executive Jetport at Sanford-Lee County Airport
21. Siler City Municipal Airport
22. Wake County Sheriff

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 NUREG 1940 RASCAL 4.0: Description of Models and Methods.

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 (χ/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, and fire.

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.

Emergency Response Data System (ERDS) - ERDS is a direct, near real time web-based, Virtual Private Network (VPN) system data link between HNP and NRC that provides for the automated transmission of a limited set of plant data (e.g., core and coolant system conditions, conditions inside containment, radioactivity release rates, met tower data.) ERDS activation is required as soon as possible, but not later than one hour after declaring an emergency classification of Alert or higher.

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.

ANNEX C

Glossary Of Terms

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 Duke Energy-owned property with a radius of approximately 7000 feet.

Fission Product Barrier - A defense in depth design concept that precludes the release of highly radioactive fission products to the environment. This concept relies on multiple physical barriers any one of which, if maintained intact, precludes the release of significant amounts of radioactive fission products to the environment. The primary fission product barriers are:

- a. Reactor Fuel Clad (FC): The Fuel Clad barrier consists of the zircalloy or stainless steel fuel bundle tubes that contain the fuel pellets.
- b. Reactor Coolant System (RCS): The RCS Barrier includes the RCS primary side and its connections up to and including the pressurizer safety and relief valves, and other connections up to and including the primary isolation valves.
- c. Containment (CNMT): The Containment Barrier includes the containment building and connections up to and including the outermost containment isolation valves. This barrier also includes the main steam, feedwater, and blowdown line extensions outside the containment building up to and including the outermost secondary side isolation valve.

Fission Product Barrier Status -

- a. Loss - the barrier no longer assures containment of radioactive materials.
- b. Potential Loss - integrity of the barrier is threatened and could be lost if conditions continue to degrade.
- c. Intact - The fission product barrier retains the ability to preclude the release of significant amounts of radioactive fission products to the environment.

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.

ANNEX C

Glossary Of Terms

Hostile Action - An act directed toward a nuclear power plant or its personnel that includes the use of violent force to destroy equipment, take hostages, and/or intimidate the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force.

Other acts that satisfy the overall intent may be included.

"Hostile Action" should not be construed to include acts of civil disobedience or felonious acts that are not part of a concerted attack on the nuclear power plant.

Nonterrorism-based EALs should be used to address such activities (i.e., this may include violent acts between individuals in the owner controlled area).

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 Duke Energy and staffed by Duke 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.

ANNEX C

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 six 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), and Operations Center Local Area Network (LAN) line, (OCL).

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.

ANNEX C

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 Duke 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.

ANNEX C
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.

ANNEX D

NUREG-0654 REV. 1 Cross-Reference
[7.0.U, Recommendation 5g]

NUREG-0654, Criterion Paragraph	EP Section Number
<u>A. Assignment of Responsibility</u>	
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
<u>B. On-site Emergency Organization</u>	
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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NUREG-0654 REV. 1 Cross-Reference **[7.0.U, Recommendation 5g]**

NUREG-0654, Criterion Paragraph	EP Section Number
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
D.2 Initiating conditions and FSAR accidents.	4.1

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
E.7 Provide narrative for public messages on protective actions.	4.5.4

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NUREG-0654 REV. 1 Cross-Reference **[7.0.U, Recommendation 5g]**

NUREG-0654, Criterion Paragraph		EP Section Number
<u>F. Emergency Communications</u>		
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
<u>G. Public Education and Information</u>		
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
G.4.c	Provide for coordinated rumor control	3.6.F
G.5	Provide annual training for media	5.2.5

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NUREG-0654 REV. 1 Cross-Reference **[7.0.U, Recommendation 5g]**

NUREG-0654, Criterion Paragraph	EP Section Number
<u>H. Emergency Facilities and Equipment</u>	
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
<u>I. Accident Assessment</u>	
I.1 Identify plant system and effluent parameters and instruments values	3.9.1, 4.1

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NUREG-0654 REV. 1 Cross-Reference **[7.0.U, Recommendation 5g]**

	NUREG-0654, Criterion Paragraph	EP Section Number
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

J. Protective Response

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
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

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NUREG-0654, Criterion Paragraph	EP Section Number
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

K. Radiological Exposure Control

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
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

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NUREG-0654, Criterion Paragraph	EP Section Number
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

N. Exercises and Drills

N.1.a Conduct annual exercise - off-site release	5.3.2
N.1.b Verify capability to respond - Evaluate, Critique	5.3.2

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NUREG-0654 REV. 1 Cross-Reference **[7.0.U, Recommendation 5g]**

NUREG-0654, Criterion Paragraph	EP Section Number
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

O. Radiological Emergency Response Training

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

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NUREG-0654 REV. 1 Cross-Reference **[7.0.U, Recommendation 5g]**

	NUREG-0654, Criterion Paragraph	EP Section Number
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

P. Responsibility for the Planning Effort

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
P.6	List other supporting plans	1.10
P.7	List and cross-reference procedures for implementing the plan	5.1.4, Annex E

ANNEX D

NUREG-0654 REV. 1 Cross-Reference
[7.0.U, Recommendation 5g]

	NUREG-0654, Criterion Paragraph	EP Section Number
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
<u>Emergency Plan Implementing Procedures (PEPs)</u>	
EP-EAL Emergency Action Levels	4.1
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-241 Technical Support Center (TSC) Emergency Ventilation System Operation	2.4.2, 3.3
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-271 Emergency Operations Facility (EOF) Emergency Ventilation System Operation	2.4.4, 3.5
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
AD-EP-ALL-0202 Emergency Response Offsite 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
<u>Emergency Program Maintenance and Administration (EPMs)</u>	
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-601 Core Damage Assessment Technical Basis	1.4.4, 2.4.2, 3.9.4, 4.4.1, 4.4.2

ANNEX E

List Of Emergency Preparedness Documents

Document Type	Plan Section
<u>Other Documents</u>	
EPL-001 Emergency Phone List	5.1.3, Annex G
<u>Fleet Emergency Preparedness Procedures</u>	
AD-EP-ALL-0202, Emergency Response Offsite Dose Assessment	2.4.4.Q, 4.4.3
EMG-NGGC-0004, Maintenance of the Emergency Response Organization Notification System	4.2.e
EMG-NGGC-0005, Activation of the Emergency Response Organization Notification System	4.2.e
EMG-NGGC-0010, Emergency Plan Change Screening and Evaluation 10CFR50.54(q)(3)	1.3
EMG-NGGC-1000, Fleet Conduct of Emergency Preparedness	

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 Duke 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 Duke 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 Duke 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 Management

Chatham County Emergency management 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, Duke Energy, and local government agencies.
- Operate the county warning point (Communications Center) on a 24-hour basis. The Communications Center is staffed 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, Duke 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 staffed continuously by a Public Safety Dispatcher.

ANNEX G

Interfacing Information From Supporting Emergency Plans

2.8 Lee County Emergency Management

Lee County Emergency Management 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, Duke 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 City of Sanford 9-1-1 Center

The City of Sanford operates the county warning point on a 24-hour basis.

The city warning point is the Lee County communications center which is staffed 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, Duke 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 Wake County Sheriff's Office Communications Center

The Wake County Sheriff's Office 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 staffed 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 National Response Framework published in January 2008.

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3.2 Federal Emergency Management Agency (FEMA)

The role of the Federal Emergency Management Agency (FEMA) is described in the National Response Framework published in January 2008.

3.3 Nuclear Regulatory Commission (NRC)

The NRC provides at least one resident inspector at HNP. Upon notification by Duke Energy, the NRC provides additional technical advice, technical assistance, and personnel per NUREG-0728, "Report to Congress, 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 Duke 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, DZ Atlantic, and URS Energy and Construction, Inc. A contract is maintained with Murray and Trettel, Inc., which provide localized weather forecasts for the system or for HNP area as requested.

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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:

- Facilitate technical information flow from the affected utility to the nuclear industry.
- Locate replacement equipment and personnel with technical expertise.
- Obtain technical information and industry experience regarding plant component and systems.
- Provide an INPO liaison to facilitate interface.

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.

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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.

Duke 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 Duke Energy. Annex A lists each agreement:

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

6.2 Ambulance Service

HNP maintains a contract for support services with Apex Rescue Squad as described in Section 4.6.3.E.4) of this plan. Annex A lists this agreement.

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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 Duke 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. Duke 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.

Table G.1-1

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	Shift Manager (SM)
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. Site Team Director 2. Interim Director	EOF, New Hill EOF, New Hill	5-8 Hours 60-75 Minutes	Site Team Director 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	Emergency Services Department, Lillington
Lee County EOC	County Board Chairman	204 West Courtland Drive, Sanford	1-3 Hours	Lee County Warning Point, 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
Holly Springs Dept. Of Public Safety Division of Municipal Fire Services	Fire Chief	HNP	30-45 Minutes	Raleigh Comm. Center

Table G.1-1

Organizations Participating in Emergency Response

Organization	Contact	Location for Response	Approximate Response Time	Agent for Initial Notification
DZ Atlantic	Designated Staff	HNP	3-5 Hours	District Manager
National Weather Service	Designated Staff	Raleigh, NC	phone contact	Raleigh, NC
Murray and Trettel	Designated Staff	North Field, Illinois	phone contact	North Field, Illinois
URS Energy and Construction, Inc.	Manager of Projects	HNP	3-5 Hours	District Manager
Rex Healthcare	Emergency Room	Rex Healthcare, 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

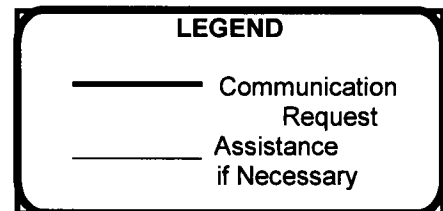
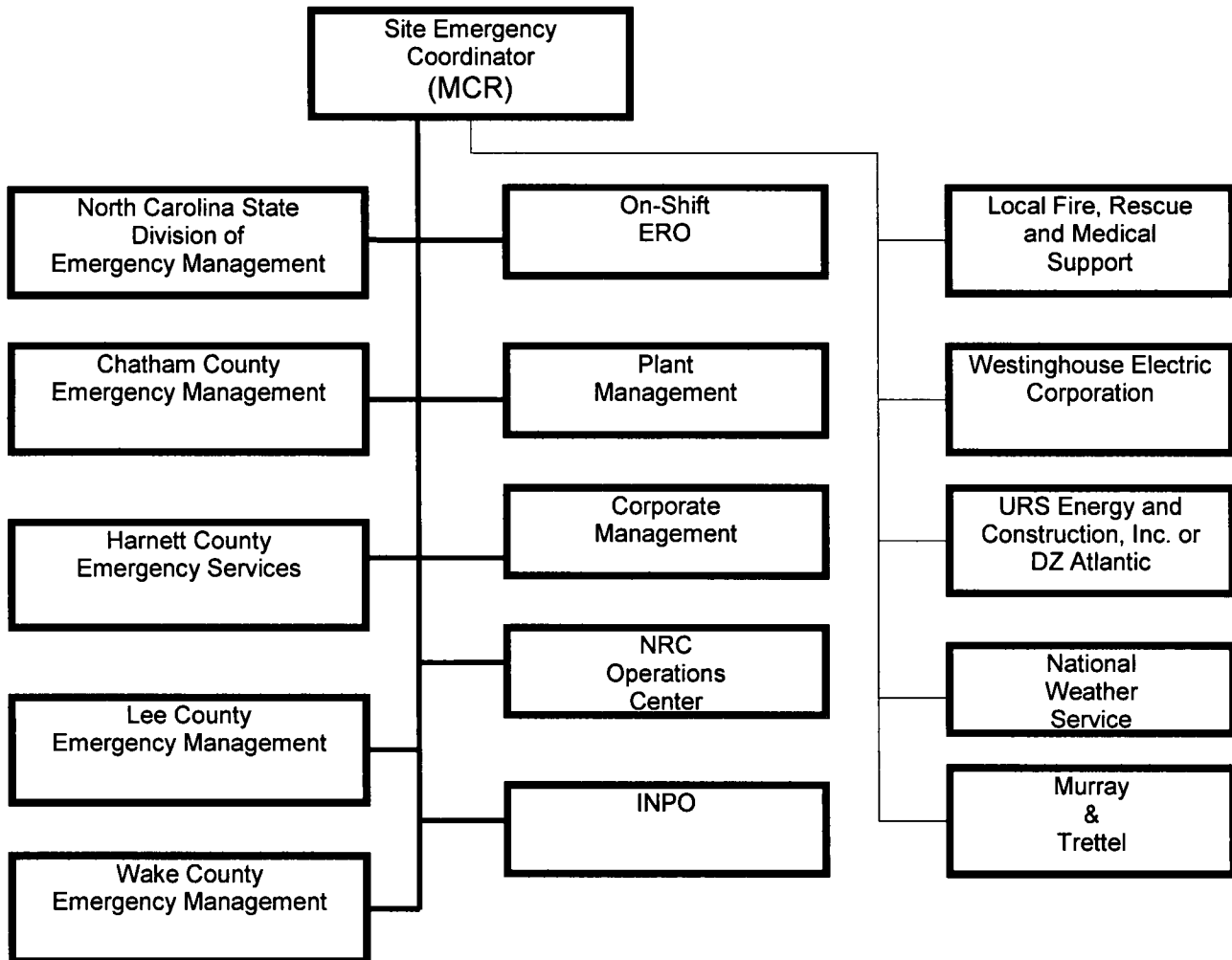
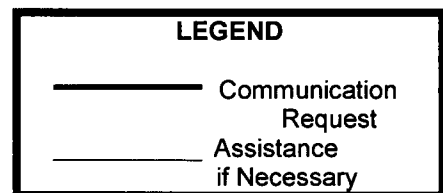
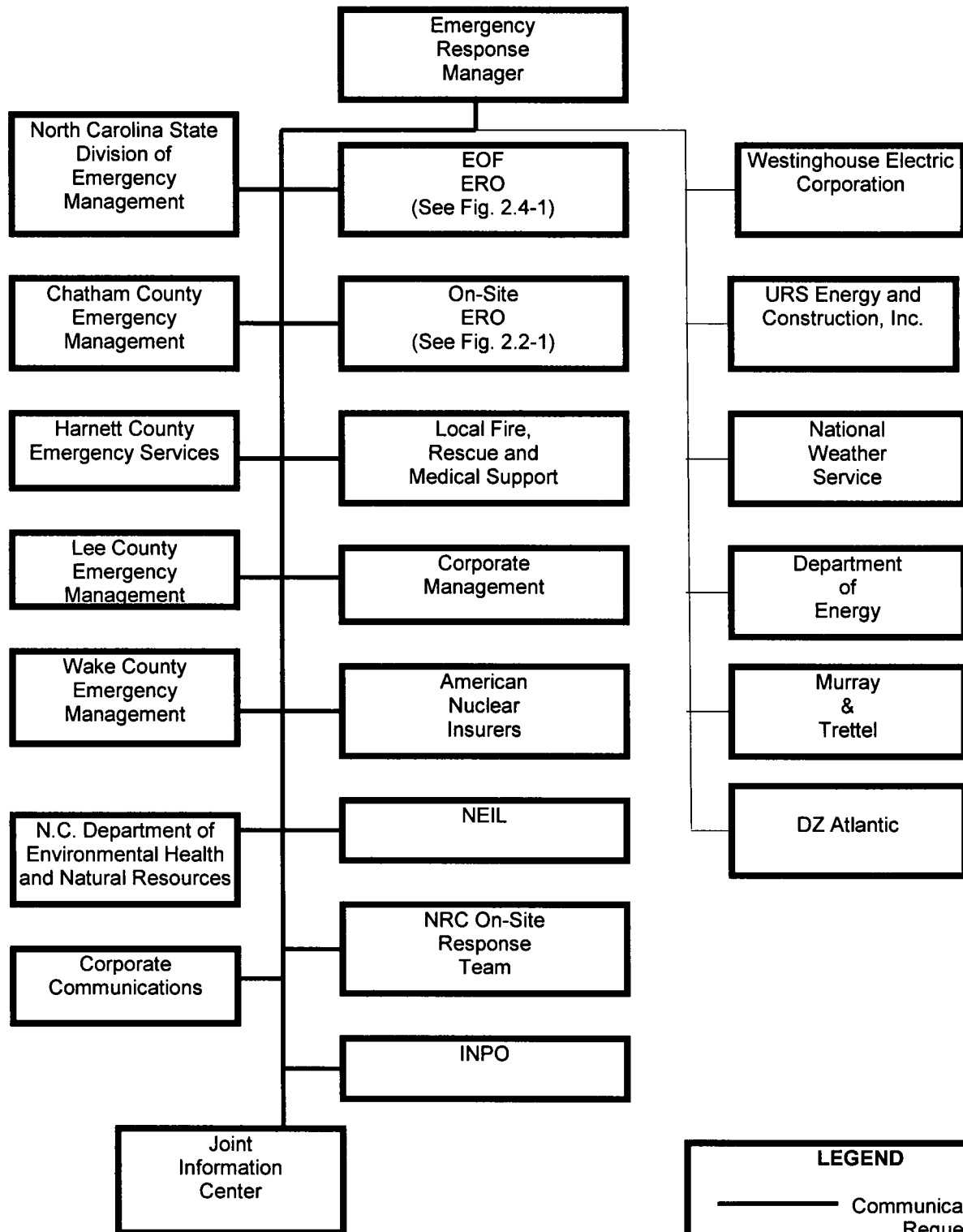


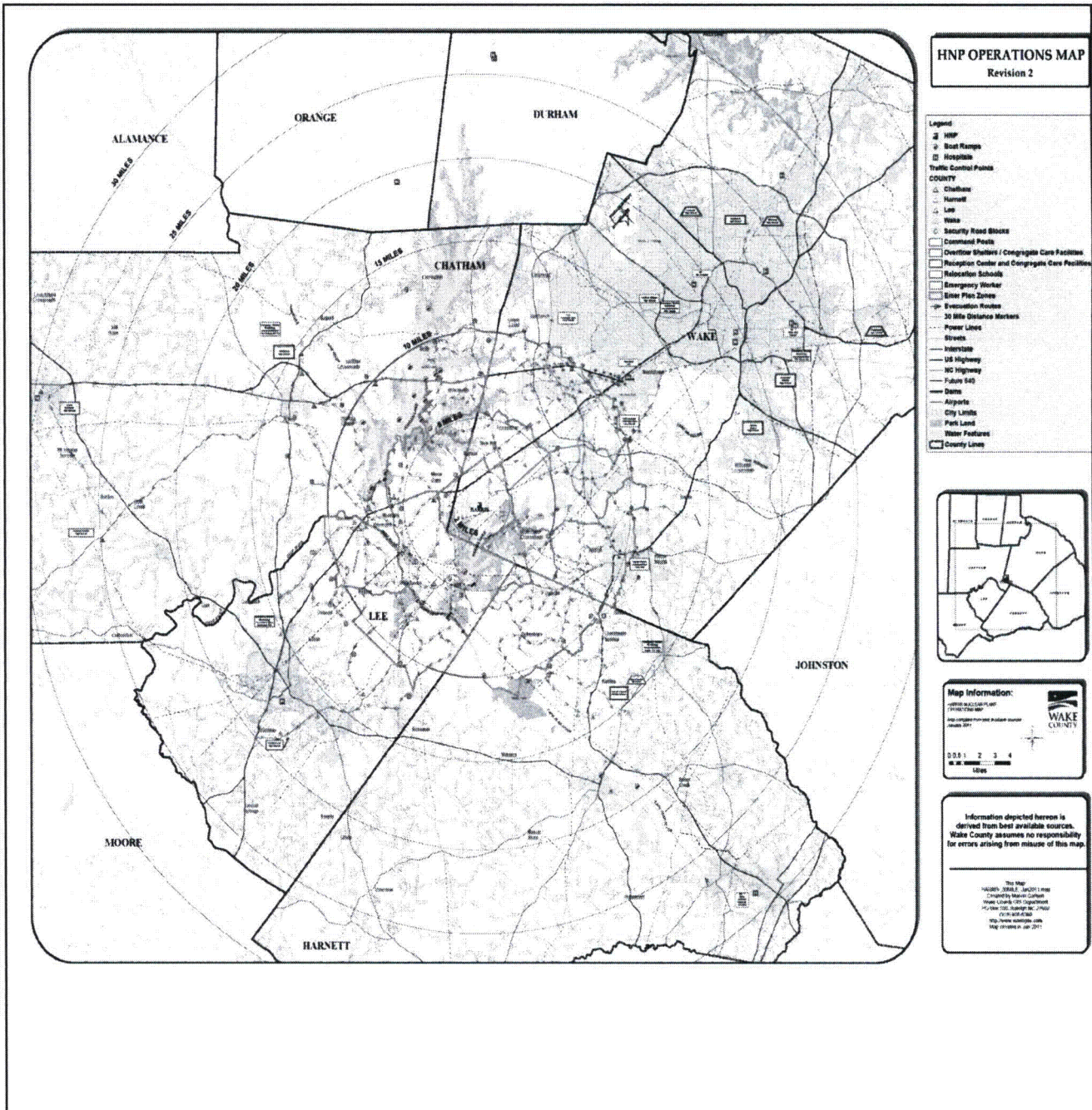
Figure G-2

ERO Interfaces, TSC and EOF Activated



Annex H

Harris Nuclear Plant - Operations Map



Revision 63 Summary	
Rev. 63 processed with PRR: 698759 PRRs Incorporated: 698759 ECs Incorporated: 96271	
3.8.2	Step A.2 revised From: An off-site Notification System (Selective Signaling System) provides communications To: An off-site Notification System [Selective Signaling System or Duke Emergency Management Network (DEMNET)] provides communications
4.2	Step B revised From: or the Selective Signaling System phone to simultaneously notify To: or the Selective Signaling System or Duke Emergency Management Network (DEMNET) phone to simultaneously notify
7.0	Step Q revised From: EMG-NGGC-0002 Offsite Dose Assessment (NCR 292138-16) To: AD-EP-ALL-0202 Emergency Response Offsite Dose Assessment (NCR 292138-16)
Annex B	Revised From: The technical basis for the dose projection program is located in NUREG-1887 RASCAL 3.0.5: Description of Models and Methods. (PRR 316135) To: The technical basis for the dose projection program is located in NUREG 1940 RASCAL 4.0: Description of Models and Methods.
Annex E	Emergency Plan Implementing Procedures revised From: PEP-340 Dose Assessment To: AD-EP-ALL-0202 Emergency Response Offsite Dose Assessment
Annex E	Emergency Plan Implementing Procedures deleted PEP-344 HNP Offsite Dose Assessment Based on Monitored Releases and Plan Sections 2.4.4.Q, 4.4.3
Annex E	Fleet Emergency Preparedness Procedures revised From: EMG-NGGC-0002, Offsite Dose Assessment To: AD-EP-ALL-0202, Emergency Response Offsite Dose Assessment