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ACRONYMS

AAT	Accident Assessment Team
AC	alternating current
ALARA	As Low As Reasonably Achievable
ANI	American Nuclear Insurers
CCPS	North Carolina Department of Crime Control and Public Safety
CDE	Committed Dose Equivalent
cm	centimeter
CO	Control Operator
cpm	counts per minute
CR	Control Room
CVT	Current Value Table
DC	direct current
DDS	Data Display and Processing System
DEM	North Carolina Division of Emergency Management
DENR	North Carolina Department of Environment and Natural Resources
DHS	U.S. Department of Homeland Security
DOE	U.S. Department of Energy
dpm	disintegrations per minute
EAB	Exclusion Area Boundary
EAL	Emergency Action Level
EAS	Emergency Alert System
EC	Emergency Communicator
ENS	Emergency Notification System

ACRONYMS

EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EOP	Emergency Operating Procedure
EPA	U.S. Environmental Protection Agency
EPM	Emergency Program Maintenance
EPZ	Emergency Planning Zone
ERDS	Emergency Response Data System
ERFIS	Emergency Response Facility Information System
ERM	Emergency Response Manager
ERO	Emergency Response Organization
ETS	Emergency Telecommunications System
FEMA	Federal Emergency Management Agency
FRC	Federal Response Center
FRMAC	Federal Radiological Monitoring and Assessment Center
FSAR	Final Safety Analysis Report
FTS	Federal Telecommunications System
HE&EC	Harris Energy and Environmental Center
HNP	Harris Nuclear Plant (All Units)
HP	Health Physics
HPN	Health Physics Network
HSI	Human Systems Interface
I&C	Instrumentation and Controls
INPO	Institute of Nuclear Power Operations

ACRONYMS

JIC	Joint Information Center
LAN	Local Area Network
LLEA	Local Law Enforcement Agencies
MCL	Management Counterpart Link
mrem/hr	millirem/hour
MT	Mobile Terminal
MWt	megawatts thermal
MWe	megawatt electric
NEIL	Nuclear Electric Insurance Limited
NLO	Non-licensed Operator
NRC	U.S. Nuclear Regulatory Commission
NRF	National Response Framework
OCL	Operation Center Local Area Network
OSC	Operations Support Center
PA	Public Address
PABX	Private Automatic Branch Exchange
PAG	Protective Action Guide
PAR	Protective Action Recommendation
PEP	Plant Emergency Procedure
PF	Protection Factor
PLS	Plant Control System
PMCL	Protective Measures Counterpart Link
PNSC	Plant Nuclear Safety Committee

ACRONYMS

PWR	Pressurized Water Reactor
POD	Plant Operations Director
POM	Plant Operating Manual
Rem	Roentgen Equivalent Man
RMS	Radiation Monitoring System
RPS	North Carolina Radiation Protection Section
RSCL	Reactor Safety Counterpart Link
RSDP	Remote Sample Dilution Panel
SAMG	Severe Accident Management Guidelines
SEC	Site Emergency Coordinator
SECN	Statewide Emergency Communication Network
SEOC	State Emergency Operations Center
SERT	State Emergency Response Team
SPDS	Safety Parameter Display System
SRPD	Self-reading Pocket Dosimeter
TEDE	Total Effective Dose Equivalent
TLD	Thermoluminescent Dosimeter
TSC	Technical Support Center
UHF	Ultra High Frequency
USCO	Unit Senior Control Operator
VES	Emergency Habitability System (control room)
WMC	WakeMed Cary
WMR	WakeMed Raleigh

ACRONYMS

WSI	Weather Services International

INTRODUCTION

The Harris Nuclear Plant (HNP) Site is located 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 (Figure Intro-1).

HNP consists of three (3) pressurized water reactors (PWRs). Unit 1 is a PWR of Westinghouse Corporation manufacture and licensed to operate at 2900 megawatts thermal (MWt). The associated net electrical output is approximately 900 megawatts electric (MWe). The major structures of Unit 1 which contain radioactive materials are the Containment Building, Reactor Auxiliary Building, Fuel Handling Building, Steam Generator Storage Building, and the Waste Processing Building. Units 2 and 3 are located adjacent to Unit 1 and consist of two (2) additional PWR's, based on the Westinghouse Electric Company, LLC (Westinghouse) AP1000 standard design. The major structures of Units 2 and 3 which contain radioactive materials are the Containment Buildings, Annex Buildings, Radwaste Buildings, and the Auxiliary Buildings. Figure Intro-2 shows the overall site and location of each Unit, and the locations of the onsite Emergency Response Facilities. Figure Intro-3 shows the Exclusion Area Boundary (EAB) and location of the Harris Energy and Environmental Center (HE&EC) in which the Emergency Operations Facility (EOF) is located.

EMERGENCY PLAN PURPOSE

The purpose of the HNP Emergency Plan and implementing procedures (i.e., Plant Emergency Procedures or PEP's) is to assure that the state of onsite and offsite 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 site. The HNP Emergency Plan and implementing procedures describe the Emergency Preparedness Program which has the following objectives:

- Protection of site personnel and the general public.
- Prevention or mitigation of property damage.
- Effective coordination of emergency activities among all organizations having a response role.
- Early warning and clear instructions to the population-at-risk in the event of a serious radiological emergency.
- Continued assessment of actual or potential consequences both onsite and offsite.
- Effective and timely implementation of emergency measures.
- 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 (PEPs)
- 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 is located in Appendix 4 of this plan.

As part of this plan, Unit specific annexes were developed to address Unit specific information. Annex 1 addresses Unit 1 specific information, and Annex 2 addresses Units 2 and 3 specific information. The content of these annexes includes the following sections:

a. Introduction;

b. Emergency Action Levels (EALs);

c. Emergency Response Facilities and Equipment; and

d. Plant Monitoring/Data Handling Systems.

The purpose of these annexes is to address any Unit specific differences that may impact emergency preparedness.

EMERGENCY PLANNING ZONES (EPZ)

PLUME EXPOSURE PATHWAY EPZ

The Plume Exposure Pathway 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. Approximate coordinates of the plant centerline are latitude 35º 38' 01" N and longitude 78º 57' 23" W (based on Unit 1). 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. The prevailing winds around the site are from the southwest.

Figure Intro-3 shows the Plume Exposure EPZ, which includes portions of the North Carolina counties of Chatham, Harnett, Lee, and Wake. The state of North Carolina and the respective counties within the 10-mile EPZ have prepared plans for a response to an emergency at HNP. These plans describe their respective responsibilities, authorities, capabilities, and emergency functions.

INGESTION EXPOSURE PATHWAY EPZ

The Ingestion Exposure Pathway 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 HNP contains both urban and rural areas with industry, farming, business, education, research, and military interests. Figure Intro-4 shows the 50-mile Ingestion Exposure EPZ, which 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.

DEMOGRAPHIC INFORMATION

The distribution of resident population in the 10-mile EPZ is presented in Table Intro-1 and Figure Intro-5. Special facilities (schools) within the 10-mile EPZ are described in Table Intro-2. Hospital and assisted living (family care) facilities are described in Figure Intro-6. The 10-mile EPZ evacuation time estimates are provided in Table Intro-3. Information related to transient populations and other demographic data within the plume exposure pathway EPZ, is located in the Harris Nuclear Plant Development of Evacuation Time Estimates (Reference M).

SUPPORTING EMERGENCY PLANS

Emergency Plans which support this Plan are:

- State of North Carolina Radiological Emergency Response Plan for Nuclear Power Facilities.
- U.S. Nuclear Regulatory Commission, NUREG-0728, NRC Incident Response Plan.
- National Response Framework.
- Southern Mutual Radiological Assistance Plan.
- Chatham County Emergency Response Plan for the Harris Nuclear Plant.
- Harnett County Emergency Response Plan for the Harris Nuclear Plant.
- Lee County Emergency Response Plan for the Harris Nuclear Plant.
- Wake County Emergency Response Plan for the Harris Nuclear Plant.

RESPONSIBILITY FOR PLAN DEVELOPMENT AND REVIEW

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

Procedures are in place to ensure changes to the Emergency Preparedness Program are evaluated to determine whether the changes do or do not decrease the effectiveness of the Plan and the Plan, as changed, continues to meet the standards of 10 CFR 50.47(b) and the requirements of Appendix E. Changes which result in an evaluated decrease in program effectiveness will not be implemented without prior NRC approval.

Table Intro-1
EPZ Permanent Resident Population by Subzone

Subzone	2000 Population	2007 Population[(a)]
A	143	180
B	1113	1397
C	331	416
D	258	319
E	26,146	32,879
F	10,764	13,534
G	12,324	15,497
H	2906	3444
I	804	947
J	1145	1348
K	619	763
L	708	874
M	1440	1778
N	584	721
TOTAL	**59,285**	**74,097**

(a): The data in this table is based on the "Harris Nuclear Plant, Development of Evacuation Time Estimates" (Reference M) and presents the estimates of permanent resident population in each sub-zone based on the 2000 Census data. Extrapolation to the year 2007 reflects population growth rates in each county derived from census data.

Table Intro-2 (Sheet 1 of 2)
Special Facilities (Schools) within the 10-Mile EPZ

Special Facility	Sub-zone	Distance from Plant (Miles)	County
Moncure Elementary School	M	6.9	Chatham
Apex Elementary School	E	8.3	Wake
Apex Middle School	E	10.1	Wake
Apex High School	E	8.8	Wake
Baucom Elementary School	E	9.1	Wake
Hope Montessori School	E	10.3	Wake
Lufkin Road Middle School	E	9.3	Wake
Olive Chapel Elementary School	E	7.8	Wake
Salem Elementary School	E	10.3	Wake
Salem Middle School	E	10.3	Wake
St. Mary Magdalene Catholic School	E	7.7	Wake
Community Partners Charter High School	F	7	Wake
Holly Grove Elementary School	F	6	Wake
Holly Ridge Elementary School	F	8	Wake
Holly Ridge Middle School	F	8	Wake
Holly Springs Elementary School	F	7.4	Wake
Holly Springs High School	F	6	Wake
Southern Wake Montessori School	F	7.2	Wake

Table Intro-2 (Sheet 2 of 2)
Special Facilities (Schools) within the 10-Mile EPZ

Special Facility	Quadrant	Distance from Plant (Miles)	County
The New School Montessori Center	F	9.6	Wake
Fuquay-Varina Middle School	G	9.7	Wake
Fuquay-Varina High School	G	9.2	Wake
Lincoln Heights Elementary School	G	8.8	Wake

Table Intro-3 (Sheet 1 of 2)
10-Mile Emergency Planning Zone Evacuation Time Estimates (100 Percent)

Region Wind Toward	Sub-zones Impacted	Summer Midday Midweek		Summer Midday Weekend		Summer Evening Midweek/Weekend	Winter Midday Midweek			Winter Midday Weekend		Winter Evening Midweek/Weekend
		Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Ice	Good Weather	Rain	Good Weather
Entire 2-Mile Region, 5-Mile Region, and Total EPZ (Hr:Min)												
R01 2-Mile Radius	A	4:00	4:00	3:00	3:00	3:00	4:00	4:00	4:00	3:00	3:00	3:00
R02 5-mile Radius	A, B, C, D, K, L	4:05	4:05	3:10	3:20	3:05	4:05	4:05	4:05	3:10	3:10	3:05
R03 Entire EPZ	A, B, C, D, E, F, G, H, I, J, K, L, M, N	4:10	4:10	4:05	4:05	4:05	4:10	4:10	4:10	4:05	4:05	4:00
2-Mile Ring and Downwind to 5 Miles (Hr:Min)												
R04 N, NW, NNW	A, B, L	4:05	4:05	3:05	3:20	3:05	4:05	4:05	4:05	3:05	3:05	3:05
R05 NNE	A, B	4:00	4:05	3:00	3:00	3:00	4:00	4:05	4:05	3:00	3:00	3:00
R06 NE, ENE	A, B, C	4:00	4:05	3:00	3:00	3:00	4:00	4:05	4:05	3:00	3:00	3:00
R07 E	A, B, C, D	4:00	4:05	3:00	3:05	3:00	4:00	4:05	4:05	3:00	3:05	3:00
R08 ESE	A, C, D	4:00	4:00	3:00	3:05	3:00	4:00	4:00	4:00	3:00	3:05	3:00
R09 SE	A, C, D, K	4:00	4:00	3:00	3:05	3:00	4:00	4:05	4:05	3:00	3:05	3:00
R10 SSE, S	A, D, K	4:00	4:00	3:05	3:05	3:00	4:00	4:05	4:05	3:05	3:05	3:00
R11 SSW, SW	A, K	4:00	4:00	3:05	3:05	3:00	4:00	4:00	4:00	3:05	3:05	3:00
R12 WSW, W, WNW	A, K, L	4:00	4:05	3:10	3:20	3:05	4:05	4:05	4:05	3:10	3:10	3:05
5-Mile Ring and Downwind to EPZ Boundary (Hr:Min)												
R13 N, NNE	A, B, C, D, E, K, L, N	4:05	4:05	4:00	4:00	4:00	4:05	4:05	4:10	4:00	4:00	4:00
R14 NE	A, B, C, D, E, F, K, L	4:05	4:05	4:00	4:00	4:00	4:05	4:05	4:10	4:00	4:00	4:00

Table Intro-3 (Sheet 2 of 2)
10-Mile Emergency Planning Zone Evacuation Time Estimates (100 Percent)

Region Wind Toward	Sub-zones Impacted	Summer Midday Midweek		Summer Midday Weekend		Summer Evening Midweek/Weekend	Winter Midday Midweek			Winter Midday Weekend		Winter Evening Midweek/Weekend
		Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Ice	Good Weather	Rain	Good Weather
R15 ENE, E	A, B, C, D, E, F, G, K, L	4:05	4:05	4:05	4:05	4:05	4:05	4:05	4:10	4:00	4:00	4:00
R16 ESE	A, B, C, D, F, G, H, K, L	4:10	4:10	4:05	4:05	4:05	4:10	4:10	4:10	4:05	4:05	4:00
R17 SE	A, B, C, D, G, H, K, L	4:10	4:10	4:05	4:05	4:00	4:10	4:10	4:10	4:00	4:00	4:00
R18 SSE	A, B, C, D, G, H, I, K, L	4:10	4:10	4:05	4:05	4:00	4:10	4:10	4:10	4:00	4:00	4:00
R19 S	A, B, C, D, H, I, K, L	4:10	4:10	3:50	3:50	3:50	4:10	4:10	4:10	3:50	3:50	3:50
R20 SSW	A, B, C, D, H, I, J, K, L	4:10	4:10	3:50	3:50	3:50	4:10	4:10	4:10	3:50	3:50	3:50
R21 SW	A, B, C, D, I, J, K, L	4:05	4:05	3:05	3:20	3:05	4:05	4:05	4:10	3:10	3:10	3:05
R22 WSW	A, B, C, D, I, J, K, L, M	4:05	4:10	3:10	3:25	3:05	4:05	4:05	4:10	3:10	3:10	3:05
R23 W, WNW	A, B, C, D, J, K, L, M	4:05	4:10	3:10	3:25	3:05	4:05	4:05	4:10	3:10	3:10	3:05
R24 NW	A, B, C, D, K, L, M, N	4:05	4:10	3:50	3:50	3:05	4:05	4:05	4:10	3:50	3:50	3:05
R25 NNW	A, B, C, D, E, K, L, M, N	4:05	4:10	4:00	4:00	4:00	4:05	4:05	4:10	4:00	4:00	4:00

A. ASSIGNMENT OF RESPONSIBILITY (ORGANIZATIONAL CONTROL)

In the event of an emergency situation at the HNP, the activation of the emergency response organization will be required. Additionally, various State, local, Federal, and private sector organizations may be required to contribute to the emergency response. This section describes the responsibilities of these organizations. A summary of primary response organizations and the emergency title of the individual in charge is contained in Table A-1.

A.1 HARRIS NUCLEAR PLANT

The HNP Site is responsible for licensee activities associated with radiological emergency planning in cooperation and coordination with local, State, Federal, and private sector organizations discussed in the HNP Emergency Plan. Coordination of such emergency planning is achieved through maintenance of the Emergency Plan and supporting procedures; training of personnel, as described in Section O of this plan; maintenance of emergency response facilities and equipment; and coordination and support of local, State, Federal, and private sector organizations. The following information summarizes the emergency-related responsibilities of HNP:

- Recognition and declaration of emergency conditions.
- Classification of the event in accordance with the methodology described in Section D (Emergency Classification System) of this plan.
- Notification of Site personnel and offsite authorities as appropriate.
- Mitigation of the severity of the event through proper corrective actions.
- Requests for additional support (as deemed necessary).
- Effective establishment and maintenance of communications with the Site and offsite organizations, as described in Section F (Emergency Communications) of this plan.
- Continuous assessment of event status and communication of event status to appropriate response organizations (includes collection and evaluation of onsite and offsite radiological monitoring data).
- Initiation of onsite protective measures and offsite protective action recommendations.
- Monitoring and control of radiation exposures of emergency response personnel.
- Transmittal of emergency status information to the public, in conjunction with local, State, and Federal authorities.

Site response to an emergency will be initiated and completed under the direction of the onsite emergency organization, as described in Section B of this plan.

A.2 STATE OF NORTH CAROLINA

A.2.1 STATE OF NORTH CAROLINA GOVERNOR'S OFFICE

The Governor has the authority to direct and control the State Emergency Management Program. During a declared State of Disaster, the Governor has

the authority to utilize all available state resources reasonably necessary to cope with emergencies. The Governor's representatives coordinate as necessary with Progress Energy and with local government officials.

A.2.2 NORTH CAROLINA DEPARTMENT OF CRIME CONTROL AND PUBLIC SAFETY

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

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

A.2.3 NORTH CAROLINA DIVISION OF EMERGENCY MANAGEMENT

The North Carolina Division of Emergency Management (DEM) is the responsible organization within the NC 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 HNP 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.

A.2.4 NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (DENR)

The Department of Environment and Natural Resources (DENR) is the lead for technical expertise regarding the protection of natural resources. The DENR administers regulatory programs designed to protect air quality, water quality, and the public's health. The DENR also works to protect fish, wildlife and wilderness areas.

A.2.5 RADIATION PROTECTION SECTION

The Radiation Protection Section (RPS), within the 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.

A.3 CHATHAM, HARNETT, LEE AND WAKE COUNTIES, NORTH CAROLINA

The area within the HNP plume exposure pathway EPZ in the State of North Carolina falls within the counties of Chatham, Harnett, Lee, and Wake. The following subsections identify the responsibilities for each county.

A.3.1 CHATHAM COUNTY EMERGENCY OPERATIONS

Chatham County Emergency Operations has the following responsibilities:

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

A.3.2 HARNETT COUNTY EMERGENCY SERVICES

Harnett County Emergency Services has the following responsibilities:

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

A.3.3 HARNETT COUNTY SHERIFF'S DEPARTMENT

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

A.3.4 LEE COUNTY EMERGENCY SERVICES

Lee County Emergency Services has the following responsibilities:

- Develop and maintain the Lee County Plan to Support the Harris Nuclear Power Plant.

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

A.3.5 LEE COUNTY SHERIFF'S DEPARTMENT

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

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

A.3.6 WAKE COUNTY EMERGENCY MANAGEMENT

The Wake County Emergency Management has the following responsibilities:

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

A.3.7 RALEIGH COMMUNICATIONS CENTER

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

A.4 LOCAL SERVICES SUPPORT

Local services are equipped and staffed to cope with many types of emergency situations on a 24 hour basis. For fire, medical, or other types of incidents that require outside assistance, offsite agency support is available as described in Table A-1.

A.4.1 MEDICAL ASSISTANCE

Medical assistance is available through agreements with the following organizations as described in Section L and Appendix 3 of this plan. HNP agreements with the listed agencies are on file at Progress Energy. Appendix 3 lists each agreement.

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

A.4.2 AMBULANCE SERVICE

HNP maintains a contract for support services with Apex Rescue Squad, Inc. as described in Section L and Appendix 3.

A.4.3 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. The HNP agreements with Apex and Holly Springs are on file at Progress Energy and described in Appendix 3.

A.5 PRIVATE SECTOR ORGANIZATIONS

A.5.1 CONTRACTED SERVICES

A number of active contracts are maintained in order to ensure continuing access to qualified personnel when and if they are needed to supplement Progress Energy resources. These contracts provide the capability of obtaining, on an expedited basis, additional maintenance support personnel (such as mechanics, electricians, and I&C Technicians), other technical personnel (such as HP and Chemistry Technicians), and engineering and consulting services. For example, contracts are maintained with Westinghouse, Atlantic Group, and Washington Group. A contract is maintained with Murray and Trettel Weather Services, Inc. and Weather Services International (WSI) which provides localized weather forecasts for the system or for the HNP Site, as requested. Appendix 3 lists each agreement.

A.5.2 INDUSTRY RESOURCE SUPPORT

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

b. Nuclear Electric Insurance Limited (NEIL): NEIL would assist Progress Energy in determining the damage to equipment onsite and managing the insurance claims made by the utility for the loss of the generation of power due to an emergency.

c. Institute of Nuclear Power Operations (INPO): One of INPO's roles is to assist Progress Energy in applying the resources of the nuclear industry to meet the needs of the emergency. A letter of agreement between INPO and HNP is on file at HNP and listed in Appendix 3.

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 maintains the following emergency support capabilities:

- Dedicated emergency call number capable of reaching INPO staff and activating INPO support functions on a 24-hour basis.
- 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 on a 24-hour basis.

The INPO emergency response plan describes the following emergency support functions:

- Assistance to the affected utility in locating sources of emergency personnel, equipment and operational analysis.
- INPO, Electric Power Research Institute (EPRI) and Nuclear Energy Institute (NEI) maintain a coordination agreement on emergency information with their member utilities.
- INPO provides the "Nuclear Network," or its replacement, electronic communications system to its members, participants, NEI, and EPRI to coordinate the flow of media and technical information about the emergency.

An INPO representative could be rapidly dispatched to the emergency response organization to coordinate INPO support activities and information flow.

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

A.6 FEDERAL GOVERNMENT

The following subsections list the Federal Agencies that will provide emergency response support to HNP. The National Response Framework (NRF) (Reference D) describes the coordination of other Federal Agencies.

The Federal Radiological Monitoring and Assessment Center (FRMAC) Operations Plan provides for the coordinated management of Federal technical response activities related to a radiological emergency. Its primary goals include:

- Assisting the State and Federal Coordinating Agency with personnel, equipment, and technical resources, as needed;
- Collecting offsite environmental radiological data; and
- Providing the data and related assessments to involved State agencies and to the Federal Coordinating Agency.

A.6.1 DEPARTMENT OF ENERGY, SAVANNAH RIVER OPERATIONS OFFICE

The U.S. Department of Energy (DOE) is assigned responsibility to establish and manage the FRMAC. The FRMAC may be activated when a major radiological emergency exists, and the Federal government will respond when a State, other governmental entity with jurisdiction, or a regulated entity requests federal support. The DOE, Savannah River Operations Office, is available to provide radiological assistance to HNP.

A.6.2 FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

The Federal Emergency Management Agency (FEMA) is responsible for Federal offsite nuclear emergency planning and response.

A.6.3 DEPARTMENT OF HOMELAND SECURITY (DHS)

The Homeland Security Act of 2002 established the Department of Homeland Security (DHS) as a focal point regarding natural and manmade crises and emergency planning. DHS is responsible for overall coordination of all actual and potential Incidents of National Significance. Incidents of National Security for commercial nuclear power plants include a declaring of a general emergency at a nuclear power plant resulting from an accident, an emergency declaration (Alert or higher classification at a nuclear facility resulting from a security related threat).

A.6.4 NUCLEAR REGULATORY COMMISSION (NRC)

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

A.6.5 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. Murray and Trettel Weather Services Inc. and WSI will also provide localized meteorological support.

A.7 CONCEPT OF OPERATIONS

The emergency preparedness program for HNP will require the coordinated response of several organizations. The onsite emergency response organization, including command and control during an emergency, is described

in detail in Section B of this plan. The interface between the onsite and offsite emergency response organizations is shown on Figures A-1 and A-2. Appendix 3 lists agreements with offsite support organizations.

A.7.1 STATE OF NORTH CAROLINA AND COUNTY OPERATIONS

The State of North Carolina and county responses to an emergency at HNP are conducted in accordance with the State of North Carolina Radiological Emergency Response Plan for Nuclear Power Facilities and applicable county plans contained in Part 2, Section 2.

Table A-1 (Sheet 1 of 2)
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
Corporate Communications	On-call Corporate Communications	Corporate Office, Raleigh	1-2 Hours	On-call Corp. Communications
Nuclear Regulatory Commission	1. Emergency Office (HQ) 2. Base Team Mg (Reg.)	NRC Ops. Center Incident Response Center	Immediate Immediate	HQ Duty Officer Regional Duty Officer
Nuclear Regulatory Comm. (Site Team)	1. Director-Site Team Ops. 2. Interim Director	EOF, New Hill EOF, New Hill	5-8 Hours 60-75 Minutes	Dir. Of Site Team Ops. Resident Inspector
State Emergency Response Team	SERT Coordinator	Division Emergency Management Headquarters, Raleigh	2 Hours	Highway Patrol Communications Center
Chatham County EOC	County Board Chairman	County Law Enforcement Center	1 1/4 — 2 Hours	County Communications Center, Pittsboro
Harnett County EOC	County Board Chairman	County Law Enforcement Bldg.	1 1/4 — 2 Hours	Sheriff's Department, Lillington
Lee County EOC	County Board Chairman	Sanford Municipal Center, Sanford	1-3 Hours	Lee County Sanford Municipal Center, Sanford
Wake County EOC	County Board Chairman	County Courthouse, Raleigh	1-2 Hours	Raleigh Comm. Center
Apex Rescue Squad	Captain	HNP	30-45 Minutes	Raleigh Comm. Center
Apex Volunteer Fire Department	Captain	HNP	20 minutes	Raleigh Comm. Center
Holly Springs Dept. Of Public Safety Division of Municipal Fire Services	Fire Chief	HNP	30-45 Minutes	Raleigh Comm. Center
Atlantic Group	Designated Staff	HNP	3-5 Hours	District Manager

Table A-1 (Sheet 2 of 2)
Organizations Participating in Emergency Response

Organization	Contact	Location for Response	Approximate Response Time	Agent for Initial Notification
National Weather Service	Designated Staff	Raleigh, NC	phone contact	Raleigh, NC
Murray and Trettel	Designated Staff	North Field, Illinois	phone contact	North Field, Illinois
Weather Service International (WSI)	Designated Staff	Landover, Maryland	phone contact	Corporate Headquarters Landover, Maryland
Washington Group	Manager of Projects	HNP	3-5 Hours	District Manager
Rex Hospital	Emergency Room	Rex Hospital, Raleigh	30-45 Minutes	Rex Emergency Room or Raleigh Comm. Center
WakeMed 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
Institute of Nuclear Power Operations (INPO)	Designated Staff	HNP	5-8 Hours	INPO representative – 24-hour emergency call number.
U.S. Department of Energy (DOE)	Designated Staff	HNP	5-8 Hours	Region Operations Manager - Aiken, SC
Federal Emergency Management Agency (FEMA)/Department of Homeland Security (DHS)	Designated Staff	HNP	5-8 Hours	Regional Operations Manager - Atlanta, GA

Table A-2 (Sheet 1 of 2)
Offsite Agency Support Summary

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

Table A-2 (Sheet 2 of 2)
Offsite Agency Support Summary

Function (NUREG-0654, II.A)	Primary Responsibility	Support Responsibility
Fire and Rescue		
Onsite	HNP	Local Fire & Rescue
Offsite	County	State
Medical		
Onsite	HNP	Rescue, Hospital
Offsite	County	State
Public Health & Sanitation		
Onsite	HNP	N/A
Offsite	County	State
Social Services		
Onsite	N/A	N/A
Offsite	County	State
Training		
Onsite	HNP	Progress Energy
Offsite	County, State, Progress Energy	State, Progress Energy
Exercises		
Onsite	HNP	Progress Energy
Offsite	State	County, Progress Energy
Re-entry		
Onsite	Progress Energy	HNP, W*, Wash. Group,
Offsite	State	FEMA, County, Progress Energy, DOE

Notes:

N/A Not applicable

*W Westinghouse

B. ONSITE EMERGENCY ORGANIZATION

Initial staffing of the HNP Emergency Response Organization (ERO) is provided from personnel normally employed at the Site. The Harris ERO, specific to the Control Room, Technical Support Center, and Operations Support Center (OSC), is shown in Figure B-1. If necessary, this staff will be augmented substantially by additional Progress Energy personnel and other organizations. Figure B-2 shows the Harris ERO in relationship to the Emergency Operations Facility (EOF) and Joint Information Center (JIC).

This section includes a description of the ERO; a discussion of command and control; and a description of ERO personnel responsibilities.

B.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 are an extension of these existing plant procedures.

B.2 EMERGENCY RESPONSE ORGANIZATION

The emergency response resources available to respond to an emergency consist of the personnel at the Site, at Corporate Headquarters, at other Company nuclear plants, the HE&EC and, in the longer term, at other organizations involved in the nuclear industry. Throughout Progress Energy there exists a staff of well-trained and experienced engineers, scientists, and

technicians. These personnel represent a pool of technical expertise that can be called upon to provide additional support to the corporate emergency response and recovery organizations, if required.

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, additional specialists needed in the event of an emergency can be recalled to the Site at any time. Table B-1 shows the minimum staffing requirements for emergencies at HNP.

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 B-1, that are to be assumed whenever an emergency is declared. As additional personnel are called into the Site, a seamless transition occurs since each individual knows ahead of time what their responsibilities will be. A current call list of ERO members is maintained in each Control Room and procedures are available to activate the ERO.

Progress Energy is committed to providing staffing to effectively mitigate the consequences of an accident and implement measures to protect personnel, the public, and the environment from adverse exposures to radioactive materials, resulting from an 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 B-1. Additional personnel will be available to provide communications; onsite and offsite 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 onsite ERO as necessary to meet the requirements of this Plan. Therefore, the ERO is expected to be activated within approximately 60 minutes after emergency notification and fully operational 75 minutes following emergency declaration.

The fully augmented onsite ERO is shown in Figure B-1, and personnel assignments are provided in Table B-1 and implementing procedures. The onsite 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.

B.3 COMMAND AND CONTROL

In the event of an emergency, the Shift Manager of Unit 1 or Shift Manager of Units 2 & 3 assumes the role of Site Emergency Coordinator (SEC – CR),

depending on which units are affected. In the event of a site-wide emergency (e.g., security event or natural phenomena), Unit 1 will take the lead, and the Shift Manager of Unit 1 will assume the role of SEC – CR.

The position of Site Emergency Coordinator – CR is activated for command and control purposes upon declaration of an emergency. Until relieved by the Emergency Response Manager, the Site Emergency Coordinator – CR 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 offsite related activities. The Site Emergency Coordinator maintains overall onsite emergency responsibilities including emergency classification and, after EOF activation, reports to the Emergency Response Manager.

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 – CR.

b. When the Technical Support Center is activated, the position of Site Emergency Coordinator is transferred from the 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 offsite 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 SEC – CR 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 – CR feels are necessary for an adequate emergency response.

f. The conditions for transfer of designated responsibilities from the Shift Manager (Site Emergency Coordinator – CR) to the Site Emergency Coordinator – TSC and the Emergency Response Manager – EOF are:

   - The TSC and EOF are ready to be activated and to assume emergency functions.

   - The Site Emergency Coordinator – TSC and the Emergency Response Manager have received a briefing on the status of the emergency.

B.4 ASSIGNMENT OF RESPONSIBILITIES

All emergency response personnel with responsibilities listed in B.4.1 through B.4.5 will:

- Be trained and qualified to perform the assigned responsibilities as specified in Section O.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.

Activation of the emergency response facilities and turnover of responsibilities is described in implementing procedures.

B.4.1 CONTROL ROOMS

a. Shift Manager: Until an emergency is declared, the Shift Manager has the following responsibilities relating to the Emergency Plan:

   1. Direct the activities of the Operations staff (USCOs, COs, and NLOs).
   2. Recognize an off-normal condition as indicated by instrument readings, direct observation of plant conditions, or an onsite/offsite report of conditions that may impact the plant.
   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 – CR.
   5. 24-hour communication point of contact.

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

   The Site Emergency Coordinator – CR 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 onsite 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 onsite 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 (POD), located in the Control Room after activation of the Technical Support Center, is responsible to the Site Emergency Coordinator – TSC for coordinating activities of the Control Room Staff, the Fire Brigade, and the First Aid Teams. The POD is trained as a Severe Accident Management Guidelines (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 – CR 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 O.1.

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 in the CR or to the Plant Operations Director after activation of the Technical Support Center.

g. Emergency Communicator – CR: Initially filled with on-shift personnel, is appointed by and reports to the Site Emergency Coordinator – CR and is responsible for communicating with:

1. Offsite authorities (e.g., County, State, and the NRC) 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 (e.g., medical, fire, and law enforcement) if their assistance is needed.

B.4.2 TECHNICAL SUPPORT CENTERS

a. Site Emergency Coordinator – TSC: The Site Emergency Coordinator – TSC is responsible for overall command and control of the onsite 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 – CR of the following major responsibilities:

   1. Classification of the emergency.
   2. Establishment of onsite mission priorities in response to the emergency.
   3. Approval of planned radiation exposures for onsite personnel in excess of 5 Rem TEDE or entry into radiation fields greater than 25 Rem/hr.
   4. Review and approval of deviations from Technical Specifications or license conditions if the Site Emergency Coordinator – TSC is a Shift Manager, or ensure that such deviations are approved by a Shift Manager.
   5. Authorization of the administration of Potassium Iodide to onsite 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 – Emergency Response Facility Information System (ERFIS) Operator. The TSC – Senior Reactor Operator is responsible for providing technical assistance related to site 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 Accident Assessment Team (AAT) members to evaluate strategies that implement Severe Accident Management Guidelines.

e. TSC – Accident Assessment Team: The TSC – AAT 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 Administrative 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 Administrative Team: The TSC Administrative Team is located in the Technical Support Center and is composed of a Librarian and Administrative 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 offsite.

l. TSC HP Technician: The TSC Health Physics 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 Safeguards Contingency Plan.

2. Coordinating the accountability of personnel inside the Protected Area.

3. Providing Security Force personnel in support of emergency activities.

B.4.3 OPERATIONS SUPPORT CENTERS

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 onsite 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.

B.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 Administrative and Logistics Manager.

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

   1. Approval of required notifications to the State/Counties.
   2. Approval of planned radiation exposures for offsite 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 offsite 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 Emergency Response Manager 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 Administrative 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. Administrative Team Leader: The Administrative Team Leader, located in the Emergency Operations Facility, reports to the Administrative and Logistics Manager and is responsible for directing the actions of the Administrative Team.

i. Administrative Team: The Administrative Team, located in the Emergency Operations Facility, consists of a Setup Leader, Librarian and Administrative Support personnel. They report to the Administrative 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 Administrative 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 Administrative and Logistics Manager, or prior to activation of this position, the Site Emergency Coordinator, for coordinating the activities in the Administrative 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 Accident 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 for 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 offsite.

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 Health Physics Network (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 – CR. 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 Emergency Operations Centers (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:

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

B.4.5 JOINT INFORMATION CENTER (JIC)

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, Administrative Coordinator and Public Information Coordinator. The Company Spokesperson also has the following major responsibilities:

   1. Maintain command and control of the Joint Information Center.
   2. Coordinates and directs responses to media inquiries.
   3. Ensure that the composition and timeliness of Progress Energy News Releases are adequate.
   4. Conduct periodic briefings with the news media.
   5. Provide for timely exchange of information between other spokespersons.

b. Technical Specialist: The Technical Specialist, located in the Joint Information Center, reports to the Company Spokesperson. The Technical Specialist is responsible for obtaining and developing technical emergency information.

   1. Gather information from the EOF for Progress Energy news media briefings.
   2. Provide timely and accurate technical information to the media during formal briefings.

c. JIC Director: The JIC Director, located in the Joint Information Center, reports to the Company Spokesperson. The JIC Director is responsible for the development and coordination of news releases and dissemination of information.

d. Administrative Coordinator: The Administrative Coordinator, located in the Joint Information Center, reports to the Technical Specialist. The Administrative Coordinator provides guidance to the Administrative Assistants and Media Badging Specialist.

e. Administrative Assistant: The Administrative Assistant, located in the Joint Information Center, reports to the Administrative Coordinator. The Administrative Assistant is responsible for providing administrative services and supplies to Joint Information Center personnel.

f. Media Badging Specialist: The Media Badging Specialist, located in the Joint Information Center, reports to the Administrative Coordinator. The Media Badging Specialist is responsible for controlling access to the Media Briefing Area and distributing information.

g. Public Information Coordinator: The Public Information Coordinator, located in the Joint Information Center, reports to the Company Spokesperson and 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.

B.5 OUTSIDE ORGANIZATION SUPPORT

Outside organizations that support HNP in an emergency are described in Section A, Assignment of Responsibility (Organizational Control).

Table B-1 (Sheet 1 of 2)
Minimum Staffing Requirements for Emergencies

Functional Area	Major Tasks	Emergency Positions	Minimum Shift Size (Unit 1)	Minimum Shift Size (Units 1 & 2)	Minimum Shift Size (Units 1, 2, & 3)	Capability for Additions	
						30-45 min	60-75 min
1. Plant Operations and Assessment of Operational Aspects	Control Room Staff	Shift Manager[a]	1	2	2[b]	--	--
		USCO	1	2	3	--	--
		Control Operators	2	4	6	--	--
		Non-Licensed Operators	2[c]	4[c]	6[c]	--	--
2. Emergency Direction and Control	--	SEC – CR (Shift Manager[d])	1	2	3	--	--
		ERM[e]	--	--	--	--	1
		SEC – TSC[e]	--	--	--	--	1
3. Notification and Communication	Emergency Communicator	Plant Personnel	1	2	2	1	2
4. Radiological Assessment	Offsite Dose Assessment[b]	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	2	2	1	1
	Chemistry	Chemistry Team Personnel	1	2	2	--	1

(Continued on next page)

NOTES:

a) After Activation of the EOF and TSC.

b) Units 2 and 3 require only one (1) Shift Manager for both units.

c) One of the two non-licensed operators may be assigned to the Fire Brigade.

d) On shift responsibility prior to activation of the EOF and TSC.

e) 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.

Table B-1 (Sheet 2 of 2)
Minimum Staffing Requirements for Emergencies

Functional Area	Major Tasks	Emergency Positions	Minimum Shift Size (Unit 1)	Minimum Shift Size (Units 1 & 2)	Minimum Shift Size (Units 1, 2, & 3)	Capability for Additions	
						30-45 min	60-75 min
5. Plant Engineering Repair and Corrective Actions	Technical Support	Shift Technical Advisor	1	2	2[f]	--	--
		Core Performance Engineering	--	--	--	1	--
		Mechanical Engineering	--	--	--	--	1
		Electrical Engineering	--	--	--	--	1
	Repair and Corrective Actions	Mechanical Maintenance	1[g]	2[g]	2[g]	--	2
		Electrical/I&C Maintenance	1[g]	2[g]	2[g]	2	1
6. In-plant Protective Actions	Radiation Protection	Radiological Control Team Personnel	1[g] 1	1[g] 1	1[g] 1	2	2
7. Fire Fighting	--	--	5[h]			Local Support	
8. First Aid and Rescue Operations	--	Plant Personnel	2[g]			--	--
9. Site Access Control	Security and Accountability	Security Team Personnel	(i)	(i)	(i)	(i)	(i)
HNP TOTAL (Less Security):			**15**	**28**	**34**	**11**	**16**

NOTES:

f) Units 2 and 3 require only one (1) STA for both units.

g) May be provided by shift personnel assigned other functions.

h) Fire Brigade per FSAR.

i) Per Security Plan.

C. EMERGENCY RESPONSE SUPPORT AND RESOURCES

C.1 STATE AND LOCAL GOVERNMENT SUPPORT

The primary responsibility for directing and conducting emergency operations in the 10-mile plume exposure pathway EPZ rests jointly with local and State governments.

Two (2) additional state agencies that have major responsibility for coordinating offsite response to emergencies resulting from an accident at HNP are the North Carolina Department of Crime Control and Public Safety (CCPS); and the North Carolina Department of Environment and Natural Resources (DENR). The CCPS has the lead for direction and control, and DENR has the lead for technical assistance and expertise. State resources are made available to support the emergency response, as deemed necessary.

C.1.1 NORTH CAROLINA – STATE EMERGENCY FACILITIES

C.1.1.1 The North Carolina – State Emergency Operations Center (SEOC)

The SEOC is the assembly location for Governor, State Emergency Response Team and other officials as described in the State of North Carolina Radiological Emergency Response Plan for Nuclear Power Facilities. The SEOC is also the primary location for coordination with Federal, State, local authorities, and HNP. The primary SEOC facility is located at the Division of Emergency Management Headquarters, Raleigh, North Carolina.

An alternate facility is located at the Disaster Recovery Operations Center, Raleigh, North Carolina.

C.1.1.2 State Emergency Response Team (SERT)

The SERT is comprised of senior representatives of State agencies, state level volunteer and non-profit organizations, and state level corporate associations who have knowledge of their organizations' resources and have the authority to commit those resources to emergency response.

The SERT operates from the SEOC, located at the Division of Emergency Management Headquarters. It will be activated on a limited or full-scale basis as deemed appropriate by the SERT Leader. In the event of full activation (Level 2 or Level 1), all SERT agencies will be represented in the EOC on a 24-hour basis. The Division of Emergency Management provides support staff for the SERT. Upon activation of the SERT, agencies are authorized, in coordination with the SERT leader, to initiate and continue actions to carry out assigned missions, including tasking of designated support agencies.

Additional details and actions of the SERT are provided in the State of North Carolina Radiological Emergency Response Plan for Nuclear Power Facilities.

C.1.1.3 County Emergency Operations Centers

The main functions of County Emergency Operations Centers (EOCs) are as follows:

a. Provide facilities for emergency operations at the local level.

b. Maintain communications with the Harris Plant, State EOC, and other county EOCs.

c. Assist in the execution of this plan on order of the Governor or his representatives.

d. Develop supporting plans, procedures and checklists.

e. Provide county level management for Care Center Operations.

The various names and locations of the county EOCs are as follows:

a. Chatham County Emergency Operations Center (EOC) – Law Enforcement Center in Pittsboro, NC.

b. Harnett County EOC – Harnett County Law Enforcement Building in Lillington, NC.

c. Lee County EOC – Police Department of the Sanford Municipal Center, Sanford, NC.

d. Wake County Emergency Operations Center – Wake County Courthouse in Raleigh, NC.

Additional details and actions of the county EOCs are provided in the State of North Carolina Radiological Emergency Response Plan for Nuclear Power Facilities.

C.2 FEDERAL GOVERNMENT SUPPORT

In addition to coordination with State/county governmental entities in an emergency situation, HNP may require assistance from Federal agencies in the areas of communications, radiological monitoring and laboratory analysis, transportation, and disaster relief.

In the event of an incident in which Federal assistance is needed to supplement county and State emergency response capabilities, principal points of contact for State government are as follows:

- The Federal Emergency Management Agency (FEMA), Regional Headquarters in Atlanta, Georgia.
- The U.S. Department of Energy (DOE), Region Operations Office in Aiken, South Carolina.
- The U.S. Environmental Protection Agency (EPA), Regional Headquarters in Atlanta, Georgia.

The U.S. Department of Homeland Security (DHS) and its subordinate agency FEMA are assigned lead responsibility for Federal offsite nuclear emergency planning and response (per Title 44 CFR 351 and the Homeland Security Act of 2002). DHS is also delegated responsibility for development and promulgation of the National Response Framework (NRF). The NRF assumes that states will be responsible for overall management of offsite emergency response. The Federal government's role consists of providing technical and/or logistical resource support at the request of State emergency management. Federal emergency response consists of technical and non-technical components. The NRC and FEMA jointly coordinate Federal emergency response actions. The NRC coordinates technical aspects, and FEMA coordinates non-technical aspects of Federal response. The NRC and FEMA are expected to have representatives at the Site within approximately five to eight hours (Director – Site Team Operations) and approximately sixty to seventy-five minutes (Interim Director) respectively, after receiving notification.

Within several hours of notification, Federal response personnel will begin arriving at, or near, the Site. The Federal Response Center (FRC) will be established for the coordination and exchange of information among various Federal agencies during an emergency at the Site. The Federal Radiological Monitoring and Assessment Center (FRMAC) will be established for the coordination of Federal monitoring and assessment assistance with State and local governments.

C.3 HNP SITE SUPPORT

HNP will provide space, telephone communications, and administrative services for NRC personnel in the TSC, EOF, and JIC. NRC personnel may also be present in the Control Room. Work space is also available for NRC and FEMA personnel responding to the JIC. Dedicated communications equipment is available for use by NRC personnel in the TSC and EOF, and licensee communications equipment is available for use by all responding personnel in emergency facilities. Health Physics Network (HPN) telephones are available in the TSC and EOF.

C.4 OTHER SUPPORT

The Site has a permanent meteorological monitoring station located within the exclusion area boundary. Progress Energy also has the capability to access the National Weather Service on a 24-hour basis to provide backup should the onsite system fail.

HNP has the following capabilities available onsite:

- Laboratory
- Field monitoring
- Radiation monitoring and analysis
- Dose assessment

A complete description of these facilities and resources can be found in Section I of this plan.

Industry resources that are under contract with Progress Energy and their areas of support (engineering and general emergency support) are listed below:

- Westinghouse Electric Company, LLC: Engineering support of Units 1, 2, and 3.
- American Nuclear Insurers (ANI): Management of insurance claims generated by the public who may be affected by an offsite radiological event.
- Nuclear Electric Insurance Limited (NEIL): Determination of damage to onsite equipment and managing the insurance claims made by the utility for the loss of the generation of power due to an emergency.
- Institute of Nuclear Power Operations (INPO): Application of resources of the nuclear industry to meet the needs of the emergency.
- Washington Group: General maintenance and technical support.
- Atlantic Group: General maintenance and technical support.
- Murray and Trettel Weather Services Inc. and Weather Services International: Localized meteorological support.

D. EMERGENCY CLASSIFICATION SYSTEM

D.1 CLASSIFICATION OF EMERGENCIES

The emergency classification system is based on the four emergency classes described in 10 CFR 50, Appendix E. The system was established by the NRC to describe response to a formal set of threshold conditions which require site personnel to take specific actions regarding notifications to state and local governments and the public upon recognition of certain off-normal indicators or events.

Levels of response and conditions leading to the responses are defined in Appendix 1 of 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” (Reference S). For Units 2 and 3 which consist of passive plant designs, levels of response are defined in NEI 07-01, “Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors,” Rev. 0, dated September 2007 (Reference P), which is currently under review by the NRC staff. NEI 07-01 is based on NEI 99-01, “Methodology for Development of Emergency Action Levels.” (Reference Q).

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 operating staff is provided formal training to recognize off normal plant conditions and categorize them within the parameters of the four emergency classes.

The emergency classification descriptions incorporate security-related events described in NRC Bulletin 2005-02, Emergency Preparedness and Response Actions for Security-Based Events, and are defined below.

D.1.1 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."

Harris Plant actions undertaken at the Notification of Unusual Event include promptly informing State and local authorities of the event, augmenting on-shift resources as needed, assessment and response, and escalation to a more severe class, if appropriate. If the emergency class is not escalated to a more severe class, then State and local authorities will be notified of event termination in accordance with implementing procedures.

D.1.2 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.

Harris Plant actions undertaken at the Alert emergency class include those described for the Notification of Unusual Event and activation of the TSC, OSC, EOF and JIC. In addition, other key emergency response personnel are alerted, on-site monitoring teams are dispatched, periodic plant status updates and meteorological assessments are provided to offsite authorities, as are dose estimates, if any event-related releases are occurring. An individual is dedicated to provide plant status updates to offsite authorities and periodic media briefings (jointly with offsite authorities when practicable), senior technical and management staff are made available for consultation with NRC and the State on a periodic basis, and release and dose projections based on available plant condition information and foreseeable contingencies are provided.

D.1.3 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.

Harris Plant actions undertaken at the Site Area Emergency class include those described for the Alert emergency class. Since the Harris Plant activates all Emergency Response Facilities, both onsite and offsite at the Alert or higher classification, the Site Area Emergency actions are identical to those described for the Alert actions.

D.1.4 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.

Harris Plant actions undertaken at the General Emergency class are identical to those described for the Site Area Emergency class except there is no more severe emergency class.

D.2 EMERGENCY ACTION LEVELS (EALS)

The basis for Harris Unit 1 EALs is Appendix 1 of 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” (Reference S). Annex 1 of the Harris Emergency Plan contains the specific EALs used in classification of emergencies for Harris Unit 1.

The basis for Harris Units 2 and 3 which consist of passive plant designs, is NEI 07-01, “Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors,” Rev. 0 (Reference P). Annex 2 of the Harris Emergency Plan contains the specific EALs used in classification of emergencies for Harris Unit 2 and 3.

E. NOTIFICATION METHODS AND PROCEDURES

This section describes notification of emergency response organization personnel; State, local, and Federal agencies; and the general public during a declared emergency at HNP. The initial notification concept, including offsite agencies that will be notified of an emergency condition, is described in Tables E-1, E-2, E-3, and E-4 and is dependent on the emergency classification. Details regarding notification responsibilities, communications systems, information required to be transmitted to offsite agencies, and notification techniques, are specifically described in appropriate implementing procedures (PEPs).

E.1 NOTIFICATION OF PROGRESS ENERGY PERSONNEL

The Site Emergency Coordinator (SEC) is responsible for notifying onsite and offsite personnel.

The primary means for notification of personnel within the protected area is the Public Address (PA) system. The Control Room will make a PA announcement that an emergency has been declared and what actions should be taken.

The Emergency Communicator – CR will also notify onsite/offsite personnel assigned to the Emergency Response Organization (ERO) using a computer-based automated duty roster system and a system of pagers. ERO members are requested to respond, as directed by the Site Emergency Coordinator. If the emergency involves a Security Threat, alternate assembly areas may be used to protect the responding ERO members.

Corporate personnel within the ERO will be notified of an emergency, in accordance with Plant Emergency Procedures (PEPs).

E.2 NOTIFICATION OF STATE, LOCAL, AND FEDERAL RESPONSE PERSONNEL

The primary means of communication between the Site and State of North Carolina and counties is the Selective Signaling System. The Site Emergency Coordinator in the Control Room of the affected Unit or designated Unit for a site wide emergency; or Emergency Response Manager in the EOF, once activated, is responsible for completion and approval of the Emergency Notification Form for notifying state/county agencies. The Emergency Notification Form, used to notify the State and Counties, is provided in Annex F of the State of North Carolina Emergency Radiological Response Plan and is included as a form in plant procedures. This form includes information related to classification of the emergency, release status, and protective measures, if necessary.

Once approved, the notification form is provided to the Emergency Communicator (EC – CR or EC – State/County in EOF) as a message text for transmittal offsite. The Emergency Communicator will use the electronic notification form to simultaneously notify the 24-hour manned State Warning

Points, SEOC, and County Warning Points with the notification message. Additional information regarding notification is provided in the plant procedures.

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 the State and all counties within 15 minutes for all emergency classifications.

State and local agencies will then be responsible for notifying appropriate response personnel in accordance with their emergency plans and procedures.

Event notifications to the NRC will be made as soon as possible, and within one hour of the emergency classification. The primary means of communication between the Site and the NRC is the Emergency Notification System (ENS). Event notifications will be made using a Reactor Plant Event Notification worksheet or other notification message approved by the Site Emergency Coordinator (Control Room) or Emergency Response Manager (EOF) as appropriate.

Notifications to offsite 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.

The Site Emergency Coordinator (Control Room) or Emergency Response Manager (EOF) is also responsible for completion and approval of follow-up emergency messages to offsite agencies on a periodic basis. Follow-up messages from the plant to affected State and local authorities will be issued to provide further description of the emergency. The following information would be supplied; to the extent the information is available and appropriate:

a. Incident location and name and contact information of caller.

b. Incident date and time.

c. Emergency classification.

d. Information regarding any actual or potential radioactive releases, including medium (i.e., airborne, waterborne) and duration.

e. Estimates of total and relative quantities and concentrations of noble gases, iodines, and particulates.

f. Other available and pertinent information regarding the release

g. Meteorological conditions, including wind speed and direction, stability class, and precipitation.

h. Projected doses at the HNP site boundary and at 2, 5, and 10 miles.

i. Emergency response actions underway.

j. Protective Action Recommendations.

k. Requests for any onsite support by offsite organizations (e.g., firefighting or medical transportation support); and

l. Prognosis for changes in event classification or other conditions based on current assessments of plant conditions.

E.3 NOTIFICATION OF THE PUBLIC

It is the responsibility of Progress Energy, along with State and local governmental organizations, to provide adequate means for notifying the public, or to be assured that such means are provided. Administrative and physical means have been established for providing early initial warning and subsequent clear instructions to the public within the Plume Exposure Pathway EPZ.

In case of an emergency, State and local agencies are responsible for activating the Public Notification and Alerting System. This system consists of sirens located throughout the 10-mile EPZ and Tone Alert Radios distributed to households within a 5-mile radius of the HNP.

The State of North Carolina Emergency Radiological Response Plan for Nuclear Power Facilities, 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 Site of an emergency.

The Site will provide offsite authorities with supporting information for messages to the public. Such messages, consistent with the emergency classification scheme, will provide the public with instructions in regard to specific protective actions to be taken by occupants of affected areas.

E.3.1 TESTING AND MAINTENANCE OF THE PUBLIC NOTIFICATION AND ALERTING SYSTEM

E.3.1.1 Tone Alert Radio Distribution, Maintenance, Testing, and Operability

The Tone Alert Radios are tested prior to distribution and provided to each residence by a trained HNP representative.

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

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

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

E.3.1.2 Siren System Testing, Maintenance, and Operability

The sirens are tested as follows:

a. A silent test should be performed every two weeks.

b. A growl test should be performed at least once per calendar quarter.

c. A full-scale test of the system shall be conducted annually.

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.

The loss of all sirens within one county or the loss of 20% of the total number of sirens requires notification of the NRC within eight hours. 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.

Table E-1
Execution of Unusual Event

A. CLASS DESCRIPTION

This class involves events that are in progress or have occurred, which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection.

B. RELEASE POTENTIAL

No releases of radioactive material requiring offsite 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)
- Onsite Emergency Response Organization (as specified by procedure)
- Offsite Emergency Response Organization (as specified by procedure)
- Nuclear Regulatory Commission Operations Center (one hour)

Additional Notifications as Necessary

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

D. ACTIVATE

Onsite ERO (not required, but may be staffed for support as necessary)

- Technical Support Center
- Operations Support Center

Offsite ERO (not required, but may be staffed for support as necessary)

- Emergency Operations Facility
- Joint Information Center

Request Assistance (if necessary)

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

Table E-2
Execution of Alert

A. CLASS DESCRIPTION

This class describes events that are in progress 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.

B. RELEASE POTENTIAL

Offsite 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)
- Onsite Emergency Response Organization
- Offsite Emergency Response Organization
- Nuclear Regulatory Commission Operations Center (One hour)
- American Nuclear Insurers (Four hours)
- Nuclear Electric Insurance Limited (NEIL) (Fire Only)
- Institute of Nuclear Power Operations (Four hours)

Additional Notifications as Necessary

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

D. ACTIVATE

Onsite ERO

- Technical Support Center
- Operations Support Center

Offsite ERO

- Emergency Operations Facility
- Joint Information Center

Request Assistance (if necessary)

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

Table E-3
Execution of Site Area Emergency

A. CLASS DESCRIPTION

This class describes events that are in process or have occurred, which involve actual or likely major failures of plant functions needed for the 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.

B. RELEASE POTENTIAL

Offsite 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)
- Onsite Emergency Response Organization
- Offsite Emergency Response Organization
- Nuclear Regulatory Commission Operations Center (One hour)
- American Nuclear Insurers (Four hours)
- Nuclear Electric Insurance Limited (NEIL) (Fire Only)
- Institute of Nuclear Power Operations (Four hours)

Additional Notifications as Necessary

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

D. ACTIVATE

Onsite ERO

- Technical Support Center
- Operations Support Center

Offsite ERO

- Emergency Operations Facility
- Joint Information Center

Request Assistance (if necessary)

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

Table E-4
Execution of General Emergency

A. CLASS DESCRIPTION

This class involves events that 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.

B. RELEASE POTENTIAL

Doses expected to be greater than the upper EPA Protective Action Guideline exposure levels offsite 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)
- Onsite Emergency Response Organization
- Offsite Emergency Response Organization
- Nuclear Regulatory Commission Operations Center (One hour)
- American Nuclear Insurers (Four hours)
- Nuclear Electric Insurance Limited (NEIL) (Fire Only)
- Institute of Nuclear Power Operations (Four hours)

Additional Notifications as Necessary

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

D. ACTIVATE

Onsite ERO

- Technical Support Center
- Operations Support Center

Offsite ERO

- Emergency Operations Facility
- Joint Information Center

Request Assistance (if necessary)

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

F. EMERGENCY COMMUNICATIONS

This section describes the provisions for communication between the Site and principal response organizations, including State, local, and Federal agencies and also describes communications between the emergency response facilities.

Sections F.1 and F.2 provide descriptions of onsite and offsite communication networks that ensure reliable and timely exchange of information necessary to support effective emergency response. A detailed communications systems description, including design criteria of some systems, is contained in Section 9.5.2 of the Unit 1 and Units 2 and 3 FSARs. Details describing operation and testing of communications systems is located in plant emergency and program maintenance procedures.

F.1 ONSITE EMERGENCY COMMUNICATIONS SYSTEMS

F.1.1 PUBLIC ADDRESS SYSTEM

The HNP public address system provides paging and party line communications between locations throughout the plant. Inside and outside type wall and desk-mounted stations are used to communicate between roaming personnel and fixed work locations. Site-wide instructions are issued using the paging feature. This system is powered from the plant uninterruptible power supply which employs battery reserve as well as diesel generator emergency supply.

F.1.2 PRIVATE AUTOMATIC BRANCH EXCHANGE (PABX) TELEPHONE SYSTEM

The HNP private automatic branch exchange (PABX) telephone system provides communication capability between telephone stations located within the plant by dialing the four-digit telephone station code. The PABX telephone system also provides for outside communications as discussed in Sections F.2.1 and F.2.2.

F.1.3 SOUND POWERED TELEPHONE SYSTEM

The sound powered telephone system is a communications system which uses the mechanical energy in the human voice to generate electrical pulses to power the system. It requires no outside source of power and is therefore very reliable. The system consists of phone jacks, wiring, and the sound-powered handsets.

F.1.4 RADIO COMMUNICATIONS

The radio communications provide maximum site coverage and operate on a designated, assigned frequency. A primary and secondary source of power is provided for fixed base radio, with portable and mobile units powered by battery.

F.1.5 WIRELESS TELEPHONE SYSTEM

The wireless telephone system provides communications capability between site personnel.

F.1.6 HARRIS EMERGENCY TELECOMMUNICATIONS SYSTEM

The HNP Emergency Telecommunications System (ETS) consists of dedicated telephone lines between emergency facilities at HNP through a switch which is provided with a primary and secondary source of power.

F.1.7 PLANT SECURITY COMMUNICATIONS

A portable radio communications system for site use is available. Specific channel assignments are designated for security force use.

F.1.8 EMERGENCY RESPONSE FACILITY INFORMATION SYSTEM (ERFIS)

During an emergency, the ERFIS provides information on visual display units simultaneously in the control room, the Technical Support Center, and the Emergency Operations Facility for Unit 1. A similar data collection and display system is available for the TSCs of Units 2 and 3. The data may also be printed out in hard-copy form. Primary and secondary power sources are supplied to this system.

F.1.9 NRC RELATED COMMUNICATIONS SYSTEMS

a. Emergency Notification System (ENS): Provides initial notifications to the NRC, as well as ongoing information about plant systems, status, and parameters. ENS lines are located in the Control Room, TSC and EOF.

b. Health Physics Network (HPN): Provides communications regarding radiological and meteorological conditions, assessments, trends, and protective measures. HPN lines are located in the TSC and EOF.

c. Reactor Safety Counterpart Link (RSCL): Allows for internal NRC discussions regarding plant and equipment conditions. RSCL lines are located in the TSC and EOF.

d. Protective Measures Counterpart Link (PMCL): Allows for conduct of internal NRC discussions on radiological releases, meteorological conditions, and protective measures. PMCL lines are located in the TSC and EOF.

e. Management Counterpart Link (MCL): This system has been established for internal discussions between the NRC Executive Team Director/members and the NRC Site Team Director or licensee management. MCL lines are located in the TSC and EOF.

F.2 OFFSITE EMERGENCY COMMUNICATIONS SYSTEMS

F.2.1 COMMERCIAL PHONE LINES

Commercial telephone lines, which supply public telephone communications, are employed by Progress Energy in three ways:

1. Corporate Telephone Communications System is interconnected with plant PABX and utilizes microwave transmission equipment.

2. Lines to site emergency facilities, and

3. Lines to the Joint Information Center for public information purposes.

F.2.2 DEDICATED TELEPHONE SYSTEM TO LOAD DISPATCHER

This system provides direct links between the Control Room and the load dispatcher. Transmission facilities are microwave radio. These lines appear on several phones in the Control Room and automatically ring at the load dispatcher, identifying Harris as the caller. Primary and secondary power is supplied at both ends.

F.2.3 EMERGENCY COMMUNICATIONS NETWORK

The Emergency Communications Network is a system, separate from other communications systems, which provides back-up dedicated telephone and radio facilities between emergency response centers. The purpose of these facilities is to ensure priority communications at any time from HNP to emergency response personnel at the Federal, State, local governments, and other Progress Energy facilities.

F.2.4 SITE SECURITY

A site security radio control station provides for radio communications to local law enforcement agencies (LLEA). Primary and secondary power is supplied.

F.2.5 CORPORATE INFORMATIONAL DATA COMMUNICATIONS

Central computers are located at the Corporate headquarters. Special purpose computers are located at other Corporate facilities, including HNP. The communications link between HNP and Corporate headquarters allows the interchange, storage, and processing of information.

F.2.6 NRC EMERGENCY NOTIFICATION SYSTEM (ENS)

The NRC uses a Progress Energy dedicated telephone line which allows direct telephone communications from the Site to NRC regional and national offices. The Progress Energy communications line provides a link independent of the local public telephone network. Telephones connected to this network are located in HNP Control Rooms, Technical Support Centers, and the Emergency Operations Facility. There are also telephones connected to this system for use by Health Physics personnel. Primary and secondary sources of power are supplied.

F.3 COMMUNICATIONS WITH THE STATE OF NORTH CAROLINA AND WAKE, LEE, HARNETT AND CHATHAM COUNTIES

The primary means of communication between the Site and State of North Carolina and counties is the Selective Signaling System which is a dedicated system providing communications to the State and county warning points and Emergency Operations Centers (EOCs). The State and county warning points

are staffed on a 24-hour basis. Extensions for this system are located in the Control Rooms, Technical Support Centers, Emergency Operations Facility (EOF), the Unit 1 Auxiliary Control Panel, and the Units 2 and 3 Remote Shutdown Room. Backup power for this system is supplied through a battery system.

Commercial telephone lines and radio systems are available to provide backup communications capability from these locations.

F.4 COMMUNICATIONS WITH THE NUCLEAR REGULATORY COMMISSION (NRC) AND OTHER FEDERAL AGENCIES

The primary means of communication between the Site and the NRC is the Emergency Notification System (ENS). The ENS phone service is provided by the Federal Telecommunications System (FTS) which is a dedicated Progress Energy telephone line allowing direct telephone communications between the Site to the NRC Operations Center and Regional Offices. The ENS is located in the Control Rooms, Technical Support Centers, and the EOF. The NRC also provides the Health Physics Network (HPN) which is connected to the FTS for use by site radiation protection personnel during an emergency. HPN phone service is located in the Technical Support Centers and the EOF. In the TSC the HPN phone will be attended by site personnel until an NRC representative arrives. The NRC Region II office in Atlanta, Georgia, may be bridged into the ENS line through the NRC Operations Center in Rockville, Maryland.

Commercial telephone lines are available to provide backup communications to the ENS and HPN.

The Emergency Response Data System (ERDS) is the primary means for transmission of plant parameter information from the Site to the NRC. The ERDS computer, when activated, will periodically transmit a predefined list of critical plant parameters over the dedicated ERDS ETS lines to the NRC Operations Center.

Communications with other Federal emergency support organizations will be made using commercial telephone lines.

F.5 COMMUNICATIONS BETWEEN HNP EMERGENCY RESPONSE FACILITIES

Communications between the Control Rooms, TSCs, OSCs, EOF, and JIC will be completed using a system of dedicated telephone lines, normal plant telephones, and radio using the plant network. The radio will also be used for communications with offsite environmental monitoring teams. The following communications systems are available as part of the plant network.

a. PABX Telephone System covering the Control Rooms, TSCs, OSCs, EOF, and JIC.

b. Site paging system (accessed by Telephone System).

c. Sound-powered telephone system.

d. Two radio communications networks, one for security and one for operations.

e. Dedicated radio system from security center to local law enforcement agencies.

f. Site PABX telephone system is powered from batteries charged by a rectifier.

g. Backup power is provided to fixed radio equipment.

F.5.1 HARRIS ENERGY AND ENVIRONMENTAL CENTER PABX TELEPHONE AND OTHER RADIO SYSTEMS

a. The Harris Energy and Environmental Center (HE&EC) PABX telephone system includes:

   1. The HE&EC Private Automatic Branch Exchange (PABX) telephone system covers the Control Rooms, TSCs, OSCs and EOF.

   2. An offsite Notification System (Selective Signaling System) provides communications to State and County warning points and Emergency Operations Centers from the Control Rooms, TSCs, EOF, Auxiliary Control Panel (Unit 1), and the Remote Shutdown Room (Unit 2 and Unit 3).

   3. The HE&EC PABX telephone system is powered from batteries charged by a rectifier.

b. Other radio systems include:

   1. Radio communications (separate from site radios) with mobile and portable units used by the Environmental Monitoring Teams.

F.6 MEDICAL SUPPORT FACILITY COMMUNICATIONS

Communications with Rex Hospital or WakeMed (Raleigh or Cary) is by commercial telephone. Radio contact serves as a backup. State and local rescue vehicles have mobile communications with the Raleigh Communications Center and local receiving hospitals.

F.7 ALERTING EMERGENCY RESPONSE PERSONNEL

As described in Section E, notification of onsite personnel will be completed through a combination of Public Address (PA) announcements, alarms, and proceduralized telephone calls. During and after normal working hours, a call out computer is available to notify the HNP Emergency Response Organization personnel and the NRC resident inspector of emergency declarations at the Site. The system provides instructions for activation of the onsite emergency facilities, the near site Emergency Operations Facility, and the Joint Information Center. Provisions are provided for remote activation of the system via telephone lines and for password protection from unauthorized use of the system.

F.8 COMMUNICATIONS SYSTEMS TESTING

Communications systems testing is completed as described in Section N.

G. PUBLIC EDUCATION AND INFORMATION

Progress Energy maintains a coordinated program to educate members of the public regarding emergency notification methods and actions.

G.1 HARRIS NUCLEAR PLANT

Progress Energy, in coordination with State and county officials, will provide information to residents, businesses, and transients in the 10-mile Plume Exposure Pathway EPZ at least annually regarding how they will be notified and what their actions should be in an emergency.

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 additional information; (2) annual distribution of a school brochure to school administrators, 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).

Safety information brochures or signs providing information to transient populations are placed in public areas in the 10-mile EPZ. Emergency information will be made available to transients through distribution of brochures to commercial establishments, including a supply of brochures which are maintained at motels. Lake warning signs are posted at boat ramps, or access roads to boat ramps, at Harris and Jordan Lakes. The signs describe activities which would be taken to initiate an evacuation of the lake and include actions to be taken in response to the evacuation. The sign postings are verified semiannually.

The Joint Information Center (JIC) will be the principal point of contact with the news media during an emergency. Public information during a drill or emergency is coordinated and disseminated through the JIC. Provisions will be established through the JIC to make available and distribute information to the news media. The JIC will also implement provisions for a number of telephones which members of the public, who receive hearsay information, can call for factual information.

HNP, in cooperation with State and county emergency management, conducts an annual program to acquaint the media with the emergency plans, information concerning radiation protection, and points of contact for release of public information during an emergency. A Company Spokesperson that has access to all required information will provide site status and company information during scheduled news conferences and media briefings.

G.2 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.

H. EMERGENCY FACILITIES AND EQUIPMENT

The purpose of emergency response facilities is to provide centralized locations for organized command and control of onsite and offsite activities performed by the Company during an emergency. The facilities provide a location for the Emergency Response Organization (ERO) to direct or perform their responsible activities and coordinate activities with other organizations. Unit-specific information for emergency facilities and equipment is described in Annex 1, Section 4 and Annex 2, Section 4.

Adequate emergency response facilities, communications, and equipment to support emergency response are provided and maintained. The emergency response facilities include:

- Control Rooms (CRs) – all Units;
- Technical Support Centers (TSCs) – all Units;
- Operations Support Centers (OSCs) – all Units;
- Emergency Operations Facility (EOF); and
- Joint Information Center (JIC).

The Control Rooms for all Units are emergency response facilities that are 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 Control Room of the affected Unit or Unit 1 if the emergency is Site-wide. Operations personnel would be dispatched from their work areas with assistance from on-shift health physics, maintenance, and security personnel as needed.

The facilities, other than the Control Rooms, are unmanned or used for other purposes on a day-to-day basis. In the event of an emergency, the TSC, OSC, EOF, and JIC would be activated, in accordance with Section H.2 and plant emergency procedures.

In addition to the emergency response facilities, provision is made for onsite and offsite 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. Typical emergency supplies available for emergency facilities are indicated in Table H-1.

H.1 EMERGENCY RESPONSE FACILITIES

H.1.1 CONTROL ROOMS (CR)

The description of the Control Room for Unit 1 is located in Annex 1, Section 3.1; and the description of the Control Rooms for Units 2 and 3 is located in Annex 2, Section 3.1.

H.1.2 TECHNICAL SUPPORT CENTERS (TSC)

The description of the TSC for Unit 1 is located in Annex 1, Section 3.2; and the description of the TSCs for Units 2 and 3 is located in Annex 2, Section 3.2.

H.1.3 OPERATIONS SUPPORT CENTERS (OSC)

The description of the OSC for Unit 1 is located in Annex 1, Section 3.3; and the description of the OSCs for Units 2 and 3 is located in Annex 2, Section 3.3.

H.1.4 EMERGENCY OPERATIONS FACILITY (EOF)

The Emergency Operations Facility (EOF) is located within 10 miles of the Site at the HE&EC (Figure Intro-3) and provides space for management of overall emergency response, including coordination with Federal, State, and local officials; coordination of offsite radiological and environmental assessment; and determination of recommended public protective actions. The EOF is activated at an Alert level or higher emergency classification (or sooner, if determined by the SEC). Other details include:

a. Characteristics

1. Approximately 4800 square feet of space for approximately 60 persons including 14 NRC personnel.
2. 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.
3. Structurally built in accordance with Uniform Building Code.
4. Environmentally controlled to provide room air temperature, humidity, and cleanliness appropriate for personnel and equipment.
5. Backup power for habitability systems and battery pack emergency lighting are provided.
6. Provided with security to maintain readiness and to exclude unauthorized personnel when activated.
7. Alternate assembly area location for EOF staff is the 11th floor of Progress Energy Building in Raleigh, NC.

b. Functions

1. Command center for Emergency Response Manager and assigned staff.
2. Upon activation, performs offsite notification, protective action recommendations, environmental monitoring, and dose projection.
3. Emergency communications systems monitoring and control.
4. Provides technical analysis and support.
5. Receives and displays site status and parameters data.
6. Serves as the Recovery Center during recovery operations.

7. 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 Emergency Response Manager (ERM).

c. Emergency Equipment and Supplies

1. Reliable voice communications with the TSCs, Control Rooms, OSCs, NRC Operations Centers and State and local government 24-hour warning points and State EOC, as described in Section F.
2. Visual display system capable of displaying information such as, site data, SPDS data, and RMS data, as discussed in Annex 1, Section 4, and Annex 2, Section 4.
3. Reference materials, including Mechanical and Electrical Systems Drawings; Plant Operating Manual; FSAR; Corporate, Plant, State, and Local Emergency Plans, are available in hardcopy or online.
4. Decontamination and monitoring area.
5. Survey meter and dosimetry.
6. Maps showing evacuation routes, evacuation areas, preselected radiological sampling and monitoring points, relocation centers in host areas, and shelter areas.
7. Computer network systems, fax, printers, and photocopier equipment.
8. Additional equipment, as discussed in Table H-1 and Section F.

H.1.5 JOINT INFORMATION CENTER (JIC)

The Joint Information Center (JIC) is located approximately 21 miles from the Site at the Progress Energy Customer Service Center in Raleigh, North Carolina, and serves as the primary location for accumulating accurate and current information regarding the emergency conditions and writing non-technical news releases. The JIC is activated at an Alert level or higher emergency classification (or sooner, if determined by the SEC). Other details include:

a. Provides work space and phones for public information personnel from the state, counties, NRC, FEMA, and industry-related organizations.

b. Provides responses to media inquiries through media communicators who staff telephones that the media can call for information about an emergency.

c. Implements provisions for rumor control by providing a number of telephones which members of the public, who hear rumors, can call for factual information.

H.2 ACTIVATION AND STAFFING

The emergency response facilities will be activated according to the emergency classification. ERO personnel will be notified to report to their pre-assigned

facilities, as described in Tables E-1, E-2, E-3, and E-4 and begin facility activation in accordance with implementing procedures. Prior to activation, the facility managers (Site Emergency Coordinator – TSC; Emergency Repair Director – OSC; Emergency Response Manager – EOF; and Company Spokesperson – JIC) will determine that minimum staffing has been met, as described in Section B and procedures, and verify readiness to activate with facility ERO members. Security measures will be established for the Emergency Operations Facility during the activation process.

H.3 PLANT MONITORING AND DATA HANDLING SYSTEMS

Plant monitoring and data handling systems that are common to all Units are described below. A description of plant monitoring and data handling systems specific to Unit 1 is located in Annex 1, Section 4; and a description of plant monitoring and data handling systems specific to Units 2 and 3 is located in Annex 2, Section 4.

H.3.1 METEOROLOGICAL INSTRUMENTATION

The Site 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 offsite dose projections.

Meteorological information is presented in the Control Rooms, the TSCs, and the EOF by means of a computer. This information is remotely interrogated using a computer or other data access terminal and is used by Progress Energy, the State, and the NRC to provide near real-time predictions of the atmospheric effluent transport and diffusion. Additional information on the onsite meteorological monitoring system can be found in Section I.6 of this plan, Section 2.3.3 of the HNP Unit 1 FSAR, and Section 2.3 of the Units 2 and 3 FSAR.

H.3.2 FIELD MONITORING EQUIPMENT

Field monitoring equipment, including air samplers, are available for immediate use and have the capability to detect and measure radioiodine in the vicinity of the Site. A complete description of this equipment is located in Subsection I.7.1 of this plan.

H.3.3 LABORATORY FACILITIES

Support of the onsite 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 Unit 1 FSAR and Section 12.5.2.4 of the Units 2 and 3 FSAR provides information on laboratory facilities. Additional facilities for counting and analyzing HNP samples can be provided by the H.B. Robinson Nuclear Plant and the Brunswick Nuclear Plant. These laboratories can act as backup facilities in the event that the Site's counting room and laboratory become unusable during an emergency.

Support of the offsite environmental radiation monitoring and analysis effort is provided by the North Carolina Radiation Protection Section's laboratory facility (both mobile and fixed) and the HE&EC's chemistry and counting room facility. The State's laboratories are the central point for receipt and analysis of offsite 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.

H.4 EMERGENCY EQUIPMENT

H.4.1 EMERGENCY EQUIPMENT AND SUPPLIES

Emergency equipment and supplies are located in the Control Rooms, TSCs, OSCs, EOF, and JIC, and are described in detail in the emergency program maintenance procedures. A listing of the typical emergency supplies available in the emergency facilities is located in Table H-1.

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

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

H.4.2 MEDICAL EQUIPMENT AND SUPPLIES

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

Table H-1
Typical Emergency Supplies Available For Emergency Facilities

Supplies	CRs	TSCs	JIC	OSCs	EOF
7 Day Supply of Food and Water	♦ [a]				
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[b] Remotes	(b)	♦	Radio[b] Remotes
Battery Powered Lanterns		♦	♦	♦	♦
Camera				♦	
Mechanical and Electrical Systems Drawings, Plant Operations Manual, FSAR, Corporate, State and Local Emergency Plans		♦			♦
10-mile EPZ Area Maps[c]	♦	♦	♦		♦
Copy of Plant Emergency Plan and Procedures	♦	♦	♦	♦[d]	♦
Environmental Monitoring Kits					(e)
Potassium Iodide Tablets	♦	♦		♦	♦

♦ Indicates equipment/supplies available in this facility.

a) Water supply for the CRs may be stored in onsite warehouse.

b) Portable radio transceivers can be supplied to any emergency facility.

c) Figure Intro-3 of Emergency Plan in the CRs, wall maps in other facilities.

d) Procedures Only.

e) Stored near the Harris E&E Center.

I. ACCIDENT ASSESSMENT

This section describes the methods, systems, and equipment available for assessing and monitoring actual or potential offsite consequences of a radiological emergency. Initial and subsequent assessment actions are the responsibility of the Site Emergency Coordinator (SEC) using available shift personnel and augmented personnel in the ERO. Subsequent assessment actions are directed by the Emergency Response Manager (ERM) with assistance from the Control Room (CR), Technical Support Center (TSC), Emergency Operations Facility (EOF), and emergency teams, as necessary.

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

I.1 PLANT PARAMETERS

Plant system and effluent parameter values characteristic of the spectrum of off-normal conditions and accidents, and the manner in which these values are used to classify an emergency, are provided in Section D. Emergency response procedures and implementing procedures include methods for quickly assessing plant system and effluent parameter values, and classifying the emergency condition. Additional information describing onsite instrumentation is provided in Annex 1, Section 4 for Unit 1 and Annex 2, Section 4 for Units 2 and 3.

I.1.1 EVALUATION OF PLANT CONDITIONS

Evaluation of plant conditions by Operations personnel is accomplished through observation of the appropriate Human Systems Interface (HSI), which includes visual data displays, the Safety Parameter Display System (SPDS) data, Radiation Monitoring System (RMS) data, and information provided by the Accident Assessment Teams in the TSC and EOF (See Annex 1, Section 4.2).

The Accident Assessment Team evaluates plant conditions by using visual data displays, the Safety Parameter Display System (SPDS) data, RMS data, damage assessment reports, seismic data, fire reports, dose projections, and field monitoring data.

Core damage assessment methodology is applied by the TSC Accident Assessment Team utilizing visual data displays, the RMS data, and the Chemistry Team.

I.2 SEVERE ACCIDENT MANAGEMENT GUIDELINES (SAMG)

Severe Accident Management Guidelines (SAMG) are initiated 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 Site to a stable condition. The implementation of SAMG invokes the provisions of 10 CFR 50.54(x) and (y).

I.3 RADIOLOGICAL MONITORING

The RMS is a site-wide radiation information gathering and control system encompassing the process and effluent monitors, as well as the area and airborne monitors.

The RMS will be used by Operations personnel and Radiological Control Team members to determine radiological conditions within the Site or abnormal radioactive effluents.

The Radiological Control Team will provide in-plant radiological measurements to supplement and confirm the RMS.

Radiological monitors are provided for plant systems as described in Annex 1, Section 4 for Unit 1 and Annex 2, Section 4 for Units 2 and 3.

The locations of the normal offsite and onsite environmental monitoring stations and the location of the TLD monitoring stations are described in the Offsite Dose Calculation Manual (ODCM). Additional predetermined emergency offsite monitoring locations are contained in environmental monitoring procedures.

The RMS provides the necessary activity or radiation levels required for determining source terms in dose projection procedures. The RMS and radiation monitoring channel values are available in the TSCs and EOF. The isotopic mix is based upon the mix discussed in NUREG-1741. Grab samples and onsite or offsite monitoring samples can then be analyzed to determine the true isotopic mix and to verify or improve the results from the computerized dose projection software.

I.4 DOSE PROJECTIONS

The technical basis for the dose projection program is located in NUREG-1741: RASCAL 3.0: Description of Models and Methods.

Dose projections will be made to determine the offsite doses that might result from an accident and the possible need for protective action (See Section J.2.2).

The computerized dose projection program can use source term data from the RMS and meteorological data from the onsite meteorological station (Section I.6). This system will aid personnel in the CR or EOF in determining recommendations for protective action for the public.

Data from the RMS that are used to determine the source term for dose projections is quality tagged. If the data are off-scale, then it is suspect or bad, and the effluent radiation levels must be determined by sampling at the radiation monitor test points. Results of sample analyses can be input directly into the dose projection program in lieu of RMS data.

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.

The National Weather Service and contracted weather sources will be contacted, as needed to forecast atmospheric conditions affecting the Site (Section I.6).

I.5 SEISMIC AND HYDROLOGICAL DATA

Each Unit at Harris has two distinct and separate seismic monitoring systems for the Site. A seismic monitoring system, described in Section 3.7.4 of the Unit 1 FSAR and PLP-114, and Section 3.7.4 of the Units 2 and 3 FSAR and appropriate plant procedures, is located inside safety related structures and measures horizontal and vertical acceleration. A second system, consisting of free field strong motion detectors, is located at various locations onsite. The signal can be viewed in the Control Rooms for determination of shutdown requirements.

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 Sections 2.4.2 and 2.4.3 of the Unit 1 FSAR, and the Units 2 and 3 FSAR for additional information.

I.6 METEOROLOGICAL INSTRUMENTATION

The Site 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 offsite dose projections. Meteorological information is presented in the Control Rooms, the TSCs, and the EOF by means of a computer. Additional information on the onsite meteorological monitoring system can be found in Section 2.3.3 of the HNP Unit 1 FSAR, and Section 2.3 of the Units 2 and 3 FSAR.

Progress Energy has the capability to access the National Weather Service on a 24-hour basis to provide backup should the onsite 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 contracted 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 both contact the weather service for appropriately formatted information and check meteorology data (current and forecasted) for the HNP area.

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

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

I.7 FIELD MONITORING

I.7.1 FIELD MONITORING EQUIPMENT

Field monitoring equipment will have at least the capability to detect and measure radioiodine concentrations in the vicinity of the Site as low as 1×10^{-7} μCi/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 (Section J.2). At an I-131 concentration of 1×10^{-7} μCi/cm^{3,} a standard air sampler can collect about 0.03 μCi of I-131 in 10 minutes, an amount which can be measured in the field by portable 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 site 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 used to detect and measure very low levels of Iodine contamination in the environment, as would be planned for subsequent radiation monitoring efforts.

I.8 ENVIRONMENTAL MONITORING

Environmental sampling and monitoring points are specified in environmental monitoring procedures.

Environmental Monitoring Teams will be activated in accordance with Table B-1 and the appropriate implementing procedures. Additional teams can be called upon for support as needed.

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.

The Environmental Monitoring Teams will aid in assessing liquid release pathways by sampling liquid effluents, such as the cooling tower blowdown.

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.

I.9 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 Section 9.3.2 of the Unit 1 FSAR and Section 9.3.3 of the Units 2 and 3 FSAR.

The post-accident sampling system is designed to collect and analyze targeted fluid and gaseous samples under accident conditions.

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

Primary and post-accident samplings are performed by the Chemistry Team assigned to the ERO, to provide radiochemistry samples for analysis. The location for sampling is dependent on the anticipated radioactivity of the sample. Results of the samples will assist in the determination of core damage and dose assessment activities.

I.10 OTHER PLANT ASSESSMENT EQUIPMENT

a. Fire Detection System (Unit 1 FSAR Sections 9.5.1 and 9.5.A; Units 2 and 3 FSAR Section 9.5.1).

b. Security Systems (Security Plan).

J. PROTECTIVE RESPONSE

This section describes the protective actions that have been developed to limit radiation exposure of site personnel and the public following an accident at the Site.

J.1 PROTECTIVE ACTIONS FOR ONSITE PERSONNEL

The following sections describe protective response for onsite personnel (including visitors and contractor personnel) in the areas of alerting, warning and notification; evacuation and personnel accountability; and monitoring, and decontamination. Protective actions for personnel remaining on site or arriving are described in Section J.2.2 of this plan.

J.1.1 ONSITE ALERTING, WARNING, AND NOTIFICATION

The Site Public Address (PA) System will be used to alert and notify onsite 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 Site 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 Site PA System is supplemented by the use of the normal and emergency communications systems located onsite as described in Section F of this Plan.

J.1.2 EVACUATION AND PERSONNEL ACCOUNTABILITY

All personnel within the Protected Area will be evacuated at a Site Area Emergency or General Emergency declaration, or earlier if deemed necessary by the Site Emergency Coordinator (SEC). Any personnel remaining in the Protected Area will be accounted for within 30 minutes of the declaration of a Site Area Emergency or higher 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). In the event of a security event, conditions may dictate initiation of protective measures other than personnel evacuation, assembly, and accountability. The SEC makes decisions regarding appropriate protective measures based on evaluation of site conditions, including input from Security. If based on SEC judgment, personnel evacuation, assembly and accountability may result in undue hazards to site personnel; the SEC may direct other protective measures including:

- Evacuation of site personnel, as appropriate
- Site evacuation while continuing to defend security gates
- Dispersal of key personnel
- Onsite sheltering as appropriate
- Staging of ERO personnel in alternate locations pending restoration of safe conditions

- Implementation of accountability measures following restoration of safe conditions.

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. Plant emergency procedures describe the accountability methodology (see PEP-350, Protective Actions). Search procedures will be implemented to locate unaccounted persons.

Evacuation of onsite personnel can be accomplished, in accordance with plant emergency procedures for the site or the Exclusion Area (see PEP-350, Protective Actions). The following provides more detail regarding Site, Exclusion Area, and local evacuations.

a. A Site Evacuation involves evacuation of all nonessential personnel (that is, personnel not on the ERO or assisting with the emergency) within the Protected Area, Administration Building, parking lots, cooling tower area, sewage treatment plant, landfill, and intake structures. The Site evacuation alarm will be sounded on the Site PA system. Nonessential personnel within the Protected Area will normally exit the Protected Area via the security buildings 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.

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

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

d. An Exclusion Area Evacuation involves evacuation of all nonessential personnel and the public within the Protected Area and the Site, as well as the surrounding areas controlled by Progress Energy within the Exclusion Area Boundary. In addition to sounding the Site 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.

e. Local evacuations relating to Radiation Control Areas and fire protection are conducted in accordance with site procedures.

J.1.3 MONITORING AND DECONTAMINATION

Information regarding radiological controls, including monitoring, control facilities, use of protective equipment and supplies, decontamination, and medical treatment is described in Section K of this plan.

J.2 PROTECTIVE ACTIONS FOR THE PUBLIC

HNP is responsible for making timely recommendations for protective actions to appropriate State and local officials. These officials (as described in Section A) are then responsible for alerting the public and ordering shelter and/or evacuation, if necessary.

J.2.1 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 the following methods (if necessary):

- Sounding sirens,
- Activation of tone-activated radios within five miles of the Site,
- Announcements made through radio and television with Emergency Alert System (EAS),
- Sound trucks,
- Bullhorns, and
- Knocking on doors.

Patrol boats will be used to alert people on Jordan Lake and Harris Lake, in accordance with the State of North Carolina Radiological Emergency Response Plan for Nuclear Power Facilities in support of the Shearon Harris Nuclear Power Site emergency plan. Public warning when deemed necessary will be accomplished as described in the State of North Carolina Radiological Emergency Response Plan for Nuclear Power Facilities in support of the Shearon Harris Nuclear Power Site.

Civil defense sirens mounted on 50-foot utility poles have been installed by Progress Energy at various locations within a 10-mile radius of the HNP (Figure Intro-3).

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

Activation of the tone alert radios by the National Weather Service will be accomplished after they receive a request from Wake County or the State of

North Carolina. The tone alert radios provide an indoor alerting signal within a 5-mile radius of the Site.

Additional details regarding notification methods and procedures are described in Section E of this Plan.

J.2.2 PROTECTIVE ACTION GUIDES

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:	**THEN**:
Projected dose is: < 1 Rem TEDE and < 5 Rem CDE Thyroid	No actions are necessary.
Projected dose is: ≥ 1 Rem TEDE or ≥ 5 Rem CDE Thyroid Note: CDE = Committed Dose Equivalent	Evacuate unless constraints make it impractical. Shelter as a minimum.

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.

HNP personnel normally do not have the necessary information to determine whether offsite 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.

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.

Determination of the benefit of evacuation must take into account the time needed to complete the evacuation. Table Intro-3 presents a summary of evacuation time estimates. The HNP Evacuation Time Estimate Study (Reference M) will be considered valid until the population within the 10-mile EPZ has increased by greater than 10% since the last ETE was determined. If the population is found to have increased by greater than 10% then a revised ETE

will be established using appropriate guidance in NUREG/CR-4831, "State of the Art in Evacuation Time Estimate Studies for Nuclear Power Plants." (Reference Y)

An ETE update should be performed every five years to ensure the adequacy of other evacuation assumptions. Figure J-1 shows evacuation routes, evacuation areas, relocation centers, hospitals, and traffic control points.

The Evacuation Time Estimate Study (Reference M) details how these estimates were developed and presents information on evacuation routes, evacuation areas, relocation centers, shelter areas, and the population distribution by evacuation areas and sectors.

The State may consider the use of KI (potassium iodide) for doses equal to or greater that 5 REM CDE adult thyroid. This PAG dose trigger is referenced in the State of North Carolina Radiological Emergency Response Plan for Nuclear Power Facilities, Annex K – Radiological Protective Drugs.

Plant Emergency Procedure PEP-110, Emergency Classification and Protective Action Recommendations addresses development of PARs.

J.2.3 PROTECTIVE ACTION RECOMMENDATIONS (PARS)

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

Plant conditions, projected dose and dose rates, and/or field monitoring data are evaluated to develop protective action recommendations (PARs) for the purpose of preventing or minimizing exposure to the general public. PARs are made to the State and County agencies that are responsible for implementing protective actions for the general public within the plume exposure EPZ. PARs are approved by the Emergency Response Manager. In an emergency which requires immediate protective actions be taken prior to activation of the emergency facilities, notification approval is given by the SEC-CR directly to the State and County agencies.

Possible recommendations issued by HNP at a General Emergency include:

a. 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).

b. Evacuation of the general public within the five (5) mile radius and ten (10) miles downwind. All other areas within the EPZ are sheltered.

c. Consideration of the use of KI (potassium iodide).

Plant Emergency Procedure PEP-110, Emergency Classification and Protective Action Recommendations addresses development of PARs.

J.2.4 INGESTION PATHWAY PROTECTIVE MEASURES

Exposure guidelines for the ingestion exposure pathway are based on the Federal Register, U.S. Food and Drug Administration, Accidental Radioactive Contamination of Human Food and Animal Feeds, Recommendations for State and Local Agencies, and are described in Table J-1.

The responsibility for specifying protective measures to be used for the ingestion pathway rests with the State, as addressed in the State of North Carolina Radiological Emergency Response Plan for Nuclear Power Facilities. These measures include the methods for protecting the public from exposure due to deposited radioactive materials and the consumption of contaminated water and foodstuffs.

J.3 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. This plan 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 onsite 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 J-1
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 (Reference J).

K. RADIOLOGICAL EXPOSURE CONTROL

K.1 EMERGENCY EXPOSURES

During an emergency, it may be necessary to authorize radiation exposures above 10 CFR 20 limits. Dose limits for workers in an emergency are in accordance with USEPA Emergency Worker and Lifesaver PAGs, contained in EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents", U.S. Environmental Protection Agency, May 1992, as described below.

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).

The SEC (for onsite personnel) and the ERM (for offsite personnel), in conjunction with health physics personnel, will evaluate the action required, relative risk, and authorize the appropriate exposure limits. Under all situations, every reasonable effort will be made to minimize exposures.

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.

Other considerations:

a. 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.

b. 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.

c. 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 onsite emergency workers and by the Emergency Response Manager for EOF or EOF dispatched personnel.

d. 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.

e. Personnel who will receive emergency related exposure should be selected and controlled, in accordance with guidelines contained in the implementing procedures.

K.2 EXPOSURE RECORDS FOR EMERGENCY WORKERS

Emergency workers will receive self reading pocket dosimeters (SRPDs) or equivalent and thermoluminescent dosimeter (TLD) badges. Dose records will be maintained by the Radiological Control Coordinator, in accordance with plant emergency procedures. TLDs are read at the HE&EC, which have 24-hour staffing capability.

K.3 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 (see PEP-330, Radiological Consequences).

K.4 DECONTAMINATION AND FIRST AID

The action levels for determining the need for decontamination of personnel, equipment, and areas are described in plant administrative and health physics procedures.

Personnel decontamination supplies are located in various areas of the Site. 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 onsite prior to medical treatment.

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 (Table K-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 K.6) 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 K-1.

In cases of severe injury, lifesaving first aid or medical treatment will take precedence over personnel decontamination. Information regarding first aid, ambulance transport of injured personnel, and medical treatment is provided in Sections L.1 and L.2 of this plan.

K.5 CONTAMINATION CONTROL OF DRINKING WATER AND FOOD

Measures will be taken to control access to potentially contaminated potable water and food supplies onsite. Under emergency conditions when a release of activity has occurred, eating, drinking, smoking, and chewing will not be permitted until the facility manager has determined that it is safe to do so. If drinking water or food is contaminated above acceptable levels, uncontaminated water and food will be brought onsite for personnel.

K.6 RADIOLOGICAL AND CONTAMINATION CONTROL FACILITIES

Radiation safety controls are established on a 24-hour basis to contain the spread of loose surface radioactive contamination and monitor personnel exposure. HNP contamination control limits are shown in Section B of Table K-1.

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 Buildings and at the HE&EC. 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).

Table K-1
HNP Area Radiation and Contamination Limits

A. Radiation Control Area — Radiation Levels

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. ≥ 25% of 10 CFR 20, App. B, Table 1 Column 3

B. Contamination Limits

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

L. MEDICAL AND PUBLIC HEALTH SUPPORT

L.1 ONSITE CAPABILITIES

Provisions have been made to assist personnel who are injured, who may have received high radiation doses, or who have been externally contaminated. There are personnel on shift and in the Emergency Response Organization (ERO) who are trained in first aid and decontamination processes.

L.1.1 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 in the CR of the affected Unit or to the Plant Operations Director after activation of the Technical Support Center.

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:

1. Care of severe physical injuries or illness.
2. Personnel decontamination.
3. First aid to other injuries.
4. 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 Rooms by personnel on the First Aid Team(s).

First Aid kits are located in various areas of the Site. The First Aid Stations/Kits contain various equipment/items necessary to treat injured personnel until offsite agencies can transport patient to appropriate treatment center, if applicable.

L.2 MEDICAL TRANSPORTATION

Injured and contaminated personnel requiring hospital medical attention will be transported to an offsite medical facility, if required.

The Apex Rescue Squad, Inc. has agreed to respond to emergency calls from the Site, including transporting persons with injuries involving radioactive contamination. This service is available on a 24-hour basis. In cases not involving severe injury, one of the site vehicles may be used to transport injured individuals. The agreement with Apex Rescue Squad, Inc. is on file at HNP and listed in Appendix 3.

Contaminated injured persons will be accompanied to a medical facility by a Radiation Control Team member carrying a 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.

L.3 OFFSITE CAPABILITIES

L.3.1 HOSPITAL FACILITIES

A specially designated emergency area is maintained in readiness at Rex Hospital for HNP's use for the treatment of contaminated or overexposed patients from the Site. 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 decontamination of radioiodine contamination of the skin, and any surgical treatment that may be required.

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

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

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

Agreements with Rex Hospital, WakeMed Raleigh and WakeMed Cary are maintained on file by HNP Emergency Preparedness and listed in Appendix 3 of this plan.

L.3.2 MEDICAL CONSULTANTS

Medical assistance is available in the Raleigh area from general practitioners who have agreed to provide medical assistance for contaminated patients. Appendix 3 lists each agreement. The DOE Radiological Assistance Team will also provide medical assistance, if required.

L.4 TRAINING OF MEDICAL SUPPORT PERSONNEL

Section O, Radiological Emergency Response Training, identifies the training that will be provided for both onsite and offsite personnel who have medical support responsibilities. Emergency Preparedness conducts training sessions at least once per calendar year. In addition, drills and exercises are an integral part of the training program and are conducted, as specified in Section N, Exercises and Drills.

M. RECOVERY AND RE-ENTRY PLANNING AND POST-ACCIDENT OPERATIONS

M.1 RECOVERY PLANNING

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

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

a. The protection of the public health and safety is the foremost consideration in formulating recovery plans.

b. Public officials are kept informed of recovery plans so that they can properly carry out their responsibilities to the public.

c. Periodic briefings of media representatives are held to inform the public of recovery plans and progress made.

d. Periodic status reports are given to company employees at other locations and to government and industry representatives.

e. The radiation doses to employees and other radiation workers are kept As Low As Reasonably Achievable (ALARA).

f. Necessary adjustments in the size and makeup of the Recovery Manager's staff are made as deemed necessary by the Recovery Manager.

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

M.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 Site 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 an 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 that some conditions remain after a severe accident 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 State of North Carolina Radiological Emergency Response Plan for Nuclear Power Facilities. The Recovery Manager will provide information to the appropriate state agencies to facilitate the decision.

When 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, (for example, for UNUSUAL EVENT classifications) the normal on shift organization is normally adequate to perform necessary recovery actions.

b. For events where damage to the Site has been significant, but no offsite releases have occurred and/or protective actions were not performed, (for example, 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.

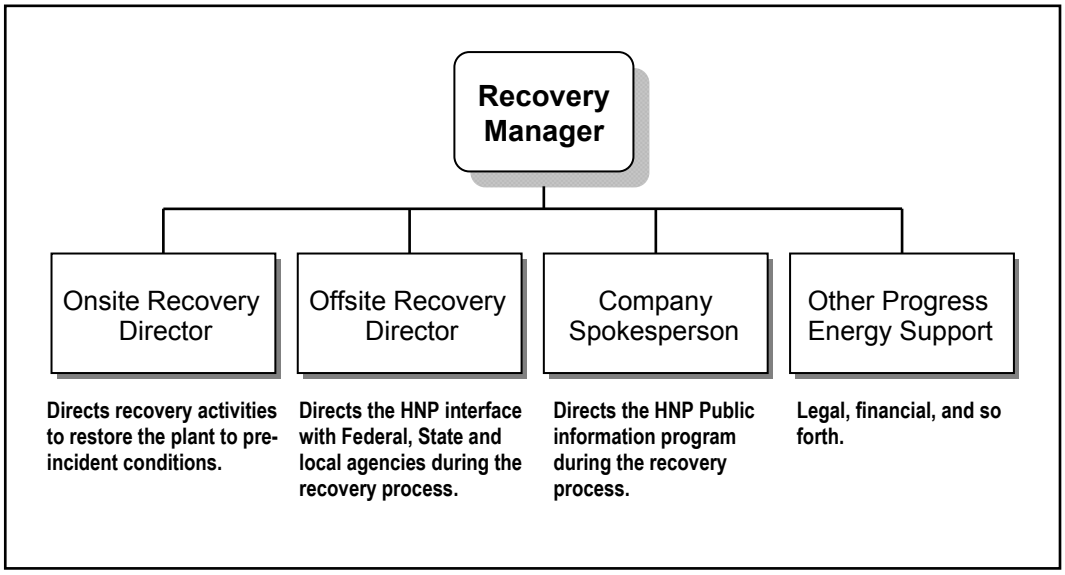
c. For events involving major damage to systems required to maintain safe shutdown of the Site and offsite radioactive releases have occurred, (for example, for Site Area Emergency or General Emergency classifications) the Recovery Organization is put in place.

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.

The Emergency Response Manager will initiate notification to offsite organizations that the Recovery Organization is to be activated. The notifications will follow plant emergency notification procedures summarized in Section E of this 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.)

M.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 Site.

The State will be the lead organization for offsite recovery operations. The State's recovery organization will be set up in accordance with the State of North Carolina Radiological Emergency Response Plan for Nuclear Power Facilities.

M.4 ASSIGNMENT OF RESPONSIBILITIES

M.4.1 RECOVERY MANAGER

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

a. Ensuring that sufficient personnel from Progress Energy and other organizations are available to support recovery.

b. Directing the development of a recovery plan and procedures.

c. Ensuring that adequate engineering activities to restore the Site 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 Progress 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.

The Vice President – HNP or a designated alternate is the Recovery Manager.

M.4.2 ONSITE RECOVERY DIRECTOR

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

a. Coordinating the development and implementation of the recovery plan and procedures.

b. Directing all onsite activities in support of the recovery of HNP.

c. Designating other Progress Energy recovery positions required in support of onsite recovery activities.

The Onsite Recovery Director position will normally be filled by the General Manager (affected Unit) or designee.

M.4.3 OFFSITE RECOVERY DIRECTOR

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

a. Providing liaison with offsite agencies and coordinating HNP assistance for offsite recovery activities.

b. Coordinating HNP ingestion exposure pathway EPZ sampling activities.

c. Developing a radiological release report.

d. Designating other HNP recovery positions required in support of offsite recovery activities.

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

M.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 Progress Energy on all matters relating to the accident or recovery.

b. Coordinating non-Progress 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 Generation Communication Specialist or designee.

M.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. An 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, for example, Community Representatives, Environmental Samples, and Investigations.

M.5 RE-ENTRY PLANNING

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

Prior to re-entry, the Recovery Manager and staff shall:

a. Review all available radiation survey data and determine site 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, for example type, ranges, number, and calibration.

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:

    1. Conduct a comprehensive radiation survey of the site facilities and define all radiological problem areas.

    2. Isolate and post with appropriate warning signs all radiation and contamination areas.

    3. Identify potential hazards associated with the recovery operation.

M.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 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.

M.7 RECOVERY TERMINATION AND REPORTING REQUIREMENTS

Responsibility for providing a closeout verbal summary and written summary to offsite authorities after the accident is the responsibility of the General Manager (affected Unit). 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 10 CFR 50.72, 10 CFR 20, Subpart M, and the HNP Unit-specific Technical Specifications.

N. EXERCISES AND DRILLS

Emergency exercises and drills are conducted to practice, test, and evaluate the adequacy of emergency preparedness program, including facilities, equipment, procedures, communication links, coordinated actions of emergency response organization personnel, and coordination between HNP and offsite emergency response organizations.

N.1 EXERCISES

An exercise is an event that tests the integrated capability of major response organizations and is conducted in accordance with NRC and FEMA guidance as described below. Procedures for the conduct of exercises are described in the Emergency Program Maintenance procedures.

An emergency (biennial) exercise involving onsite participation will be conducted at least once every other calendar year.

Exercise scenarios will be varied from exercise to exercise such that major elements of the plans and emergency organizations are tested within a 6-year period. One exercise shall start between 6:00 p.m. and 4:00 a.m. every six years. The Site will demonstrate an emergency response to a security-based threat at least once within a 6-year period.

Partial participation exercises involving offsite agencies will be conducted at least once every other calendar year (IE Information Notice 85-55). Partial participation means appropriate offsite 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 offsite 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 onsite and offsite 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 offsite agencies will simulate an emergency that results in an offsite radiological release.

The biennial exercises should be conducted during different seasons of the year. Advance knowledge of the scenarios will be kept to a minimum to allow "free-play" decision making and to ensure a realistic participation by those involved.

Each biennial exercise plan should include the following:

a. The basic objective(s) of the exercise.

b. The date(s), time period, place(s), and participating organizations.

c. The simulated events.

d. A time schedule of real and simulated initiating events.

e. A narrative summary describing the conduct of the exercise to include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities.

f. Arrangements for qualified Evaluators and Controllers.

g. Critique and Evaluation Reports.

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

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

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

N.2 DRILLS

A drill is a supervised instruction period aimed at testing, developing, and maintaining skills in a particular operation. Drills are conducted to ensure that adequate emergency response capabilities are maintained during the interval between evaluated exercises. Procedures for the conduct of drills are described in EPM-210.

N.2.1 COMMUNICATION DRILLS

a. Communication from the Site to the State Warning Point, State EOC and local government warning points within the plume exposure pathway EPZ shall be tested monthly. This shall include the transmittal of the information on an Emergency Notification Form.

b. Communications from the Control Rooms, Technical Support Centers, and the Emergency Operations Facility to the NRC Headquarters Operations Center shall be tested monthly.

c. Communications between the nuclear facility, state, and local emergency operations centers, and environmental monitoring teams shall be tested annually.

d. Communications between the Control Rooms, the Technical Support Centers, and the Emergency Operations Facility shall be tested annually.

e. Communications with Federal emergency response organizations and States within the ingestion pathway shall be tested quarterly.

N.2.2 FIRE DRILLS

Fire drills shall be conducted in accordance with Section 13.2 of the Unit 1 FSAR, Section 9.5.1.8 of the Units 2 and 3 FSAR, and plant procedures.

N.2.3 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 offsite medical treatment facility) shall be conducted annually. The offsite portions of the medical drill may be conducted once per calendar year.

N.2.4 ENVIRONMENTAL MONITORING DRILLS

Site environs and radiological monitoring drills (onsite and offsite) 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.

N.2.5 RADIOLOGICAL CONTROL DRILLS

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.

Analysis of post accident sampling system with simulated elevated radiation levels shall be included in Radiological Control drills annually.

N.2.6 INTEGRATED DRILLS

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 onsite response which includes the management and coordination of the response, accident assessment, protective action decision-making, and site 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. At least one integrated drill is to be performed between the biennial exercises, and some drills may be unannounced. The degree of participation by outside agencies in conducting these drills may vary, and their action may actually be simulated.

Critiques and evaluation of drills will be conducted by a qualified individual.

O. RADIOLOGICAL EMERGENCY RESPONSE TRAINING

Selected individuals onsite and offsite will receive specialized training annually to support implementation of the HNP Emergency Plan.

Training will be conducted in accordance with the general requirements described below, and in emergency program maintenance procedures.

O.1 GENERAL REQUIREMENTS

HNP ensures the training of appropriate company personnel to support the Harris Nuclear 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 Site.

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 members 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.

O.2 CONDUCT OF TRAINING

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

The emergency program maintenance procedures 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 the 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 during drills, exercises, or walkthroughs. Exceptions are made for pool personnel whose normal job functions closely match their emergency functions, (such as operations, maintenance, administrative and security pool personnel). Pool personnel will work under the direction of qualified ERO Managers and Coordinators. The training and evaluations are documented on ERO qualification record forms.

O.3 OFFSITE ORGANIZATIONS

Training of offsite organizations is described in their respective radiological emergency plans. Additional training is provided by Progress Energy for hospital, rescue, local law enforcement agencies, and fire personnel. Such training will include the procedures for notification, basic radiation protection, and expected roles and responsibilities. For those Immediate Response Organizations who may enter the Site, training by Progress Energy 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 personnel will assist these offsite 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.

O.4 EMERGENCY PLANNING COORDINATOR AND STAFF TRAINING

Training of emergency preparedness personnel involved in the planning effort may consist of either observation of exercises at other plants or participation in emergency preparedness workshops, seminars, and/or courses.

P. RESPONSIBILITY FOR THE PLANNING EFFORT: DEVELOPMENT, PERIODIC REVIEW AND DISTRIBUTION OF EMERGENCY PLANS

The Supervisor – Emergency Preparedness serves as the HNP Emergency Planning Coordinator. The Emergency Planning Coordinator is responsible for coordinating onsite and selected offsite radiological emergency response planning. The Emergency Planning Coordinator is also responsible for performing the following planning functions:

a. Interfacing with Federal, State, County, and local planners.

b. Revising and updating the Plan in response to action items identified during actual events, appraisals, audits, exercises, drills, and changes in regulations, hardware, and personnel.

c. Coordinating the biennial exercise and the periodic drills.

d. Identifying offsite 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, actual events, 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.

P.1 MAINTAINING EMERGENCY PREPAREDNESS

a. Emergency Preparedness at HNP will be maintained by:

   1. Maintaining planning documents through review, updates, audits, and Plant Nuclear Safety Committee (PNSC) review.

   2. Preparing Emergency Response Organization (ERO) members for proper response actions through training and retraining.

   3. Testing the adequacy of emergency preparedness through the use of drills and exercises.

   4. Inventorying and calibrating emergency equipment, supplies, and instrumentation.

   5. Ensuring that the public notification and alerting system is tested and maintained.

   6. Ensuring that the Evacuation Time Estimate is periodically reviewed for adequacy.

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

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

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

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

P.2 EMERGENCY PLAN AND PLANT EMERGENCY PROCEDURES UPDATE AND CHANGES

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

Changes to the emergency plan or PEPs shall be forwarded to the NRC within 30 days after approval.

P.2.1 UPDATED 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.

P.3 PLANT EMERGENCY PROCEDURES AND SUPPORTIVE PLANS

A list of emergency preparedness documents that support this Plan is provided in Appendix 4.

P.4 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 Appendix 5.

P.5 INDEPENDENT AUDIT

An independent audit of the HNP Emergency Preparedness Program will be conducted by the Nuclear Assessment Section at a frequency specified in 10 CFR 50.54(t). The Nuclear Assessment Section will audit the Plan, Plant Emergency Procedures, Training, Drills and Exercises, 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 site 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 P.e of this Plan and the Site Corrective Action Program.

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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.

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

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.

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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.

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 offsite), 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 onsite and offsite power, security threats, fire, and strikes of operating employees.

Emergency Alert System (EAS) – A network of broadcast stations and interconnecting facilities which have been authorized by the Federal Communications Commission to operate in a controlled manner during a war,

state of public peril or disaster, or other national emergency, as provided by the Emergency Alert System Plan. In the event of a nuclear reactor accident, instructions/notifications to the public on conditions or protective actions would be broadcast by state or local government authorities on the EAS.

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

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, the EOF assumes responsibility for coordination of emergency response activities with State, Federal, and local emergency response officials, including offsite radiological and environmental assessments; recommendations for public protective actions; and direction of recovery operations.

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

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

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

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

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

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

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

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

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

Fission Product Barrier Status -

a. Breached – The fission product barrier is incapable of sufficiently retaining radioactive materials to protect the public.

b. Jeopardy – Conditions exist that are likely to result in fission product barrier breach, but the barrier is intact at the present time.

c. Intact – The fission product barrier retains the ability to protect the public from a harmful release of radioactive materials.

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

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

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

Joint Information Center (JIC) – An Emergency Facility activated by Progress Energy and staffed by Progress Energy, State, county, and Federal 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).

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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.

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 Notification System (ENS), Health Physics Network (HPN), Reactor Safety Counterpart Link (RSCL), Protective Measures Counterpart Link (PMCL), Management Counterpart Link (MCL), and the Operations Center Local Area Network (LAN) line and (OCL).

Operations Support Center (OSC) – An onsite emergency response facility to which support personnel report and stand by for deployment during an emergency situation.

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

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

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

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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.

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 = Unshielded dose rate ÷ shielded dose rate.

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

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

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

Release – Escape of radioactive materials into the uncontrolled environment.

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

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

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

a. Forming a part of the Reactor Coolant System pressure boundary, or

b. Used to mitigate the consequences of an abnormal condition, or

c. 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(s) 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 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 onsite 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.

APPENDIX 2
REFERENCES

A. Code of Federal Regulations; Title 10, Part 20, “Standards for Protection Against Radiation.”

B. Code of Federal Regulations; Title 10, Part 50, “Licensing of Production and Utilization Facilities.”

C. Code of Federal Regulations; Title 10, Part 52, “Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants.”

D. Department of Homeland Security, “National Response Framework,” January 2008.

E. EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," U.S. Environmental Protection Agency. May 1992.

F. 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.

G. EPPOS No. 2, "Emergency Preparedness Position (EPPOS) on Timeliness of Classification of Emergency Conditions," August 17, 1995.

H. EPPOS No. 3, "Emergency Preparedness Position (EPPOS) on Requirement for Onshift Dose Assessment Capability," November 8, 1995.

I. Federal Register, Vol. 43, No. 242, U.S. Food and Drug Administration, “Accidental Radioactive Contamination of Human Food and Animal Feeds.” December 15, 1978.

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

K. Federal Emergency Management Agency, Guidance Memorandum MS-1, "Medical Services," Federal Emergency Management Agency, November 13, 1986.

L. Final Safety Analysis Report (FSAR), Progress Energy, Shearon Harris Nuclear Power Plant.

M. Harris Nuclear Plant, “Development of Evacuation Time Estimates.” KLD Associates, Inc. February 2009.

N. Harris Nuclear Plant Operating Manual.

O. IE Information Notice 85-55, "Revised Emergency Exercise Frequency Rule," July 15, 1985.

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P. NEI 07-01, “Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors,” Revision 0, September 2007.

Q. NEI 99-01, “Methodology for Development of Emergency Action Levels,” Revision 5, August 2007.

R. NGGM-PM-0002, “Progress Energy Radiation Control Protection Manual.”

S. NUREG-0654/FEMA-REP-1, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” November 1980, Revision 1.

T. NUREG-0737, “Clarification of TMI Action Plan Requirements,” October 1980.

U. NUREG-0737, Supplement 1, “Requirements for Emergency Response Capability,” December 1982.

V. NUREG-0696, “Functional Criteria for Emergency Response Facilities,” Final Report, February 1981.

W. NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants (LWR Edition),” June 1996.

X. NUREG-1741, “RASCAL 3.0: Description of Models and Methods,” 2002.

Y. NUREG/CR-4831, "State of the Art in Evacuation Time Estimate Studies for Nuclear Power Plants," March 1992.

Z. Regulatory Issue Summary 2002-21, "National Guard and Other Emergency Responders Located in the Licensee's Controlled Area."

AA. 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.

BB. U.S. Nuclear Regulatory Commission Bulletin 2005-02, “Emergency Preparedness and Response Actions for Security-Based Events.”

CC. U.S. Nuclear Regulatory Commission Correspondence: SECY 88-147, SECY 89-012, Generic Letter 88-20.

DD. U.S. Nuclear Regulatory Commission Order, “Implementation Guidance for Interim Safeguards and Security Compensatory Measures for the Order,” February 25, 2002.

EE. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.206, “Combined License Applications for Nuclear Power Plants (LWR Edition),” June 2007.

FF. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.101, “Emergency Response Planning and Preparedness for Nuclear Power Reactors,” Revision 5, June 2005.

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GG. U.S. Nuclear Regulatory Commission, RTM-92, “Response Technical Manual,” 1992.

APPENDIX 3
LETTERS OF AGREEMENT

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

Agreement Organization

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

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

APPENDIX 4
LIST OF EMERGENCY PLAN SUPPORTIVE DOCUMENTS

Document Type/ Identification Number	Title	Plan Section(s)
Emergency Plan Implementing Procedures (PEPs)		
PEP-110	Emergency Classification and Protective Action Recommendations	D.1 – D.3, J.2, J.2.2, J.2.3, Annex 1 – Section 2, Annex 2 – Section 2
PEP-230	Control Room Operations	B.3, B.4.1
PEP-240	Activation and Operation of the Technical Support Center	B.4.2, H.1.2, H.2, Annex 1 – Section 3.2, Annex 2 – Section 3.2
PEP-250	Activation and Operation of the Joint Information Center	B.4.5, H.1.5, H.2
PEP-260	Activation and Operation of the Operations Support Center	B.4.3, H.1.3, H.2, Annex 1 – Section 3.3, Annex 2 – Section 3.3
PEP-270	Activation and Operation of the Emergency Operations Facility	B.4.4, H.1.4, H.2
PEP-310	Notifications and Communications	E - E.3, F
PEP-330	Radiological Consequences	B.4.4, I.3, I.9, K.3, L.1.1, L.2, L.3
PEP-340	Dose Assessment	B.4.4, I.4
PEP-342	Core Damage Assessment	B.4.2, D.1.4, I.1.1, I.2, I.9
PEP-350	Protective Actions	B.4.1, J.1 – J.3
PEP-500	Recovery	M.1 – M.4
Emergency Program Maintenance and Administration (EPMs)		
EPM-100	EP Program Administration	N.2, P, P.1, P.5
EPM-200	ERO Training Program	O.1 – O.3
EPM-201	EP Staff Training Program	O.4
EPM-210	EP Drill and Exercise Program	N
EPM-211	EP Scenario Development Guidelines	N
EPM-400	Public Notification and Alerting System	E.3
EPM-410	Communication and Facility Performance Tests	E.3, N.2.1, P.1
EPM-420	Emergency Equipment Inventory	H.4.1, H.4.2, P.1

APPENDIX 4
LIST OF EMERGENCY PLAN SUPPORTIVE DOCUMENTS

Document Type/ Identification Number	**Title**	**Plan Section(s)**
EPM-500	Public Education and Information Program	G.1, G.2
EPM-601	Core Damage Assessment Technical Basis	B.4.2, I.1.1, I.2, I.3
EPM-602	Routine Maintenance and Testing of the Dialogic System	E.1
Other Documents		
EPL-001	Emergency Phone List	A, P.2.1
The State of North Carolina Radiological Emergency Response Plan for Nuclear Power Facilities		Intro., A.2.3, A.7.1, C.1, J.2, M.2, M.3
U.S. Nuclear Regulatory Commission, NUREG-0728, NRC Incident Response Plan		Intro., A.6.4
National Response Framework		Intro., A.6, C.2
Southern Mutual Radiological Assistance Plan		Intro.

APPENDIX 5
NUREG-0654 CROSS REFERENCE

NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Section A: Assignment of Responsibility (Organization Control) ***Primary responsibilities for emergency response by the nuclear facility licensee, and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis. (10 CFR 50.47(b)(1))***		
Criteria A.1.a. *Each plan shall identify the State, local, Federal and private sector organizations (including utilities), that are intended to be part of the overall response organization for Emergency Planning Zones.*	Table A-1, Organizations Participating in Emergency Response A.1, Harris Nuclear Plant A.2, North Carolina A.3, Chatham, Harnett, Lee, and Wake Counties A.4, Local Services Support (Medical, Ambulance, Fire) Table A-2, Offsite Agency Support Summary A.5, Private Sector Organizations – Westinghouse; Atlantic Group; Washington Group; Murray and Trettel; ANI; NEIL; INPO A.6, Federal Government – DOE-Savannah River Site; FEMA; NRC; National Weather Service	
Criteria A.1.b. *Each organization and sub-organization having an operational role shall specify its concept of operations, and its relationship to the total effort.*	A.7, Conduct of Operations – HNP and Federal Interfaces Figure A-1; Figure A-2 A.7.1, North Carolina and County Operations	See respective State and local plans for details of their respective concept of operations and their relationship to the total effort.

APPENDIX 5
NUREG-0654 CROSS REFERENCE

NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria A.1.c. *Each plan shall illustrate these interrelationships in a block diagram.*	Figure A-2, ERO Interfaces (TSC and EOF Activated)	
Criteria A.1.d. *Each organization shall identify a specific individual by title who shall be in charge of the emergency response*	Figure A-1, ERO Interfaces (TSC and EOF Not Activated) Figure A-2, ERO Interfaces (TSC and EOF Activated)	
Criteria A.1.e. *Each organization shall provide for 24-hour per day emergency response, including 24-hour per day manning of communications links.*	A.2.2, North Carolina Department of Crime Control and Public Safety A.2.3, North Carolina Division of Emergency Management A.3, Chatham, Harnett, Lee, and Wake Counties A.5.2, Industry Resource Support – INPO	See respective State and local plans for details of 24-hour per day manning for communication links.
Criteria A.2.a. *Each organization shall specify the functions and responsibilities for major elements and key individuals by title, of emergency response, including the following: Command and Control, Alerting and Notification, Communications, Public Information, Accident Assessment, Public Health and Sanitation, Social Services, Fire and Rescue, Traffic Control, Emergency Medical Services, Law Enforcement, Transportation, Protective Response (including authority to request Federal assistance and to initiate other protective actions), and Radiological Exposure Control. The description of these functions shall include a clear and concise summary such as a table of primary and support responsibilities using the agency as one axis, and the function as the other. (See Section B for licensee).*	A.1, HNP A.2, North Carolina A.3, Chatham, Harnett, Lee, and Wake Counties A.4, Local Services Support A.5, Private Sector Organizations A.6, Federal Government	See respective State and local plans for additional details related to assignment of responsibilities.

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NUREG-0654 CROSS REFERENCE

NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria A.2.b. *Each plan shall contain (by reference to specific acts, codes or statutes) the legal basis for such authorities.*		See respective State plan for details related to the legal basis for their plan.
Criteria A.3 *Each plan shall include written agreements referring to the concept of operations developed between Federal, State, and local agencies and other support organizations having an emergency response role within the Emergency Planning Zones. The agreements shall identify the emergency measures to be provided and the mutually acceptable criteria for their implementation, and specify the arrangements for exchange of information. These agreements may be provided in an appendix to the plan or the plan itself may contain descriptions of these matters and a signature page in the plan may serve to verify the agreements. The signature page format is appropriate for organizations where response functions are covered by laws, regulations or executive orders where separate written agreements are not necessary.*	Appendix 3, Letters of Agreement	A list of written letters of agreement and certification letters is provided in Appendix 3.

APPENDIX 5
NUREG-0654 CROSS REFERENCE

NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria A.4 *Each principal organization shall be capable of continuous (24-hour) operations for a protracted period. The individual in the principal organization who will be responsible for assuring continuity of resources (technical, administrative, and material) shall be specified by title.*	A.1, Harris Nuclear Plant	See respective State and local plans for details of 24-hour per day manning for communication links.
Section B: Onsite Emergency Organization ***On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available, and the interfaces among various onsite response activities and offsite support and response activities are specified. (10 CFR 50.47(b)(2))***		
Criteria B.1. *Each licensee shall specify the onsite emergency organization of plant staff personnel for all shifts and its relation to the responsibilities and duties of the normal staff complement.*	B.2, Emergency Response Organization Table B-1, Minimum Staffing Requirements for Emergencies Figure B-1, Harris ERO (CR, TSC, OSC) Figure B-2, Harris ERO (EOF, JIC)	
Criteria B.2. *Each licensee shall designate an individual as emergency coordinator who shall be on shift at all times and who shall have the authority and responsibility to immediately and unilaterally initiate any emergency actions, including providing protective action recommendations to authorities responsible for implementing offsite emergency measures.*	B.3, Command and Control Table B-1, Minimum Staffing Requirements for Emergencies	
Criteria B.3. *Each licensee shall identify a line of succession for the*	B.3, Command and Control	

APPENDIX 5
NUREG-0654 CROSS REFERENCE

NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
emergency coordinator position and identify the specific conditions for higher level utility officials assuming this function.		
Criteria B.4. *Each licensee shall establish the functional responsibilities assigned to the emergency coordinator and shall clearly specify which responsibilities may not be delegated to other elements of the emergency organization. Among the responsibilities which may not be delegated shall be the decision to notify and to recommend protective actions to authorities responsible for offsite emergency measures.*	B.4.1.b, Site Emergency Coordinator-CR	CR – Control Room
Criteria B.5. *Each licensee shall specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both onsite and away from the site. These assignments shall cover the emergency functions in Table B-1 entitled, "Minimum Staffing Requirements for Nuclear Power Plant Emergencies." The minimum on-shift staffing levels shall be as indicated in Table B-1. The licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency. This capability shall be as indicated in Table B-1. The implementation schedule for licensed operators, auxiliary operators and the shift technical advisor on shift shall be as specified in the July 31, 1980 letter to all power reactor licensees. Any deficiencies in the other staffing requirements of Table B-1 must be capable of augmentation within 30 minutes by September 1, 1981, and such deficiencies must be fully removed by July 1, 1982.*	B.4.1.b, Site Emergency Coordinator-CR B.4.1.e, Fire Brigade B.4.1.f, First Aid B.4.1.g, Emergency Communicator-CR B.4.2.a, Site Emergency Coordinator-TSC B.4.2.b, Senior Reactor Operator-TSC B.4.2.l, HP Technician-TSC B.4.3.a, Emergency Repair Director-OSC B.4.3.e, Maintenance Planners B.4.3.g, Radiological Control Coordinator B.4.3.j, Chemistry Team B.4.4.a, Emergency Response Manager-EOF B.4.4.b, SRO – EOF B.4.4.o, HP Technician -EOF Table B-1, Minimum Staffing Requirements for Emergencies	EOF – Emergency Operations Facility HP – Health Physics CR – Control Room OSC – Operations Support Center TSC – Technical Support Center

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Criteria B.6. *Each licensee shall specify the interfaces between and among the onsite functional areas of emergency activity, licensee headquarters support, local services support, and State and local government response organization. This shall be illustrated in a block diagram and shall include the onsite technical support center and the operational support (assembly) center and the licensee's near-site Emergency Operations Facility (EOF)*	Figure B-1, Harris ERO Interfaces (CR, TSC, OSC) Figure B-2, Harris ERO Interfaces (EOF, JIC)	
Criteria B.7. *Each licensee shall specify the corporate management, administrative, and technical support personnel who will augment the plant staff as specified in the table entitled "Minimum Staffing Requirements for Nuclear Power Plant Emergencies," (Table B-1) and in the following areas:*	B.4.4.a, Emergency Response Manager-EOF B.4.2.a, Site Emergency Coordinator-TSC B.4.1.g, Emergency Communicator-CR B.4.4.q, Does Projection Team Leader B.4.4.t, Environmental Monitoring Teams B.4.3.h, Radiological Control Teams B.4.3.j, Chemistry Team B.4.2.d, Technical Analysis Director B.4.2.k, Radiological Control Director Table B-1, Minimum Staffing Requirements for Emergencies	
Criteria B.7.a. *logistics support for emergency personnel, e.g., transportation, communications, temporary quarters, food and water, sanitary facilities in the field, and special equipment and supplies procurement;*	B.4.4.f, Administrative and Logistics Manager	
Criteria B.7.b. *Technical support for planning and reentry/recovery operations;*	B.4.4.l – Technical Analysis Manager	

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Criteria B.7.c. *Management level interface with governmental authorities; and*	B.4.4.u – Communications Manager	
Criteria B.7.d *Release of information to news media during an emergency (coordinated with governmental authorities).*	B.4.5.a – Company Spokesperson	
Criteria B.8. *Each licensee shall specify the contractor and private organizations who may be requested to provide technical assistance to and augmentation of the emergency organization.*	A.5, Private Sector Organizations – Westinghouse; Atlantic Group; Washington Group; Murray and Trettel; ANI; NEIL; INPO	
Criteria B.9. *Each licensee shall identify the services to be provided by local agencies for handling emergencies, e.g., police, ambulance, medical, hospital, and fire-fighting organizations shall be specified. The licensee shall provide for transportation and treatment of injured personnel who may also be contaminated. Copies of the arrangements and agreements reached with contractor, private, and local support agencies shall be appended to the plan. The agreements shall delineate the authorities, responsibilities, and limits on the actions of the contractor, private organization, and local services support groups.*	A.4, Local Services Support (Medical, Ambulance, Fire) Table A-2, Offsite Agency Support Summary Appendix 3, Letters of Agreement	

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Section C: Emergency Response Support and Resources ***Arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate State and local staff at the licensee's near-site Emergency Operations Facility have been made, and other organizations capable of augmenting the planned response have been identified. (10CFR 50.47(b)(3))***		
Criteria C.1. *The Federal government maintains in-depth capability to assist licensees, States and local governments through the Federal Radiological Monitoring and Assessment Plan (formerly Radiological Assistance Plan (RAP) and Interagency Radiological Assistance Plan (IRAP). Each State and licensee shall make provisions for incorporating the Federal response capability into its operation plan, including the following:*		
Criteria C.1.a. *Specific persons by title authorized to request Federal assistance.*	B.4.1.b, Site Emergency Coordinator-CR B.4.4.a, Emergency Response Manager-EOF	See respective state plan for state authorization.
Criteria C.1.b. *Specific Federal resources expected, including expected times of arrival at specific nuclear facility sites; and*	C.2, Federal Government Support Table A-1, Organizations Participating in Emergency Response	See respective state and county plans for state and county details.
Criteria C.1.c. *Specific licensee, State and local resources available to support the Federal response, e.g., air fields, command posts, telephone lines, radio frequencies and telecommunications centers.*	C.1.1, North Carolina State Emergency Facilities	See respective state and county plans for state and county details.

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Criteria C.2.b. *The licensee shall prepare for the dispatch of a representative to principal offsite governmental emergency operations centers.*	B.4.4.x, Representatives to the State/County EOCs C.2, Federal Government Support C.3, HNP Site Support	See respective state and county plans for state and county details.
Criteria C.3. *Each organization shall identify radiological laboratories and their general capabilities and expected availability to provide radiological monitoring and analyses services which can be used in an emergency.*	C.4, Other Support H.3.3, Laboratory Facilities	See respective state and county plans for state and county details.
Criteria C.4. *Each organization shall identify nuclear and other facilities, organizations or individuals which can be relied upon in an emergency to provide assistance. Such assistance shall be identified and supported by appropriate letters of agreement.*	C.4, Other Support Appendix 3, Letters of Agreement	See respective state and county plans for state and county details.
Section D: Emergency Classification System ***A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures. (10CFR 50.47(b)(4))***		

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Criteria D.1. *An emergency classification and emergency action level scheme as set forth in Appendix 1 must be established by the licensee. The specific instruments, parameters or equipment status shall be shown for establishing each emergency class, in the in-plant emergency procedures. The plan shall identify the parameter values and equipment status for each emergency class.*	D.1, Classification of Emergencies Annex 1, Section 2 Annex 2, Section 2	
Criteria D.2. *The initiating conditions shall include the example conditions found in Appendix I and all postulated accidents in the Final Safety Analysis Report (FSAR) for the nuclear facility.*	D.2, Categorization of Events and Emergency Action Levels	
Criteria D.3. *Each State and local organization shall establish an emergency classification and emergency action level scheme consistent with that established by the facility licensee.*		See respective State and County plans.
Criteria D.4. *Each State and local organization should have procedures in place that provide for emergency actions to be taken which are consistent with the emergency actions recommended by the nuclear facility licensee, taking into account local offsite conditions that exist at the time of the emergency.*		See respective State and County plans.

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Section E: Notification Methods and Procedures ***Procedures have been established for notification, by the licensee of State and local response organizations and for notification of emergency personnel by all response organizations; the content of initial and follow-up messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established. (10CFR 50.47(b)(5))***		
Criteria E.1. *Each organization shall establish procedures which describe mutually agreeable bases for notification of response organizations consistent with the emergency classification and action level scheme set forth in Appendix 1. These procedures shall include means for verification of messages. The specific details of verification need not be included in the plan.*	E, Notification Methods and Procedures E.2, Notification of State, Local, and Federal Response Personnel	
Criteria E.2. *Each organization shall establish procedures for alerting, notifying, and mobilizing emergency response personnel.*	E.1, Notification of Progress Energy Personnel E.2, Notification of State, Local, and Federal Response Personnel	
Criteria E.3. *The licensee in conjunction with State and local organizations shall establish the contents of the initial emergency messages to be sent from the plant. These measures shall contain information about the class of emergency, whether a release is taking place, potentially affected population and areas, and whether protective measures may be necessary.*	E.2, Notification of State, Local, and Federal Response Personnel	See respective State and County plans.

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Criteria E.4. *Each licensee shall make provisions for follow-up messages from the facility to offsite authorities which shall contain the following information if it is known and appropriate:*	E.2, Notification of State, Local, and Federal Response Personnel	
Criteria E.4.a. *location of incident and name and telephone number (or communications channel identification) of caller;*	E.2, Notification of State, Local, and Federal Response Personnel	
Criteria E.4.b. *date/time of incident;*	E.2, Notification of State, Local, and Federal Response Personnel	
Criteria E.4.c. *class of emergency;*	E.2, Notification of State, Local, and Federal Response Personnel	
Criteria E.4.d. *type of actual or projected release (airborne, waterborne, surface spill),and estimated duration/impact times;*	E.2, Notification of State, Local, and Federal Response Personnel	
Criteria E.4.e. *estimate of quantity of radioactive material released or being released and the points and height of releases;*	E.2, Notification of State, Local, and Federal Response Personnel	
Criteria E.4.f. *chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines and particulates;*	E.2, Notification of State, Local, and Federal Response Personnel	
Criteria E.4.g. *meteorological conditions at appropriate levels (wind speed, direction (to and from), indicator of stability, precipitation, if any);*	E.2, Notification of State, Local, and Federal Response Personnel	

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Criteria E.4.h. *actual or projected dose rates at site boundary; projected integrated dose at site boundary;*	E.2, Notification of State, Local, and Federal Response Personnel	
Criteria E.4.i. *projected dose rates and integrated dose at the projected peak and at 2, 5 and10 miles, including sector(s) affected;*	E.2, Notification of State, Local, and Federal Response Personnel	
Criteria E.4.j. *estimate of any surface radioactive contamination in-plant, onsite or offsite;*	E.2, Notification of State, Local, and Federal Response Personnel	
Criteria E.4.k. *licensee emergency response actions underway*	E.2, Notification of State, Local, and Federal Response Personnel	
Criteria E.4.l. *recommended emergency actions, including protective measures;*	E.2, Notification of State, Local, and Federal Response Personnel	
Criteria E.4.m. *request for any needed onsite support by offsite organizations; and*	E.2, Notification of State, Local, and Federal Response Personnel	
Criteria E.4.n. *prognosis for worsening or termination of event based on plant information*	E.2, Notification of State, Local, and Federal Response Personnel	
Criteria E.5. *State and local government organizations shall establish a system for disseminating to the public appropriate information contained in initial and follow-up messages received from the licensee including the appropriate notification to appropriate broadcast media, e.g., the Emergency Broadcast System (EBS).*	E.3, Notification of the Public	See respective State and County plans.

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Criteria E.6. *Each organization shall establish administrative and physical means, and the time required for notifying and providing prompt instructions to the public within the plume exposure pathway Emergency Planning Zone. (See Appendix 3.) It shall be the licensee's responsibility to demonstrate that such means exist, regardless of who implements this requirement. It shall be the responsibility of the State and local governments to activate such a system.*	E.3, Notification of the Public	See respective State and County plans.
Criteria E.7 *Each organization shall provide written messages intended for the public, consistent with the licensee's classification scheme. In particular, draft messages to the public giving instruction with regard to specific protective actions to be taken by occupants of affected areas shall be prepared and included as part of the State and local plans. Such messages should include the appropriate aspects of sheltering, ad hoc, respiratory protection, e.g., handkerchief over mouth, thyroid blocking or evacuation. The role of the licensee is to provide supporting information for the messages. For ad hoc respiratory protection see "Respiratory Protective Devices Manual" American Industrial Hygiene Association, 1963 pp. 123-126.*	E.3, Notification of the Public G.1, Harris Nuclear Plant	See respective State and County plans.
Section F: Emergency Communications ***Provisions exist for prompt communications among principal response organizations to emergency Personnel and to the public. (10CFR 50.47(b)(6))***		
Criteria F.1. *The communication Plans for emergencies shall include organizational titles and alternates for both ends of the communication links. Each organization shall establish reliable primary and backup means of communication for licensees,*	F, Emergency Communications	See respective State and County plans for additional details.

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local, and State response organizations. Such systems should be selected to be compatible with one another. Each plan shall include:		
Criteria F.1.a. *provision for 24-hour,per day notification to and activation of the State/local emergency response network; and at a minimum, a telephone link and alternate, including 24-hour per day manning of communications links that initiate emergency response actions.*	F.3, Communications with the State of North Carolina and Wake, Lee, Harnett, and Chatham Counties	See respective State and County plans for additional details.
Criteria F.1.b. *provision for communications with continuous State/local governments within the Emergency Planning Zones;*	F.3, Communications with the State of North Carolina and Wake, Lee, Harnett, and Chatham Counties	
Criteria F.1.c. *provision for communications as needed with Federal emergency response organizations;*	F.4, Communications with the Nuclear Regulatory Commission and other Federal Agencies	See respective State and County plans for additional details.
Criteria F.1.d. *provision for communications between the nuclear facility and the licensee's near-site Emergency Operations Facility, State and local emergency operations center, and radiological monitoring teams;*	F.5, Communications Between HNP Emergency Response Facilities F.3, Communications with the State of North Carolina and Wake, Lee, Harnett, and Chatham Counties	
Criteria F.1.e. *provision for alerting or activating emergency personnel in each response organization; and*	F.7, Alerting Emergency Response Personnel	See respective State and County plans for additional details.
Criteria F.1.f. *provision for communication by the licensee with NRC headquarters and NRC Regional Office Emergency Operations Centers and the licensee's near-site Emergency Operations Facility and radiological monitoring team assembly area.*	F.4, Communications with the Nuclear Regulatory Commission and other Federal Agencies	

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Criteria F.2. *Each organization shall ensure that a coordinated communication link for fixed and mobile medical support facilities exists.*	F.6, Medical Support Facility Communications	
Criteria F.3. *Each organization shall conduct periodic testing of the entire emergency communications system (see evaluation criteria H.10, N.2.a and Appendix 3).*	F.8, Communications Systems Testing	See respective State and County plans for additional details.
Section G: Public Education and Information ***Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established. (10CFR 50.47(b)(7))***		

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Criteria G.1. *Each organization shall provide a coordinated periodic (at least annually) dissemination of information to the public regarding how they will be notified and what their actions should be in an emergency. This information shall include, but not necessarily be limited to:* *a. educational information on radiation;* *b. contact for additional information;* *c. protective measures, e.g., evacuation routes and relocation centers, sheltering, respiratory protection, radioprotective drugs; and* *d. special needs of the handicapped.* *Means for accomplishing this dissemination may include, but are not necessarily limited to: information in the telephone book; periodic information in utility bills; posting in public areas; and publications distributed on an annual basis.*	G, Public Education and Information G.1, Harris Nuclear Plant	

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Criteria G.2. *The public information program shall provide the permanent and transient adult population within the plume exposure EPZ an adequate opportunity to become aware of the information annually. The programs should include provision for written material that is likely to be available in a residence during an emergency. Updated information shall be disseminated at least annually. Signs or other measures (e.g., decals, posted notices or other means, placed in hotels, motels, gasoline stations and phone booths) shall also be used to disseminate to any transient population within the plume exposure pathway EPZ appropriate information that would be helpful if an emergency or accident occurs. Such notices should refer the transient to the telephone directory or other source of local emergency information and guide the visitor to appropriate radio and television frequencies.*	G, Public Education and Information G.1, Information for Transients	
Criteria G.3.a. *Each principal organization shall designate the points of contact and physical locations for use by news media during an emergency.*	G.1, Harris Nuclear Plant H.1.5, Joint Information Center	
Criteria G.3.b. *Each licensee shall provide space which may be used for a limited number of the news media at the near-site Emergency Operations Facility.*	G.1, Harris Nuclear Plant H.1.5, Joint Information Center	
Criteria G.4.a. *Each principal organization shall designate a spokesperson who should have access to all necessary information.*	G.1, Harris Nuclear Plant B.4.5.a, Company Spokesperson	

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Criteria G.4.b. *Each organization shall establish arrangements for timely exchange of information among designated spokespersons.*	G.1, Harris Nuclear Plant	
Criteria G.4.c. *Each organization shall establish coordinated arrangements for dealing with rumors.*	H.1.5, Joint Information Center	
Criteria G.5. *Each organization shall conduct coordinated programs at least annually to acquaint news media with the emergency plans, information concerning radiation, and points of contact for release of public information in an emergency.*	G.1, Harris Nuclear Plant	
Section H: Emergency Facilities and Equipment ***Adequate emergency facilities and equipment to support the emergency response are provided and maintained. (10CFR 50.47(b)(8))***		
Criteria H.1. *Each licensee shall establish a Technical Support Center and an onsite operations support center (assembly area) in accordance with NUREG-0696, Revision 1.*	H.1.2, Technical Support Center H.1.3, Operations Support Center Annex 1, Section A1-3.2, Technical Support Center Annex 1, Section A1-3.3, Operations Support Center Annex 2, Section A2-3.2, Technical Support Center Annex 2, Section A2-3.3, Operations Support Center	

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Criteria H.2. *Each licensee shall establish an Emergency Operations Facility from which evaluation and coordination of all licensee activities related to an emergency is to be carried out and from which the licensee shall provide information to Federal, State and local authorities responding to radiological emergencies in accordance with NUREG-0696, Revision 1.*	H.1.4, Emergency Operations Facility	
Criteria H.3. *Each organization shall establish an emergency operations center for use in directing and controlling response functions.*	H.1.4, Emergency Operations Facility	See respective State and County plans for a description of emergency operation centers.
Criteria H.4. *Each organization shall provide for timely activation and staffing of the facilities and centers described in the plan.*	H.2, Activation and Staffing	
Criteria H.5. *Each licensee shall identify and establish onsite monitoring systems that are to be used to initiate emergency measures in accordance with Appendix 1, as well as those to be used for conducting assessment.* *The equipment shall include*	H.3, Plant Monitoring and Data Handling Systems	
Criteria H.5.a. *geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);*	H.3.1, Meteorological Instrumentation I.5, Seismic and Hydrological Data I.6, Meteorological Data Annex 2, Section 4.5	
Criteria H.5.b. *radiological monitors, (e.g., process, area, emergency, effluent, wound and portable monitors and sampling equipment);*	I.3, Radiological Monitoring Annex 1, Section 4.3 Annex 2, Section 4.6	

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Criteria H.5.c. *process monitors, (e.g., reactor coolant system pressure and temperature, containment pressure and temperature, liquid levels, flow rates, status or lineup of equipment components); and*	Annex 1, Section 4.2 Annex 2, Section 4.5	
Criteria H.5.d. *fire and combustion products detectors.*	H, Emergency Facilities and Equipment	
Criteria H.6. *Each licensee shall make provision to acquire data from or for emergency access to offsite monitoring and analysis equipment including:*		
Criteria H.6.a. *geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);*	H.3.1, Meteorological Instrumentation I.5, Seismic and Hydrological Data I.6, Meteorological Data Annex 2, Section 4.5	
Criteria H.6.b. *radiological monitors including radiometers and sampling devices. Dosimetry shall be provided and shall meet, as a minimum, the NRC Radiological Assessment Branch Technical position for the Environmental Radiological Monitoring Program; and*	I.3, Radiological Monitoring Annex 1, Section 4.3 Annex 2, Section 4.6	
Criteria H.6.c. *laboratory facilities, fixed or mobile.*	H.3.3, Laboratory Facilities	
Criteria H.7. *Each organization, where appropriate, shall provide for offsite radiological monitoring equipment in the vicinity of the nuclear facility.*	I.3, Radiological Monitoring	

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Criteria H.8. *Each licensee shall provide meteorological instrumentation and procedures which satisfy the criteria in Appendix 2, and provisions to obtain representative current meteorological information from other sources.*	I.6, Meteorological Instrumentation	
Criteria H.9. *Each licensee shall provide for an onsite operations support center (assembly area) which shall have adequate capacity, and supplies, including, for example, respiratory protection, protective clothing, portable lighting, portable radiation monitoring equipment, cameras and communications equipment for personnel present in the assembly area.*	H.4.1, Emergency Equipment and Supplies Table H-1, Typical Emergency Supplies Available for Emergency Facilities	
Criteria H.10. *Each organization shall make provisions to inspect, inventory and operationally check emergency equipment/instruments at least once each calendar quarter and after each use. There shall be sufficient reserves of instruments/equipment to replace those which are removed from emergency kits for calibration or repair. Calibration of equipment shall be at intervals recommended by the supplier of the equipment.*	H.4.1, Emergency Equipment and Supplies H.4.2, Medical Equipment and Supplies	
Criteria H.11. *Each plan shall, in an appendix, include identification of emergency kits by general category (protective equipment, communications equipment, radiological monitoring equipment and emergency supplies).*	Table H-1, Typical Emergency Supplies Available for Emergency Facilities	
Criteria H.12. *Each organization shall establish a central point (preferably associated with the licensee's near-site Emergency Operations Facility), for the receipt and analysis of all field monitoring data and coordination of sample media.*	H.3.3, Laboratory Facilities	

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Section I: Accident Assessment ***Adequate methods, systems and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use. (10CFR 50.47(b)(9))***		
Criteria I.1. *Each licensee shall identify plant system and effluent parameter values characteristic of a spectrum of off-normal conditions and accidents, and shall identify the plant parameter values or other information which correspond to the example initiating conditions of Appendix 1. Such parameter values and the corresponding emergency class shall be included in the appropriate facility emergency procedures. Facility emergency procedures shall specify the kinds of instruments being used and their capabilities.*	I.1, Plant Parameters	
Criteria I.2. *Onsite capability and resources to provide initial values and continuing assessment throughout the course of an accident shall include post-accident sampling capability, radiation and effluent monitors, in-plant iodine instrumentation, and containment radiation monitoring in accordance with NUREG-0578, as elaborated in the NRC letter to all power reactor licensees dated October 30, 1979.*	I.3, Radiological Monitoring	
Criteria I.3. *Each licensee shall establish methods and techniques to be used for determining:*		
Criteria I.3.a. *the source term of releases of radioactive material within plant systems. An example is the relationship between the containment radiation monitor(s) reading(s) and radioactive material available for release from containment.*	I.4, Dose Projection	

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Criteria I.3.b. *the magnitude of the release of radioactive materials based on plant system parameters and effluent monitors.*	I.4, Dose Projection	
Criteria I.4. *Each licensee shall establish the relationship between effluent Monitor readings and onsite and offsite exposures and contamination for various meteorological conditions.*	I.4, Dose Projection	
Criteria I.5. *Each licensee shall have the capability of acquiring and evaluating meteorological information sufficient to meet the criteria of Appendix 2. There shall be provisions for access to meteorological information by at least the near-site Emergency Operations Facility, the Technical Support Center, the Control Room and an offsite NRC center. The licensee shall make available to the State suitable meteorological data processing interconnections which will permit independent analysis by the State, of facility generated data in those States with the resources to effectively use this information.*	I.6, Meteorological Instrumentation	
Criteria I.6. *Each licensee shall establish the methodology for determining the release rate/projected doses if the instrumentation used for assessment are offscale or inoperable.*	I.4, Dose Projection	
Criteria I.7. *Each organization shall describe the capability and resources for field monitoring within the plume exposure Emergency Planning Zone which are an intrinsic part of the concept of operations for the facility.*	I.8, Environmental Monitoring	

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Criteria I.8. *Each organization, where appropriate, shall provide methods, equipment and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways. This shall include activation, notification means, field team composition, transportation, communication, monitoring equipment and estimated deployment times.*	I.7, Field Monitoring I.8, Environmental Monitoring	
Criteria I.9. *Each organization shall have a capability to detect and measure radioiodine concentrations in air in the plume exposure EPZ as low as 10^{-7} uci/cc (microcuries per cubic centimeter) under field conditions. Interference from the presence of noble gas and background radiation shall not decrease the stated minimum detectable activity.*	I.7.1, Field Monitoring Equipment	
Criteria I.10. *Each organization shall establish means for relating the various measured parameters (e.g., contamination levels, water and air activity levels) to dose rates for key isotopes (i.e., those given in Table 3, page 18) and gross radioactivity measurements. Provisions shall be made for estimating integrated dose from the projected and actual dose rates and for comparing these estimates with the protective action guides. The detailed provisions shall be described in separate procedures.*	I.4, Dose Projection	
Criteria I.11. *Arrangements to locate and track the airborne radioactive plume shall be made, using either or both Federal and State resources.*		See respective State plan.

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Section J: Protective Response ***A range of protective actions have been developed for the plume exposure pathway EPZ for emergency Workers and the public. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed. (10CFR 50.47(b)(10))***		
Criteria J.1. *Each licensee shall establish the means and time required to warn or advise onsite individuals and individuals who may be in areas controlled by the operator, including:*	J.1, Protective Actions for Onsite Personnel J.1.1, Onsite Alerting, Warning, and Notification	
Criteria J.1.a. *Employees not having emergency assignments;*	J.1, Protective Actions for Onsite Personnel J.1.1, Onsite Alerting, Warning, and Notification	
Criteria J.1.b. *Visitors;*	J.1, Protective Actions for Onsite Personnel J.1.1, Onsite Alerting, Warning, and Notification	
Criteria J.1.c. *Contractor and construction personnel; and*	J.1, Protective Actions for Onsite Personnel J.1.1, Onsite Alerting, Warning, and Notification	
Criteria J.1.d. *Other persons who may be in the public access areas on or passing through the site or within the owner controlled area.*	J.1, Protective Actions for Onsite Personnel J.1.1, Onsite Alerting, Warning, and Notification	
Criteria J.2. *Each licensee shall make provisions for evacuation routes and transportation for onsite individuals to some suitable offsite location, including alternatives for inclement weather, high traffic density and specific radiological conditions.*	J.1.2, Evacuation and Personnel Accountability	

APPENDIX 5
NUREG-0654 CROSS REFERENCE

NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria J.3. *Each licensee shall provide for radiological monitoring of people evacuated from the site.*	J.1.3, Monitoring and Decontamination	
Criteria J.4. *Each licensee shall provide for the evacuation of onsite non-essential personnel in the event of a Site or General Emergency and shall provide a decontamination capability at or near the monitoring point specified in J.3.*	J.1.2, Evacuation and Personnel Accountability	
Criteria J.5. *Each licensee shall provide for a capability to account for all individuals onsite at the time of the emergency and ascertain the names of missing individuals within 30 minutes of the start of an emergency and account for all onsite individuals continuously thereafter.*	J.1.2, Evacuation and Personnel Accountability	
Criteria J.6. *Each licensee shall, for individuals remaining or arriving onsite during the emergency, make provisions for:*		
Criteria J.6.a. *Individual respiratory protection;*	K.3, Use of Protective Equipment and Supplies	
Criteria J.6.b. *Use of protective clothing; and*	K.3, Use of Protective Equipment and Supplies	
Criteria J.6.c. *Use of radioprotective drugs, (e.g., individual thyroid protection).*	J.2.3, Protective Action Recommendations K.3, Use of Protective Equipment and Supplies	

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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria J.7. *Each licensee shall establish a mechanism for recommending protective actions to the appropriate State and local authorities. These shall include Emergency Action Levels corresponding to projected dose to the population-at-risk, in accordance with Appendix 1 and with the recommendations set forth in Tables 2.1 and 2.2 of the Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (EPA-520/1-75-001). As specified in Appendix 1, prompt notification shall be made directly to the offsite authorities responsible for implementing protective measures within the plume exposure pathway Emergency Planning Zone.*	J.2.3, Protective Action Recommendations	
Criteria J.8. *Each licensee's plan shall contain time estimates for evacuation within the plume exposure EPZ. These shall be in accordance with Appendix 4.*	Table Intro-3, 10-Mile EPZ Evacuation Time Estimates	
Criteria J.9. *Each State and local organization shall establish a capability for implementing protective measures based upon protective action guides and other criteria. This shall be consistent with the recommendations of EPA regarding exposure resulting from passage of radioactive airborne plumes, (EPA-520/1-75-001) and with those of DHEW (DHHS)/FDA regarding radioactive contamination of human food and animal feeds as published in the Federal Register of December 15, 1978 (43 FR 58790).*		See respective State and County plans.
Criteria J.10. *The organization's plans to implement protective measures for the plume exposure pathway shall include:*		

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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria J.10.a. *Maps showing evacuation routes, evacuation areas, preselected radiological sampling and monitoring points, relocation centers in host areas, and shelter areas; (identification of radiological sampling and monitoring points shall include the designators in Table J-1 or an equivalent uniform system described in the plan);*	Figure J-1, Operations Map Appendix 6, Evacuation Time Estimate Study Summary	
Criteria J.10.b. *Maps showing population distribution around the nuclear facility. This shall be by evacuation areas (licensees shall also present the information in a sector format);*	Figure Intro-5, Resident Population within the 10-Mile EPZ	
Criteria J.10.c. *Means for notifying all segments of the transient and resident population;*	J.2.1, Public Alerting, Warning, and Notification	
Criteria J.10.d. *Means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement;*		See respective State and County plans for additional details.
Criteria J.10.e. *Provisions for the use of radioprotective drugs, particularly for emergency workers and institutionalized persons within the plume exposure EPZ whose immediate evacuation may be infeasible or very difficult, including quantities, storage, and means of distribution.*		See respective State and County plans for additional details.

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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria J.10.f. *State and local organizations' plans should include the method by which decisions by the State Health Department for administering radioprotective drugs to the general population are made during an emergency and the pre-determined conditions under which such drugs may be used by offsite emergency workers;*		See respective State and County plans.
Criteria J.10.g. *Means of relocation;*		See respective State and County plans.
Criteria J.10.h. *Relocation centers in host areas which are at least 5 miles, and preferably 10 miles, beyond the boundaries of the plume exposure emergency planning zone; (See K.8)*	Figure J-1, Operations Map	
Criteria J.10.i. *Projected traffic capacities of evacuation routes under emergency conditions;*	Figure J-1, Operations Map Appendix 6, Evacuation Time Estimate Study Summary	See respective State and County plans.
Criteria J.10.j. *Control of access to evacuated areas and organization responsibilities for such control;*	J.1.2, Evacuation and Personnel Accountability Appendix 6, Evacuation Time Estimate Study Summary	See respective State and County plans.
Criteria J.10.k. *Identification of and means for dealing with potential impediments (e.g., seasonal impassability of roads) to use of evacuation routes, and contingency measures;*	Appendix 6, Evacuation Time Estimate Study Summary	See respective State and County plans.
Criteria J.10.l *Time estimates for evacuation of various sectors and distances based on a dynamic analysis (time-motion study under various conditions) for the plume exposure pathway emergency planning zone (See Appendix 4); and*	Appendix 6, Evacuation Time Estimate Study Summary	

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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria J.10.m. *The bases for the choice of recommended protective actions from the plume exposure pathway during emergency conditions. This shall include expected local protection afforded in residential units or other shelter for direct and inhalation exposure, as well as evacuation time estimates.*	J.2.2, Protective Action Guides J.2.3, Protective Action Recommendations J.2.4, Ingestion Pathway Protective Measures	
Criteria J.11. *Each State shall specify the protective measures to be used for the ingestion pathway, including the methods for protecting the public from consumption of contaminated food stuffs. This shall include criteria for deciding whether dairy animals should be put on stored feed. The plan shall identify procedures for detecting contamination, for estimating the dose commitment consequences of uncontrolled ingestion, and for imposing protection procedures such as impoundment, decontamination, processing, decay, product diversion, and preservation. Maps for recording survey and monitoring data, key land use data (e.g., farming), dairies, food processing plants, water sheds, water supply intake and treatment plants and reservoirs shall be maintained. Provisions for maps showing detailed crop information may be by including reference to their availability and location and a plan for their use. The maps shall start at the facility and include all of the 50-mile ingestion pathway EPZ. Up-to-date lists of the name and location of all facilities which regularly process milk products and other large amounts of food or agricultural products originating in the ingestion pathway Emergency Planning Zone, but located elsewhere, shall be maintained.*		See respective State and County plans.

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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria J.12. *Each organization shall describe the means for registering and monitoring of evacuees at relocation centers in host areas. The personnel and equipment available should be capable of monitoring within about a 12 hour period all residents and transients in the plume exposure EPZ arriving at relocation centers.*		See respective State and County Plans.
Section K: Radiological Exposure Control ***Means for controlling radiological exposures, in an emergency, are established for emergency workers. The means for controlling radiological exposures shall include exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides. 10CFR 50.47(b)(11))***		
Criteria K.1. *Each licensee shall establish onsite exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective*	K.1, Emergency Exposures	
Criteria K.1.a. *removal of injured persons;*	K.4, Decontamination and First Aid	
Criteria K.1.b. *undertaking corrective actions;*	K.1, Emergency Exposures	
Criteria K.1.c *performing assessment actions;*	K.1, Emergency Exposures	
Criteria K.1.d *providing first aid;*	K.4, Decontamination and First Aid	
Criteria K.1.e *performing personnel decontamination;*	K.4, Decontamination and First Aid	

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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria K.1.f *providing ambulance service; and*	K.4, Decontamination and First Aid	See respective State and County plans.
Criteria K.1.g *providing medical treatment services.*	K.4, Decontamination and First Aid	See respective State and County plans.
Criteria K.2. *Each licensee shall provide an onsite radiation protection program to be implemented during emergencies, including methods to implement exposure guidelines. The plan shall identify individual(s), by position or title, who can authorize emergency workers to receive doses in excess of 10 CFR Part 20 limits. Procedures shall be worked out in advance for permitting onsite volunteers to receive radiation exposures in the course of carrying out lifesaving and other emergency activities. These procedures shall include expeditious decision making and a reasonable consideration of relative risks.*	K.1, Emergency Exposures K.2, Exposure Records for Emergency Workers	
Criteria K.3.a. *Each organization shall make provision for 24-hour-per-day capability to determine the doses received by emergency personnel involved in any nuclear accident, including volunteers. Each organization shall make provisions for distribution of dosimeters, both self-reading and permanent record devices.*	K.2, Exposure Records for Emergency Workers	
Criteria K.3.b. *Each organization shall ensure that dosimeters are read at appropriate frequencies and provide for maintaining dose records for emergency workers involved in any nuclear accident.*	K.2, Exposure Records for Emergency Workers	

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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria K.4. *Each State and local organization shall establish the decision chain for authorizing emergency workers to incur exposures in excess of the EPA General Public Protective Action Guides (i.e., EPA PAGs for emergency workers and lifesaving activities).*		See respective State and County plans.
Criteria K.5.a. *Each organization as appropriate shall specify action levels for determining the need for decontamination.*	K.4, Decontamination and First Aid	
Criteria K.5.b. *Each organization, as appropriate, shall establish the means for radiological decontamination of emergency personnel wounds, supplies, instruments and equipment, and for waste disposal.*	K.4, Decontamination and First Aid	
Criteria K.6. *Each licensee shall provide onsite contamination control measures including:*	K.6, Radiological Contamination Control Facilities	
Criteria K.6.a. *area access control;*	K.6, Radiological Contamination Control Facilities	
Criteria K.6.b. *drinking water and food supplies;*	K.5, Contamination Control of Drinking Water and Food	
Criteria K.6.c. *criteria for permitting return of areas and items to normal use, see Draft ANSI 13.12.*	K.4, Decontamination and First Aid	

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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria K.7. *Each licensee shall provide the capability for decontaminating relocated onsite personnel, including provisions for extra clothing and decontaminants suitable for the type of contamination expected, with particular attention given to radioiodine contamination of the skin.*	L.3, Offsite Capabilities	
Section L: Medical and Public Health Support ***Arrangements are made for medical services for contaminated injured individuals. (10 CFR 50.47(b)(12))***		
Criteria L.1. *Each organization shall arrange for local and backup hospital and medical services having the capability for evaluation of radiation exposure and uptake, including assurance that persons providing these services are adequately prepared to handle contaminated individuals.*	L.2, Medical Transportation L.3.1, Hospital Facilities Appendix 3, Letters of Agreement	
Criteria L.2. *Each licensee shall provide for onsite first aid capability.*	L.1.1, First Aid Team	
Criteria L.3. *Each State shall develop lists indicating the location of public, private and military hospitals and other emergency medical services facilities within the State or contiguous States considered capable of providing medical support for any contaminated injured individual. The listing shall include the name, location, type of facility and capacity and any special radiological capabilities. These emergency medical services should be able to radiologically monitor contamination personnel, and have facilities and trained personnel able to care for contaminated injured persons.*		See respective State plan.

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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria L.4. *Each organization shall arrange for transporting victims of radiological accidents to medical support facilities.*	L.2, Medical Transportation	
Section M: Recover and Reentry Planning and Postaccident Operations ***General plans for recovery and reentry are developed. (10CFR 50.47(b)(13))***		
Criteria M.1. *Each organization, as appropriate, shall develop general plans and procedures for reentry and recovery and describe the means by which decisions to relax protective measures (e.g., allow reentry into an evacuated area) are reached. This process should consider both existing and potential conditions.*	M.1, Recovery Planning M.5, Re-entry Planning	
Criteria M.2. *Each licensee plan shall contain the position/title, authority and responsibilities of individuals who will fill key positions in the facility recovery organization. This organization shall include technical personnel with responsibilities to develop, evaluate and direct recovery and reentry operations. The recovery organization recommended by the Atomic Industrial Forum's "Nuclear Power Plant Emergency Response Plan" dated October 11, 1979, is an acceptable framework.*	M.4, Assignment of Responsibilities	
Criteria M.3. *Each licensee and State plan shall specify means for informing members of the response organizations that a recovery operation is to be initiated, and of any changes in the organizational structure that may occur.*	M.2, Recovery Plan Activation	
Criteria M.4. *Each plan shall establish a method for periodically estimating total population exposure.*	M.6, Total Population Exposure Estimates	

APPENDIX 5
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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Section N: Exercises and Drills ***Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected. (10CFR 50.47(b)(14))***		
Criteria N.1.a. *An exercise is an event that tests the integrated capability and a major portion of the basic elements existing within emergency preparedness plans and organizations. The emergency preparedness exercise shall simulate an emergency that results in offsite radiological releases which would require response by offsite authorities. Exercises shall be conducted as set forth in NRC and FEMA rules.*	N, Exercises and Drills N.1, Exercises	
Criteria N.1.b. *An exercise shall include mobilization of State and local personnel and resources adequate to verify the capability to respond to an accident scenario requiring response. The organization shall provide for a critique of the annual exercise by Federal and State observers/evaluators. The scenario should be varied from year to year such that all major elements of the plans and preparedness organizations are tested within a five-year period. Each organization should make provisions to start an exercise between 6:00 p.m. and midnight, and another between midnight and 6:00 a.m. once every six years. Exercises should be conducted under various weather conditions. Some exercises should be unannounced.*	N.1, Exercises	

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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria N.2. *A drill is a supervised instruction period aimed at testing, developing and maintaining skills in a particular operation. A drill is often a component of an exercise. A drill shall be supervised and evaluated by a qualified drill instructor. Each organization shall conduct drills, in addition to the annual exercise at the frequencies indicated below:*	N.2, Drills	
Criteria N.2.a. *Communication Drills* *Communications with State and local governments within the plume exposure pathway Emergency Planning Zone shall be tested monthly. Communications with Federal emergency response organizations and States within the ingestion pathway shall be tested quarterly. Communications between the nuclear facility, State and local emergency operations centers, and field assessment teams shall be tested annually. Communication drills shall also include the aspect of understanding the content of messages.*	N.2.1, Communication Drills F.8, Communications System Testing	
Criteria N.2.b. *Fire Drills* *Fire drills shall be conducted in accordance with the plant (nuclear facility) technical specifications.*	N.2.2, Fire Drills	
Criteria N.2.c. *Medical Emergency Drills* *A medical emergency drill involving a simulated contaminated individual which contains provisions for participation by the local support services agencies (i.e., ambulance and offsite medical treatment facility) shall be conducted annually. The offsite portions of the medical drill may be performed as part of the required annual exercise.*	N.2.3, Medical Emergency Drills	

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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria N.2.d. *Radiological Monitoring Drills* *Plant environs and radiological monitoring drills (onsite and offsite) shall be conducted annually. These drills shall include collection and analysis of all sample media (e.g., water, vegetation, soil and air), and provisions for communications and record keeping. The State drills need not be at each site. Where appropriate, local organizations shall participate.*	N.2.5, Radiological Control Drills	
Criteria N.2.e. *Health Physics Drills* *(1) Health Physics drills shall be conducted semi-annually which involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment. The State drills need not be at each site.* *(2) Analysis of inplant liquid samples with actual elevated radiation levels including use of the post-accident sampling system shall be included in Health Physics drills by licensees annually.*	N.2.5, Radiological Control Drills	
Criteria N.3. *Each organization shall describe how exercises and drills are to be carried out to allow free play for decision making and to meet the following objectives. Pending the development of exercise scenarios and exercise evaluation guidance by NRC and FEMA the scenarios for use in exercises and drills shall include but not be limited to, the following:*	N.1, Exercises	
Criteria N.3.a. *The basic objective(s) of each drill and exercise and appropriate evaluation criteria;*	N.1, Exercises	

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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria N.3.b. *The date(s), time period, place(s) and participating organizations;*	N.1, Exercises	
Criteria N.3.c. *The simulated events;*	N.1, Exercises	
Criteria N.3.d. *A time schedule of real and simulated initiating events;*	N.1, Exercises	
Criteria N.3.e. *A narrative summary describing the conduct of the exercises or drills to include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities; and*	N.1, Exercises	
Criteria N.3.f. *A description of the arrangements for and advance materials to be provided to official observers.*	N.1, Exercises	
Criteria N.4. *Official observers from Federal, State or local governments will observe, evaluate, and critique the required exercises. A critique shall be scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as called for in the plan. The critique shall be conducted as soon as practicable after the exercise, and a formal evaluation should result from the critique.*	N.1, Exercises	

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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria N.5. *Each organization shall establish means for evaluating observer and participant comments on areas needing improvement, including emergency plan procedural changes, and for assigning responsibility for implementing corrective actions. Each organization shall establish management control used to ensure that corrective actions are implemented.*	N.1, Exercises N.2, Drills	
Section O: Radiological Emergency Response Training ***Radiological emergency response training is provided to those who may be called on to assist in an emergency. (10CFR 50.47(b)(15))***		
Criteria O.1. *Each organization shall assure the training of appropriate individuals.*	O, Radiological Emergency Response Training	
Criteria O.1.a. *Each facility to which the plant applies shall provide site specific emergency response training for those offsite emergency organizations who may be called upon to provide assistance in the event of an emergency.*	O, Radiological Emergency Response Training O.3, Offsite Organizations	
Criteria O.1.b. *Each offsite response organization shall participate in and receive training. Where mutual aid agreements exist between local agencies such as fire, police and ambulance/rescue, the training shall also be offered to the other departments who are members of the mutual aid district.*	O, Radiological Emergency Response Training O.3, Offsite Organizations	

APPENDIX 5
NUREG-0654 CROSS REFERENCE

NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria O.2. *The training program for members of the onsite emergency organization shall, besides classroom training, include practical drills in which each individual demonstrates ability to perform his assigned emergency function. During the practical drills, on-the-spot correction of erroneous performance shall be made and a demonstration of the proper performance offered by the instructor.*	O.1, General Requirements O.2, Conduct of Training O.4, Emergency Planning Coordinator and Staff Training	
Criteria O.3. *Training for individuals assigned to licensee first aid teams shall include courses equivalent to Red Cross Multi-Media.*	O.1, General Requirements	
Criteria O.4. *Each organization shall establish a training program for instructing and qualifying personnel who will implement radiological emergency response plans. The specialized initial training and periodic retraining programs (including the scope, nature and frequency) shall be provided in the following categories:*	O.1, General Requirements	
Criteria O.4.a. *Directors or coordinators of the response organizations;*	O.1.a	
Criteria O.4.b. *Personnel responsible for accident assessment;*	O.1.b	
Criteria O.4.c. *Radiological monitoring teams and radiological analysis personnel;*	O.1.c	
Criteria O.4.d. *Police, security and fire fighting personnel;*	O.1.j	

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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria O.4.e. *Repair and damage control/correctional action teams (onsite);*	O.1.d	
Criteria O.4.f. *First aid and rescue personnel;*	O.1.e	
Criteria O.4.g. *Local support services personnel including Civil Defense/Emergency Service personnel;*	O.1.i	
Criteria O.4.h. *Medical support personnel;*	O.1.h	
Criteria O.4.i. *Licensee's headquarters support personnel;*	O.1.g	
Criteria O.4.j. *Personnel responsible for transmission of emergency information and instructions.*	O.1.f	
Criteria O.5. *Each organization shall provide for the initial and annual retraining of personnel with emergency response responsibilities.*	O.1, General Requirements	
Section P: Responsibility for the Planning Effort: Periodic Review and Distribution of Emergency Plans ***Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained. (10CFR 50.47(b)(16))***		
Criteria P.1. *Each organization shall provide for the training of individuals responsible for the planning effort.*	O.4, Emergency Planning Coordinator and Staff Training	

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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria P.2. *Each organization shall identify by title the individual with the overall authority and responsibility for radiological emergency response planning.*	P, Responsibility for the Planning Effort	
Criteria P.3. *Each organization shall designate an Emergency Planning Coordinator with responsibility for the development and updating of emergency plans and coordination of these plans with other response organizations.*	P, Responsibility for the Planning Effort	
Criteria P.4. *Each organization shall update its plan and agreements as needed, review and certify it to be current on an annual basis. The update shall take into account changes identified by drills and exercises.*	P, Responsibility for the Planning Effort P.2, Emergency Plan and Plant Emergency Procedures Update and Changes	
Criteria P.5. *The emergency response plans and approved changes to the plans shall be forwarded to all organizations and appropriate individuals with responsibility for implementation of the plans. Revised pages shall be dated and marked to show where changes have been made.*	P, Responsibility for the Planning Effort P.2, Emergency Plan and Plant Emergency Procedures Update and Changes	
Criteria P.6 *Each plan shall contain a detailed listing of supporting plans and their source.*	P.3, Plant Emergency Procedures and Supportive Plans Appendix 4, List of Emergency Plan Supportive Documents	
Criteria P.7. *Each plan shall contain as an appendix listing, by title, procedures required to implement the plan. The listing shall include the section(s) of the plan to be implemented by each procedure.*	Appendix 4, List of Emergency Plan Supportive Documents	

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NUREG 0654 Criteria (10 CFR 50.47(b))	HNP Emergency Plan Section(s)	Comments
Criteria P.8. *Each plan shall contain a specific table of contents. Plans submitted for review should be cross-referenced to these criteria.*	See general table of contents (TOC).	
Criteria P.9. *Each licensee shall arrange for and conduct independent reviews of the emergency preparedness program at least every 12 months. (An independent review is one conducted by any competent organization either internal or external to the licensees' organization, but who are not immediately responsible for the emergency preparedness program). The review shall include the emergency plan, its implementing procedures and practices, training, readiness testing, equipment, and interfaces with State and local governments. Management controls shall be implemented for evaluation and correction of review findings. The result of the review, along with recommendations for improvements, shall be documented, reported to appropriate licensee corporate and plant management, and involved Federal, State and local organizations, and retained for a period of five years.*	P.5, Independent Audit	
Criteria P.10 *Each organization shall provide for updating telephone numbers in emergency procedures at least quarterly.*	P.2.1, Updated Telephone Listings	

APPENDIX 6
EVACUATION TIME ESTIMATE STUDY SUMMARY

The Evacuation Time Estimate Study (Reference M) describes the analyses undertaken and the results obtained by a study to develop Evacuation Time Estimates (ETEs) for the Harris Nuclear Plant (HNP). ETEs are part of the required planning basis and provide HNP and State and local governments with site-specific information needed for Protective Action decision-making.

All relevant existing ETE documentation specific to HNP was reviewed. The main Federal guidance followed in the development of the ETEs included the following:

- Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, NUREG 0654/FEMA-REP-1, Rev. 1, November 1980.
- Analysis of Techniques for Estimating Evacuation Times for Emergency Planning Zones, NUREG/CR-1745, November 1980.
- Development of Evacuation Time Estimates for Nuclear Power Plants, NUREG/CR-6863, January 2005.

Overview of Project Activities

The major activities performed are briefly described in chronological sequence:

- Kick-off meetings were held with State and local governments.
- Prior HNP ETE reports were reviewed and U.S. Census Bureau data files for the year 2000 were accessed. Geographical Information Systems (GIS) maps of the area in the vicinity of HNP were studied, and a detailed field survey of the highway network was conducted.
- An analysis network representing the highway system topology and capacities within the EPZ was developed, plus a “Shadow” area extending 15 miles radially from the plant.
- A telephone survey of residents within the EPZ was conducted to gather focused data needed for this ETE study that were not contained within the census database.
- GIS files from the Wake County Office of Emergency Management providing data on employment, traffic control points, and the locations of special facilities were collected. Data collection forms (provided to the counties at the kickoff meeting) were returned with data pertaining to employment, transients, and special facilities in each county.
- The traffic demand and trip-generation rates of evacuating vehicles were estimated from the gathered data. The trip generation rates reflected the estimated mobilization time (i.e., the time required by evacuees to prepare for the evacuation trip) computed using the results of the telephone survey of EPZ residents.
- Similar to prior HNP ETE data, the EPZ is subdivided into 14 sub-zones. These sub-zones were then grouped within circular areas or “keyhole” configurations (circles plus radial sectors) that define a total of 25 Evacuation Regions.

APPENDIX 6
EVACUATION TIME ESTIMATE STUDY SUMMARY

- The time-varying external circumstances are represented as Evacuation Scenarios, each described in terms of the following factors: (1) Season (Summer, Winter); (2) Day of Week (Midweek, Weekend); (3) Time of Day (Midday, Evening); and (4) Weather (Good, Rain, Ice). One special scenario involving construction of a new unit at the HNP site was considered.
- The Planning Basis for the calculation of ETE is:
  - A rapidly escalating accident at HNP that quickly assumes the status of General Emergency such that the Advisory to Evacuate is virtually coincident with the siren alert.
  - While an unlikely accident scenario, this planning basis will yield ETE, measured as the elapsed time from the Advisory to Evacuate until the last vehicle exits the impacted Region, that represent “upper bound” estimates. This conservative Planning Basis is applicable for all initiating events.
- If the emergency occurs while schools are in session, the ETE study assumed that the children will be evacuated by bus directly to specified host schools located outside the EPZ. Parents, relatives, and neighbors are advised to not pick up their children at school prior to the arrival of the buses dispatched for that purpose. The ETE for school children are calculated separately.
- Evacuees who do not have access to a private vehicle will either ride-share with relatives, friends or neighbors, or be evacuated by buses provided as specified in the county evacuation plans. Those in special facilities will likewise be evacuated with public transit, as needed: bus, van, or ambulance, as required. Separate ETEs were calculated for the transit-dependent evacuees and for those evacuated from special facilities.

Computation of ETE

A total of 300 ETEs were computed for the evacuation of the general public. Each ETE quantifies the aggregate evacuation time estimated for the population within one of the 25 Evacuation Regions to completely evacuate from that Region, under the circumstances defined for one of the 12 Evacuation Scenarios (25 x 12 = 300). Separate ETEs are calculated for transit-dependent evacuees, including school children for applicable scenarios.

Except for Region R03, which is the evacuation of the entire EPZ, only a portion of the people within the EPZ would be advised to evacuate. That is, the Advisory to Evacuate applies only to those people occupying the specified impacted region. It is assumed that 100 percent of the people within the impacted region will evacuate in response to this Advisory. The people occupying the remainder of the EPZ outside the impacted region may be advised to take shelter.

The computation of ETEs assumed that a portion of the population within the EPZ but outside the impacted region, will elect to “voluntarily” evacuate. In addition, it was assumed

that a portion of the population in the "Shadow" region beyond the EPZ that extends a distance of 15 miles from HNP would also elect to evacuate. These voluntary evacuees could impede those who are evacuating from within the impacted region. The impedance that could be caused by voluntary evacuees is considered in the computation of ETEs for the impacted region.

The ETE statistics provide the elapsed times for 50 percent, 90 percent, 95 percent and 100 percent, respectively, of the population within the impacted region, to evacuate from within the impacted region. These statistics are presented in tabular and graphical formats.

Traffic Management

This study includes the development of a comprehensive traffic management plan designed to expedite the evacuation of people from within an impacted region. This plan, which was reviewed with State and local law enforcement personnel, is also designed to control access into the EPZ after returning commuters have rejoined their families.

The plan is documented in the form of detailed schematics specifying: (1) the directions of evacuation travel to be facilitated, and other traffic movements to be discouraged; (2) the traffic control personnel and equipment needed (cones, barricades) and their deployment; (3) the locations of these "Traffic Control Points" (TCP); (4) the priority assigned to each traffic control point indicating its relative importance and how soon it should be manned relative to others; and (5) the number of traffic control personnel required.

Selected Results

The following is a list and brief description of important figures and tables within the ETE report:

- Figure 3-1 displays a map of the HNP site showing the layout of the 14 subzones that comprise, in aggregate, the EPZ.
- Table 3-1 presents the estimates of permanent resident population in each subzone based on the 2000 Census data. Extrapolation to the year 2007 reflects population growth rates in each county derived from census data.
- Table 6-1 defines each of the 25 Evacuation Regions in terms of their respective groups of sub-zones.
- Table 6-2 lists the 12 Evacuation Scenarios.
- Tables 7-1C and 7-1D are compilations of Evacuation Time Estimates (ETE). These data are the times needed to *clear the indicated regions* of 95 and 100 percent of the population occupying these regions, respectively. These computed ETE include consideration of mobilization time and of estimated voluntary evacuations from other regions within the EPZ and from the shadow region.
- Table 8-5A presents ETE for the school children in good weather.

- Table 8-7A presents ETE for the transit-dependent population in good weather.

Conclusion

The ETE report presents the methodological details supporting the results obtained and recommendations for consideration by local emergency responders.

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ANNEX 1
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A1-1 INTRODUCTION

The HNP Emergency Plan is designed to describe features and emergency preparedness processes for three (3) Westinghouse design reactors at the Site. This Annex contains specific portions of the Harris Emergency Plan that are applicable to HNP Unit 1. Annex 2 contains specific portions of the Harris Emergency Plan that are applicable to HNP Units 2 and 3.

The HNP Emergency Plan is designed to be compliant with 10 CFR 50.47 and 10 CFR 50, Appendix E. It is also based on guidance contained in 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.*

A1-2 EMERGENCY ACTION LEVELS (EALS)

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

The categorization of events according to one of the four emergency classes is implemented through the Emergency Action Level (EAL) system. The system is composed of two subsystems: The Unusual Event Action Level Matrix and the EAL Network/Flow Path. The Unusual Event Action Level Matrix provides a set of plant conditions and events which coincide with the conditions associated with the Unusual Event. The Unusual Event Action Level Matrix is presented at the bottom of Figure A1-1. For the upper three emergency classes, the Emergency Action Level (EAL) System uses an integrated set of flowchart instructions. As with the Unusual Event Action Levels, the EAL System also associates plant conditions and events with the three upper classes of emergency, but it does so through a symptomatic (vice diagnostic) methodology using critical safety function status trees.

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This allows the EAL System to interface smoothly with the Emergency Operating Procedure (EOP) Network, thus assuring the rapid and correct classification of emergencies. Figures A1-1 and A1-2 are the flowcharts which together form the EAL Network. Abnormal Operating Procedures, Functional Restoration Procedures, End Path Procedures, and Flow Path Procedures contain specific direction for using the EAL Network whenever conditions warrant. A Plant Emergency Procedure provides the Unusual Event Action Levels, the EAL Network, the EAL Flow Path, as well as instructions for using them. Additional information regarding the basis for Unit 1 EALs is available in the Unit 1 EAL technical basis document, “EP-EAL, Emergency Action Level Guidelines”.

A1-3 EMERGENCY RESPONSE FACILITIES AND EQUIPMENT

A1-3.1 CONTROL ROOM

a. Characteristics

1. Located in the Reactor Auxiliary Building as shown in Figure Intro-2.
2. Control Room habitability and radiation protection, as described in Section 6.4 of the FSAR.

b. Functions

1. Reactor and plant control.
2. Interim location for Site Emergency Coordinator.
3. Accident recognition, classification, and mitigation.
4. Notification of offsite agencies.
5. Alerting of onsite personnel.
6. Initial dose projections.
7. Recommendations for immediate protective actions for the public.
8. Activation of HNP ERO and emergency response facilities.
9. Activation of ERDS.

c. Emergency Equipment and Supplies

1. Main Control Board.
2. Emergency Response Facility Information System (ERFIS).
3. Safety Parameter Display System (SPDS is part of ERFIS).
4. Measurement and Indication of Regulatory Guide 1.97 (Rev. 2) variables (ERFIS).

5. Radiation Monitoring System (RMS).
6. Fire Detection System (adjacent room).
7. Seismic Monitoring Cabinet.
8. Gross Failed Fuel Detector Console.
9. Kitchen and sanitary facilities.
10. Reliable voice communications with the TSC, OSC, EOF, NRC Operations Center, and State and local government 24-hour warning points and State EOC.
11. Typical emergency supplies, as described in Section H, Table H-1; and emergency program maintenance procedures.

A1-3.2 TECHNICAL SUPPORT CENTER

a. Characteristics

1. Located within the Protected Area at Elevation 324'-0" in the Fuel Handling Building, Section "K," approximately 400 feet walking distance from the Control Room (primary route).
2. 2000 square feet facility sized for a minimum of 25 persons, including 20 persons designated by Progress Energy and 5 NRC personnel.
3. Protective clothing and portable breathing apparatus are kept in both the TSC and 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.
4. Exterior walls, roof, and floor are built to Seismic Category I, tornado, wind, and missile safety related criteria.
5. Provided with radiation protection equivalent to 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.
6. Environmentally controlled to provide room air temperature, humidity and cleanliness appropriate for personnel and equipment.
7. Reliable power for habitability systems and battery pack emergency lighting are provided.
8. Equipment is non-safety related and nonredundant.

b. Functions

1. Command and communications 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 are assembled at the TSC to carry out emergency response functions required by the emergency conditions.
2. Receives and displays plant status and parameters data on ERFIS.
3. Provides notifications to the NRC via the Emergency Telecommunications System.
4. Provides plant management and technical support to plant operations personnel.
5. Prioritizes OSC emergency response team missions.
6. Assists the Control Room in accident assessment.
7. Performs emergency classification.
8. The TSC function will be relocated to the applicable control room (or alternate location, as determined by the SEC), if the primary TSC is uninhabitable.

c. Emergency Equipment and Supplies

1. Reliable voice communications with the Control Room, EOF, OSC, NRC Operations Center, and State and local government 24-hour warning points and State EOC, as described in Section F.
2. Video System capable of displaying ERFIS information (such as, plant data, SPDS, and RMS), as discussed in Section 4.1 of this Annex.
3. Reference materials, including Mechanical and Electrical Systems Drawings; Plant Operating Manual; FSAR; Corporate, Plant, State, and Local Emergency Plans, are available in hardcopy or online.
4. Decontamination and monitoring area.
5. Survey meter and area radiation monitor.
6. Fax and photocopier equipment.
7. Computer networking and printers.
8. Typical emergency supplies, as described in Section H, Table H-1, and emergency program maintenance procedures.

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HNP UNIT 1 SPECIFIC INFORMATION

A1-3.3 OPERATIONS SUPPORT CENTER

a. Characteristics

1. Located in the Waste Processing Building inside the Protected Area (Figure Intro-2).
2. 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 OSC activities, in addition to sufficient area for team members to stand by 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.
3. Emergency Repair Director provides direction and control of the facility.
4. If the OSC becomes uninhabitable, an alternate location for OSC activities will be made available (e.g., Turbine Building 261' North and Technical Support Center).

b. Functions

1. Assembly location for operational support personnel (such as maintenance, operations, radiation protection, chemistry) for receipt of equipment and assignments to aid in response to an emergency.
2. Briefing and dispatch of emergency teams.

c. Emergency Equipment and Supplies

1. Reliable voice communications with the Control Room, TSC, and EOF, consisting of the following communications systems:
   - Public Address System,
   - PABX Telephone System,
   - Sound Powered Telephone System,
   - Radio Communications, and
   - Harris Emergency Telephone System.
2. Reference materials, including copies of Plant Emergency Procedures (PEPs).
3. Fax and photocopier equipment.
4. Computer networking and printers.
5. Typical emergency supplies, as described in Section H, Table H-1, and emergency program maintenance procedures.

ANNEX 1
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A1-4 PLANT MONITORING AND DATA HANDLING SYSTEMS

Use of the equipment described in this section during an emergency is detailed in plant procedures.

A1-4.1 EMERGENCY RESPONSE DATA SYSTEM (ERDS)

The Emergency Response Data System (ERDS) will supply the NRC with selected ERFIS data points on a near real time basis. This function will be activated by the Control Room staff within an hour of the declaration of an Alert. The selected data points are transmitted via modem to the NRC at approximately 1-minute intervals. If the primary ERFIS system fails (failover), the backup ERFIS system will re-establish the ERDS link automatically through the communication port for ERDS.

A1-4.2 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 multiplexers, ERFIS Host Computer, Plant Process Network, and ERFIS computer work-stations. ERFIS work-stations are located in the Unit 1 Control Room, Technical Support Center (TSC), Emergency Operations Facility (EOF) and the ERFIS Computer Room. In addition, Unit 2 and Unit 3 plant data is transmitted to ERFIS for display on ERFIS workstations in the EOF and in the Unit 2 and Unit 3 TSC (but not the Unit 1 Control Room). These TSC and EOF work-stations can be configured to run from the Simulator for any unit during drills and exercises.

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

The ERFIS work-stations are connected to the ERFIS Host via a dedicated Ethernet LAN.

There is a Primary and Backup ERFIS Host computer and. 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. An

assigned SPDS display is provided in the Control Room and ERFIS work-stations 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, and

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.

A1-4.3 RADIOLOGICAL MONITORING

The Radiation Monitoring System (RMS) is a site-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, and
- 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.

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A1-4.3.1 RADIOLOGICAL EXPOSURE CONTROL

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 Unit 1 FSAR.

A1-4.3.2 TREATMENT OF INJURED AND CONTAMINATED PERSONS

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

A1-4.4 OTHER PLANT ASSESSMENT EQUIPMENT

a. Gross Failed Fuel Detection System.

b. Metal Impact Monitoring System (FSAR Section 5.4.6.4).

ANNEX 2
HNP UNITS 2 AND 3 SPECIFIC INFORMATION

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A2-4	Recognition Category H – HAZARDS or OTHER Conditions Affecting Plant Safety (Initiating Condition Matrix)
A2-5	Recognition Category S – System Malfunction (Initiating Condition Matrix)

ANNEX 2
HNP UNITS 2 AND 3 SPECIFIC INFORMATION

A2-1 INTRODUCTION

The HNP Emergency Plan is designed to describe features and emergency preparedness processes for three (3) Westinghouse design reactors at the Site. This Annex contains specific portions of the Harris Emergency Plan that are applicable to HNP Units 2 and 3. Annex 1 contains specific portions of the Harris Emergency Plan that are applicable to HNP Unit 1.

The HNP Emergency Plan is designed to be compliant with 10 CFR 50.47 and 10 CFR 50, Appendix E. It is also based on guidance contained in 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.*

A2-2 EMERGENCY ACTION LEVELS (EALS)

Section D of the Harris Emergency Plan describes the classification of emergencies and four levels of classifications: Unusual Event, Alert, Site Area Emergency, and General Emergency. These classification levels are entered by meeting the criteria of Emergency Action Levels (EALs) provided in this section of the Units 2 and 3 Annex. Initiating conditions and additional EAL information specific to Units 2 and 3, including the EAL technical basis provided in NEI 07-01, “Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors.” (Reference P)

A2-2.1 EAL MATRICES

Five Initiating Condition (IC) Matrices are used depending on the initial mode of the Unit. The IC Matrices are human factored to read from left to right, General Emergency to Notification of Unusual Event, within a category or subcategory.

To facilitate expeditious classification of emergencies, the various initiating conditions which may result in an emergency class are grouped into five (5) recognition categories as follows:

- A – Abnormal Rad Levels / Radiological Effluent.
- C – Cold Shutdown/ Refueling System Malfunction.
- F – Fission Product Barrier Degradation.
- H – HAZARDS or OTHER Conditions Affecting Plant Safety.
- S – System Malfunction.

Within each category or sub-categories, specific Initiating Conditions (IC’s) are identified. IC matrices for each of the five recognition categories are provided in Tables A2-1, A2-2, A2-3, A2-4, and A2-5.

ANNEX 2
HNP UNITS 2 AND 3 SPECIFIC INFORMATION

A2-3 EMERGENCY RESPONSE FACILITIES AND EQUIPMENT

A2-3.1 CONTROL ROOM

a. Characteristics

1. Located in the Auxiliary Building (of each Unit 2 and 3), as shown in Figure Intro-2.
2. Includes the main control area, operations staff areas, and offices for the shift.
3. Control Room habitability and radiation protection is served by the nuclear island nonradioactive ventilation system (VBS) and the emergency habitability system (VES), as described in Section 9.4 and 6.4 respectively, of the Units 2 and 3 FSAR.

b. Functions

1. Reactor and plant control.
2. Interim location for Site Emergency Coordinator.
3. Accident recognition, classification, and mitigation.
4. Notification of offsite agencies.
5. Alerting of onsite personnel.
6. Initial dose projections.
7. Recommendations for immediate protective actions for the public.
8. Activation of HNP/Progress Energy emergency response facilities and recall of emergency personnel.
9. Activation of ERDS.

c. Emergency Equipment and Supplies

1. Qualified Data Processing Subsystem (QDPS).
2. Safety Parameter Display System (SPDS is part of the Data Display System (DDS).
3. Measurement and Indication of Regulatory Guide 1.97 variables (QDPS and DDS).
4. Radiation Monitoring System (RMS) via DDS.
5. Fire Detection System via DDS.
6. Kitchen and sanitary facilities.

7. Reliable voice communications with the TSC, OSC, EOF, NRC Operations Center, and State and local government 24-hour warning points and State EOC.

8. Typical emergency supplies, as described in Section H, Table H-1; and emergency program maintenance procedures.

A2-3.2 TECHNICAL SUPPORT CENTER

a. Characteristics

1. Located within the Protected Area at Elevation 117.6" in the passage from the Annex Building to the Control Room (of each Unit 2 and 3), as shown in Figure Intro-2. The TSC command room covers 2144 square feet with four (4) adjoining conference rooms which cover 988 square feet. The TSC is sized for a minimum of 25 persons, including 20 persons designated by Progress Energy and 5 NRC personnel.

2. Exterior walls, roof, and floor are built to Seismic Category II requirements.

3. Served by the nuclear island nonradioactive ventilation system (VBS), as described in Section 9.4 of the Units 2 and 3 FSAR. Provided with radiation protection equivalent to 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.

4. Environmentally controlled to provide room air temperature, humidity and cleanliness appropriate for personnel and equipment.

5. Reliable power for habitability systems and battery pack emergency lighting are provided. Power for vital information systems is provided by reliable power supplies including a battery backed Uninterruptible Power Supply (UPS) system.

6. Equipment is non-safety related and nonredundant.

7. Designed using human factors criteria contained in APP-GW-GLR-136, *AP1000 Human Factors Program Implementation for the Emergency Operations Facility and the Technical Support Center*.

b. Functions

1. Command and communications 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 are assembled at the TSC to carry out an emergency response function required by the emergency conditions.

2. Receives and displays plant status and parameters on ERFIS.

3. Provides notifications to the NRC via Emergency Telecommunications System.
4. Provides plant management and technical support to plant operations personnel.
5. Prioritizes emergency response team activities in the plant.
6. Assists the Control Room in accident assessment.
7. Performs emergency classification.
8. The TSC function will be relocated to the applicable control room (or alternate location, as determined by the SEC), if the primary TSC is uninhabitable.

c. Emergency Equipment and Supplies

1. Reliable voice communications with the Control Room, EOF, OSC, NRC Operations Center, and State and local government 24-hour warning points and State EOC, as described in Section F.
2. A visual display system capable of displaying plant data, SPDS, and RMS information.
3. Reference materials, including Mechanical and Electrical Systems Drawings; Plant Operating Manual; FSAR; Corporate, Plant, State, and Local Emergency Plans, are available in hardcopy or online.
4. Decontamination and monitoring area.
5. Survey meter and area radiation monitor.
6. Fax, photocopier equipment, computer networking, and printers.
7. Typical emergency supplies, as described in Section H, Table H-1, and emergency program maintenance procedures.

A2-3.3 OPERATIONS SUPPORT CENTER

a. Characteristics

1. Located inside the Protected Area on the second floor of the Annex Building (of each Unit 2 and 3), adjacent to the Unit 2 and 3 Control Rooms, as shown in Figure Intro-2.
2. The total area is approximately 2888 square feet in the ALARA Support Center and Office Area. This location includes separate areas for coordinating and planning OSC activities. Additional space is available in adjacent offices and locker rooms to accommodate additional personnel, as may be required.

3. Emergency Repair Director provides direction and control of the facility.
4. If the OSC becomes uninhabitable, an alternate location for OSC activities will be made available. Evacuation of the OSC will be conducted in accordance with plant emergency procedures.

b. Functions

1. Assembly location for operational support personnel (such as maintenance, operations, radiation protection, chemistry) for receipt of equipment and assignments to aid in response to an emergency.
2. Briefing and dispatch of emergency teams.

c. Emergency Equipment and Supplies

1. Reliable voice communications with the Control Room, TSC, and EOF.
2. Typical emergency supplies, as described in Section H, Table H-1, and emergency program maintenance procedures.

A2-4 PLANT MONITORING AND DATA HANDLING SYSTEMS

Use of the equipment described in this section during an emergency is detailed in plant procedures.

A2-4.1 PLANT CONTROL SYSTEM (PLS)

The plant control system provides the functions necessary for normal operation of the plant from cold shutdown through full power. The plant control system controls non-safety related components and the non-safety functions of selected safety related components in the plant that are operated from the Control Room or remote shutdown workstation.

A2-4.2 DATA DISPLAY AND PROCESSING SYSTEM (DDS)

The data display and processing system provides the equipment used for processing data that result in non-safety related alarms and displays for both normal and emergency plant operations, generating these displays and alarms, providing analysis of plant data, providing plant data logging and historical storage and retrieval, and providing operational support for plant personnel.

The data display and processing system provides the display functions for the plant control system

The data display and processing system also contains the real-time data network, which is a redundant data highway that links the elements of the AP1000 instrumentation and control architecture.

A2-4.3 SAFETY RELATED PROCESS MONITORING

Monitoring of safety related process variables is performed through the Qualified Data Processing System (QDPS). The QDPS, a subsystem of the Protection and Monitoring System (PMS), provides safety related display of selected parameters in the Control Room.

The QDPS subsystems are a redundant configuration consisting of sensors, QDPS hardware, and qualified displays.

The qualified data processing subsystems perform the following functions:

- Provide safety related data processing and display,
- Provide the operator with sufficient operational data to safely shut the plant down in the event of a failure of the other display systems,
- Provide qualified and nonqualified data to the real-time data network for use by other systems in the plant,
- Process data for Control Room display, and to meet Regulatory Guide 1.97 requirements, and
- Provide data to the Control Room, the remote shutdown workstation, other non-safety related devices, and nonqualified emergency response facilities in conformance with NUREG-0696.

The QDPS hardware consists of safety related modular data gathering units. The QDPS receives inputs from safety related process sensors and safety related digital systems. The QDPS consolidates the input data, performs conversions to process units, and formats the data for data link transmission.

Power is provided to the QDPS from the Class 1E DC and UPS system for 72 hours after a loss of all AC power (station blackout). After 72 hours, the ancillary diesel generators provide power for the QDPS. The QDPS is a two-train subsystem (Divisions B and C). The PMS, including the QDPS, is diverse from the Diverse Actuation System (DAS). Sensors are not shared between PMS and DAS.

A2-4.4 EMERGENCY RESPONSE DATA SYSTEM (ERDS)

In accordance with the requirements of 10 CFR 50, Appendix E, Section VI and NUREG-1394, Revision 1, “Emergency Response Data System (ERDS) Implementation”, the ERDS transmits critical plant variables from the onsite control and monitoring systems to the NRC Operations Center via a dedicated communications link. The installed system acquires data, assigns the appropriate data quality value, formats the data stream, and periodically transmits the data stream to the NRC.

A2-4.5 RADIOLOGICAL MONITORING

The radiation monitoring system (RMS) provides plant effluent monitoring, process fluid monitoring, airborne monitoring, and continuous indication of the radiation environment in plant areas where such information is needed. Radiological monitors are provided for plant systems, as described in the Units 2 and 3 FSAR Section 3.11.

The radiation monitoring system is divided functionally into two subsystems:

- Process, airborne, and effluent radiological monitoring and sampling, and
- Area radiation monitoring.

Fluid process radiological monitors are provided for:

- Steam Generator Blowdown,
- Component Cooling Water System,
- Main Steam Line,
- Service Water Blowdown,
- Primary Sampling System Liquid Sample,
- Primary Sampling System Gaseous Sample,
- Control Room Supply Air Duct,
- Containment Air Filtration Exhaust,
- Gaseous Radwaste Discharge, and
- Containment Atmosphere.

Airborne radiological monitors are provided for:

- Steam Generator Blowdown,
- Component Cooling Water System,
- Main Steam Line,
- Service Water Blowdown,
- Primary Sampling System Liquid Sample,
- Primary Sampling System Gaseous Sample,
- Control Room Supply Air Duct,

- Containment Air Filtration Exhaust,
- Gaseous Radwaste Discharge, and
- Containment Atmosphere.

Liquid and gaseous effluent radiological monitors are provided for:

- Plant Vent,
- Turbine Island Vent Discharge,
- Liquid Radwaste Discharge, and
- Waste Water Discharge.

The AP1000 tag numbers, types, and locations of these monitors are described in Section 3.11 of the Units 2 and 3 FSAR.

The locations of the normal offsite and onsite environmental monitoring stations and the location of the TLD monitoring stations are described in the Off-Site Dose Calculation Manual. Additional predetermined emergency offsite 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 (PLS/DDS) and subsequently to the ERFIS in the TSC and EOF. The isotopic mix is based upon the mix discussed in NUREG-1741. Grab samples and onsite or offsite monitoring samples can then be analyzed to determine the true isotopic mix and the results used in the computerized dose projection software.

A2-4.6 EMREGENCY RESPONSE INFORMATION SYSTEM (ERFIS)

In addition to the functions described in A1-4.2, Unit 2 and Unit 3 plant data, including SPDS data and RMS data, are transmitted to ERFIS for display on ERFIS workstations in the EOF and in the Unit 2 and Unit 3 TSC. The TSC and EOF work-stations can be configured to run from any unit on the Simulator during drills and exercises. ERFIS is the primary plant data display system for the EOF and TSC.

A2-4.7 OTHER PLANT ASSESSMENT EQUIPMENT

a. Effluent Monitoring and Sampling.

b. Process and Airborne Monitoring and Sampling.

c. Post-Accident Radiation Monitoring.

d. Area Radiation Monitors.

ANNEX 2
HNP UNITS 2 AND 3 SPECIFIC INFORMATION

Table A2-1
Recognition Category A – Abnormal Rad Levels / Radiological Effluent
INITIATING CONDITION MATRIX

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	NOUE
AG1 Off-site Dose Resulting from an Actual or IMMINENT Release of Gaseous Radioactivity Greater Than 1000 mrem TEDE or 5000 mrem Thyroid CDE for the Actual or Projected Duration of the Release Using Actual Meteorology. *Op. Modes: All*	**AS1** Off-site Dose Resulting from an Actual or IMMINENT Release of Gaseous Radioactivity Greater Than 100 mrem TEDE or 500 mrem Thyroid CDE for the Actual or Projected Duration of the Release. *Op. Modes: All*	**AA1** Any Release of Gaseous or Liquid Radioactivity to the Environment Greater Than 200 Times the Off-site Dose Calculation Manual for 15 Minutes or Longer. *Op. Modes: All*	**AU1** Any Release of Gaseous or Liquid Radio-activity to the Environment Greater Than Two Times the Off-site Dose Calculation Manual for 60 Minutes or Longer. *Op. Modes: All*
		AA3 Rise in Radiation Levels Within the Facility that Impedes Operation of Systems Required to Maintain Safe Operations or to Establish or Maintain Cold Shutdown. *Op. Modes: All*	**AU2** UNPLANNED Rise in Plant Radiation Levels. *Op. Modes: All*
		AA2 Damage to Irradiated Fuel or Loss of Water Level that Has Resulted or Will Result in the Uncovering of Irradiated Fuel Outside the Reactor Vessel. *Op. Modes: All*	

ANNEX 2
HNP UNITS 2 AND 3 SPECIFIC INFORMATION

Table A2-2
Recognition Category C – Cold Shutdown/Refueling System Malfunction
INITIATING CONDITION MATRIX

GENERAL EMERGENCY		SITE AREA EMERGENCY		ALERT		NOUE	
CG1	Loss of RPV Inventory Affecting Fuel Clad Integrity with Containment Challenged. *Op. Modes: Cold Shutdown, Refueling*	**CS1**	Loss of RPV Inventory Affecting Core Decay Heat Removal Capability. *Op. Modes: Cold Shutdown , Refueling*	**CA1**	Loss of RCS/RPV Inventory. *Op. Modes: Cold Shutdown, Refueling*		
						CU2	UNPLANNED Loss of RCS/RPV Inventory. *Op. Mode: Refueling*
						CU3	All Safety Related DC Batteries Not Being Charged for Greater Than 30 Minutes Due to Loss of Power to PIP Busses. *Op. Modes: Cold Shutdown, Refueling, Defueled*
				CA4	Inability to Maintain Plant in Cold Shutdown. *Op. Modes: Cold Shutdown, Refueling*	**CU4**	UNPLANNED Loss of Decay Heat Removal Capability. *OP. Modes: Cold Shutdown, Refueling*
						CU6	UNPLANNED Loss of All On-site or Off-site Communications Capabilities. *Op. Modes: Cold Shutdown, Refueling, Defueled*
						CU7	UNPLANNED Loss of Required DC Power for 15 Minutes or longer. *Op. Modes: Cold Shutdown, Refueling*
						CU8	Inadvertent Criticality. *Op Modes: Cold Shutdown, Refueling*

ANNEX 2
HNP UNITS 2 AND 3 SPECIFIC INFORMATION

Table A2-3
Recognition Category F – Fission Product Barrier Degradation
INITIATING CONDITION MATRIX

GENERAL EMERGENCY		SITE AREA EMERGENCY		ALERT		NOUE	
FG1	Loss of ANY Two Barriers AND Loss or Potential Loss of Third Barrier *Op. Modes: Power Operation, Hot Standby, Startup, Safe/Stable Shutdown*	**FS1**	Loss or Potential Loss of ANY Two Barriers *Op. Modes: Power Operation, Hot Standby, Startup, Safe/Stable Shutdown*	**FA1**	ANY Loss or ANY Potential Loss of EITHER Fuel Clad OR RCS *Op. Modes: Power Operation, Hot Standby, Startup, Safe/Stable Shutdown*	**FU1**	ANY Loss or ANY Potential Loss of Containment *Op. Modes: Power Operation, Hot Standby, Startup, Safe/Stable Shutdown*

NOTES

1. The logic used for these initiating conditions reflects the following considerations:

   - The Fuel Clad Barrier and the RCS Barrier are weighted more heavily than the Containment Barrier (See Sections 3.4 and 3.8). NOUE ICs associated with RCS and Fuel Clad Barriers are addressed under System Malfunction ICs.

   - At the Site Area Emergency level, there must be some ability to dynamically assess how far present conditions are from the threshold for a General Emergency. For example, if Fuel Clad and RCS Barrier "Loss" EALs existed, that, in addition to off-site dose assessments, would require continual assessments of radioactive inventory and containment integrity. Alternatively, if both Fuel Clad and RCS Barrier "Potential Loss" EALs existed, the Emergency Director would have more assurance that there was no immediate need to escalate to a General Emergency.

   - The ability to escalate to higher emergency classes as an event deteriorates must be maintained. For example, RCS leakage steadily increasing would represent an increasing risk to public health and safety.

   - The Containment Barrier should not be declared lost or potentially lost based on exceeding Technical Specification action statement criteria, unless there is an event in progress requiring mitigation by the Containment barrier. When no event is in progress (Loss or Potential Loss of either Fuel Clad and/or RCS) the Containment Barrier status is addressed by Technical Specifications.

ANNEX 2
HNP UNITS 2 AND 3 SPECIFIC INFORMATION

Table A2-4
Recognition Category H – HAZARDS or OTHER Conditions Affecting Plant Safety
INITIATING CONDITION MATRIX

GENERAL EMERGENCY		SITE AREA EMERGENCY		ALERT		NOUE	
				HA1	Natural or Destructive Phenomena Affecting the Plant VITAL AREA. *Op. Modes: All*	**HU1**	Natural or Destructive Phenomena Affecting the PROTECTED AREA. *Op. Modes: All*
				HA2	FIRE or EXPLOSION Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown. *Op. Modes: All*	**HU2**	FIRE Within PROTECTED AREA Boundary Not Extinguished In Less Than 15 Minutes of Detection OR EXPLOSION within the Protected Area Boundary *Op. Modes: All*
				HA3	Access To a VITAL AREA Is Prohibited Due To Release of Toxic, Corrosive, Asphyxiant or Flammable Gases Which Jeopardizes Operation of Systems Required to Maintain Safe Operations or Safely Shutdown the Reactor *Op. Modes: All*	**HU3**	Release of Toxic, Corrosive, Asphyxiant, or Flammable Gases Deemed Detrimental to NORMAL PLANT OPERATIONS. *Op. Modes: All*
		HS2	Control Room Evacuation Has Been Initiated and Plant Control Cannot Be Established. *Op. Modes: All*	**HA5**	Control Room Evacuation Has Been Initiated. *Op. Modes: All*		
HG1	HOSTILE ACTION Resulting in Loss Of Physical Control of the Facility. *Op. Modes: All*	**HS4**	HOSTILE ACTION within the PROTECTED AREA *Op. Modes: All*	**HA4**	HOSTILE ACTION within the OWNER CONTROLLED AREA *Op. Modes: All*	**HU4**	Confirmed SECURITY CONDITION or Threat Which Indicates a Potential Degradation in the Level of Safety of the Plant. *Op. Modes: All*
HG2	Other Conditions Existing Which in the Judgment of the Emergency Director Warrant Declaration of General Emergency. *Op. Modes: All*	**HS3**	Other Conditions Existing Which in the Judgment of the Emergency Director Warrant Declaration of Site Area Emergency. *Op. Modes: All*	**HA6**	Other Conditions Existing Which in the Judgment of the Emergency Director Warrant Declaration of an Alert. *Op. Modes: All*	**HU5**	Other Conditions Existing Which in the Judgment of the Emergency Director Warrant Declaration of a NOUE. *Op. Modes: All*

ANNEX 2
HNP UNITS 2 AND 3 SPECIFIC INFORMATION

Table A2-5 (Sheet 1 of 2)
Recognition Category S – System Malfunction
INITIATING CONDITION MATRIX

GENERAL EMERGENCY		SITE AREA EMERGENCY		ALERT		NOUE	
SG1	Prolonged Loss of All Off-site and On-site AC Power for 72 hours or longer. *Op. Modes: Power Operation, Startup, Hot Standby, Safe/Stable Shutdown*	**SS1**	All Safety Related DC Batteries Not Being Charged for 24 Hours or Longer Due to Loss of Power to PIP Busses. *Op. Modes: Power Operation, Startup, Hot Standby, Safe/Stable Shutdown*	**SA1**	All Safety Related DC Batteries Not Being Charged for 60 Minutes or Longer Due to Loss of Power to PIP Busses. *Op. Modes: Power Operation, Startup, Hot Standby, Safe/Stable Shutdown*	**SU1**	All Safety Related DC Batteries Not Being Charged for 30 Minutes or Longer Due to Loss of Power to PIP Busses. *Op. Modes: Power Operation, Startup, Hot Standby, Safe/Stable Shutdown*
SG2	Automatic Scram (Trip) and All Manual Actions Fail to Shutdown the Reactor and Indication of an Extreme Challenge to the Ability to Cool the Core Exists. *Op. Modes: Power Operation, Startup*	**SS2**	Automatic Scram (Trip) and All Manual Actions Fail to Shutdown the Reactor and Manual Actions Taken From the Reactor control Console are not Successful in Shutting Down the Reactor. *Op. Modes: Power Operation, Startup*	**SA2**	Automatic Scram (Trip) and All Manual Actions Fail to Shutdown the Reactor and the Manual Actions Taken From the Reactor control Console are Successful in Shutting Down the Reactor. *Op. Modes: Power Operation, Startup*	**SU9**	Failure of the Reactor Protection System, Automatic OR Manual and Subcriticality Was Achieved. *Op Modes: Power Operation, Startup*
						SU2	Inability to Reach Required Shutdown Mode Within Technical Specification Limits. *Op. Modes: Power Operation, Startup, Hot Standby, Safe/Stable Shutdown*
		SS6	Inability to Monitor a SIGNIFICANT TRANSIENT in Progress. *Op. Modes: Power Operation, Startup, Hot Standby, Safe/Stable Shutdown*	**SA4**	UNPLANNED Loss of Indicating and Monitoring Functions *Op. Modes: Power Operation, Startup, Hot Standby, Safe/Stable Shutdown*		

Table A2-5 (Sheet 2 of 2)
Recognition Category S – System Malfunction
INITIATING CONDITION MATRIX

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	NOUE
	SS3 Loss of All Vital DC Power for 15 Minutes or Longer. *Op. Modes: Power Operation, Startup, Hot Standby, Safe/Stable Shutdown*		
			SU4 Fuel Clad Degradation. *Op. Modes: Power Operation, Startup, Hot Standby*
			SU5 RCS Leakage. *Op. Modes: Power Operation, Startup, Hot Standby, Safe/Stable Shutdown*
			SU6 UNPLANNED Loss of All On-site OR Off-site Communications Capabilities. *Op. Modes: Power Operation, Startup, Hot Standby, Safe/Stable Shutdown*
			SU8 Inadvertent Criticality. *Op Modes: Hot Standby, Safe/Stable Shutdown*