TABLE OF CONTENTS

Section	Title	Page
1.0	INTRODUCTION	1
1.1	EMERGENCY PLAN PURPOSE	1
1.2	LNP SITE DESCRIPTION	2
1.3	EMERGENCY PLANNING ZONES (EPZ)	2
1.3.1	PLUME EXPOSURE PATHWAY EPZ	2
1.3.2	INGESTION EXPOSURE PATHWAY EPZ	3
A.	ASSIGNMENT OF RESPONSIBILITY (ORGANIZATIONAL CONTROL)	A-1
1.	EMERGENCY ORGANIZATION	A-1
2.	FUNCTIONS, RESPONSIBILITIES, AND LEGAL BASIS	A-10
3.	WRITTEN AGREEMENTS	A-10
4.	CONTINUOUS OPERATIONS	A-10
B.	ON-SITE EMERGENCY ORGANIZATION	B-1
1.	ON-SITE EMERGENCY ORGANIZATION	B-1
2.	EMERGENCY COORDINATOR	B-2
3.	EMERGENCY COORDINATOR LINE OF SUCCESSION	B-2
4.	EMERGENCY COORDINATOR RESPONSIBILITIES	B-2
5.	PLANT EMERGENCY RESPONSE STAFF	B-3
5.1	ON-SITE EMERGENCY RESPONSE ORGANIZATION	B-3
5.2	OFF-SITE EMERGENCY RESPONSE ORGANIZATION	B-6
6.	INTERFACES BETWEEN FUNCTIONAL AREAS	B-8
7.	CORPORATE SUPPORT FOR THE PLANT STAFF	B-8

TABLE OF CONTENTS (CONTINUED)

8. SUPPORT FROM CONTRACTOR AND PRIVATE ORGANIZATIONS B-9

C. EMERGENCY RESPONSE SUPPORT AND RESOURCES C-1

1. FEDERAL RESPONSE CAPABILITY C-1

2. OFF-SITE ORGANIZATION REPRESENTATION IN THE EMERGENCY OPERATIONS FACILITY C-1

3. RADIOLOGICAL LABORATORIES C-2

4. OTHER SUPPORTING ORGANIZATIONS C-2

D. EMERGENCY CLASSIFICATION SYSTEM D-1

1. CLASSIFICATION SYSTEM D-1

1.1 UNUSUAL EVENT D-1

1.2 ALERT D-1

1.3 SITE AREA EMERGENCY D-2

1.4 GENERAL EMERGENCY D-2

2. EMERGENCY ACTION LEVELS (EALS) D-3

3. STATE/LOCAL EMERGENCY ACTION LEVEL SCHEME D-3

4. OFF-SITE EMERGENCY PROCEDURES D-3

E. NOTIFICATION METHODS AND PROCEDURES E-1

1. NOTIFICATION AND MOBILIZATION OF EMERGENCY RESPONSE PERSONNEL E-1

1.1 PROGRESS ENERGY EMERGENCY RESPONSE ORGANIZATION E-1

1.2 OFF-SITE EMERGENCY RESPONSE ORGANIZATIONS E-2

2. MESSAGE CONTENT E-3

3. FOLLOW-UP MESSAGES TO OFF-SITE AUTHORITIES E-3

TABLE OF CONTENTS (CONTINUED)

4. DISSEMINATING INFORMATION TO THE AFFECTED PUBLIC E-4

5. INSTRUCTIONS TO THE PUBLIC IN THE PLUME EXPOSURE EPZ E-4

6. WRITTEN MESSAGES TO THE PUBLIC E-4

F. EMERGENCY COMMUNICATIONS F-1

1. DESCRIPTION OF COMMUNICATION LINKS F-1

2. COMMUNICATION WITH FIXED AND MOBILE MEDICAL SUPPORT FACILITIES F-4

3. COMMUNICATION SYSTEM RELIABILITY F-4

G. PUBLIC EDUCATION AND INFORMATION G-1

1. PUBLIC INFORMATION PROGRAM G-1

2. DISTRIBUTION AND MAINTENANCE OF PUBLIC INFORMATION G-1

3. NEWS MEDIA COORDINATION G-2

4. INFORMATION EXCHANGE G-2

5. NEWS MEDIA TRAINING G-2

H. EMERGENCY FACILITIES AND EQUIPMENT H-1

1. ON-SITE EMERGENCY RESPONSE FACILITIES H-1

1.1 CONTROL ROOMS H-1

1.2 TECHNICAL SUPPORT CENTERS H-2

1.3 OPERATIONS SUPPORT CENTERS H-4

2. OFF-SITE EMERGENCY RESPONSE FACILITIES H-4

2.1 EMERGENCY OPERATIONS FACILITY H-4

2.2 EMERGENCY NEWS CENTER H-6

3. STATE/COUNTY EMERGENCY OPERATIONS CENTERS H-7

TABLE OF CONTENTS (CONTINUED)

4. ACTIVATION AND STAFFING OF EMERGENCY RESPONSE FACILITIES H-7

5. ON-SITE MONITORING SYSTEMS H-7

6. ACCESS TO DATA FROM ENVIRONMENTAL MONITORING SYSTEMS H-8

7. OFF-SITE RADIOLOGICAL MONITORING EQUIPMENT H-9

8. METEOROLOGICAL INSTRUMENTATION AND PROCEDURES H-9

9. EMERGENCY EQUIPMENT AND SUPPLIES H-10

10. EMERGENCY KITS H-10

11. RECEIPT OF FIELD MONITORING DATA H-10

I. ACCIDENT ASSESSMENT I-1

1. PARAMETERS INDICATIVE OF EMERGENCY CONDITIONS I-1

2. PLANT MONITORING SYSTEMS I-1

2.1 RADIOLOGICAL MONITORING I-1

2.2 OTHER PLANT MONITORING EQUIPMENT I-3

3. DETERMINATION OF SOURCE TERM AND RADIOLOGICAL CONDITIONS I-3

4. RELATIONSHIP BETWEEN EFFLUENT MONITOR READING AND EXPOSURE AND CONTAMINATION LEVELS I-3

4.1 ON-SITE DOSE ASSESSMENT I-4

4.2 OFF-SITE DOSE ASSESSMENT I-5

5. METEOROLOGICAL INFORMATION I-6

6. DETERMINATION OF RELEASE RATES AND PROJECTED DOSES I-6

7. FIELD MONITORING CAPABILITY I-6

TABLE OF CONTENTS (CONTINUED)

8. ASSESSMENT HAZARDS THROUGH LIQUID OR GASEOUS RELEASE PATHWAYS I-7

9. MEASURING RADIOIODINE CONCENTRATIONS I-7

10. RELATING MEASURED PARAMETERS TO DOSE RATES I-7

11. TRACKING OF PLUME USING FEDERAL AND STATE RESOURCES I-8

J. PROTECTIVE RESPONSE J-1

1. ON-SITE NOTIFICATION J-1

2. EVACUATION ROUTES AND TRANSPORTATION J-2

3. PERSONNEL MONITORING AND DECONTAMINATION J-2

4. NON-ESSENTIAL PERSONNEL EVACUATION AND DECONTAMINATION J-3

5. PERSONNEL ACCOUNTABILITY J-3

6. PROTECTIVE MEASURES J-3

7. PROTECTIVE ACTION RECOMMENDATIONS AND BASES J-5

8. EVACUATION TIME ESTIMATES J-6

9. STATE AND LOCAL GOVERNMENT IMPLEMENTATION OF PROTECTIVE MEASURES J-6

10. PROTECTIVE MEASURES IMPLEMENTATION J-6

11. INGESTION PATHWAY PROTECTIVE MEASURES J-8

12. REGISTERING AND MONITORING EVACUEES J-8

K. RADIOLOGICAL EXPOSURE CONTROL K-1

1. EMERGENCY EXPOSURES K-1

2. RADIATION PROTECTION PROGRAM K-2

3. DOSIMETRY AND DOSE ASSESSMENT K-2

TABLE OF CONTENTS (CONTINUED)

4. STATE AND LOCAL RESPONDER EXPOSURE AUTHORIZATIONS K-3

5. DECONTAMINATION ACTION LEVELS K-3

6. CONTAMINATION CONTROL MEASURES K-3

7. DECONTAMINATION OF RELOCATED LNP PERSONNEL K-5

L. MEDICAL AND PUBLIC HEALTH SUPPORT L-1

1. HOSPITAL AND MEDICAL SUPPORT L-1

1.1 SEVEN RIVERS REGIONAL MEDICAL CENTER L-1

1.2 CITRUS MEMORIAL HOSPITAL L-1

1.3 OFF-SITE MEDICAL SUPPORT PLANS L-1

2. ON-SITE FIRST AID CAPABILITY L-2

2.1 MEDICAL RESPONSE PERSONNEL L-2

2.2 FIRST AID KITS L-2

3. EMERGENCY MEDICAL FACILITIES (STATE OF FLORIDA) L-2

4. MEDICAL EMERGENCY TRANSPORTATION L-3

M. RECOVERY AND REENTRY PLANNING AND POST-ACCIDENT OPERATIONS M-1

1. RECOVERY PLANS AND PROCEDURES M-1

2. RECOVERY OPERATIONS M-1

3. UPDATING TOTAL POPULATION EXPOSURE M-2

N. EXERCISES AND DRILLS N-1

1. EXERCISES N-1

2. DRILLS N-1

3. CONDUCT OF DRILLS AND EXERCISES N-3

TABLE OF CONTENTS (CONTINUED)

4. EXERCISE AND DRILL EVALUATION N-4

5. EXERCISE AND DRILL CRITIQUES N-4

O. RADIOLOGICAL EMERGENCY RESPONSE TRAINING O-1

1. GENERAL REQUIREMENTS O-1

2. PROGRESS ENERGY EMERGENCY RESPONSE TRAINING O-1

3. FIRST AID TRAINING O-1

4. EMERGENCY RESPONSE TRAINING AND QUALIFICATION O-2

5. RETRAINING O-3

P. RESPONSIBILITY FOR THE PLANNING EFFORT: DEVELOPMENT, PERIODIC REVIEW AND DISTRIBUTION OF EMERGENCY PLANS P-1

1. TRAINING P-1

2. RESPONSIBILITY FOR RADIOLOGICAL EMERGENCY RESPONSE TRAINING P-1

3. EMERGENCY PLANNING COORDINATION P-1

4. PLAN REVIEWS AND UPDATES P-1

5. DISTRIBUTION OF REVISED PLANS P-2

6. SUPPORTING PLANS P-2

7. IMPLEMENTING PROCEDURES P-2

8. TABLE OF CONTENTS AND NUREG-0654 CROSS REFERENCE P-3

9. EMERGENCY PLAN AUDITS P-3

10. EMERGENCY TELEPHONE NUMBERS P-4

APPENDICES

Number	Title
1	GLOSSARY OF TERMS
2	REFERENCES
3	CERTIFICATION LETTERS
4	EMERGENCY ACTION LEVELS
5	LIST OF EMERGENCY PLAN SUPPORTING PROCEDURES
6	EVACUATION TIME ESTIMATE STUDY SUMMARY
7	PUBLIC ALERT AND NOTIFICATION SYSTEM
8	NUREG-0654 CROSS REFERENCE

LIST OF TABLES

Number	Title	Page
A-1	Primary Emergency Response Organizations	A-11
B-1	Minimum Staffing Requirements for Emergencies	B-11
C-1	Radiological Laboratories – Capabilities	C-3
E-1	Notification of Response Organizations for Each Emergency Classification	E-6
F-1	On-site Communications	F-5
F-2	Interfacility/Organization Communications	F-6
H-1	Typical Emergency Kit Equipment/Supplies and Locations	H-11
I-1	Mobile Emergency Radiological Laboratory - Typical Instrumentation and Equipment	I-9
J-1	Protective Action Guides	J-9
J-2	10-Mile Emergency Planning Zone Evacuation Time Estimates (100 Percent) (Hr:Min)	J-10
K-1	Emergency Worker Exposure Guidelines	K-6
L-1	Summary of Actions for Emergency Medical Treatment	L-4
A4-1	Recognition Category A – Abnormal Rad Levels / Radiological Effluent	Appendix 4-2
A4-2	Recognition Category C – Cold Shutdown/Refueling System Malfunction	Appendix 4-3
A4-3	Recognition Category F – Fission Product Barrier Degradation	Appendix 4-4
A4-4	Recognition Category H – HAZARDS or OTHER Conditions Affecting Plant Safety	Appendix 4-5
A4-5	Recognition Category S – System Malfunction	Appendix 4-6
A6-1	EPZ Population Distribution (by Subzone)	Appendix 6-5
A6-2	Special Facilities (Schools) within the 10-Mile EPZ	Appendix 6-5

LIST OF FIGURES

Number	Title
Intro-1	Levy Site Location
Intro-2	Levy Site Layout
Intro-3	Plume Exposure Pathway EPZ (10-Mile)
Intro-4	Ingestion Exposure Pathway EPZ (50-Mile)
A-1	Interrelationships between Key Response Organizations
A-2	Functional Interrelationships between Key Response Organizations
A-3	State Organization for Radiological Response
B-1	Levy Emergency Response Organization
B-2	On-Site Emergency Response Organization (CR, TSC, OSC)
B-3	Off-Site Emergency Response Organization (EOF/ENC)
A6-1	Resident Population within the 10-Mile EPZ
A6-2	Levy Evacuation Routes and Shelters

ACRONYMS AND ABBREVIATIONS

µCi	Microcurie
AAT	Accident Assessment Team
AC	alternating current
ALARA	As Low As Reasonably Achievable
ANI	American Nuclear Insurers
ANSI	American National Standards Institute
AP1000	Westinghouse Electric Company, LLC AP1000
CDE	Committed Dose Equivalent
CFR	Code of Federal Regulations
cm	centimeter
CO	Control Operator
cpm	counts per minute
CR	Control Room
CR3	Crystal River-3 Nuclear Plant
CVT	Current Value Table
DC	direct current
DCD	AP1000 Design Control Document
DDS	Data Display and Processing System
DEM	State of Florida Department of Community Affairs, Division of Emergency Management
DHBRC	Department of Health, Bureau of Radiation Control
DHS	U.S. Department of Homeland Security
DOE	U.S. Department of Energy
dpm	disintegrations per minute

ACRONYMS AND ABBREVIATIONS

EAB	Exclusion Area Boundary
EAL	Emergency Action Level
EAS	Emergency Alert System
EBS	Emergency Broadcast System
EC	Emergency Coordinator
ED	electronic dosimeter
EMS	Emergency Medical Services
ENC	Emergency News Center
ENS	Emergency Notification System
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EOP	Emergency Operating Procedure
EPA	U.S. Environmental Protection Agency
EPPOS	Emergency Preparedness Position
EPRI	Electric Power Research Institute
EPZ	Emergency Planning Zone
ERDS	Emergency Response Data System
ERF	Emergency Response Facility
ERO	Emergency Response Organization
ESATCOM	Florida Emergency Satellite Communications System
ETE	Evacuation Time Estimate
ETS	Emergency Telecommunications System
FDLE	Florida Department of Law Enforcement

ACRONYMS AND ABBREVIATIONS

FEMA	Federal Emergency Management Agency
FL	Florida
FRC	Federal Response Center
FRMAC	Federal Radiological Monitoring and Assessment Center
FSAR	Final Safety Analysis Report
FTS	Federal Telecommunications System
GA	Georgia
GIS	Geographical Information Systems
G-M	Geiger-Müller
HP	Health Physics
HPN	Health Physics Network
IC	initiating condition
I&C	Instrumentation & Controls
INPO	Institute of Nuclear Power Operations
KI	potassium iodide
LAN	Local Area Network
LLEA	Local Law Enforcement Agencies
LNP	Levy Nuclear Plant
MCL	Management Counterpart Link
MERL	Mobile Emergency Radiological Laboratory
mrem/hr	millirem/hour
MHz	Mega Hertz
MWt	megawatts thermal

ACRONYMS AND ABBREVIATIONS

MWe	megawatt electric
NLO	Non-licensed Operator
NOAA	National Oceanic and Atmospheric Administration
NRC	U.S. Nuclear Regulatory Commission
NRF	National Response Framework
NWS	National Weather Service
OCLAN	Operations Center Local Area Network
ODCM	Off-site Dose Calculation Manual
ORAU	Oak Ridge Associated Universities
OSC	Operations Support Center
PA	Public Address
PABX	Private Automatic Branch Exchange System
PAG	Protective Action Guide
PAR	Protective Action Recommendation
PAZ	Protective Action Zones
PE	Progress Energy
PEF	Progress Energy Florida, Inc.
PF	Protection Factor
PIP	Plant Investment Protection
PLS	Plant Control System
PMCL	Protective Measures Counterpart Link
PNSC	Plant Nuclear Safety Committee
PWR	pressurized water reactor

ACRONYMS AND ABBREVIATIONS

POM	Plant Operating Manual
Q	quantity of radioactive material
QDPS	Qualified Data Processing Subsystem
R	Roentgen
rad/hr	radians per hour
RCA	Radiation Controlled Area
rem	Roentgen Equivalent Man
RMS	Radiation Monitoring System
RPP	Radiation Protection Program
RSCL	Reactor Safety Counterpart Link
RWP	Radiation Work Permit
SAMG	Severe Accident Management Guidelines
SCBA	Self-contained breathing apparatus
SEOC	State Emergency Operations Center
SERT	State Emergency Response Team
SPDS	Safety Parameter Display System
SRPD	self-reading pocket dosimeter
S-SO	Superintendent – Shift Operations
STA	Shift Technical Advisor
SWPT	State Warning Point-Tallahassee
TCP	Traffic Control Points
TEDE	total effective dose equivalent
TLD	thermoluminescent dosimeter

ACRONYMS AND ABBREVIATIONS

TSC	Technical Support Center
UHF	ultra high frequency
USCO	Unit Senior Control Operator
VBS	nonradioactive ventilation system
VES	emergency habitability system
Westinghouse	Westinghouse Electric Company, LLC
WCAP	Westinghouse Commercial Atomic Power

1.0 INTRODUCTION

This emergency plan for the Levy Nuclear Plant (LNP) Units 1 and 2 has been developed in compliance with the requirements of the U.S. Nuclear Regulatory Commission (NRC) 10 Code of Federal Regulations (CFR) 52, "Early Site Permits, Standard Design Certifications, and Combined Licenses For Nuclear Power Plants (Reference R)." The regulations in 10 CFR 52 invoke the emergency planning requirements in 10 CFR 50, "Domestic Licensing of Production and Utilization Facilities (Reference Q)." Consistent with the requirements of both 10 CFR 50 and 10 CFR 52, this plan is based on the requirements of 10 CFR 50, Section 50.47, "Emergency Plans," and Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities." This plan is also based on the guidance provided in NUREG-0654/FEMA REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (Reference V)."

1.1 EMERGENCY PLAN PURPOSE

Progress Energy Florida, Inc. (PEF) has developed this Emergency Plan to respond to potential radiological emergencies at the LNP. The basic purpose of this Plan is to ensure that the state of on-site and off-site emergency preparedness provides reasonable assurance that adequate corrective and protective measures can and will be taken in the event of a radiological emergency at the site. With the cooperation and coordination of local and state organizations and their plans for emergency preparedness, this Plan integrates the necessary elements to provide effective emergency response.

The integrated emergency planning described in this document is intended to ensure that each party involved has a clear understanding of what the overall level of preparedness must be and what role it will play in the event of an emergency. In addition, the intent is that each party involved understand the capabilities, responsibilities, and obligations of the other parties, as well as the predetermined courses of action to be taken, upon receiving notification that an emergency or potential emergency exists at LNP.

The LNP Emergency Plan and implementing procedures outline the Emergency Preparedness Program, which has the following objectives:

- Protection of plant 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 on site and off site.
- Effective and timely implementation of emergency measures.
- Continued maintenance of an adequate state of emergency preparedness.

A list of documents that implement and maintain this Plan is located in Appendix 5.

1.2 LNP SITE DESCRIPTION

The LNP Site is located in Levy County, Florida. This is a large, primarily rural area located southwest of Gainesville, west of Ocala, and approximately 7 miles north of the Crystal River Energy Complex, an energy facility also owned by Progress Energy (Figure Intro-1).

LNP consists of two (2) pressurized water reactors (PWRs), Units 1 and 2. These units are based on the Westinghouse Electric Company, LLC (Westinghouse) AP1000 (AP1000) standard design. The major structures of Units 1 and 2 that contain radioactive materials are the Containment Buildings, Annex Buildings, Radwaste Buildings, and the Auxiliary Buildings. Figure Intro-1 shows the overall LNP Site location and the Crystal River-3 Nuclear Plant (CR3), as well as the Crystal River Training Center, in which the Emergency Operations Facility (EOF) is located. Figure Intro-2 shows the Levy site layout, and the locations of the on-site Emergency Response Facilities (ERF).

1.3 EMERGENCY PLANNING ZONES (EPZ)

1.3.1 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 LNP and is referred to as the 10-mile EPZ. Principal exposure sources from the plume exposure pathway are (a) external exposure to gamma and beta radiation from the plume and from deposited materials and (b) exposure of the internal organs to gamma and beta radiation from inhaled radioactive gases and/or radioactive particulates. The time of potential exposure can range in length from hours to days.

Figure Intro-3 shows the Plume Exposure EPZ, which includes portions of the Florida counties of Citrus, Levy, and Marion. Figure Intro-3 also shows the overlap of the LNP and CR3 10-mile radii. The State of Florida and the respective counties within the 10-mile EPZ have prepared plans for a response to an emergency at LNP. These plans describe their respective responsibilities, authorities, capabilities, and emergency functions.

1.3.2 INGESTION EXPOSURE PATHWAY EPZ

The Ingestion Exposure Pathway EPZ is defined as the area within an approximate 50-mile radius of the LNP 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 LNP contains both urban and rural areas. Figure Intro-4 shows the 50-mile Ingestion Exposure EPZ, which includes the Florida counties of Alachua, Citrus, Dixie, Gilchrist, Hernando, Lake, Levy, Marion, Pasco, Putnam, and Sumter.

A. ASSIGNMENT OF RESPONSIBILITY (ORGANIZATIONAL CONTROL)

In the event of an emergency situation at the LNP, 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.

1. EMERGENCY ORGANIZATION

a. State, Local, Federal, and Private Organizations

The principal state, county and municipal, and federal government organizations and other agencies interrelated to these local governments participating in emergency response activities within the 10-mile EPZ (plume exposure pathway) at LNP include the following:

1. State of Florida
2. State of Florida Department of Community Affairs, Division of Emergency Management (DEM)
3. Florida Department of Health's Bureau of Radiation Control (DHBRC)
4. Citrus County Emergency Management
5. Levy County Emergency Management
6. Marion County Emergency Management
7. Citrus Memorial Hospital
8. Seven Rivers Regional Medical Center
9. Local Emergency Medical Services
10. Local Fire Departments
11. U.S. Department of Energy (DOE)
12. U.S. Nuclear Regulatory Commission (NRC)
13. U.S. Department of Homeland Security (DHS/Federal Emergency Management Agency (FEMA))

14. Progress Energy – LNP Emergency Response Organization (ERO)

15. Electric Power Research Institute (EPRI)

16. Institute of Nuclear Power Operations (INPO)

17. Westinghouse

b. Concept of Operations

This section describes the relationships and the concept of operations for the organizations and agencies that are part of the overall LNP ERO that will respond to an emergency at LNP.

1. State of Florida

The State of Florida has primary responsibility for the local population and environs, including the possible need for evacuation. The principal state and county agencies having emergency responsibilities are described in the State Plan. The State Warning Point-Tallahassee (SWPT) is the primary notification point for activation of the State Plan.

The SWPT (or the Alternate SWPT – Tallahassee Weather Service: Florida State University Campus) is available on a 24-hour basis to receive emergency communications from LNP and, in turn, contact the state emergency response organizations.

Emergency notification is received from the LNP Emergency Coordinator via the State Hot Ringdown Telephone System. If the call to the SWPT is made from other than the State Hot Ringdown Telephone System, the SWPT Duty Officer verifies, with the Emergency Coordinator or designee, the authenticity of the message before transmission. He also verifies receipt of the message by each of the Risk Counties and the DHBRC. The Duty Officer notifies the DEM. The Duty Officer, with assistance from the DEM, then notifies all state emergency organizations (as required) as identified in Figure A-1.

2. State of Florida Department of Community Affairs, Division of Emergency Management (DEM)

The DEM is responsible for coordinating federal, state, and local radiological emergency response activities, and for preparing and maintaining the State Plan.

The DEM provides guidance and assistance in preparation of local emergency response procedures. The DEM provides personnel and equipment to emergency response facilities, and provides needed supplies to state and local political subdivisions.

The Director of the Division of Emergency Management is responsible for coordinating DEM emergency response. The DEM receives notification of an emergency at LNP via the SWPT; verifies the information contained in the notification messages; and alerts key state, local, and federal emergency response personnel, as appropriate.

The DEM coordinates initial off-site monitoring and assessment with Progress Energy until arrival of the DHBRC. The DEM also will initiate, if required, protective action responses, which could include evacuation of radiologically affected areas. The DEM is also responsible for providing a public information program for timely information regarding an emergency and for assisting local governments in providing warnings and instructions to the general public.

The DEM has a State Warning Point Duty Officer on duty on a 24-hour basis. With the availability of the State Emergency Management Communications Network, the State Hot Ringdown Telephone System, and the Florida Emergency Satellite Communications System (ESATCOM), it has the continuous means of instant liaison with the DHBRC, the state's Nuclear Power Plants, and the local and state agencies that would react to a radiological incident.

3. Florida Department of Health, Bureau of Radiation Control

The Director of the DHBRC is responsible for the evaluation and assessment of radiological emergencies in the State of Florida and for providing recommendations for protective actions to the DEM. The DHBRC will respond to any emergency that involves possible or actual release of radiological materials in order to protect health, safety, and property.

The DHBRC, as the principal radiological assessment agency, provides technical consultation and advice to state officials and agencies regarding radiation and radiological health (e.g., determination of radiation levels, health hazards, and decontamination). It develops comprehensive policies and programs for decontamination and mitigation of radiological hazards. It determines the severity of radiological emergencies when an actual release of radioactive materials occurs and makes

recommendations to state and local officials and agencies on protective actions to be taken based on technical analysis of the situation.

The DHBRC performs off-site monitoring, evaluates the extent of radiological contamination of the affected area, recommends protective actions for persons living within the 10-mile EPZ, and performs laboratory analyses of air, water, and food samples for the 50-mile ingestion EPZ. Other responsibilities are included in the following list.

a. Coordinating distribution of radiological data to the state and county response organizations.

b. Determining the severity of a radiological emergency when an actual radioactive release occurs, and making protective action recommendations to state and local officials and agencies.

c. Responding to an LNP emergency by proceeding to the EOF.

d. Maintaining liaison with state agencies, local governments, and nuclear power plants for planning and operational purposes.

e. Providing criteria and technical support for the decision to relax protective actions and allow recovery and re-entry into the affected area.

f. Providing radiological laboratory capability, including mobile laboratory facilities, such as the Mobile Emergency Radiological Laboratory (MERL) and field radiological instrumentation, equipment, and supplies to ensure measurements are properly and effectively carried out.

4. Citrus County Emergency Management

Citrus County Emergency Management is responsible for supporting any required evacuation of the public from portions of Citrus County, and for arranging for the housing of such evacuees.

The Chairperson of the Citrus County Board of County Commissioners, supported by the mayors of Crystal River and Inverness, Florida, has the responsibility for overall radiological emergency response planning. The Citrus County Emergency Operations Center (EOC) Director, or alternate, is responsible for coordinating emergency operations at the local level and for keeping local officials advised on the status of operations. The Director is also responsible for the coordination, development, and

maintenance of procedures to implement the county emergency plan.

The Citrus County Emergency Management organization operates from the Citrus County EOC in Lecanto, Florida. It maintains daily communications through the County's Fire Dispatch/EOC on the State Hot Ringdown Telephone System, ESATCOM, and commercial telephone on a 24-hour basis. It carries out emergency activities based on its emergency plan (Appendix I of the State Plan) and recommendations from Progress Energy and state organizations.

5. Levy County Emergency Management

Levy County Emergency Management is responsible for supporting any required evacuation of the public from Levy County, and for arranging for the housing of such evacuees.

The Chairperson of the Levy County Board of County Commissioners, in coordination with the mayors of Yankeetown and Inglis, Florida, has the responsibility for overall radiological emergency response planning. The Director, Levy County Emergency Management, or designee, is responsible for coordinating emergency operations at the local level and for keeping local officials advised of the status of operations. The Director also is responsible for the development and maintenance of procedures to implement the county emergency plan.

The Levy County Emergency Management organization operates from the Levy County EOC in Bronson, Florida. It maintains daily communications provided through the Sheriff's Office via the State Hot Ringdown Telephone System, ESATCOM, and commercial telephone on a 24-hour basis. It carries out emergency activities based on its emergency plan (Appendix I of the State Plan) and recommendations from Progress Energy and state organizations.

6. Marion County Emergency Management

Marion County Emergency Management is responsible for supporting any required evacuation of the public from Marion County, and for arranging for the housing of such evacuees.

The Chairperson of the Marion County Board of County Commissioners, in coordination with the mayor of Dunnellon, Florida, has the responsibility for overall radiological emergency response planning. The Director, Marion County Emergency Management, or designee, is responsible for coordinating

emergency operations at the local level and for keeping local officials advised of the status of operations. The Director also is responsible for the development and maintenance of procedures to implement the county emergency plan.

The Marion County Emergency Management organization operates from the Marion County EOC in Ocala, Florida. It maintains daily communications provided through the Sheriff's Office via the State Hot Ringdown Telephone System, ESATCOM, and commercial telephone on a 24-hour basis. It carries out emergency activities based on its emergency plan (Appendix I of the State Plan) and recommendations from Progress Energy and state organizations.

7. U.S. Nuclear Regulatory Commission

The NRC is the primary federal agency providing coordination and support to the licensee in the event of an emergency at a nuclear power plant. NRC responsibilities are directed toward a coordination of federal efforts to provide assistance to the licensee and state and local governments in their planning and implementation of emergency preparedness procedures.

The NRC response must be regarded primarily as supportive of, and not a substitute for, responsible action by Progress Energy and other key response organizations. The NRC must be continually informed of plant status and possible radiological consequences, and be frequently updated on plans for emergency and recovery actions and needs for assistance.

In the event of an emergency at LNP, contact is established and maintained with the Region II Incident Response Center. Operational information and radiological information are communicated to this office over a dedicated telephone from LNP. Emergency notification and operational information is communicated through the Emergency Notification System (ENS) and the Emergency Response Data System (ERDS); radiological information is communicated via the Health Physics Network (HPN). Other plant information is communicated through normal telephone service.

8. Department of Homeland Security (DHS/Federal Emergency Management Agency (FEMA))

The U.S. Department of Homeland Security (DHS) and its subordinate agency FEMA are assigned lead responsibility for

federal off-site nuclear emergency planning and response (per Title 44 CFR 351 and the Homeland Security Act of 2002).

The Homeland Security Act of 2002 established DHS as "a focal point regarding natural and manmade crises and emergency planning." DHS/FEMA 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, or an emergency declaration (Alert or higher classification at a nuclear facility) resulting from a security-related threat.

DHS/FEMA has the lead responsibility for off-site emergency preparedness around nuclear facilities. To meet this role, DHS/FEMA establishes policy and provides leadership in the coordination of all federal assistance and guidance to local and state governments for developing, reviewing, assessing, and testing the local and state radiological emergency response plans.

In the event of an emergency at LNP, the primary role of DHS/FEMA is to assure that appropriate federal assistance is available to local and state governments for implementing their radiological emergency response plans. DHS/FEMA Region IV will provide assistance and guidance jointly with other federal agencies.

9. Progress Energy – LNP Emergency Response Organization (ERO)

The LNP staff has the immediate and continuing responsibility for emergency response and control of emergency activities at the Site.

The LNP ERO and its functions are predefined. Personnel assignments are specified and updated on a continuous basis to provide automatic, unambiguous staffing of the LNP ERO in order to respond effectively within the designated time.

The LNP ERO is prepared to function on a 24-hour basis and performs the initial and primary emergency technical, radiological, warning, and health support response. This organization also evaluates the emergency and initiates the necessary technical actions to control it. It is also supported on a broad scale by numerous off-site organizations in the local, state, federal, and private sectors.

The Superintendent, Shift Operations (S-SO) at LNP has the responsibility and authority to declare an emergency classification and initiate appropriate actions in accordance with written procedures to mitigate the consequences of that emergency. The S-SO also has the responsibility to notify the Plant General Manager as soon as possible after an emergency classification has been determined. The S-SO serves as the Emergency Coordinator (EC) until the Plant General Manager, or designated alternate, arrives to assume the position of EC.

The EC is responsible for the direction of all activities at the plant site during any emergency. Should the evaluation indicate that extreme measures must be taken, the EC has the authority to direct any or all personnel to evacuate the site, to place any or all site generating units in a safe shutdown condition, and to notify all applicable agencies of the site's status. The EC ensures that appropriate actions are taken to mobilize emergency teams and to notify corporate management and other off-site supporting organizations and regulatory agencies as necessary. The EC reports to the EOF Director after the EOF is operational.

10. Citrus Memorial Hospital

Citrus Memorial Hospital in Inverness, Florida, will provide definitive medical care for serious cases of radiation exposure or contamination. To provide these services, the hospital offers fully equipped medical facilities with an adequate staff of physicians, nurses, and technical personnel skilled in the diagnosis and treatment of radiation injury and personnel contamination.

The plan designated by the hospital for emergency handling of radiation accident cases from LNP relates to the total effort by: (a) coordinating the medical disciplines committed to support the treatment of injuries involving radiation exposure and/or radioactive contamination; (b) providing plans, procedures, and training programs for the reception, diagnosis, and treatment of injured personnel; (c) designating the physical facilities and equipment to be used for initial emergency care and subsequent definitive care and treatment; and (d) designating physicians, medical support personnel, and alternatives to handle the radiation emergency patients.

The hospital will provide treatment, medical examinations, and laboratory services for Progress Energy employees and other persons designated by Progress Energy who have been involved in a radiation incident or who have been involved in actual or suspected exposure or contamination. When local hospital

facilities are considered inadequate by the hospital because of the nature or severity of the injury sustained, the injured person may be transferred to a regional facility for hospitalization. Medical records, including bioassay records, will be maintained permanently by the hospital.

11. Seven Rivers Regional Medical Center

Seven Rivers Regional Medical Center in Crystal River, Florida will receive and treat casualties resulting from any non-radiological or radiological emergency situation. This hospital will be used when it is the closest facility to provide the necessary services.

The hospital will acknowledge and respond to all emergency medical requests from those response organizations and management having key operational roles at LNP.

The hospital will furnish the services of physicians to Progress Energy employees and members of the public. The hospital will accept all non-radiological patients dispatched from LNP (or other sites within the EPZs) and will accept individuals involved in actual or suspected radiation exposure or contamination. Where necessary, the hospital will utilize the radiological support provided by the LNP staff (see Section L).

12. Local Emergency Medical Services

Ambulance service is available on a 24-hour basis through local county ambulance services to provide assistance in the event of an emergency at LNP.

Upon request, ambulance services will be provided immediately, including emergency medical treatment and/or transportation to a designated hospital facility. The service will provide emergency service to Progress Energy employees and members of the public and, where necessary, shall utilize the radiological support provided by the LNP staff.

13. Local Fire Departments

In the event of a fire at LNP, the on-site Fire Brigade will respond initially to the fire and if necessary, call upon the local fire departments for assistance. The local fire departments are primarily comprised of volunteers. In the event of a large area fire at LNP, local fire departments will be called upon for assistance as will larger departments from outside the immediate area, as warranted.

14. Westinghouse Electric Company, LLC

Westinghouse provides technical and operational support to the LNP ERO specific to the designs of Units 1 and 2. Westinghouse will also provide and coordinate for other emergency support activities.

2. FUNCTIONS, RESPONSIBILITIES, AND LEGAL BASIS

The emergency preparedness program for LNP will require the coordinated response of several organizations. A summary of primary response organizations and the emergency title of the individual in charge is contained in Table A-1. Figures A-1 and A-2 illustrate the interrelationships between the key response organizations, and Figure A-3 illustrates the state organization for radiological response. The on-site emergency response organization, including functions, responsibilities, and key individuals is described in detail in Section B of this plan.

3. WRITTEN AGREEMENTS

Progress Energy has established agreements in the form of certification letters with local emergency response support services, including firefighting, and medical and hospital services. Appendix 3 of this Plan provides a list of certification letters for organizations providing the required services.

The response functions for the state and county organizations are established in the Florida Statutes, Chapter 252 (Reference G).

4. CONTINUOUS OPERATIONS

Progress Energy maintains capability for continuous operations through training of multiple responders for key emergency response positions, consistent with the training requirements established in Section O of this Plan. The Emergency Coordinator or EOF Director, as appropriate, bears responsibility for ensuring continuity of technical, administrative, and material resources during emergency operations.

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

Organization	Contact	General Location	Specific Location	Classification
LNP ERO	Emergency Coordinator	On-site	Inglis, FL	Corporate
EOF Staff	EOF Director	Off-site	Crystal River, FL	Corporate
State Warning Point-Tallahassee	State Warning Point Duty Officer	Off-site	Tallahassee, FL	State
Division of Emergency Management (DEM)	Director, Division of Emergency Management	Off-site	Tallahassee, FL	State
Department of Health, Bureau of Radiation Control (DHBRC)	Operations Officer	Off-site	Orlando, FL	State
Citrus County Emergency Management	Director, Citrus County Emergency Management	Off-site	Lecanto, FL	County
Levy County Emergency Management	Director, Levy County Emergency Management	Off-site	Bronson, FL	County
Marion County Emergency Management	Director, Marion County Emergency Management	Off-site	Dunnellon, FL	County
Citrus Memorial Hospital	Director	Off-site	Inverness, FL	Local
Seven Rivers Regional Medical Center	Director	Off-site	Crystal River, FL	Local
Local Emergency Medical and Fire Fighting Services	Director	Off-site	Crystal River, FL	Local
Nuclear Regulatory Comm. (Site Team)	Director – Site Team Ops. or Interim Director	Off-site	EOF, Crystal River, FL	Federal
Nuclear Regulatory Commission (Region II)	Regional Administrator, Region II	Off-site	Atlanta, GA	Federal

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

Organization	Contact	General Location	Specific Location	Classification
Nuclear Regulatory Commission (Ops. Center)	Project Manager	Off-site	Rockville, MD	Federal
DHS/FEMA	Director, Region IV	Off-site	Atlanta, GA	Federal
Florida Department of Transportation	Director	Off-site	Tallahassee, FL	State
Westinghouse	Emergency Response Director	Off-site	Monroeville, PA (Command Center)	Private
Institute of Nuclear Power Operations (INPO)	Project Manager	Off-site	Atlanta, GA	Private
Nuclear Safety Department, Nuclear Power Division of Electric Power Research Institute (EPRI)	Project Manager	Off-site	Palo Alto, CA	Private
Contractors	Various	Off-site	Various	Private

B. ON-SITE EMERGENCY ORGANIZATION

Initial staffing of the LNP Emergency Response Organization (ERO) is provided from personnel normally employed at the Site. The LNP ERO is shown in Figure B-1. If necessary, this staff will be augmented by additional Progress Energy personnel and other organizations.

General elements of the LNP organization are briefly described in Section A. This section provides additional detail and includes a description of the ERO, a discussion of command and control, and a description of ERO personnel responsibilities.

1. ON-SITE EMERGENCY ORGANIZATION

The personnel and resources of the LNP organization utilized for normal operations provide the basic capabilities that will be utilized in emergency situations. All plant activities are under the direction and control of the Plant General Manager. To provide support in required areas, the normal organization is broken down into functional areas led by designated managers. As appropriate, these areas are further subdivided according to specific technical disciplines or support functions.

The following list details the LNP operating organization for emergency response. Table B-1 provides a full description of minimum staffing requirements for emergencies.

a. One (1) Superintendent, Shift Operations.

b. Two (2) Control Room Supervisors, each with an SRO License.

c. Four (4) Control Operators, each with a Reactor Operator License.

d. A minimum of four (4) other Operators (not required to be licensed).

e. Two (2) Health Physics Technicians.

f. Two (2) Chemistry Technicians.

g. One (1) Shift Technical Advisor (STA).

With the exception of the two (2) Health Physics technicians and two (2) Chemistry technicians, the individuals listed above will be part of the Nuclear Plant Operations organization.

In addition to these personnel, the full organizational complement of Chemistry, Health Physics, Maintenance, Technical Support, and Administrative personnel will be available during normal working hours.

Upon declaration of an emergency, designated members of the normal staff complement corresponding roles within the emergency response organization. For example, radiation protection personnel undertake radiation protection activities, security personnel undertake security activities, engineering personnel focus on plant assessment and technical support for operations, and operations personnel focus on plant operations.

2. EMERGENCY COORDINATOR

The Superintendent - Shift Operations will assume the position of Emergency Coordinator (EC) of the affected unit until relieved by the Plant General Manager or designated alternate. Upon recognition of an emergency condition, the individual filling this position assumes the duties of the EC until relieved or until termination of the emergency condition, whichever comes first.

The individual filling the EC role has the responsibility and authority to initiate required emergency response actions, including notification of affected state, local, and federal authorities and provision of Protective Action Recommendations to off-site authorities.

3. EMERGENCY COORDINATOR LINE OF SUCCESSION

If the Superintendent - Shift Operations is rendered unable to fulfill the duties and responsibilities of the EC or becomes incapacitated for any reason, a designated alternate shall assume the position of EC. The Plant General Manager or a designated alternate assumes the position of EC as soon as possible after an emergency classification has been determined.

4. EMERGENCY COORDINATOR RESPONSIBILITIES

The EC has the responsibility and authority to declare an emergency classification and to initiate appropriate actions in accordance with written procedures to mitigate the consequences of the emergency. The EC also has the responsibility to notify the Plant General Manager, or the designated alternate, who shall assume the position of EC.

The EC is responsible for the direction of all activities at the LNP Site during any emergency. The EC shall also evaluate the emergency and take the necessary actions to maintain control. Should the EC's evaluation indicate that extreme measures must be taken, the EC has the authority to direct any or all personnel to evacuate the LNP Site, to direct a safe shutdown, to initiate accountability and evacuation of personnel, and to notify all applicable agencies of the plant status or required outside assistance. Should an emergency situation appear to require long-term response and support, the EC shall provide personnel assignments for continuing response. The highest level of authority for on-site emergency

activities will remain with the EC who may delegate responsibilities to other personnel, as the EC deems necessary.

The EC shall not delegate the responsibility for decisions related to:

1. Emergency classification
2. Notifications of state, counties, and NRC
3. Protective action recommendations to state and local authorities responsible for off-site emergency measures
4. Approval of planned radiation exposures for LNP personnel in excess of 5 rem total effective dose equivalent (TEDE) or entry into radiation fields greater than 25 rem/hour
5. Review and approval of deviations from Technical Specifications or license conditions if the EC – TSC is a Superintendent – Shift Operations, or ensure that such deviations are approved by a Superintendent – Shift Operations
6. Authorization of the administration of potassium iodide to on-site emergency workers
7. Termination of the emergency.

When the EOF is declared operational and staffed by both Progress Energy and DEM personnel, the EOF Director will assume responsibility for protective action recommendations and notifications to state and county authorities (Items 2 and 3). The EC reports to the EOF Director.

5. PLANT EMERGENCY RESPONSE STAFF

The following sections describe the positions, titles, and major tasks of the personnel assigned to the functional areas of emergency activities. Table B-1 provides a complete summary of minimum staffing requirements for emergencies. Figures B-2 and B-3 describe augmented staffing to support activation of emergency response facilities, including minimum staffing and support positions.

5.1 ON-SITE EMERGENCY RESPONSE ORGANIZATION

In the event of an emergency, the Superintendent-Shift Operations assumes the role of Emergency Coordinator (EC), on the affected unit. In the event of a site-wide emergency (e.g., security event or natural phenomena), Unit 1 will take the lead, and the Superintendent-Shift Operations will assume the role of EC. During a classified emergency, only the TSC and OSC of the affected or lead unit will be activated.

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

   1. Direct the activities of the Operations staff (Unit Senior Control Operators [USCOs], Control Operators [COs], and Non-licensed Operators [NLOs]).

   2. Recognize an off-normal condition as indicated by instrument readings, direct observation of plant conditions, or an on-site/off-site 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 EC – Control Room (CR) until relieved by the Plant General Manager or designated alternate.

b. Emergency Coordinator – CR: The primary person assigned to the position of EC during the initial stages of an emergency is the Superintendent – Shift Operations. The assigned alternates are on-shift Licensed Senior Control Operators, as designated in accordance with operations procedures.

c. Emergency Communicator - CR: Initially filled with on-shift personnel, the Emergency Communicator is appointed by and reports to the EC and is responsible for communicating with the following:

   1. Local Immediate Response Organizations (e.g., medical, fire, and law enforcement), if their assistance is needed.

   2. The plant ERO when LNP emergency facilities are being activated.

   3. Off-site authorities (e.g., state, counties, and the NRC) to perform required notifications of the declaration, upgrading, and termination of an emergency prior to the activation of the Technical Support Center (TSC) and EOF.

d. Emergency Coordinator – TSC: Once the EOF/TSC are activated, the EC – TSC is responsible for overall command and control of the on-site response to the emergency. The EC – TSC is also responsible for providing guidance to the Accident Assessment Coordinator, Radiation Controls Coordinator, Repairs Coordinator, Security Coordinator, and Communications/Report Coordinator.

Upon activation of the Technical Support Center, the EC – TSC relieves the EC – CR of the following major responsibilities:

1. Classification of the emergency.

2. Development of Protective Action Recommendations (PARs).

3. Notifications of State, counties, and NRC.

4. Establishment of on-site mission priorities in response to the emergency.

5. Approval of planned radiation exposures for on-site personnel in excess of 5 rem TEDE or entry into radiation fields greater than 25 rem/hr.

6. Review and approval of deviations from Technical Specifications or license conditions if the EC – TSC is a Superintendent – Shift Operations, or ensure that such deviations are approved by a Superintendent – Shift Operations.

7. Authorization of the administration of potassium iodide to on-site emergency workers.

8. A trained Severe Accident Management Guidelines (SAMG) decision maker whose focus is on the development and prioritization aspect of the SAMG strategy.

9. Termination of the emergency.

e. Accident Assessment Coordinator: The Accident Assessment Coordinator is located in the TSC and reports to the EC-TSC; responsible for coordinating Accident Assessment Team strategies to support accident mitigation.

f. Repairs Coordinator: The Repairs Coordinator is located in the TSC and reports to the EC-TSC; responsible for coordinating equipment repair priorities with the TSC and ensuring dispatch of personnel through the OSC Manager.

g. Radiation Controls Coordinator: The Radiation Controls Coordinator is located in the TSC and reports to the EC – TSC; responsible for ensuring that the EC and other coordinators in the TSC are kept informed of radiological/chemical conditions on and off-site; and providing direction for onsite health physics and chemistry response actions in the TSC and OSC.

h. Security Coordinator: The Security Coordinator is located in the TSC and reports to the EC-TSC; responsible for maintaining plant security in accordance with the Safeguards Contingency Plan; and directing Security in the implementation of emergency response activities, including evacuation/accountability of personnel and access control.

i. Communications/Report Coordinator: The Communications/Report Coordinator is located in the TSC and reports to the EC-TSC; responsible for notifications of emergency status to the state, county, and NRC.

j. OSC Manager: The OSC Manager is located in the OSC and reports to the Repairs Coordinator in the TSC; responsible for providing direction to the total on-site maintenance and equipment restoration effort and coordinating dispatch of OSC teams with the OSC Maintenance, Chemistry, and Health Physics coordinators.

k. Chemistry Team: Chemistry Teams report to the OSC Chemistry Coordinator and are composed of plant chemistry personnel. They assemble initially in the OSC and are subsequently dispatched to sampling stations and the laboratory.

l. Radiological Control Teams: Radiological Control Teams report to the OSC Health Physics Coordinator and are composed of health physics personnel. They initially assemble in the OSC and are dispatched whenever radiation control and decontamination functions are needed (as determined by the TSC Radiation Controls Coordinator).

m. 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. The Fire Brigade reports to the EC – CR or OSC Manager after activation of the OSC.

n. 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 EC – CR or OSC Manager after activation of the OSC.

5.2 OFF-SITE EMERGENCY RESPONSE ORGANIZATION

The Off-site ERO is activated during an emergency classified as an Alert or higher. It functions under the direction of the EOF Director, and is responsible for off-site emergency response activities. These activities include providing information to, and interface with, off-site authorities, monitoring off-site results of

the event, protecting plant personnel outside the Protected Area(s), supporting the on-site organization and coordinating the flow of information to the Public Information ERO.

a. EOF Director: The EOF Director, located in the Emergency Operations Facility (EOF), is responsible for overall command and control of the LNP response to the emergency. The EOF Director is also responsible for providing guidance to the Technical Support Coordinator, Radiation Controls Manager, and Report Preparation Director.

   Upon activation of the EOF, the EOF Director relieves the EC – CR of the following major responsibilities:

   1. Approval of required notifications to the state/counties.

   2. Approval of planned radiation exposures for off-site LNP personnel in excess of 5 rem TEDE or entry into radiation fields greater than 25 rem/hr.

   3. Approval of the administration of potassium iodide to off-site LNP emergency workers.

   4. Approval of Protective Action Recommendations.

   5. Direct interface with off-site authorities.

   6. Coordination of Dose Projection and Environmental Monitoring activities.

   7. A trained SAMG decision maker whose focus is on the off-site consequences of the strategy recommended by the TSC. The EOF Director has the ultimate approval authority for strategy implementation.

c. Radiation Controls Manager: The Radiation Controls Manager is located in the EOF and reports to the EOF Director; responsible for providing direction for dose assessment and environmental monitoring activities; and keeping the EOF staff informed of radiological conditions off-site.

d. Report Preparation Director: The Report Preparation Director is located in the EOF and reports to the EOF Director; responsible for initiating notifications to the state and counties of emergency status.

e. Technical Support Coordinator: The Technical Support Coordinator is located in the EOF and reports to the EOF Director; responsible for

assisting the TSC Accident Assessment Team in identifying accident mitigation activities and monitoring critical safety system functions.

f. Representatives to the State/County EOCs: The representatives to the State/County EOCs are located at the following:

FL State EOC	State Administrative Building in Tallahassee, FL
Citrus County EOC	Lecanto, FL
Levy County EOC	Bronson, FL
Marion County EOC	Ocala, FL

These representatives act as technical liaisons to facilitate communications and the coordination of information flow between the EC or EOF Director and state/local authorities. They report to the Assistant EOF Director.

d. Emergency News Center (ENC): The ENC Staff is responsible for dissemination of information to the public and the news media under the direction of the Public Information Director.

Outside organizations that support LNP in an emergency include CR3 and other organizations as described in Section A, Assignment of Responsibility (Organizational Control).

6. INTERFACES BETWEEN FUNCTIONAL AREAS

Figure A-1 illustrates the interfaces among functional areas of LNP emergency response activity, Progress Energy corporate support, and the affected state, local, and federal government response organizations.

7. CORPORATE SUPPORT FOR THE PLANT STAFF

Within the overall organization of Progress Energy, additional elements exist to directly control and support the operation of LNP. The Plant General Manager and the entire LNP staff are a part of the Progress Energy Nuclear Operations organization, headed by the Vice President, Levy Nuclear Plant. The Vice President, Levy Nuclear Plant, reports to the Senior Vice President and Chief Nuclear Officer, Nuclear Generation, who, in turn, reports to the Chief Executive Officer – Progress Energy Inc.

In addition to Plant Operations, the Nuclear Operations organization consists of organizational elements that provide additional administrative and technical support to ensure continued safe plant operation in compliance with operational

commitments and applicable licensing requirements and regulations. These elements include Engineering, Support Services, Training, and Nuclear Assessments.

Upon declaration of an Alert, Site Area Emergency, General Emergency, or Unusual Event, if conditions warrant, the EC directs the activation and notification of the on-site and off-site Emergency Response Facilities (ERFs). Progress Energy management, technical, and administrative personnel staff the EOF and other facilities and provide augmented support for the plant staff as shown in Table B-1.

In addition to the minimum required staff, additional personnel report to the EOF to augment the minimum staff. This augmentation would occur within the required time specified in Table B-1.

In the event of an emergency at LNP that requires personnel and other support resources beyond those available within the LNP Emergency Organization, augmentation is available from various off-site organizations. Primary off-site support is available from the Nuclear Generation Group organization. This support is initiated upon activation of the EOF. Corporate support is also available as described in plant procedures. The following list describes other areas of support within this Plan.

a. Logistics support for emergency personnel is addressed in Section A and Section B of this Plan.

b. Technical support for planning and reentry/recovery operations is addressed in Section M of this Plan.

c. The EOF Director has the ultimate responsibility for directing the corporate emergency response. Corporate support is coordinated between the Emergency Coordinator and the EOF Director. The EOF Director and staff serve as the point of contact among LNP personnel, the corporate emergency response staff, and governmental authorities.

d. The Corporate Communications organization coordinates with governmental authorities and controls the release of information to news media during emergencies. Section G of this Plan discusses the public information function.

8. SUPPORT FROM CONTRACTOR AND PRIVATE ORGANIZATIONS

The principal organizations in the private sector that are part of the overall response organization are as follows:

a. Westinghouse

b. Citrus Memorial Hospital

c. Seven Rivers Regional Medical Center

d. Local Emergency Medical Services

e. Local Fire Departments

f. The Independent Telephone Companies

g. Local Radio and Television Stations

The Institute of Nuclear Power Operations (INPO) serves as a clearinghouse for industry wide support during an emergency. When notified of an emergency situation, INPO provides emergency response, as requested. INPO provides the following emergency support functions:

a. Assistance to the affected utility in locating sources of emergency manpower and equipment.

b. Analysis of the operational aspects of the incident.

c. Dissemination to member utilities of information concerning the incident.

d. Organization of industry experts who could advise on technical matters.

If requested, one or more suitably qualified members of the INPO staff will report to the EOF Director and assist in coordinating INPO's response to the emergency.

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

Functional Area	Location	Major Tasks	Emergency Positions	Minimum Shift Size (Unit 1)	Minimum Shift Size (Units 1 & 2)	Capability for Additions	
						30-45 min	60-75 min
1. Plant Operations and Assessment of Operational Aspects	Control Room	Control Room Staff	S-SO[a] USCO Control Operators Non-Licensed Operators	1 1 2 2[b]	1 2 4 4[b]	-- -- -- --	-- -- -- --
2. Emergency Direction and Control	Control Room	--	EC – CR (S-SO[c])	1	1	--	--
			EOF Director [d]	--	--	--	1
			EC – TSC[d]	--	--	--	1
3. Notification and Communication	Control Room/TSC	Emergency Communicator	Plant Personnel	1	2	1	2
4. Radiological Assessment	EOF	Off-site Dose Assessment[b]	Dose Projection Team Leader	--	--	1	--
	EOF	Off-site Surveys	Environmental Monitoring Team Personnel	--	--	2	2
	TSC	On-site Surveys	Radiological Control Team Personnel	--	--	1	1
	TSC	In-plant Surveys	Radiological Control Team Personnel	1	2	1	1
	TSC	Chemistry	Chemistry Team Personnel	1	2	--	1

(Continued on next page)

NOTES:

a) After activation of the EOF and TSC.

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

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

d) Overall direction of facility response is assumed by the EOF Director when all facilities are activated. The direction of minute-to-minute facility operations remains with the EC – TSC.

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

Functional Area	Location	Major Tasks	Emergency Positions	Minimum Shift Size (Unit 1)	Minimum Shift Size (Units 1 & 2)	Capability for Additions	
						30-45 min	60-75 min
5. Plant Engineering, Repair and Corrective Actions	TSC	Technical Support	Shift Technical Advisor	1	1	--	--
	TSC		Core Performance Engineering	--	--	1	--
	TSC		Mechanical Engineering	--	--	--	1
	TSC		Electrical Engineering	--	--	--	1
	TSC	Repair and Corrective Actions	Mechanical Maintenance	1[e]	1[e]	--	2
	TSC		Electrical/I&C Maintenance	1[e]	1[e]	2	1
6. In-plant Protective Actions	Main Assembly Area	Radiation Protection	Radiological Control Team Personnel	1	1	2	2
7. Fire Fighting	Main Assembly Area	--	--	5[f]		Local Support	
8. First Aid and Rescue Operations	Main Assembly Area	--	Plant Personnel	2[e]		--	--
9. Site Access Control	Main Assembly Area	Security and Accountability	Security Team Personnel	[g]	[g]	[g]	[g]
LNP TOTAL (Less Security):				**14**	**22**	**11**	**16**

NOTES:

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

f) Fire Brigade per FSAR.

g) Per Security Plan.

C. EMERGENCY RESPONSE SUPPORT AND RESOURCES

This section describes emergency support arrangements among state, local, and Progress Energy facilities and individuals providing emergency services other than those already cited. Those response support organizations from the state, local, federal, and private sectors available to assist in an emergency at LNP are identified and described in Section A, "Assignment of Responsibility (Organization Control)."

1. FEDERAL RESPONSE CAPABILITY

Upon notification of a hazard to public health and safety by the Emergency Coordinator (EC), the U.S. Nuclear Regulatory Commission (NRC), acting as the cognizant federal agency, will initiate and coordinate federal response to the emergency. This response may also be initiated by request from state and/or local governments. Details of the federal response are outlined in the National Response Framework and include actions to be taken by as many as 12 federal agencies. These actions primarily include assistance in off-site monitoring and assessment, protective action recommendations, and assistance in implementation of protective actions.

a. Under some complex circumstances, it may be necessary to obtain off-site radiological monitoring support from federal government agencies. The Emergency Operations Facility (EOF) Director may request assistance directly or through the NRC (federal coordinating agency).

b. Federal radiological monitoring assistance may be provided by the NRC. Progress Energy estimates that NRC support would arrive at the LNP site within 3 to 4 hours following the order to deploy, based on driving time. This response time may be shortened by use of aircraft. Progress Energy expects that NRC assistance from NRC's offices in Atlanta, Georgia, will arrive in the LNP site vicinity within 7 to 8 hours following notification; the team may also reduce this time by use of aircraft.

c. Progress Energy will provide facilities and resources needed to support the federal response through the EOF. Progress Energy will provide office space and telephone communications for NRC personnel in the TSC, EOF, and ENC.

2. OFF-SITE ORGANIZATION REPRESENTATION IN THE EMERGENCY OPERATIONS FACILITY

Each principal off-site organization will, upon request, dispatch a representative(s) to the EOF. The EOF organization will dispatch a representative to principal off-site local and state governmental EOCs to provide technical expertise and assistance to these organizations.

3. RADIOLOGICAL LABORATORIES

Radiological laboratories, their capabilities, and expected response times are listed in Table C-1. These laboratories can be used by the LNP Emergency Response Organization (ERO) in an emergency situation.

Progress Energy's H.B. Robinson Nuclear Plant, in Hartsville, South Carolina, and Crystal River-3 Nuclear Plant, in Red Level, Florida, have the capability to provide post-accident analytical services, particularly for high-level radioactivity samples. The Department of Health, Bureau of Radiation Control (DHBRC) will provide services for low-level radioactivity samples and for environmental monitoring.

4. OTHER SUPPORTING ORGANIZATIONS

Nuclear and other facilities, organizations, and individuals, other than those already cited in Section A, which can be relied upon in an emergency to provide assistance include Oak Ridge Associated Universities (ORAU). ORAU is available to provide back-up support for the definitive care and treatment of seriously irradiated persons.

Table C-1
Radiological Laboratories – Capabilities

Radiological Laboratories	Capabilities
H.B. Robinson Nuclear Plant	High-level radioactivity samples analytical services
Crystal River-3 Nuclear Plant	High-level radioactivity samples analytical services
Department of Health, Bureau of Radiation Control	Low-level radioactivity samples and environmental monitoring

D. EMERGENCY CLASSIFICATION SYSTEM

This section describes the emergency classification system at LNP. The emergency classification system is based on the four emergency classes described in 10 CFR 50, Appendix E. These four emergency classes represent a hierarchy of emergencies based on potential or actual accidents presented to plant personnel and the general public. Their order of increasing severity, as discussed in the following subsections, is UNUSUAL EVENT, ALERT, SITE AREA EMERGENCY, and GENERAL EMERGENCY.

The system was established by the NRC to describe response to a formal set of threshold conditions that 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.

1. CLASSIFICATION SYSTEM

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

Emergency Action Levels (EALs) for this classification are selected based upon the potential to degenerate to a more severe situation.

The purpose of the UNUSUAL EVENT classification is to bring the operating staff to a state of readiness in the event of escalation to a more severe action level classification, and to provide for systematic handling of event information and its related decision making.

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 hostile action. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

As in the case of the UNUSUAL EVENT, the ALERT classification includes emergency situations which are not expected to threaten the public, but for which it is deemed prudent to alert the off-site emergency organizations and mobilize a portion thereof.

The purpose of the ALERT classification is to assure that emergency personnel are readily available to respond if situations become more serious, or to perform

confirmatory radiation monitoring as required, and to provide off-site authorities with current status information.

Also, since those events initiating an ALERT classification are those with the potential for limited release of radioactive material to the environment, broader assessment actions shall be initiated than those utilized for an UNUSUAL EVENT.

1.3 SITE AREA EMERGENCY

Events are in process or have occurred which involve actual or likely major failures of Plant functions needed for protection of the public or hostile action that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment need 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.

This emergency classification, unlike the two previously described classifications, is very likely to involve some radiation exposure to the public and the potential for escalation to the GENERAL EMERGENCY classification.

The purpose of the SITE AREA EMERGENCY classification is to: (a) assure that response centers are staffed; (b) assure that Radiation Monitoring Teams are dispatched; (c) assure that personnel required for evacuation of near-site areas are at duty stations if the situation becomes more serious; and (d) provide current information for consultation with off-site authorities and the public. Its purpose is not to initiate protective actions.

1.4 GENERAL EMERGENCY

Events which are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or hostile action 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 off-site for more than the immediate site area.

It also includes other accidents that have large radioactive release potential, such as fuel handling and waste gas system accidents. This is the most severe classification of emergency.

The purpose of the GENERAL EMERGENCY classification is to (a) initiate predetermined protective actions for the public; (b) provide continuous assessment of information from on-site and off-site measurements; (c) initiate additional measures indicated by event releases or potential releases; and (d) provide current information and consultation with off-site authorities and the public. Since the lower limits of the EPA PAGs are likely to be exceeded upon the declaration of a GENERAL EMERGENCY, the Emergency Coordinator may recommend some protective actions.

2. EMERGENCY ACTION LEVELS (EALS)

This section incorporates by reference NEI 07-01, Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors, Rev. 0, dated March, 2008, (Reference K) which is currently under review by NRC staff. Because this document has not yet been endorsed by the NRC, EALs contained in this Plan will be subject to further review and modification based on the version of NEI 99-01 ultimately endorsed in a future revision to NRC Regulatory Guide 1.101, or other accepted guidance, modified consistent with the improvements to facility design and operation as reflected in the AP1000 Design Control Document (DCD). Appendix 4 provides the parameter values and equipment status that are indicative of each emergency class.

3. STATE/LOCAL EMERGENCY ACTION LEVEL SCHEME

The State of Florida and local counties of Citrus, Levy, and Marion, support the emergency classification and emergency action level scheme established by LNP. The content of the EALs is reviewed with the state and county authorities on an annual basis. Additional information is available in the State of Florida Radiological Emergency Management Plan (Annex A to the State Comprehensive Emergency Management Plan), and respective appendices of county radiological emergency plans.

4. OFF-SITE EMERGENCY PROCEDURES

The State of Florida and local counties of Citrus, Levy, and Marion, have procedures in place that provide for emergency actions to be taken, which are consistent with the emergency actions recommended by LNP. These procedures also address local off-site conditions. Additional information is available in the State of Florida Radiological Emergency Management Plan (Annex A to the State Comprehensive Emergency Management Plan), and respective appendices of county radiological emergency plans.

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 LNP. This section also outlines the content of initial and follow-up messages to response organizations in the 10-mile Plume Exposure Pathway Emergency Planning Zone (EPZ).

Progress Energy, in cooperation with state and county agencies, has established mutually agreeable methods and procedures for notification of off-site response organizations consistent with the emergency classification and action level scheme, as described in Section D, "Emergency Classification System." The use of emergency classifications as the primary basis for notification has been mutually agreed upon by applicable state, local and federal response organizations. Table E-1 describes the notification steps associated with each emergency classification.

Details regarding notification responsibilities, communications systems, and information required to be transmitted to off-site agencies, including provisions for message verification, are described in appropriate emergency plan implementing procedures.

1. NOTIFICATION AND MOBILIZATION OF EMERGENCY RESPONSE PERSONNEL

1.1 PROGRESS ENERGY EMERGENCY RESPONSE ORGANIZATION

The Emergency Coordinator (EC) is responsible for classifying an event under the appropriate emergency classification and directing the notification and mobilization of on-site and off-site personnel.

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

Notifications will be made to personnel assigned to the Emergency Response Organization (ERO). ERO members are requested to respond, as directed by the Emergency Coordinator. If the emergency involves a Security Threat, alternate assembly areas may be used to protect the responding ERO members.

In addition to the PA system, the LNP Site staff is informed of an emergency condition through the use of both audible and visual alarms. Separate, distinct, audible alarms are available to alert personnel of a fire, building evacuation, and Site evacuation. The EC or designee will use the LNP PA System to inform personnel of specific emergency conditions or instructions, and to activate the LNP ERO. In the event that personnel required to staff emergency teams are not on-site, they may be contacted by commercial telephone and/or telephone-activated

pager. Telephone numbers of ERO personnel are available in the Emergency Telephone Directory.

Corporate personnel within the ERO will be notified of an emergency, in accordance with implementing procedures.

1.2 OFF-SITE EMERGENCY RESPONSE ORGANIZATIONS

a. State of Florida, Levy, Citrus, and Marion Counties

The EC in the Control Room or the TSC, as applicable, is responsible for notifying state and local agencies. Once the Emergency Operations Facility (EOF) is operational, this responsibility is transferred to the EOF Director. Once notified by LNP, state and local agencies are then responsible for notifying appropriate response personnel in accordance with their emergency plans and procedures.

A notification shall be made within fifteen (15) minutes of:

- Initial emergency classification;
- Classification escalation;
- Issuance of, or change to a Protective Action Recommendation (PAR) for the general public;
- Change in radiological release status, occurring outside of an event classification or PAR notification;
- Event termination.

The emergency warning points are simultaneously notified using a dedicated notification system. Commercial telephone lines and/or radios are available as backup notification methods.

b. Nuclear Regulatory Commission (NRC)

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 LNP and the NRC is the Emergency Notification System (ENS). Commercial telephone lines are available as backup notification methods.

c. Other Support Organizations

In the event that additional assistance for radiological assessments is required, health physics support from the Florida Department of Health, Bureau of Radiation Control (DHBRC) is available in accordance with the State Plan. Upon classification of an emergency as an UNUSUAL EVENT or ALERT, the DHBRC is notified and alerted of the possible need for assistance. If an emergency is classified as a SITE AREA EMERGENCY

or GENERAL EMERGENCY, or threatens to escalate to these classifications, specific assistance for off-site radiological monitoring by the DHBRC is requested. The DHBRC will immediately mobilize its Radiological Emergency Team to assemble at the EOF to provide assistance through its Mobile Emergency Radiological Laboratory (MERL). The Emergency Preparedness Telephone Directory provides appropriate telephone numbers for off-site emergency contacts.

2. MESSAGE CONTENT

The content of the messages have been established in conjunction with the state and local governments and include the class of emergency, whether a release is taking place, basic meteorological data, potentially affected population/areas, and any recommended protective actions.

As additional information describing the emergency situation and local conditions becomes available, supplemental messages containing more detail than the initial notification will be provided.

3. FOLLOW-UP MESSAGES TO OFF-SITE AUTHORITIES

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 LNP site boundary and at 2, 5, and 10 miles.

i. Emergency response actions underway.

j. Protective Action Recommendations.

k. Requests for any on-site support by off-site organizations (e.g., firefighting or medical transportation support).

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

Additional remarks or comments may also be provided as warranted.

4. DISSEMINATING INFORMATION TO THE AFFECTED PUBLIC

The state and county emergency response plans describe procedures for state and county officials to make a public notification decision promptly on being informed by the plant of an emergency. The system for disseminating information to the public includes notification by pre-scripted messages through appropriate broadcast media such as the Emergency Alert System (EAS).

5. INSTRUCTIONS TO THE PUBLIC IN THE PLUME EXPOSURE EPZ

The primary method of alerting the public is by sounding the Alert and Notification System. The Alert and Notification System consists of a system of sirens that alert the public in the 10-mile EPZ of the recommendation to initiate protective actions. Upon hearing the warning sirens, the public is instructed to tune their radios or televisions to emergency channels for further instructions. Local and state actions are then instituted in accordance with the State Plan to ensure the implementation of appropriate protective measures.

Notification of the public, particularly to take protective actions such as sheltering or evacuation, is the responsibility of local and State Emergency Management authorities. Recommendations for such actions may come from various local, state, and federal organizations, including Progress Energy. Plans, however, have been developed to notify and provide information to the public regarding the general nature of potential emergencies. This information will be provided through news releases or press conferences held at the Emergency News Center (ENC) in Crystal River, Florida, which is a shared facility with CR3. Section G of this Plan provides additional information regarding public education and information.

The Emergency News Center staff, under the direction of the Public Information Director, is responsible for the coordination and dissemination of information to the public and the media, including appropriate coordination with state, local, and federal organizations.

6. WRITTEN MESSAGES TO THE PUBLIC

Written pre-planned messages or EAS messages intended for transmittal to the public by radio and television stations are consistent with the classification scheme. Messages are released to the media by the State Director of Emergency Management or Local Director of Emergency Management or their

designees. The messages give instruction with regard to specific actions to be taken by the occupants of the affected area. The messages provide information on the nature of the emergency and recommended protective actions, including sheltering, evacuation, and the use of potassium iodide, as appropriate.

Table E-1
Notification of Response Organizations for Each Emergency Classification

Notified Organization or Individual	Emergency Classification			
	Unusual Event	Alert	Site Area Emergency	General Emergency
LNP Personnel	X	X	X	X
Plant General Manager(1)	X	X	X	X
EOF Director	X	X(2)	X(2)	X(2)
NRC(3)	X	X	X	X
State Warning Point-Tallahassee	X	X	X	X
Citrus/Levy/Marion County EOCs	X	X	X	X
Florida DHBRC(3)	X(4)	X(4)	X(4)	X(4)
Westinghouse	(5)	(5)	(5)	(5)
Medical Support Organizations	(5)	(5)	(5)	(5)
Institute of Nuclear Power Operations (INPO)		X(6)	X(6)	X(6)

NOTES:

1) If the Plant General Manager has not already assumed the position of EC.

2) The EOF Director alerts/activates the EOF staff.

3) For any condition involving, or potentially involving, radioactive releases, property damage, or other specific events as indicated in emergency plan implementing procedures, NRC and DHBRC notification may be required.

4) The EC notifies the DHBRC only.

5) If the nature of the particular emergency requires specific assistance.

6) The EOF Director, or designee, notifies INPO.

F. EMERGENCY COMMUNICATIONS

This section describes the communications systems and provisions for communications between the Site and principal response organizations, including state, local, and federal agencies and also describes communications between the emergency response facilities.

Details describing operation and testing of communications systems is located in emergency plan implementing procedures.

Public Address (PA) System and Plant Telephones

The PA system consists of a network of phones and speakers strategically located throughout the plant. The plant telephones are operated in three modes using a switch control, touch-tone (pushbutton) phones, and/or a dialing code.

Commercial Telephones

Commercial telephones are located throughout the LNP. These phones operate through the Florida Telephone switchboard located in Leesburg, Florida.

PE Voicenet System

The Progress Energy Voicenet System interconnects all Progress Energy plants, major substations, and main offices, and is interconnected with the area public telephone system. This communication service is available throughout the Progress Energy service area. The voicenet system is wholly owned and operated by Progress Energy.

Portable UHF Radios

Portable UHF radios are available to emergency teams for limited communication on the LNP Site. During normal day shift operations, key plant staff personnel have UHF radios available for communication with the Control Rooms. These radios are the primary communications link during a fire.

This system utilizes UHF repeaters and antennas located in the plant to aid in radio communications. Earphones are provided in high noise areas.

1. DESCRIPTION OF COMMUNICATION LINKS

Progress Energy maintains reliable communications links both within the plant using the above mentioned systems, and between the plant and external emergency response organizations.

a. Progress Energy maintains capabilities for 24-hour per day emergency notification to the state and county emergency response network. All state/county Warning Points are manned 24-hours per day.

b. Communications with state/county governments within the emergency planning zones, consist of the following:

1. The Florida Emergency Satellite Communications System (ESATCOM) is an intrastate communications system that is operated by the State of Florida Division of Emergency Management in Tallahassee, Florida. The system connects the State Warning Point-Tallahassee (SWPT), state agencies, all Florida counties; weather service forecast offices, nuclear facilities, and other select locations via a satellite communications link. Voice transmissions from any of the locations are received at all other locations. The satellite dish is located at LNP with connections to the Control Rooms, Technical Support Centers (TSCs), and Emergency Operations Facility (EOF). The LNP Control Room ESATCOM will provide back-up communications for notification of an emergency at LNP.

2. Private telephone capability to the county and state warning points/Emergency Operation Centers (EOCs).

3. Satellite telephone capability.

4. Dedicated radio networks to the state and county warning points/EOCs.

Communication links are available from the Control Rooms, the Technical Support Centers, and the EOF.

c. Separate telephone lines are dedicated for communications with the NRC and include the following:

1. 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 Rooms, TSCs, and EOF.

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

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

4. 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 TSCs and EOF.

5. Emergency Response Data System (ERDS) Channel: Allows transmittal of reactor parametric data from LNP to the NRC. ERDS data is transmitted to the NRC Operations Center.

6. 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 Progress Energy management. MCL lines are located in the TSCs and EOF.

7. NRC Remote Access: Provides access to the NRC local area network. Modem access is provided in the TSCs and EOF for NRC access.

d. Progress Energy provides capability for communications between Control Rooms or TSCs and the EOF, state and county EOCs, via the State of Florida Hot Ringdown Telephone System. This system has been established as the primary means of 24-hour per day communications among the LNP Control Rooms/TSCs/EOF; SWPT; DHBRC; and Citrus, Levy, and Marion County EOCs. The State Hot Ringdown Telephone System consists of three separate networks utilizing dedicated telephone circuits to communicate with the SWPT. LNP will be able to dial all stations on the circuit or call a selected station(s). Each network includes LNP; the SWPT; Citrus, Levy, and Marion County EOCs; the EOF; and the DHBRC. All stations on the network can call all or a selected number of other stations by utilizing a dial-up code.

The following three separate conference-line phone systems have been established:

1. Between the EOF and TSCs for emergency status information.

2. Between the Control Rooms, TSCs, and EOF for dose assessment information.

3. Between the TSCs and Control Rooms for accident assessment information.

Actuation of a phone in one center will actuate the phones located in the other two centers.

e. Notification, alerting, and activation of emergency response personnel in the TSCs, OSCs, and EOF are described in Section E of this Plan.

f. Communications between Control Rooms/TSCs/EOF to the NRC Operations Center is via the Emergency Telephone System (ETS) phone or private telephone. Communications from the Control Rooms/TSCs/EOF to the regional office is via normal private telephone capability.

g. The Emergency Response Data System (ERDS) provides a real-time transfer of plant data from LNP information systems to the NRC Operations Center in Rockville, Maryland. Progress Energy will activate the ERDS within one hour of the declaration of an Alert or higher emergency classification in accordance with LNP implementing procedures.

2. COMMUNICATION WITH FIXED AND MOBILE MEDICAL SUPPORT FACILITIES

Progress Energy maintains communication systems that allow for communications between LNP and fixed and mobile medical support facilities. The communication systems include both commercial telephone communications with fixed facilities and radio communications to the ambulance through the supporting dispatching center.

3. COMMUNICATION SYSTEM RELIABILITY

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 aspect of understanding the content of messages.

Communications from the Control Rooms, TSCs, and the EOF to the NRC Headquarters Operations Center shall be tested quarterly.

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

Communications between the Control Rooms, the TSCs, and the EOF shall be tested quarterly.

The multiplicity of on-site communication networks ensures the availability and reliability of adequate communications. The communication systems at LNP are normally in use and have diverse power supplies, including back-up power supplies.

Equipment for these systems is located in different areas of LNP thus ensuring that an accident in one area of LNP would not incapacitate all communication systems. Failure of normal power supplies will not deprive LNP of off-site communication capability since, backup power is provided. Dedicated telephone lines are checked according to specified schedules.

Table F-1
On-site Communications

COMMUNICATIONS SYSTEM	CONTROL ROOM	TSC/OSC	SECURITY OPERATIONS CENTER	NRC RESIDENT INSPECTOR'S OFFICE (LNP)
Commercial Telephone	X	X	X	X
PE Microwave System	X	X	X	X
PE Low-band Radio		X		
FDLE Radio (back-up system)			X	
ESATCOM	X	X		
Emergency Notification System (ENS)	X	X		
ERDS	X			
Health Physics Network (HPN)		X		
PAX	X	X	X	X
Maintenance Telephones	X			
Portable UHF Radios	X(1)	X(1)	X(1)	
Evacuation Alarms	X	X	X	X
State Hot Ringdown System	X	X		
TSC/EOF Ringdown Phone		X		
Accident Assessment Ringdown	X	X		
Dose Assessment Ringdown	X	X		
Facsimile Transmittal System	X	X		
PRIMARY COMMUNICATORS	SUPERINTENDENT SHIFT OPERATIONS(2)	EMERGENCY COORDINATOR(2)	SECURITY SHIFT SUPERVISOR	RESIDENT INSPECTOR

NOTE: 1) Assigned as required by the Emergency Coordinator.
2) Or designees.

Table F-2
Interfacility/Organization Communications

COMMUNICATIONS SYSTEM	LNP	EOF/ENC	NRC	LEVY COUNTY SHERIFF'S OFFICE	COUNTY EOCs	SWPT	DHBRC
Commercial Telephone	X	X	X	X	X	X	X
PE Microwave System	X	X					
PE Low-band Radio	X	X					
FDLE Radio	X			X			
ESATCOM	X	X			X	X	X
Emergency Notification System (ENS)	X	X	X				
ERDS	X		X				
Health Physics Network (HPN)	X	X	X				
State Hot Ringdown System	X	X			X	X	X
TSC/EOF Ringdown Phone	X	X					
Dose Assessment Ringdown	X	X					
Facsimile Transmittal System	X	X	X	X	X	X	X
PRIMARY COMMUNICATIONS	EMERGENCY COORDINATOR(2)	EOF DIRECTOR(2)	REGIONAL DIRECTOR (2)	SHERIFF	EMERGENCY DIRECTOR	DEM	DHBRC

NOTE: 1) Via the MERL.
2) Or designees.

G. PUBLIC EDUCATION AND INFORMATION

This section describes Progress Energy's coordinated public education and information program, designed to educate members of the public regarding emergency notification methods and actions.

1. PUBLIC INFORMATION PROGRAM

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 information will include, but not necessarily be limited to the following:

a. Educational information on radiation.

b. Contact for additional information.

c. Protective measures (e.g., evacuation routes and relocation centers, sheltering, respiratory protection, and radioprotective drugs).

d. Special needs of the handicapped.

To accomplish the dissemination of this information, Progress Energy will support, but not necessarily be limited to, the following:

a. A publication, in the form of brochures, calendars, and/or phone book pages that will be disseminated annually to the residents of Citrus, Levy, and Marion Counties within a 10-mile radius of LNP, and that will be available to the general public within the same area. The publication will include the following:

    1. All aspects of public emergency procedures, including evacuation routes, shelters, and other pertinent information that one should be aware of during an emergency.

    2. Easily comprehensible written terms for the public regarding radiation.

2. DISTRIBUTION AND MAINTENANCE OF PUBLIC INFORMATION

The public education and information program provides the permanent and transient adult population within the plume exposure EPZ adequate opportunities to become aware of important emergency response information.
To accomplish the dissemination of this information, Progress Energy will support, but not necessarily be limited to, publications to be provided in quantity at key locations, such as motels and various business locations, in order to reach any new or transient individuals in the area. These publications will provide

appropriate information that would be helpful if an emergency or accident occurs. Such information will refer the new or transient individual to the telephone directory or other source of local emergency information, and provide guidance to appropriate radio and television frequencies.

3. NEWS MEDIA COORDINATION

An Emergency News Center (ENC), located in the Crystal River Training Center/Emergency Operations Facility (EOF) approximately one-half mile east of U.S. 19 on West Venable Street, is designated for the local dissemination of information to the public and news media and is a shared facility with CR3.

4. INFORMATION EXCHANGE

a. The Emergency News Center (ENC) will be the principal point of contact with the news media during an emergency. Public information is coordinated and disseminated through the ENC. A News Coordinator who has access to all required information will provide plant status and company information during scheduled news conferences and media briefings.

b. Throughout the emergency and recovery phases, LNP personnel (as designated in implementing procedures) and designated alternates shall periodically meet and/or have timely exchanges of information. These exchanges of information will extend to include other designated spokespersons of local, state, and federal agencies. This exchange will include awareness of media releases.

c. This timely exchange of information among spokespersons will aid in dispelling most rumors. Additional rumor control is accomplished through obtaining and disseminating accurate information through the representatives in the ENC. Progress Energy customer inquiries are handled by Customer Service Centers. State and local plans and procedures also discuss control of rumors and other misinformation.

5. NEWS MEDIA TRAINING

Progress Energy, in cooperation with state and county emergency management, conducts an annual program to acquaint the news media with the emergency plans; information concerning radiation and operation of the plant; and points of contact for release of public information during an emergency. These briefings may be in the form of a group presentation or may be accomplished by documented individual contacts throughout the year.

H. EMERGENCY FACILITIES AND EQUIPMENT

This section addresses emergency response facilities and equipment used, both on-site and off-site, to augment the LNP Emergency Response Organization (ERO) and effectively mitigate and control emergencies.

The purpose of emergency response facilities is to provide centralized locations for organized command and control of on-site and off-site activities performed during an emergency. The facilities provide a location for the ERO to direct or perform their responsible activities and coordinate activities with other organizations.

The following facilities will be discussed in this section, along with the associated equipment to support emergency response:

a. Control Rooms (CRs).

b. Technical Support Centers (TSCs).

c. Operations Support Centers (OSCs).

d. Emergency Operations Facility (EOF).

e. Emergency News Center (ENC).

Where adequate description is provided in the LNP FSAR, such information will be incorporated by reference.

1. ON-SITE EMERGENCY RESPONSE FACILITIES

1.1 CONTROL ROOMS

a. Characteristics

1. Located in the Auxiliary Building (of each Unit 1 and 2), 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 Sections 9.4 and 6.4 respectively, of the LNP FSAR.

b. Functions

1. Reactor and plant control.
2. Interim location for Emergency Coordinator.

3. Accident recognition, classification, and mitigation.
4. Notification of off-site agencies.
5. Recommendations for immediate protective actions for the public.
6. Alerting of on-site personnel.
7. Initial dose projections.
8. Activation of LNP/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 TSCs, OSCs, EOF, NRC Operations Center, and state and local government 24-hour warning points and state EOC.
8. Typical emergency supplies, as described in Table H-1; and emergency plan administrative procedures.

1.2 TECHNICAL SUPPORT CENTERS

a. Characteristics

1. Located within the Protected Area at Elevation 117.6” in the passage from the Annex Building to the Control Rooms (of each Unit 1 and 2), as shown in Figure Intro-2. Each TSC command room covers 2144 square feet with four (4) adjoining conference rooms which cover 988 square feet. Each TSC is sized for a minimum of 25 persons, including 20 persons designated by Progress Energy and five 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 LNP 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.
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 Emergency Coordinator (EC) and assigned staff upon TSC activation. The affected unit TSC is officially activated by the EC when the necessary personnel are assembled at the TSC to carry out an emergency response function required by the emergency conditions.
2. Performs emergency classification; notification of off-site agencies (including the NRC); and protective action recommendations to off-site agencies.
3. Provides plant management and technical support to plant operations personnel.
4. Prioritizes emergency response team activities in the plant.
5. Assists the Control Room in accident assessment.

c. Emergency Equipment and Supplies

1. Reliable voice communications with the Control Rooms, EOF, OSCs, 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 Table H-1, and emergency plan administrative procedures.

1.3 OPERATIONS SUPPORT CENTERS

a. Characteristics

1. Located inside the Protected Area on the second floor of the Annex Building (of each Unit 1 and 2), adjacent to the Unit 1 and 2 Control Rooms, as shown in Figure Intro-2.
2. The total area for each OSC 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. During an emergency, if the OSC becomes uninhabitable, an alternate location for OSC activities will be designated. Evacuation of the OSC will be conducted in accordance with emergency plan implementing procedures.

b. Functions

1. Assembly location for OSC manager and 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 Rooms, TSCs, and EOF.
2. Typical emergency supplies, as described in Table H-1 and emergency plan administrative procedures.

2. OFF-SITE EMERGENCY RESPONSE FACILITIES

In addition to on-site emergency response facilities, the following off-site facilities are available to provide support during an emergency.

2.1 EMERGENCY OPERATIONS FACILITY

a. Characteristics

1. Located at the Crystal River Training Center / EOF on West Venable Street in Crystal River, Florida.
2. Equipped with a kitchen and shower facilities, as well as an emergency electrical generator. Its classrooms, auditorium, and offices perform double duty to provide approximately 21,000 feet of working space for

Progress Energy and other support personnel. Supplemental accommodations for working space may be arranged at local motels and commercial establishments if required.

b. Functions

1. Capable of supporting extended emergency operations.

2. Provide a near-site location for assembling the EOF Staff and representatives of federal, state, county, and industry emergency response agencies.

3. Upon activation, performs offsite notification, protective action recommendations, environmental monitoring, and dose projection.

4. Emergency communications systems monitoring and control.

5. Provides technical analysis and support.

6. Receives and displays site status and parameters data.

7. Serves as the Recovery Center during recovery operations.

c. Emergency Equipment and Supplies

1. Equipped with communications systems previously noted in Table F-2. The facilities are equipped with commercial telephones, the PE Voicenet system, and power base radio service to facilitate contact among the Plant, Corporate facilities, and off-site organizations. The EOF is further equipped with an automatic ringdown telephone system that provides two-party communications between it and the TSCs.

2. Hard copy transmission of data is available through dedicated facsimile transmittal equipment located in the EOF and the TSCs/OSCs. Messages, technical data, and other emergency-related information can rapidly and efficiently be communicated among the three response facilities. The equipment can also be used to communicate with the state and county EOCs, and any other location that possesses compatible equipment.

3. Special communications systems are available for non-Progress Energy support groups. The EOF is included in the State Hot Ringdown Telephone System which consists of four (4) separate networks utilizing dedicated telephone circuits. Each network connects one of the four Nuclear Power Plant sites in the state with the SWPT, the DHBRC, and the county EOCs.

4. Several special telephone links have also been installed for use by NRC personnel. These links are described in Section F.1.

5. A selection of technical documents is stored in the Crystal River Training Center / EOF at all times so these documents will be available whenever the EOF is activated.

6. Radiological monitoring equipment will be provided by Health Physics if radiological conditions warrant.

7. The display of Plant and other technical data may be useful to the EOF Staff during assessment and mitigation activities. Several information displays are available.

2.2 EMERGENCY NEWS CENTER

a. Characteristics

1. Located at the Crystal River Training Center / EOF on West Venable Street in Crystal River, Florida.

2. Equipped with a kitchen and shower facilities, as well as an emergency electrical generator. Supplemental accommodations for working space may be arranged at local motels and commercial establishments if required.

b. Functions

1. Provide a near-site location for the local dissemination of information to the public and news media.

2. The Public Information Director is responsible for dissemination of information by Progress Energy and for coordination of statements with local, state, and federal authorities from this location.

c. Emergency Equipment and Supplies

1. Equipped with communications systems previously noted in Table F-2.

2. Hard copy transmission of data is available through dedicated facsimile transmittal equipment. Messages, technical data, and other emergency-related information can rapidly and efficiently be communicated among the three response facilities. The equipment can also be used to communicate with the state and county EOCs, and any other location that possesses compatible equipment.

3. Special communications systems are available for non-Progress Energy support groups.

4. Several special telephone links have also been installed for use by NRC personnel. These links are described in Section F.1.

3. STATE/COUNTY EMERGENCY OPERATIONS CENTERS

The State Emergency Operations Center (SEOC) is the primary center for coordination of state response for any major emergency or disaster. The State Warning Point-Tallahassee (SWPT) and the Citrus, Levy, and Marion County EOCs are also important facilities utilized in the event of an LNP emergency. The SWPT is the formal contact point between Progress Energy and the affected local areas, and the source of directives from the state government to the county EOCs. The inter-relationship of Progress Energy with these centers and federal agencies (see implementing procedures) assures prompt emergency response and appropriate actions for all affected organizations and the general public.

4. ACTIVATION AND STAFFING OF EMERGENCY RESPONSE FACILITIES

During the facility activation process, the facility managers will determine that minimum staffing has been met, as described in emergency plan implementing procedures, and verify the readiness to declare the facility operational with facility ERO members.

Progress Energy staffs and activates the designated emergency response facilities as follows:

a. Notification of Unusual Event – Emergency response facility staffing not normally needed, but may be undertaken at the discretion of the EC.

b. Alert – Staffing of the TSC and OSC is required (EOF and ENC staffing is discretionary).

c. Site Area Emergency and General Emergency – Staffing of the TSC, OSC, EOF, and ENC is required.

Following declaration of an emergency condition, the emergency response facilities are staffed and declared operational in accordance with emergency plan implementing procedures. State and local emergency response personnel also staff their emergency response facilities.

5. ON-SITE MONITORING SYSTEMS

Progress Energy maintains and operates on-site monitoring systems needed to provide data that is essential for initiating emergency measures and performing accident assessment. This includes monitoring systems for geophysical phenomena, radiological conditions, plant processes, and fire and combustion products.

a. Subsection 3.7 of the LNP FSAR provides a description of the seismic monitoring system.

b. Sections 11.5 and 12.3 of the LNP FSAR provide a description of the installed radiological monitoring systems. In addition to the installed systems, Progress Energy maintains an adequate supply of portable radiation monitoring and sampling equipment, including dedicated emergency response equipment, consistent with this section of this Plan.

c. Section 11.5 of the LNP FSAR provides a description of the plant process monitoring systems.

d. Section 9.5.1.8 of the LNP FSAR provides a description of the plant fire monitoring system.

6. ACCESS TO DATA FROM ENVIRONMENTAL MONITORING SYSTEMS

a. Progress Energy acquires meteorological data from the National Weather Service (NWS) during periods when the primary system is unavailable. Back-up seismic data are available from the U.S. Geological Survey. Flooding data are available from the National Oceanic and Atmospheric Administration (NOAA) Hydro-Meteorological Reports. These data are shared with affected local, state, and federal authorities via the communications links discussed in Section F of this Plan.

b. The LNP Off-site Dose Calculation Manual (ODCM) describes the LNP off-site monitoring systems. In addition to the monitoring systems, equipment, and radiological laboratory facilities provided at the plant, Progress Energy maintains arrangements to obtain back-up radiological monitoring and analysis support from off-site organizations. Section A of this Plan provides a description of these arrangements and the capabilities of the affected organizations and facilities. Appendix 3 of this Plan provides information regarding certifications from these support organizations.

   Environmental Radiological Monitoring equipment includes multiple radioiodine and particulate monitors and thermoluminescent dosimeters or other dose integrating devices. The dosimeters are posted and collected in accordance with Table 1, of NRC's Branch Technical Position for the Environmental Radiological Monitoring Program, Rev. 1 (Reference S). The LNP ODCM provides locations of posted dosimeters and air samplers.

c. Section C.3 of this Plan provides a description of the available laboratory facilities.

7. OFF-SITE RADIOLOGICAL MONITORING EQUIPMENT

The Department of Health, Bureau of Radiation Control (DHBRC) is responsible for the evaluation and assessment of radiological emergencies in the State of Florida and for providing recommendations for protective actions to the DEM. DHBRC Standard Operating Procedures (Chapter 8 of the State Plan) contains inventories of radiation response emergency kits, radiological laboratory equipment, and mobile laboratory equipment available through the agency. The Mobile Emergency Radiological Laboratory (MERL) also contains wind speed and direction instruments. Additional assistance on meteorological conditions and forecasts is available per the State Plan through the NWS in Ruskin, Florida.

Progress Energy has capabilities and resources for field monitoring with additional dosimetry as specified in LNP's ODCM concerning the Environmental Radiological Monitoring Program. Thermoluminescent dosimeter (TLD) stations have been placed around the Site in each accessible sector at various distances. Additionally, the NRC TLD Direct Monitoring Network is in place to supplement Progress Energy's Environmental Radiological Monitoring Program.

8. METEOROLOGICAL INSTRUMENTATION AND PROCEDURES

Meteorological parameters required for dose assessments are measured by onsite instrumentation maintained by Progress Energy with readouts in the Control Rooms. Specific directions are provided in implementing procedures for incorporating onsite meteorological data into the dose assessment calculations. A 60.4-m (198-ft) meteorological tower is located on-site approximately 1500-m (4920-ft) west-southwest of the proposed LNP reactor locations. The following meteorological parameters are measured:

1. Wind Speed, 60-m (197-ft)
2. Wind Direction, 60-m (197-ft)
3. Wind Speed, 10-m (33-ft)
4. Wind Direction, 10-m (33-ft)
5. Ambient Temperature, 60-m (197-ft)
6. Ambient Temperature, 10-m (33-ft)
7. Delta Temperature (Stability Class), 60-m (197-ft) and 10-m (33-ft)

Real time meteorological data will be digitally displayed in the Control Rooms, with provisions for computerized historical storage and retrieval, for use in accident scenarios. Real time meteorological data will also be available in the EOF and TSCs. The system records 1-minute averages of wind speed, wind direction, ambient temperature, dew point temperature, and differential

temperature, and calculates 15-minute and hourly averages of each of these parameters. Cumulative hourly precipitation is also recorded. The meteorological data from the tower is stored and maintained electronically for historical future retrieval and remote interrogation.

9. EMERGENCY EQUIPMENT AND SUPPLIES

Emergency equipment and supplies to carry out the provisions of the Emergency Plan are specified in the emergency plan administrative procedures.

Provisions have been made to inspect, inventory, and operationally check emergency equipment/instruments once each calendar quarter and after drills or an actual emergency, in accordance with administrative procedures. Sufficient reserves of instruments/equipment are provided to replace those that are removed from emergency kits for calibration or repair. Calibration of instruments has been established at intervals recommended by instrument suppliers, or as required by federal regulations.

10. EMERGENCY KITS

Table H-1 lists typical emergency equipment and supplies included in emergency kits, along with their locations.

11. RECEIPT OF FIELD MONITORING DATA

Dose Assessment personnel located in the EOF are designated as the central point for the receipt of off-site monitoring data results and sample media analysis results collected by Progress Energy personnel. Resources exist within the organization to evaluate the information and make recommendations based upon the evaluations.

Table H-1
Typical Emergency Kit Equipment/Supplies and Locations

Kit Contents	
– Compass	– Pens, Pencils
– Protective Clothing	– Calculator
– Air Sampler Heads	– Plant Survey Map
– Tape, Barricade	– Area Map
– TLD Badges	– HP Probes
– Tape, Masking	– Check Source
– Radiation Signs	– Area Monitor (or Electronic Dosimeters)
– Plastic Rain Gear	– Batteries
– Smears	– Flashlight
– Electronic Dosimeters	– Felt Marker, Black
– Air Filters, Particulate	– Shoe Covers
– Charcoal Cartridges	– Gloves
– Silver Zeolite Cartridges	– Pad Paper
– Labeled Envelopes	
– SH-4 Sample Mount and Holder	
– Bottle, for water samples	
Kit Locations	
– LNP Control Rooms	
– Technical Support Centers/Operations Support Centers (TSCs/OSCs)	

I. ACCIDENT ASSESSMENT

This section describes the methods, systems, and equipment available for assessing and monitoring actual or potential off-site consequences of a radiological emergency. Use of the equipment described in this section during an emergency is detailed in emergency plan implementing procedures.

1. PARAMETERS INDICATIVE OF EMERGENCY CONDITIONS

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 on-site instrumentation is provided in Section I.2.

2. PLANT MONITORING SYSTEMS

Initial values and continuing assessment of plant conditions through the course of an emergency may rely on reactor coolant sample results, radiation and effluent monitors, in-plant iodine instrumentation, and containment radiation monitoring. Subsection 9.3.3 of the LNP FSAR describes provisions for obtaining samples under accident conditions. Section 11.5 of the LNP FSAR describes the LNP radiation monitoring systems.

2.1 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 Section 3.11 of the LNP FSAR.

The radiation monitoring system is divided functionally into two subsystems:

a. Process, airborne, and effluent radiological monitoring and sampling.

b. Area radiation monitoring.

Fluid process radiological monitors are provided for the following:

a. Steam Generator Blowdown.

b. Component Cooling Water System.

c. Main Steam Line.

d. Service Water Blowdown.

e. Primary Sampling.

f. System Liquid Sample.

g. Primary Sampling System Gaseous Sample.

h. Control Room Supply Air Duct.

i. Containment Air Filtration Exhaust.

j. Gaseous Radwaste Discharge.

k. Containment Atmosphere.

Airborne radiological monitors are provided for the following:

a. Steam Generator Blowdown.

b. Component Cooling Water System.

c. Main Steam Line.

d. Service Water Blowdown.

e. Primary Sampling System Liquid Sample.

f. Primary Sampling System Gaseous Sample.

g. Control Room Supply Air Duct.

h. Containment Air Filtration Exhaust.

i. Gaseous Radwaste Discharge.

j. Containment Atmosphere.

Liquid and gaseous effluent radiological monitors are provided for the following:

a. Plant Vent.

b. Turbine Island Vent Discharge.

c. Liquid Radwaste Discharge.

d. Waste Water Discharge.

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

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

The RMS provides the necessary activity or radiation levels required for determining source terms in dose projection procedures. Grab samples and on-site or off-site monitoring samples can then be analyzed to determine the true isotopic mix and the results used in the computerized dose projection software.
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2.2 OTHER PLANT MONITORING EQUIPMENT

a. Effluent Monitoring and Sampling.

b. Process and Airborne Monitoring and Sampling.

c. Post-accident Radiation Monitoring.

d. Area Radiation Monitors.

3. DETERMINATION OF SOURCE TERM AND RADIOLOGICAL CONDITIONS

Implementing procedures provide means for relating various measured parameters, including the following:

a. The source term available for release within plant systems, such as the relationship between the containment radiation monitor(s) reading(s), and the radioactive material available for release from containment.

b. The magnitude of the release of radioactive materials based on plant system parameters and effluent monitor readings.

4. RELATIONSHIP BETWEEN EFFLUENT MONITOR READING AND EXPOSURE AND CONTAMINATION LEVELS

Dose assessment procedures include the relationship between effluent monitor readings, and on-site and off-site exposures and contamination for various meteorological conditions. The following two sections provide a description of the emergency dose assessment program used at LNP for both on-site and off-site. Information includes dose and dose rate determinations based on plant effluent monitors, and contamination estimates based on deposition assumptions and meteorological conditions.

4.1 ON-SITE DOSE ASSESSMENT

In addition to those on-site assessment activities being performed to control the plant and to mitigate the possible consequences of an emergency, methods have been established to monitor radiation levels in and around the plant and to determine the nature of actual or potential radioactive releases. These activities range from gross radiation surveys to confirm the emergency classification, to detailed measurement and analysis of liquid and gaseous samples to identify key isotopes or the nature of damage.

Radiological parameters are monitored by the operating staff to provide early indication of any release of radioactivity. The plant process and effluent radiological monitoring systems and associated alarms described in Section H, "Emergency Facilities and Equipment," are utilized for this purpose.

In-plant evaluations and radiological surveys are performed by the Radiation Monitoring Team. Upon activation of this team and following preparation of team personnel and assembly of emergency kits and equipment, the Radiation Controls Coordinator and EC determine area(s) to be surveyed. As required, the Team conducts a general beta-gamma survey of the area, performs a gross particulate air sample and a gross iodine sample, collects and replaces TLDs at appropriate stations, conducts smear surveys, and establishes controlled access areas. Survey results are forwarded to the TSCs for evaluation and assessment. The Radiation Controls Coordinator will assess survey results and advise the EC of in-plant radiological status. The need for additional or continuing surveys is established by the EC. Specific instructions for in-plant radiological surveys are provided in implementing procedures.

It is important to determine radioactive levels at the site boundary, and beyond, as soon as possible following an accidental release. These activities are performed by the Radiation Monitoring Team in accordance with implementing procedures. TLDs have been strategically placed within the Exclusion Area Boundary. However, conditions at the time of occurrence of any emergency will dictate specific areas where intense radiological monitoring efforts will be required. Upon activation and preparation of the Radiation Monitoring Team, the Radiation Controls Coordinator and EC will determine area(s) to be monitored. The Radiation Monitoring Team has sole responsibility for plume monitoring until such time as the state monitoring teams arrive and assume this responsibility for areas beyond the site boundary. As required, a general beta-gamma survey, gross particulate air sampling, gross iodine sampling, TLD collection and replacement, if applicable, and smear surveys will be conducted. The need for additional or continuing surveys is established by the EC. Results of surveys are appropriately recorded and reported to the TSCs via portable transceiver. The TSCs transmit the results to the EOF for coordination of analysis, as appropriate, with state survey results.

The radiation monitoring results obtained from in-plant and environmental surveys can provide some information on the nature and quantities of radioactive

releases, but in some instances additional sampling and analysis are required for quantitative assessment of potential source terms or the magnitude of a release.

Implementing procedures provide procedural guidance for the following assessment activities:

a. Assessment and quantification of actual and potential releases.

b. Obtaining samples.

c. Performing isotopic analysis (evaluation of effluents).

d. Sampling and analyzing the containment atmosphere for radionuclide concentration under accident conditions.

e. Sampling and analyzing the containment atmosphere for hydrogen content under accident conditions.

f. Estimate the types and quantities of radioactive material available for release.

4.2 OFF-SITE DOSE ASSESSMENT

Dose projections will be performed, using emergency plan implementing procedures, to assess the dose to personnel downwind of an accidental radioactive release and the possible need for protective action. The technical basis for this program is located in NUREG-1741: RASCAL 3.0: Description of Models and Methods.

These procedures provide the Operations staff with a rapid method of determining the magnitude of a radioactive release from LNP during an accident condition. Certain procedures are performed manually. The manual method contains a series of tables, which are used along with meteorological and radiological data displayed in the CR to quickly generate off-site dose information. It is intended that these procedure be used in the initial phases of the emergency to determine appropriate protective actions to be recommended to off-site authorities.

Other procedures provide Dose Assessment personnel guidance to utilize computers/software to determine the magnitude of the radioactive release and cumulative dose by distance and sector to aid in formulating protective action recommendations. The program prompts the user to provide meteorological data, source term data, and accident type for use in the dispersion model. The ability to project dose information may also be accomplished through the use of a forecast mode within the model. This allows the user to predict future impact if conditions remain relatively stable.

The capability of performing dose assessment at both the TSCs and EOF provides the redundancy necessary to ensure timely estimation of off-site dose.

Data used for producing dose assessments, as well as the data generated by these methods, will be made available to both the NRC and the state for independent analysis.

5. METEOROLOGICAL INFORMATION

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 off-site dose projections.

Meteorological information is presented in the CRs, the TSCs, and the EOF by means of a computer. Additional information on the on-site meteorological monitoring system can be found in Section 2.3 of the LNP FSAR.

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

In the event that the on-site meteorological tower or monitoring instrumentation becomes inoperative and the contracted meteorologists cannot be contacted, meteorological data may be obtained directly from the NWS in Tallahassee, Florida.

6. DETERMINATION OF RELEASE RATES AND PROJECTED DOSES

Implementing procedures establish processes for estimating release rates and projected doses if the associated instrumentation is inoperable or off-scale. These procedures include the following considerations:

a. Estimated releases based on field monitoring data.

b. Surrogate instrumentation and methods to estimate extent of fuel damage.

7. FIELD MONITORING CAPABILITY

Radiological surveys and monitoring of the off-site environs are coordinated by the state and conducted by the State Radiological Emergency Team. In the event of an emergency at LNP, assistance for off-site monitoring and assessment can be requested from the state. State Radiological Emergency Team members are dispatched by the most expeditious transportation and assemble at the EOF. This team is supported by the Mobile Emergency Radiological Laboratory (MERL), which can reach the EOF within 2 hours of notification. The MERL is a

vehicle that has been outfitted to provide radiological laboratory services in emergency situations and mobile laboratory services in routine operations.

Table I-1 describes the major instrumentation systems and equipment available on the MERL.

Upon arrival in the Crystal River area, and subsequent briefing of personnel at the EOF, the Radiological Emergency Team will immediately collect samples from fixed monitoring stations around the facility and perform surveys in accordance with the State Standard Operating Procedures. Any radiation exposure to the public will be estimated by the State Health Physicist. Other samples will be analyzed as soon as possible to provide estimates of levels of concentration in the air of particulates and/or halogens or other information.

8. ASSESSMENT HAZARDS THROUGH LIQUID OR GASEOUS RELEASE PATHWAYS

Progress Energy trains, designates, equips, dispatches, and coordinates field teams consistent with Section I.7 of this Plan. The field teams (both radiological and environmental) perform sampling of off-site media samples, as needed, to assess the actual or potential magnitude and locations of radiological hazards. Progress Energy notifies and activates field team personnel consistent with Section E of this Plan.

9. MEASURING RADIOIODINE CONCENTRATIONS

Progress Energy equips field teams with field monitoring equipment with the capability to detect and measure radioiodine concentrations in the vicinity of the Site as low as 1×10^{-7} microcuries per cubic centimeter ($\mu Ci/cm^3$). Interference from the presence of noble gas and background radiation will be minimized by ensuring that monitoring teams move to areas of low background prior to analyzing the sample cartridge. The collected air sample is measured by hand-held survey meter as an initial check of the projection derived from the plant data to determine if significant quantities of elemental iodine have actually been released (the chemical form that would pose a health problem).

10. RELATING MEASURED PARAMETERS TO DOSE RATES

Implementing procedures establish the means for relating measured parameters, such as surface, airborne or waterborne activity levels, to dose rates for those key isotopes listed in Table 3 of NUREG-0654, Rev. 1. Implementing procedures also establish provisions for estimating the projected dose based on projected and actual dose rates. Radiation protection personnel are responsible for directing implementation of these procedures under emergency conditions.

11. TRACKING OF PLUME USING FEDERAL AND STATE RESOURCES

Progress Energy has made arrangements for both federal and state resources to assist in the location and tracking of the airborne radioactive plume. These resources include both the NRC and the Florida State Radiological Emergency Team.

Table I-1
Mobile Emergency Radiological Laboratory – Typical Instrumentation and Equipment

Number	Instrumentation and Equipment
1	Alternating Current Generator
2	Gamma Spectroscopy System
3	Low Volume Air Samplers, 12 V (DC)
4	Ludlum Model 12 Rate meters With Alpha Scintillators; 0-50,000 counts per minute (cpm)
5	Ludlum 2200 Portable, Single Channel Analyzer; 0-500,000 cpm; with Sodium Iodide Detectors
6	Self-Reading Pocket Dosimeters With Chargers: 0-200 mR, 0-20 R, and 0-5 R
7	Victoreen 190 With Geiger-Müller (G-M) Pancake Probe; 0-350,000 cpm
8	CDV-718 Radiac Sets; 0-10,000 R/hr
9	Ludlum 177-45 Frisking Station With G-M Pancake Probe; 0-500,000 cpm
10	Eberline ASP-1 With G-M Pancake Probe; 0-3,600,000 cpm
11	Merlin Gerin Model DMC90 Electronic Personnel Dosimeters

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.

The Radiation Protection Program at LNP assures that protective measures are provided for the purpose of safeguarding the health of all personnel working on-site and of the public outside the boundaries of the facility that may be radiologically threatened during an emergency. The responsibility for the implementation of these protective measures is shared between Progress Energy and the State of Florida. Progress Energy is responsible for the implementation of these protective measures on-site; the state is responsible for implementation off-site. As appropriate, Progress Energy recommends off-site protective actions to the local and state authorities.

1. ON-SITE NOTIFICATION

LNP has established methods to inform personnel and others within the LNP site boundary, in a timely manner, of an emergency condition requiring individual action. These individuals may include the following:

a. LNP personnel not having emergency assignments.

b. Visitors.

c. Contractors and construction personnel.

d. Other individuals who may be in the public access areas, on or passing through the Site or within the owner controlled area.

Progress Energy informs the individuals located within the Protected Area primarily via use of the plant public announcement system and audible warning systems (see Section F). In high noise areas or other areas where these systems may not be audible, other measures, such as visible warning signals or personal notifications, may be used.

LNP informs individuals located outside of the Protected Area through audible warnings provided by warning systems and the activities of the Security Force (e.g., vehicle-mounted public address systems) and, if needed, local law enforcement personnel. LNP provides information regarding the meaning of the various warning systems, and the appropriate response actions, through plant training programs, visitor orientation, escort instructions, posted instructions, or within the content of audible messages.

2. EVACUATION ROUTES AND TRANSPORTATION

Evacuation of on-site personnel can be accomplished, in accordance with plant emergency procedures for the site or the Exclusion Area. 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, 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 EOF. Personnel not on the ERO or assisting with the emergency shall depart the Site using personal transportation and follow established evacuation routes.

b. An evacuation may affect only the Protected Area, or the entire Owner Controlled Area. Personnel not assigned to the ERO or assisting with the emergency shall report to a pre-designated main assembly area.

c. An Owner Controlled 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 Owner Controlled Area. 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.

d. Personnel without transportation will arrange for a ride from others.

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

f. Local evacuations relating to radiation control areas and fire protection are conducted in accordance with site procedures.

3. PERSONNEL MONITORING AND DECONTAMINATION

If a radiological release has occurred or is in progress, a representative sample of vehicles will be monitored for contamination prior to dismissing personnel to relocation sites. Progress Energy has established the relocation sites to provide a location for personnel monitoring. The EC directs contamination monitoring of personnel, vehicles, and personal property arriving at the assembly area when there is a possibility that individuals and their property may have become

contaminated before or during the LNP site evacuation. Based on monitoring results, personnel will be cleared for unrestricted egress or dispatched to an off-site vehicle wash-down station. If it is necessary to dispatch personnel off-site, Progress Energy will coordinate this process with county emergency management personnel.

4. NON-ESSENTIAL PERSONNEL EVACUATION AND DECONTAMINATION

In the event of a Site Area Emergency or General Emergency, non-essential LNP personnel (i.e., personnel who do not have an emergency response assignment) will be evacuated consistent with the provisions of Section J.2 of this Plan. Appropriate equipment and supplies are provided from the facility to the assembly areas to facilitate contamination monitoring. All members of the general public who are on-site must be evacuated if there is a possibility of individual exposures.

When assembly is requested, members of the general public will proceed to the pre-designated assembly area(s); and non-essential personnel will stop work, shut down potentially hazardous equipment, and proceed to the pre-designated assembly area(s).

Assembly area accountability will take place and the results will be reported to the EC when requested. Members of the general public and LNP personnel will remain in assembly area(s) until instructed to return to work, to shelter in the assembly areas, or to evacuate.

5. PERSONNEL ACCOUNTABILITY

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

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

6. PROTECTIVE MEASURES

LNP distributes protective equipment and supplies to personnel remaining or arriving on-site during the emergency as needed to control radiological exposures or contamination. Protective measures to be utilized are as follows:

a. Respiratory Protection and Engineering Controls:

1. Protective measures will be utilized to minimize the ingestion and/or inhalation of radionuclides and to maintain internal exposure below the limits specified in 10 CFR 20, Appendix B.

2. Engineering (ventilation) controls are utilized in the Technical Support Centers (TSCs) and Control Rooms (CRs) to control concentrations of radioactive material in air. Otherwise, when not practical to apply process or other engineering controls to limit intakes of radioactive material in air, one or more of the following protective measures will be utilized:

   Control of access.

   Limitation of exposure times.

   Use of individual respiratory protection equipment.

3. Self-contained breathing apparatus (SCBA) will be used in areas that are deficient in oxygen or when fighting fires. Respiratory protective equipment will be issued by Radiation Protection or Safety and Health Services. SCBAs are available with other firefighting equipment for use by the station fire brigade.

b. Use of Protective Clothing:

Protective clothing will be issued when contamination levels exceed 1000 disintegrations per minute (dpm)/100 square centimeters (cm^2) beta-gamma and 20 dpm/100 cm^2 alpha of smearable contamination. Protective clothing is available for emergency use only. Special firefighting protective clothing and equipment is available in designated station supply storage areas for use by fire brigade personnel.

c. Individual Thyroid Protection:

Protective measures will be utilized to minimize the ingestion and/or inhalation of radioactive iodine. However, if an unplanned incident involves the accidental or potential ingestion or inhalation of radioactive iodine, potassium iodide (KI) tablets are available for distribution in accordance with LNP procedures.

Section H of this Plan provides a description of the typical emergency response supplies and equipment available.

7. PROTECTIVE ACTION RECOMMENDATIONS AND BASES

The Emergency Operations Facility (EOF) Director or the EC (if the EOF is not yet activated) is responsible for recommending off-site protective actions to the state and affected counties. The state and local governments are responsible for notification of the public and implementation of the appropriate protective measures. Protective Action Recommendations (PARs) are required to be made to the state and affected counties within 15 minutes of declaring a General Emergency and also within 15 minutes of any change in the protective action recommendations. Specific protective action recommendations, tied to plant and meteorological conditions, are provided in an implementing procedure. This guidance is based on Supplement 3 (Criteria for Protective Action Recommendations for Severe Accidents) to NUREG-0654.

Public PARs are based on plant conditions, estimated off-site doses, or some combination of both. The Emergency Action Levels correspond to the projected dose to the population-at-risk and are determined consistent with the methodology discussed in NEI 07-01 (Reference K).

The initial PAR for any event classified as a General Emergency, at a minimum, will be to evacuate in all directions out to two miles and evacuation of the downwind protective action zones (PAZs). This PAR may vary depending upon meteorological conditions. Sheltering may be appropriate when a release is controlled or terminated and its radiological consequences fall below evacuation thresholds. Sheltering may be appropriate when known conditions make evacuation dangerous (e.g., severe weather or overriding threat to public safety). Follow-up protective action recommendations that the station may make to the state and counties will be based on current meteorological data such as wind direction, wind speed and stability class, and dose projections. Also, recommendations are made for use of potassium iodide by the public consistent with approved strategies.

In addition to the plant condition-based PARs, Progress Energy provides PARs based on off-site dose projections. The Dose Assessment Team is responsible for conducting off-site dose projections periodically throughout any emergency where there is an actual or potential release of radioactive material that may result in off-site consequences. Requirements for performing required calculations and projections are established in implementing procedures.

The Dose Assessment Team is responsible for making dose projections on a periodic basis. These calculations will use existing plant procedures to calculate projected dose to the population-at-risk for either potential or actual release conditions. For conditions in which a release has not occurred but fuel damage has taken place and radiation levels in the containment building atmosphere are significant, a scoping analysis will be performed to determine what recommendations would be made if containment integrity were lost at that time. A Total Effective Dose Equivalent (TEDE) and Committed Dose Equivalent (CDE) thyroid will be calculated at various distances from the plant (site

boundary, 2 miles, 5 miles, 10 miles, and beyond, if needed). These dose projections are compared to Protective Action Guides shown in Table J-1, which are derived from USEPA 400-R-92-001 (Reference A). Based on these comparisons, protective action recommendations are developed by the Dose Assessment Team. If these recommendations involve sheltering or evacuation of the public around the plant, the Radiological Control Manager informs the EOF Director of the situation and recommendations for protective actions.

8. EVACUATION TIME ESTIMATES

Progress Energy conducted an Evacuation Time Estimate (ETE) Study that focused specifically within the plume exposure Emergency Planning Zone (EPZ) of the LNP Site (Reference I). The Evacuation Time Estimate (ETE) is consistent with the guidance provided in Appendix 4 of NUREG-0654 and NUREG/CR-6863, "Development of Evacuation Time Estimate Studies for Nuclear Power Plants" (Reference X). Table J-2 shows a summary of the evacuation time estimates. A summary of the ETE, complete with population distribution, is included in Appendix 6 of this Plan.

The distribution of resident population in the 10-mile EPZ is presented in Appendix 6, Table A6-1, and Figure A6-1. Special facilities (schools) within the 10-mile EPZ are depicted in Table A6-2.

9. STATE AND LOCAL GOVERNMENT IMPLEMENTATION OF PROTECTIVE MEASURES

If protective actions for any off-site location are deemed necessary, the emergency management agency of the affected county, in conjunction with the appropriate state agencies (Division of Emergency Management, Department of Health, Bureau of Radiation Control (DHBRC)) has the legal authority and responsibility for initiating protective measures for the general public in the plume exposure pathway EPZ, including evacuation of these areas. Public notification of the emergency, the resources used to determine if an evacuation is necessary, the evacuation routes, and the methods used for evacuating persons in the plume exposure pathway EPZ are outlined in the appropriate county and state emergency plans.

10. PROTECTIVE MEASURES IMPLEMENTATION

Progress Energy has implemented protective measures for the plume exposure pathway, based upon NUREG-0654. The following list explains these protective measures, areas of this Plan where more specific information is available, and also lists areas where the state and county agencies are responsible for providing protective measures.

a. Figure A6-2 provides a map of the Plume Exposure Pathway EPZ illustrating evacuation routes, evacuation areas, relocation centers in host

areas, and shelter areas. Implementing procedures provide locations of pre-selected radiological sampling and monitoring points.

b. Appendix 6 provides tables and figures of the Plume Exposure Pathway EPZ illustrating population distribution around the facility by evacuation area and in a sector format.

c. Warnings to the public within the 10-mile EPZ are the responsibility of state and local officials. The primary method of warning the public is by the use of the Alert and Notification System.

d. Protection of those persons, whose mobility may be impaired due to such factors as institutional or other confinement, is addressed in the state and county emergency plans.

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, are addressed in the state and county emergency plans.

f. The state and county emergency plans address methods by which decisions are made to administer radioprotective drugs to the general population during an emergency, including predetermined conditions under which such drugs may be used by off-site emergency workers.

g. Means of relocation are addressed in the state and county emergency plans.

h. Figure A6-2 provides a map of the Plume Exposure Pathway EPZ illustrating relocation centers, as applicable.

i. Projected traffic capacities of evacuation routes under emergency conditions, are provided in the Evacuation Time Estimate Study (Reference I).

j. Control of access to evacuated areas and organization responsibilities for such control are addressed in the state and county emergency plans.

k. Identification of and means for dealing with potential impediments (e.g., seasonal impassability of roads) to use of evacuation routes, and contingency measures are addressed in the state and county emergency plans.

l. Time estimates for evacuation of various zones for the plume exposure pathway EPZ are summarized in Table J-2 of this Plan.

m. The choices of recommended protective actions are based on the guidance provided in EPA-400-R-92-001. Section J.8 and Appendix 6 of

this Plan provide a summary of the ETE that has been prepared for the Plume Exposure Pathway EPZ.

11. INGESTION PATHWAY PROTECTIVE MEASURES

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

12. REGISTERING AND MONITORING EVACUEES

LNP has the means for registering and monitoring all evacuees at relocation centers. Personnel and monitoring equipment will be made available in order to monitor all residents and transients at relocation centers, arriving from within the plume exposure EPZ.

Table J-1
Protective Action Guides

Projected Dose		Protective Action Recommendation
Total Effective Dose Equivalent (TEDE)	**Committed Dose Equivalent Thyroid (CDE Thyroid)**	
< 1 rem	< 5 rem	No protective action required based on projected dose
≥ 1 rem	≥ 5 rem	Evacuate affected zones and shelter the remainder of the Plume Exposure Pathway EPZ

Table J-2 (Sheet 1 of 2)
10-Mile Emergency Planning Zone Evacuation Time Estimates (100 Percent) (Hr:Min)

Region Wind Toward	Sub-zones Impacted	Summer Midday Midweek		Summer Midday Weekend		Summer Evening Midweek/Weekend	Winter Midweek Midday		Winter Midday Weekend		Winter Evening Midweek/Weekend
		Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Good Weather	Rain	Good Weather
Entire 2-Mile Region, 5-Mile Region, and Total EPZ (Hr:Min)											
R01 2-Mile Radius	L5	5:00	5:00	5:00	5:00	5:00	5:00	5:00	5:00	5:00	5:00
R02 5-mile Radius	L5, L6	5:10	5:10	5:00	5:10	5:10	5:10	5:10	5:10	5:10	5:10
R03 Entire EPZ	C1, C3, C4, L5, L6, L7, L8, M9	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10
2-Mile Ring and Downwind to 5 Miles (Hr:Min)											
Same as R01 SSE, S, SSW, SW, WSW, W	L5	5:00	5:00	5:00	5:00	5:00	5:00	5:00	5:00	5:00	5:00
Same as R02 WNW, NW, NNW, N, NNE, NE, ENE, E, ESE, SE	L5, L6	5:10	5:10	5:00	5:10	5:10	5:10	5:10	5:10	5:10	5:10
5-Mile Ring and Downwind to EPZ Boundary (Hr:Min)											
R04 N	L5, L6, L7, L8, M9	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10
R05 NNE, NE	L5, L6, L8, M9	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10
R06 ENE, E	C4, L5, L6, M9	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10
R07 ESE, SE	C3, C4, L5, L6, M9	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10
R08 SSE	C1, C3, C4, L5, L6	5:10	5:10	5:00	5:10	5:10	5:10	5:10	5:10	5:10	5:10
R09 S, SSW	C1, C3, L5, L6	5:10	5:10	5:00	5:10	5:10	5:10	5:10	5:10	5:10	5:10
R10 SW, WSW	C1, L5, L6	5:10	5:10	5:00	5:10	5:10	5:10	5:10	5:10	5:10	5:10

Table J-2 (Sheet 2 of 2)
10-Mile Emergency Planning Zone Evacuation Time Estimates (100 Percent) (Hr:Min)

Region Wind Toward	Sub-zones Impacted	Summer Midday Midweek		Summer Midday Weekend		Summer Evening Midweek/Weekend	Winter Midweek Midday		Winter Midday Weekend		Winter Evening Midweek/Weekend
		Good Weather	Rain	Good Weather	Rain	Good Weather	Good Weather	Rain	Good Weather	Rain	Good Weather
R11 W	C1, L5, L6, L7	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10
R12 WNW	L5, L6, L7	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10
R13 NW, NNW	L5, L6, L7, L8	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10	5:10

K. RADIOLOGICAL EXPOSURE CONTROL

This section describes the means for controlling emergency worker radiological exposures during an emergency, as well as the measures that are used by LNP to provide necessary assistance to persons injured or exposed to radiation and/or radioactive materials. Exposure guidelines in this section are consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides described in EPA 400-R-92-001.

1. EMERGENCY EXPOSURES

Emergency exposures may be authorized for activities such as removal of injured personnel, undertaking corrective actions, performing assessment actions, providing first aid or medical treatment, performing personnel decontamination, or providing ambulance service. Guidelines for emergency response personnel exposure limits, including life-saving actions, are described in Table K-1.

The Emergency Coordinator (EC), in consultation with facility Radiation Protection personnel, is responsible for authorization of any emergency exposures resulting in doses exceeding the numerical values of the occupational dose limits provided in 10 CFR 20. If exposures in excess of the numerical values of the occupational dose limits provided in 10 CFR 20 are required, these exposures will be limited to individuals who are properly trained and knowledgeable of the tasks to be completed and the risks associated with the exposures. Selection criteria for volunteer emergency workers include consideration of those who are in good physical health, are familiar with the consequences of emergency exposure, and are not a "declared pregnant adult." Efforts are made to maintain personnel doses As Low As Reasonably Achievable (ALARA).

In the absence of the extenuating circumstances identified in Table K-1, LNP applies the routine radiation dose limits to each of the following activities:

a. Removal of injured persons.

b. Undertaking corrective actions.

c. Performing assessment actions.

d. Providing first aid.

e. Performing personnel decontamination.

f. Providing ambulance service.

g. Providing medical treatment services.

If any of the extenuating circumstances identified in Table K-1 exist, then the associated exposure guidelines identified in Table K-1 may be applied, subject to proper authorization.

2. RADIATION PROTECTION PROGRAM

The purpose of a Radiation Protection Program (RPP) is to ensure that radiation doses received by personnel are kept as low as reasonably achievable and do not exceed the prescribed limits for both normal operating and emergency conditions. The established measures to provide this assurance include access control, personnel monitoring, and contamination control. Access control, personnel monitoring, and contamination control are discussed below in Section K.6.

Chapter 12 of the LNP FSAR provides additional detail regarding the RPP consistent with the requirements of 10 CFR 20. The RPP, combined with implementing procedures, includes provisions for implementing emergency exposure guidelines.

3. DOSIMETRY AND DOSE ASSESSMENT

To monitor the exposure of personnel during normal or emergency conditions, personal dosimeters are utilized. Adequate supplies of dosimeters are maintained by the Radiation Protection Section for use during an emergency.

a. Implementing procedures describe in detail the types of personal dosimeter devices (both self-reading and permanent), the manner in which they are to be used, who is to wear them, and how they are to be cared for. The types of dosimeters include thermoluminescent dosimeters (TLDs), electronic alarming dosimeters, and special types of ring badges. In an emergency situation, special care shall be taken to assure proper reading frequency. Provisions have been established, both on-site and through service organizations, to provide 24-hour per day capability to read dosimeters to determine the doses received by emergency workers.

b. When personal dosimeters indicate that an individual has been exposed to concentrations of radioactive materials, or in any case where it is suspected that radioactive materials may have entered the body, appropriate bioassay services and/or special tests shall be performed as stipulated in 10 CFR 20. The determination of the individual's exposure shall be based upon this evaluation.

   The LNP RPP requires that individual exposure records be documented and maintained in order to:

   1. Evaluate the effectiveness of the RPP.

2. Demonstrate and facilitate compliance with procedural requirements and applicable governmental regulations.

3. Reconstruct for legal or medical purposes situations and conditions for analysis of radiation doses received.

4. STATE AND LOCAL RESPONDER EXPOSURE AUTHORIZATIONS

The State of Florida and the local counties of Citrus, Levy, and Marion address, in their respective radiological emergency plans, 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).

5. DECONTAMINATION ACTION LEVELS

a. LNP implements procedures for decontamination of on-site emergency personnel wounds, supplies, instruments and equipment, and for waste disposal. LNP provides decontamination supplies with emergency kits consistent with Section K.7 of this Plan.

b. LNP implements requirements for personnel and area decontamination, including decontamination action levels and criteria for returning areas and items to normal use, in procedures supporting the RPP.

6. CONTAMINATION CONTROL MEASURES

a. During either normal or emergency conditions, strict control of access to areas is a primary means to minimize radiation exposure. LNP implementing procedures have been established such that even during an emergency condition, measures can be quickly taken for identifying and controlling access to hazardous areas. The measures are initiated by the EC through the use of the Radiation Monitoring Team as described in the implementing procedures.

In the event of a radiological emergency in which access to certain areas of the plant is required and hazardous radiation levels might be encountered, the Radiation Monitoring Team is dispatched and, among other duties, identifies the need to establish Radiation Controlled Areas (RCAs) and appropriate access and work precautions. RCAs are established where elevated levels of radiation, contamination, and/or airborne radioactivity may exist. Within the RCA, areas of varying hazards may be present; these are identified in one of the following five categories:

1. Radiation Area.

2. High Radiation Area.

3. Airborne Radioactivity Area.

4. Contaminated Area.

5. Radioactive Material.

Normally, RCAs are located within the Auxiliary, Turbine, and Reactor Buildings. However, during an emergency, a temporary RCA may be set up in other parts of the plant, as directed by the EC, by barricades, ropes, etc., and be conspicuously posted with precautionary signs. The "Radiological Protection Standard" states that any area exceeding 1R per hour at 30 centimeters (cm) whole body exposure must be locked, barricaded with flashing lights, or guarded to preclude unauthorized entry.

Radiation Work Permits (RWPs) are utilized to maintain control of personnel radiation exposures, to assure all personnel are aware of radiological conditions, and to assure awareness of the precautions to be taken. Entry into an RCA requires the use of a General or Specific RWP.

A Control Point is established, as appropriate, as the point of entrance to and exit from an RCA. This point is utilized to assure personnel are adequately attired with required protective clothing and have proper personnel monitoring devices, and to prevent the spread of radioactive contamination upon exiting.

b. Control of potable water and food supplies from radioactive contamination on-site is affected by the following measures:

1. All potable water for the plant comes from approved, surveyed locations.

2. No food is permitted in the RCA.

3. No drinking is permitted in the RCA.

In addition, selected water sources and vegetation around the plant are routinely analyzed for radioactivity. Also, external radiation field measurements and ambient air samples are analyzed.

The DHBRC will implement their PAGs in the event of an off-site radiological emergency to ensure that recovery operations restore food pathways. These guidelines provide for use of stored feed, isolation/condemnation of milk products or crops, decontamination of crops, soil treatment, and/or designation of land use for non-food applications, as warranted.

c. LNP permits areas and items to be returned to normal (i.e., non-contaminated) use after appropriate surveys and verification have been conducted, verifying that the contamination levels meet the criteria provided in the RPP or its supporting procedures.

7. DECONTAMINATION OF RELOCATED LNP PERSONNEL

LNP has dedicated decontamination and clothing kits and decontamination stations on-site. The kits can be used when decontamination of relocated on-site personnel is required. The kits and clothing can also be taken to alternate locations providing extra clothing and decontaminants needed to support decontamination of relocated on-site personnel.

Personnel and equipment leaving contaminated areas are monitored to ensure that equipment, personnel or their clothing are not contaminated. If contaminated above acceptable levels, they will be decontaminated in accordance with plant procedures. Prompt removal of the contaminant, using the general procedures for personal cleanliness, will generally remove the contaminant and reduce the exposure. Stronger cleansing agents may be utilized, as necessary, and applied to the skin with needed caution to the risk of injury to skin surfaces.

Table K-1
Emergency Worker Exposure Guidelines

Dose Limit (rem TEDE)	Activity	Condition
5	Personnel should be kept within normal 10 CFR 20 limits during bona fide emergencies, except as authorized for activities as indicated below	
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

L. MEDICAL AND PUBLIC HEALTH SUPPORT

This section addresses medical assistance and support for both on-site and off-site treatment of LNP personnel. Table L-1 summarizes the types of medical treatment for various types of injuries.

A list of certification letters from off-site organizations that will provide medical support are provided in Appendix 3 of this Plan.

1. HOSPITAL AND MEDICAL SUPPORT

Since the possibility of on-site injuries covers such a large spectrum of injuries varying from minor to life-threatening, coupled with non-radiological to radiological, the following sections identify which facilities will handle the various types of injuries.

1.1 SEVEN RIVERS REGIONAL MEDICAL CENTER

Persons with injuries of a non-radiological or radiological nature requiring off-site treatment will be sent to Seven Rivers Regional Medical Center in Crystal River, Florida.

1.2 CITRUS MEMORIAL HOSPITAL

Persons with injuries of a non-radiological or radiological nature requiring off-site treatment will be sent to Citrus Memorial Hospital in Inverness, Florida when Seven Rivers Regional Medical Center is not available due to evacuation.

1.3 OFF-SITE MEDICAL SUPPORT PLANS

The above hospitals will provide for treatment, medical examinations, and laboratory services for those Progress Energy employees, and other persons designated by Progress Energy, who have been involved in a radiation incident. When local facilities are considered inadequate by the hospital because of the nature or severity of the injury sustained, the injured person may be referred to a regional facility (Oak Ridge, Tennessee – REAC/TS) for hospitalization. Medical records, including bioassay records, will be maintained permanently by the hospital.

Both Seven Rivers Regional Medical Center and Citrus Memorial Hospital have plans for emergency handling of radiation accident cases from the LNP to carry out the terms of the hospital's agreement with Progress Energy. The plans will:

a. Coordinate the medical disciplines, which are committed to support the treatment of injuries involving radiation exposure and/or radioactive contamination.

b. Develop plans, procedures, and training programs for the reception, diagnosis, and treatment of injured personnel.

c. Designate the physical facilities and equipment to be used for initial emergency care and subsequent definitive care and treatment.

d. Designate physicians and medical support personnel and alternates to handle radiation emergency patients.

Oak Ridge Associated Universities (ORAU) operates a research hospital in Oak Ridge, Tennessee for the U.S. Department of Energy (DOE). It studies radiation and radioactive materials in diagnosis, therapy, and research. Its specialized facilities are available for the care and treatment of possible accident victims transferred from the local hospitals.

2. ON-SITE FIRST AID CAPABILITY

First aid assistance at LNP is designed to handle a wide range of injuries from simple first aid to injuries requiring medical assistance. This task is accomplished by Medical Response Personnel.

2.1 MEDICAL RESPONSE PERSONNEL

The Medical Response Personnel are on-site individuals trained in basic medical procedures and certified by the State of Florida Department of Health, Bureau of Emergency Medical Services (EMS) and Community Health Resources as described in Section O, "Radiological Emergency Response Training," of this Plan. They are trained to handle injured personnel, with or without radiological considerations, in accordance with implementing procedures.

2.2 FIRST AID KITS

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 off-site agencies can transport patients to appropriate treatment centers, if applicable.

3. EMERGENCY MEDICAL FACILITIES (STATE OF FLORIDA)

The State of Florida has identified public, private, and other emergency medical services facilities within the state that are capable of providing medical support for any contaminated injured individual. This information is available in the State of Florida Radiological Emergency Management Plan (herein referred to as the State Plan). The State Plan includes the name, location, type of facility and capacity, and any special radiological capabilities.

4. MEDICAL EMERGENCY TRANSPORTATION

Transportation for injured personnel at LNP is available via local emergency medical services, other Progress Energy vehicles, or private vehicles. Instructions, including maps, for transportation of personnel to local hospitals are provided in implementing procedures.

Table L-1
Summary of Actions for Emergency Medical Treatment
(Degree of Contamination)

Type of Injury	Non-Contaminated	Contaminated
Minor Injury Not Requiring Doctor	Treat on-site.	Treat on-site.
Minor Injury Requiring Medical Assistance	Notify Control Room or transport off-site.	Notify Control Room or transport off-site.
Serious Injury	Notify, then transport to Seven Rivers Regional Medical Center or Citrus Memorial Hospital.	Notify, then transport to Seven Rivers Regional Medical Center or Citrus Memorial Hospital.
Over exposure (15 Rem)	Notify, then transport to Seven Rivers Regional Medical Center.	Notify, then transport to Seven Rivers Regional Medical Center or Citrus Memorial Hospital.
Life or Death Situation	Notify, then transport to Seven Rivers Regional Medical Center.	Notify, then transport to Seven Rivers Regional Medical Center or Citrus Memorial Hospital.

M. RECOVERY AND REENTRY PLANNING AND POST-ACCIDENT OPERATIONS

This section addresses the general plans for recovering from emergencies and reentry. 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.

1. RECOVERY PLANS AND PROCEDURES

Progress Energy implements recovery plans and procedures that provide guidance for a range of recovery and re-entry activities, including:

a. Recovery/re-entry organization.

b. Responsibilities for recovery/re-entry decision-making, including decisions for relaxing protective measures based on existing and potential hazardous conditions.

c. Means for informing members of the emergency response organization that recovery operations are to be initiated and related changes in the organizational structure.

d. Methods for periodically updating estimates of total population exposure.

2. RECOVERY OPERATIONS

This organization may be modified during the recovery/re-entry process to better respond to the conditions at the Site.

The state will be the lead organization for off-site recovery operations. The state's recovery organization will be set up in accordance with the State of Florida Radiological Emergency Management Plan (Annex A to the State of Florida Comprehensive Emergency Management Plan) (Reference O).

The Emergency Coordinator (EC) acts as site liaison with the recovery organization. Other LNP management and supervisory personnel interface with recovery operations, as necessary and as warranted.

The basic organization may be modified, as required, to address the needs of the given situation. The EOF Director assumes control and direction of the recovery/re-entry operation with the authority and responsibilities set forth in implementing procedures.

The recovery organization develops plans and procedures designed to address both immediate and long-term actions. The necessity to maintain protective measures implemented during the emergency will be evaluated, and, if deemed appropriate, the recovery organization will recommend relaxation of the protective measures.

The following conditions are considered appropriate for the recommendation to relax protection measures:

a. Site parameters of operation no longer indicate a potential or actual emergency exists.

b. The release of radioactivity from the Station is controllable, no longer exceeds permissible levels, and does not present a credible danger to the public.

c. The Site is capable of sustaining itself in a long-term shutdown condition.

Because it is not possible to foresee all of the consequences of an event, specific recovery/re-entry procedures may need to be written to address specialized requirements. Where possible, existing implementing procedures are utilized in the areas of operations, maintenance, and radiological controls. Any special recovery procedures receive the same review and approval process accorded other implementing procedures.

Depending on plant conditions and the scope of required activities, the recovery organization may discharge its activities from one or more designated emergency response facilities or from other locations. As recovery operations progress, the recovery organization may be augmented or reduced, as needed, to ensure effectiveness in fulfilling ongoing operational needs.

The recovery process is implemented when the LNP emergency response organization managers, with concurrence of state and federal agencies, have determined the Site to be in a stable and controlled condition. Upon the determination, the EOF Director notifies the NRC Operations Center, the State Emergency Operations Center (EOC), and the local EOCs that the emergency has been terminated and any required recovery has commenced.

3. UPDATING TOTAL POPULATION EXPOSURE

Total population exposure is periodically estimated in the affected sectors and zones utilizing population distribution data from within the emergency planning zones. The Radiological Control Manager, or designee, will periodically update estimates of total population exposure consistent with the provisions of Section I.10 of this Plan.

N. EXERCISES AND DRILLS

This section addresses exercises and drills conducted to evaluate emergency response capabilities. Progress Energy implements a program of periodic exercises and drills to evaluate major portions of emergency response capabilities and to develop and maintain key emergency response skills. Any identified deficiencies are evaluated and corrected.

1. EXERCISES

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.

a. Exercise Scope and Frequency

An emergency response exercise shall be conducted every two (2) years. The scenario should be varied such that all major elements of the Plan are tested within a 6-year period. During the interval between biennial Exercises, at least one (1) drill should be conducted involving principal areas of on-site emergency response capabilities. These areas include management and coordination of emergency response, accident assessment, protective action decision-making, and Plant system repair and corrective action. State and local agencies will be invited to participate in the "off-year" drills. Plan elements may be tested during "off-year" drills. Provisions for drills and exercises using terrorist based events are also part of the Drill and Exercise Program.

b. Exercise Scenarios and Participation

Chapter 14 of the State Plan delineates the frequency in which the State of Florida will participate in an exercise with Progress Energy. This participation may be either full or partial depending on the objectives of the exercise and the degree to which the state and local plans will be tested. The State Division of Emergency Management is responsible for implementing Chapter 14 and assuring that exercises are conducted as set forth in NRC and FEMA rules. These exercises must be preceded by written plans and briefings with affected agencies. They shall be evaluated by personnel familiar with the operation and cognizant of the expected results with the ability to demonstrate on-the-spot correction of erroneous performance. Post-exercise meetings should be conducted with participants and observers to provide a preliminary assessment of emergency response actions. Comments resulting from these sessions should serve as input to the critique.

2. DRILLS

Progress Energy maintains adequate emergency response capabilities between biennial exercises by conducting drills, including at least one drill involving a combination of some of the principal functional areas of on-site emergency

response capabilities. Such drills would include activities such as management and coordination of emergency response, accident assessment, protective action decision-making, plant system repair, and corrective actions. Upon request, Progress Energy allows affected state and local governments located within the plume exposure pathway EPZ to participate in the drills.

During these drills, activation of all of the emergency response facilities may not be necessary. Progress Energy may use the drills to consider accident management strategies, provide supervised instruction, allow the operating staff to resolve problems and focus on internal training objectives. Progress Energy may include one or more drills as portions of an exercise.

The drill program includes the following:

a. Communications Drills

Progress Energy tests communications with state and local governments within the Plume Exposure Pathway EPZ monthly, as identified in Section F.3 of this Plan.

Progress Energy tests communications with federal emergency response organizations and states within the Ingestion Pathway EPZ quarterly, as identified in Section F.3 of this Plan.

Progress Energy tests communications between the facility, state, and local Emergency Operations Centers (EOCs), and field assessment teams annually.

Communications drills evaluate both the operability of the communications system(s) and the ability to understand message content.

The communications undertaken in the event of an actual declared emergency may be used to satisfy these emergency communications drill requirements, provided that these communications demonstrate both system operability and understanding of message content.

b. Fire Drills

Progress Energy conducts fire drills as discussed in Section 9.5.1.8.2.2 of the LNP FSAR.

c. Medical Emergency Drills

Progress Energy conducts medical emergency drills that include a simulated contaminated injured individual and may involve participation by the local support services agencies (e.g., medical transportation and off-site medical treatment facility) annually.

d. Radiological Monitoring Drills/Health Physics Drills

Progress Energy conducts radiological monitoring drills, involving both on-site and off-site radiological monitoring activities, annually. Radiological monitoring drills include the following:

1. Use of the appropriate procedures for collecting and analyzing samples and recording results.

2. Collection and analysis of all sample media for which the facility is responsible.

3. Communications with monitoring teams.

4. Recordkeeping activities.

Progress Energy may coordinate radiological monitoring drills with those drills conducted by state and local government entities or may conduct these drills independently.

e. Sampling Drills

Progress Energy conducts on-site Radiation Protection drills at least semi-annually. Radiation Protection drills include the following:

1. Response to, and analysis of, simulated elevated airborne and liquid activity levels.

2. Response to simulated elevated area radiation levels.

3. Analysis of the simulated radiological situation using the appropriate procedures.

3. CONDUCT OF DRILLS AND EXERCISES

Emergency Preparedness is responsible for the overall development and direction of the exercise. Designated personnel develop the exercise scenario, exercise messages, and simulated data for the Site and off-site areas. The Exercise Director develops an exercise plan for each exercise. This plan includes the following:

a. Objectives of the exercise and evaluation criteria.

b. The date, time, place, and participating organizations.

c. The exercise scenario, including a time schedule of real and simulated events.

d. A narrative summary of the event including such things as emergency classification at various times in the simulated accident, off-site assistance, some detail on plant conditions.

e. A description of the arrangements for official observers.

4. EXERCISE AND DRILL EVALUATION

One, or more, qualified Progress Energy instructor(s)/evaluator(s) supervises and evaluates drills and exercises. A qualified instructor/evaluator is an individual whose knowledge, skills, and abilities have been evaluated by the Emergency Planning Manager or designee and determined to be sufficient for observing and evaluating the planned activities against the established criteria. For example, a qualified instructor/evaluator may be an individual who has been trained to fill the emergency response position to be observed or may be a supervisor or instructor for the position. Specific areas to be observed by the evaluators will be defined in the form of pre-printed critique sheets.

Progress Energy conducts a critique as soon as practicable following each exercise. Participants include selected Progress Energy, NRC, state, local, and other participants and observers/evaluators. A formal evaluation will result from the critique.

5. EXERCISE AND DRILL CRITIQUES

Progress Energy records the input from the critique participants; evaluates the need for changes to the Plan, procedures, equipment, facilities, and other components of the emergency preparedness and response program; and develops an action plan to address the identified substantive issues.

Progress Energy tracks identified corrective actions to completion using the facility's corrective action program. The exercise scenario package and Post-Exercise Critiques are filed as records.

O. RADIOLOGICAL EMERGENCY RESPONSE TRAINING

This section addresses training of radiological emergency response personnel, including both on-site staff and off-site individuals who may be called on to provide assistance in the event of an emergency.

1. GENERAL REQUIREMENTS

Progress Energy implements a training program that provides for initial training and retraining for individuals and organizations who have been assigned emergency response duties.

Personnel who may be required to fill emergency response positions receive initial and annual training in their functional responsibilities. Training is also provided for various off-site organizations that have agreed to support responses to an emergency. Periodic drills and a biennial exercise are conducted for training and to identify program strengths and weaknesses.

a. Off-site Emergency Response Training

Progress Energy conducts, or supports the conduct of, site-specific training for off-site personnel who may be called upon to provide assistance in the event of an emergency. This includes emergency responders employed by agencies identified in Section A of this Plan.

Progress Energy provides or supports training for affected hospital, ambulance/rescue, police, and firefighting personnel that includes their expected emergency response roles, notification procedures, and radiation protection precautions. For these and any other off-site emergency responders who may be required to enter the LNP Site under emergency conditions, Progress Energy provides or supports training that addresses LNP access procedures and identifies (by position) the individual who will control on-site activities.

2. PROGRESS ENERGY EMERGENCY RESPONSE TRAINING

The emergency response training program includes Progress Energy personnel who may be called upon to respond to an emergency. Each individual completes the required training prior to being assigned to a position in the emergency response organization

3. FIRST AID TRAINING

Progress Energy provides First Aid Training to all individuals assigned to Medical Response teams in accordance with approved procedures.

4. EMERGENCY RESPONSE TRAINING AND QUALIFICATION

Progress Energy conducts a program for instructing and qualifying all personnel who implement this Plan. Each individual completes the required training prior to assignment to a position in the emergency response organization. The training program establishes the scope, nature, and frequency of the required training and qualification measures.

Progress Energy implements a program to provide position-specific emergency response training for designated members of the emergency response organization. The content of the training program is appropriate for the duties and responsibilities of the assigned position. The affected positions, and the scope of the associated training programs, include the following:

a. Directors, Coordinators and Managers in the emergency response organization: Emergency condition assessment and classification, notification systems and procedures, organizational interfaces, LNP site evacuation, radiation exposure controls, off-site support, and recovery.

b. Accident Assessment Personnel: Emergency condition assessment and classification, notification systems and procedures, and organizational interfaces.

c. Radiological Control Personnel: Dose assessment, emergency exposure evaluation, protective measures, protective actions, contamination control and decontamination, monitoring systems, and procedures.

d. Police, Security, and Firefighting Personnel: Notification of station personnel, facility activation, personnel accountability and evacuation, and access control. (Note: Off-site police and firefighting personnel will receive training consistent with Section O.1.a of this Plan.)

e. Damage Control/Emergency Repair Teams: Damage control organization, communication systems, and planning and coordination of damage control tasks.

f. First Aid/Fire Brigade/Rescue Personnel: Emergency organizational interfaces, firefighting, search and rescue procedures, and communications systems.

g. Local Support Services/Emergency Service Personnel: Training consistent with Section O.1.a of this Plan.

h. Offsite Medical Support Personnel: Training consistent with Section O.1.a of this Plan. All Medical Response Personnel are, at a minimum, certified by the State of Florida as Emergency Medical Technicians. Training topics are established as per the State certification requirements

i. Emergency communicators: Notifications and reports to off-site authorities and communication systems as appropriate for individual position assignments.

j. Personnel responsible for communicating with the media and public.

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

Section O.5 of this Plan discusses provisions for periodic retraining of ERO personnel.

5. RETRAINING

Progress Energy conducts, or supports the conduct of, annual retraining for personnel with emergency response responsibilities, in accordance with the plant training program. Failure to successfully complete this training in a timely manner as specified in plant training program requirements results in the individual's removal from the ERO pending completion of the required training.

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

This section addresses responsibilities associated with planning efforts. For example, Progress Energy implements an organizational structure and processes to ensure that this Plan is periodically reviewed, updated, audited, distributed, and controlled consistent with facility quality assurance and document control requirements. Progress Energy also implements a program to ensure personnel responsible for the emergency planning effort receive training appropriate to their duties and responsibilities.

1. TRAINING

Progress Energy develops and implements a process to ensure the Emergency Preparedness Supervisor and support staff are properly trained for effective implementation of the emergency planning effort, consistent with applicable regulatory requirements and guidance, license conditions, other commitments, and accepted good practices. Training is primarily through on-the-job related to Plan preparation, periodic revisions, or drills and exercises. Other training may include formal education, professional seminars, plant-specific training, industry meetings, and other activities and forums that provide for an exchange of pertinent information.

2. RESPONSIBILITY FOR RADIOLOGICAL EMERGENCY RESPONSE TRAINING

The Vice President, Nuclear Operations holds the overall authority and responsibility for ensuring that an adequate level of emergency preparedness is maintained. Responsibility for the planning effort is delegated to the Emergency Preparedness Supervisor.

3. EMERGENCY PLANNING COORDINATION

The Emergency Preparedness Supervisor is designated as the Emergency Planning Coordinator, having lead responsibility for emergency planning. This individual is responsible for developing and updating the LNP Emergency Plan and coordination of this Plan with other response organizations. The Progress Energy corporate staff may augment these on-site efforts, as needed, to ensure a comprehensive emergency preparedness effort.

4. PLAN REVIEWS AND UPDATES

This Emergency Plan shall be reviewed, updated as needed, and certified to be current on an annual basis. Any revisions to the Plan will be reviewed in accordance with 10 CFR 50.54(q) requirements.

On an annual basis, the Emergency Planning Coordinator reviews the LNP procedures for emergency classification with the state and any affected local organizations.

5. DISTRIBUTION OF REVISED PLANS

Upon completion of the annual review, the Emergency Planning Coordinator or designee incorporates any necessary changes. Changed pages are marked and dated to highlight the changes.

Following approval of the updated plan by the Vice President, the LNP document control organization distributes the updated plan to organizations/individuals with responsibility for implementing the plans.

6. SUPPORTING PLANS

Other plans that support this Plan are:

a. The State of Florida Radiological Emergency Management Plan (Annex A to the State of Florida Comprehensive Emergency Management Plan) (Reference O).
b. Appendix VI of the State Plan (Levy Nuclear Plant Site Plan) (Reference O).
c. U.S. Nuclear Regulatory Commission, NUREG-0728, NRC Incident Response Plan (Reference Y).
d. National Response Framework (Reference J).
e. NRC Region II Incident Response Plan.
f. Institute of Nuclear Power Operations (INPO) Emergency Response Plan.

7. IMPLEMENTING PROCEDURES

Appendix 5 of this Plan provides a topical listing of implementing procedures and administrative procedures that support this Plan and includes the section(s) of the Plan to be implemented by each procedure.

Certain emergency plan features recommended by NUREG-0654 (e.g., Evaluation Criterion I.3, which addresses methods and techniques for determining source terms and the magnitude of releases) are procedural in nature and have been appropriately placed in LNP procedures. Changes to the affected portions of these procedures are developed and approved consistent with the requirements of 10 CFR 50.54(q) and the guidance provided in NRC Regulatory Information Summary 2005-02, “Clarifying the Process for Making Emergency Plan Changes (Ref III.A. 28).”

8. TABLE OF CONTENTS AND NUREG-0654 CROSS REFERENCE

This Plan contains a specific table of contents. Additionally, the format for this Emergency Plan directly follows the format of NUREG-0654, Rev. 1.

9. EMERGENCY PLAN AUDITS

Progress Energy's Nuclear Assessment Section performs, or oversees the performance of, periodic independent audits of the Emergency Preparedness Program consistent with the requirements of 10 CFR 50.54(t). The audits include, at a minimum, the following:

a. The Emergency Plan.

b. Emergency Plan Implementing Procedures and practices.

c. The Emergency Preparedness Training Program.

d. Readiness testing (e.g., drills and exercises).

e. Emergency response facilities, equipment, and supplies.

f. Interfaces with state and local government agencies.

g. Required records and documentation.

Progress Energy's Nuclear Assessment Section ensures that all audit findings are subject to management controls consistent with the facility's corrective action program.

Progress Energy establishes and maintains the frequency of the periodic audits based on an assessment of performance as compared to performance indicators; however, the audit frequency may not be less than once every 24 months. In addition, Progress Energy conducts a program audit as soon as reasonably practicable after a change occurs in personnel, procedures, equipment, or facilities that could potentially adversely affect emergency preparedness, but no longer than 12 months after the change.

Progress Energy's Nuclear Performance Section documents audit results and improvement recommendations and reports these results to the LNP facility and Progress Energy management. Progress Energy makes those portions of the audits that address the adequacy of interfaces with state and local governments available to the affected governments.

Records Management shall file and maintain the following records for 5 years:

a. The review results and recommended improvements.

b. The answers to the recommended improvements.

c. A description of the corrective actions taken.

10. EMERGENCY TELEPHONE NUMBERS

The Emergency Planning Coordinator, or designee, is responsible for performing a quarterly review of the telephone numbers in emergency response procedures and for ensuring required revisions are completed.

APPENDIX 1
GLOSSARY OF TERMS

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

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 necessary to make decisions to implement specific emergency measures.

Bomb - An explosive device suspected of having sufficient force to damage Plant systems or structures.

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 LNP, 10-mile Emergency Planning Zone (EPZ) means Citrus, Levy, or Marion County(ies).

Credible Site-Specific Security Threat Notification – A threat confirmed and validated by Site Security or received over the Emergency Notification System (ENS) from the NRC. Notification may be received from recognized law enforcement or governmental agencies (e.g. Federal Bureau of Investigation (FBI), Florida Department of Law Enforcement (FDLE), Division of Emergency Management (DEM), Nuclear Regulatory Commission (NRC).

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.

APPENDIX 1
GLOSSARY OF TERMS

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

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

DEM – An abbreviation standing for State of Florida Department of Community Affairs, Division of Emergency Management. DEM is responsible for coordinating federal, state, and local radiological emergency response activities, and for preparing and maintaining the State Plan.

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

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

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

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

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

Emergency 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) – 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) – LNP facility near the plant that is provided for the management of overall LNP 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 off-site radiological and environmental assessments; recommendations for public protective actions; and direction of recovery operations.

Emergency Planning Zone (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.

APPENDIX 1
GLOSSARY OF TERMS

Exclusion Area – An Exclusion Area is an area specified for the purpose of reactor site evaluation in accordance with 10 CFR 100. 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 LNP is Progress Energy-owned property with a radius of approximately 3600 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 – 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 TSCs and EOF.

Hostage - A person or object held as leverage against the station to ensure that demands will be met by LNP.

Hostile Action - An act toward a Nuclear Power Plant or its personnel that includes the use of violent force to destroy equipment, take hostages, and/or intimidate the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force. Other acts that satisfy the overall intent may be included.

“Hostile Action” should not be construed to include acts of civil disobedience or felonious acts that are not part of a concerted attack on the Nuclear Power Plant. Non-terrorism-based EALs should be used to address such activities, (e.g., violent acts between individuals in the owner controlled area).

APPENDIX 1
GLOSSARY OF TERMS

Hostile Force - One or more individuals who are engaged in a determined assault, overtly or by stealth and deception, equipped with suitable weapons capable of killing, maiming, or causing destruction.

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. Specific to a nuclear power plant, this is typically described in connection with the 50-mile radius Emergency Planning Zone (50-mile EPZ).

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

Emergency News Center (ENC) – An Emergency Facility activated by Progress Energy and staffed by Progress Energy, state, county, and federal 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).

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.)

APPENDIX 1
GLOSSARY OF TERMS

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 (OCLAN) line.

Operations Support Center (OSC) – An on-site 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.

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 that 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 person 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.

APPENDIX 1
GLOSSARY OF TERMS

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 where access to which is controlled by Progress Energy for purposes of protection of individuals from exposure to radiation and radioactive materials.

Safety Analysis Report, Final (FSAR) – 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, the term “safety-related” means the following:

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

SERT – State Emergency Response Team (Florida). (See also DEM.)

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

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

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

State – The State of Florida.

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

APPENDIX 1
GLOSSARY OF TERMS

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
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X. U.S. Nuclear Regulatory Commission, 2005, NUREG/CR-6863, “Development of Evacuation Time Estimate Studies for Nuclear Power Plants, January 2005.

Y. U.S. Nuclear Regulatory Commission, 2005, NUREG-0728, NRC Incident Response Plan, Revision 4. April 2005.

APPENDIX 2
REFERENCES

Z. U.S. Nuclear Regulatory Commission, 1980, NUREG-0737, Clarification of TMI Action Plan Requirements, October 1980.

AA. U.S. Nuclear Regulatory Commission, 1982, NUREG-0737, Supplement 1, Requirements for Emergency Response Capability, December 1982.

BB. U.S. Nuclear Regulatory Commission, 1992, RTM-92, Response Technical Manual.

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

APPENDIX 3
CERTIFICATION LETTERS

This Appendix contains a list of certifications between Progress Energy and other organizations that may be required to provide support to the LNP in the event of a classified emergency. Copies of the original agreements are kept on file by LNP Emergency Preparedness or Progress Energy Contract Services.

Organizations

1. Citrus County Emergency Management
2. Levy County Emergency Management
3. Marion County Emergency Management
4. State of Florida Division of Emergency Management
5. Citrus Memorial Hospital
6. Seven Rivers Regional Medical Center
7. Citrus County Dept. of Public Safety Fire Rescue Division
8. Nature Coast Emergency Medical Services Fire Department

APPENDIX 4
EMERGENCY ACTION LEVELS

Section D of the Levy Nuclear Plant 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 Appendix. Initiating conditions (ICs) and additional EAL information, including the EAL technical basis, are provided in NEI 07-01, "Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors." (Reference K)

EAL MATRICES

Five 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 ICs that 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 ICs are identified. IC matrices for each of the five recognition categories are provided in Tables A4-1, A4-2, A4-3, A4-4, and A4-5.

APPENDIX 4
EMERGENCY ACTION LEVELS

Table A4-1
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 2 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 Plant Safety Functions. *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*	

APPENDIX 4
EMERGENCY ACTION LEVELS

Table A4-2
Recognition Category C – Cold Shutdown/Refueling System Malfunction
INITIATING CONDITION MATRIX

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	NOUE
CG1 Loss of RCS/RPV Inventory Affecting Fuel Clad Integrity with Containment Challenged. *Op. Modes: Cold Shutdown, Refueling*	**CS1** Loss of RCS/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 With Irradiated Fuel in the RPV. *OP. Modes: Cold Shutdown, Refueling*
			CU6 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*

Table A4-3
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 the 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

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. 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.

APPENDIX 4
EMERGENCY ACTION LEVELS

Table A4-4
Recognition Category H – HAZARDS or OTHER Conditions Affecting Plant Safety
INITIATING CONDITION MATRIX

GENERAL EMERGENCY		SITE AREA EMERGENCY		ALERT		NOUE	
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 Exist Which in the Judgment of the Emergency Coordinator Warrant Declaration of General Emergency. *Op. Modes: All*	**HS3**	Other Conditions Exist Which in the Judgment of the Emergency Coordinator Warrant Declaration of Site Area Emergency. *Op. Modes: All*	**HA6**	Other Conditions Exist Which in the Judgment of the Emergency Coordinator Warrant Declaration of an Alert. *Op. Modes: All*	**HU5**	Other Conditions Exist Which in the Judgment of the Emergency Coordinator Warrant Declaration of a NOUE. *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*		
				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/Stable Shutdown. *Op. Modes: All*	**HU2**	FIRE Within PROTECTED AREA Not Extinguished Within 15 Minutes of Detection OR EXPLOSION within the Protected Area. *Op. Modes: All*
				HA3	Access To a VITAL AREA Is Prohibited Due To Release of Toxic, Corrosive, Asphyxiant or Flammable Gases Which Jeopardize Operation of Operable Equipment 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*

APPENDIX 4
EMERGENCY ACTION LEVELS

Table A4-5 (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. Due to Loss of Power to PIP Busses. *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) Fails 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*	**SU8**	Inadvertent Criticality *Op Modes: 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**	Loss of Indicating and Monitoring Functions. *Op. Modes: Power Operation, Startup, Hot Standby, Safe/Stable Shutdown*		
		SS3	Loss of All Vital DC Power for 15 Minutes or Longer. *Op. Modes: Power Operation, Startup, Hot Standby, Safe/Stable Shutdown*			**SU2**	Inability to Reach Required Shutdown Mode Within Technical Specification Limits. *Op. Modes: Power Operation, Startup, Hot Standby, Safe/Stable Shutdown*

Table A4-5 (Sheet 2 of 2)
Recognition Category S – System Malfunction
INITIATING CONDITION MATRIX

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	NOUE
			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 Loss of All On-site OR Off-site Communications Capabilities. *Op. Modes: Power Operation, Startup, Hot Standby, Safe/Stable Shutdown*

APPENDIX 5
LIST OF EMERGENCY PLAN SUPPORTING PROCEDURES

Implementing Procedures	**Affected Sections of This Plan**
Emergency Classification	Section D
Notifications/Communications	Section E
Protective Action	Section J
Recommendations	Section J
Dose Assessment	Section I
Off-site Radiological Monitoring	Section I
Core Damage	Section I
Evacuation and Accountability	Section J
Medical Response	Section L
Recovery and Reentry	Section M
Technical Support Center	Section B
Activation and Operation	Sections B, C, & H
Operational Support Center Activation and Operation	Sections B & H
Emergency Operations Facility Activation and Operation	Sections B & H
Emergency News Center Activation and Operation	Sections B & H
Administrative Procedures	
Maintaining Emergency Preparedness	Section P
Emergency Response Facilities and Equipment	Sections B, C, & H
Drills and Exercises	Section N
Emergency Preparedness Training	Section N
Public Information	Section G
Emergency Preparedness Telephone Directory	Section E

APPENDIX 6
EVACUATION TIME ESTIMATE STUDY SUMMARY

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

All relevant existing ETE documentation specific to LNP 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 (Reference V).
- 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 (Reference X).

Overview of Project Activities

The major activities performed are briefly described in chronological sequence:

- Kick-off meetings were held with state and local governments.
- Crystal River Nuclear Plant 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 LNP 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 Levy 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 kick-off 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 Crystal River ETE data, the EPZ is subdivided into 8 sub-zones. These sub-zones were then grouped within circular areas or "keyhole" configurations (circles plus radial sectors) that define a total of 13 Evacuation Regions.
- 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 LNP site was considered.
- The Planning Basis for the calculation of ETE is:
  - A rapidly escalating accident at LNP 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 143 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 13 Evacuation Regions to completely evacuate from that Region, under the circumstances defined for one of the 11 Evacuation Scenarios (13 x 11 = 143). 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 LNP 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 LNP site showing the layout of the 8 protective action zones (PAZ) 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 13 Evacuation Regions in terms of their respective groups of sub-zones.
- Table 6-2 lists the 11 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. The following tables A6-1 and A6-2 depict the EPZ population distribution by subzone and special facilities within the 10-Mile EPZ, respectively. Figure A6-1 provides resident population within the 10-Mile EPZ and Figure A6-2 provides a map of the Plume Exposure Pathway EPZ illustrating evacuation routes, evacuation areas, relocation centers in host areas, and shelter areas. Implementing procedures provide locations of pre-selected radiological sampling and monitoring points.

APPENDIX 6
EVACUATION TIME ESTIMATE STUDY SUMMARY

Table A6-1
EPZ Population Distribution (by Subzone)

Subzone	2000 Population	2007 Population[(a)]
C1	1,434	1,776
C3	4,422	5,476
C4	2,795	3,461
L5	3,004	3,601
L6	545	653
L7	14	17
L8	245	294
M9	5,866	7,480
TOTAL	**18,325**	**22,758**

(a): The data in this table are based on the "Levy Nuclear Plant Development of Evacuation Time Estimates, April, 2008" (Reference I) and presents the estimates of permanent resident population in each sub-zone based on the 2000 Census data.

Table A6-2
Special Facilities (Schools) within the 10-Mile EPZ

Special Facility	Quadrant	Distance from Plant (Miles)	County
Citrus Springs Elementary	C4	9.9	Citrus
Yankeetown School	L5	5	Levy
Dunnellon Christian Academy	M9	9.4	Marion
Romeo Elementary School	M9	11.9	Marion
Dunnellon Middle School	M9	9.4	Marion

APPENDIX 7
PUBLIC ALERT AND NOTIFICATION SYSTEM

1.0 SUMMARY

This appendix provides a design for the prompt notification system used for alerting the public in the event of a radiological emergency at the Levy Nuclear Plant. Historically a system of outdoor warning devices (i.e., sirens) has been used for this purpose in the plume exposure pathway emergency planning zones of nuclear power stations.

2.0 DESIGN OBJECTIVE/BASIS

The design parameters are intended to meet or exceed the applicable criteria in Appendix 3 of NUREG-0654/FEMA-REP-1, "Criteria for the Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."

2.1 INPUTS/ASSUMPTIONS/CRITERIA

INPUTS

Initial inputs for the design of the siren system are based on projected population estimates and local topography. Initial inputs include:

- Local population demographics
- Local topography
- Local meteorological conditions

The final parameters of the siren system are based on a detailed sound engineering study of the plume exposure pathway emergency planning zone (EPZ). Siren locations are based on the sound engineering study, necessary rights-of-way, and electrical power availability.

ASSUMPTIONS

This design is based on technology currently used for promptly alerting the public at existing nuclear power stations (i.e., fixed sirens) and current guidance from the NRC and Federal Emergency Management Agency (FEMA).

Emergency Planning Zone (EPZ): The Plume Exposure Pathway EPZ is defined in the Introduction of this plan.

Population Demographics: NUREG-0654/FEMA-REP-1 provides specific guidance for sound coverage in areas with population densities greater than 2000 persons/mi² within the EPZ. No areas meeting this criterion have been identified in the Levy Plume Exposure Pathway EPZ; therefore, this guidance does not apply to the Levy public alert and notification system.

Capability beyond fixed sirens: Alternate alert equipment such as mobile sirens may be used in thinly populated areas if cost effective. Alternate methods for alerting and notifying institutional facilities are provided, as needed.

CRITERIA

Alerting criteria are delineated in NUREG-0654/FEMA-REP-1 (Appendix 3) which also references Civil Preparedness Guide 1-17 (CPG 1-17). Additional guidance is provided in FEMA-REP-10. The following performance criteria are used to consider the system functional:

Reliability: The system is designed to allow activation by at least two separate (redundant) methods and will be available 24 hours per day. Backup power supplies are provided for the activation system. Fixed siren design is sufficient to withstand the environmental conditions expected at the emplacement (e.g., wind loading, precipitation).

Signal Parameters: The siren signal is a 3 to 5 minute steady signal capable of repetition. The strength of the signal is at least 10 db above average ambient noise level but not more than 123 db at the receptor.

Coverage: The siren system alerts the population on an area-wide basis within the Plume Exposure Pathway EPZ within 15 minutes. The system provides direct coverage of essentially 100% of the population within 5 miles of the site. Alternative methods, such as mobile sirens, may be employed outside the inner 5 mile radius if needed to assure coverage of the plume exposure pathway EPZ.

2.2 METHODOLOGY

A detailed sound engineering study, including acoustic surveys, is used to determine optimum siren site locations. Site selection is also based on population density, ambient noise levels, topography, electric power availability, and existing/interfaced siren locations. Siren site selection is subject to obtaining necessary rights of way.

Alternate means of alerting the population may be used for areas that are not suitable for fixed siren emplacement. These include the use of mobile sirens in areas beyond 5 miles from the site to alert the public in sparsely populated areas.

Public information is provided to transient populations within the EPZ to advise them on actions to be taken if the sirens are sounded.

APPENDIX 7
PUBLIC ALERT AND NOTIFICATION SYSTEM

3.0 SYSTEM DESCRIPTION

The siren system consists of redundantly power supplied sirens that are activated by Levy County emergency response officials (coordinated with Citrus and Marion County emergency response officials). A redundant activation method is available. A method to activate individual sirens for maintenance and testing is provided.

SYSTEM COMPONENTS

The fixed sirens/controllers are an integrated package from a single vendor to promote reliability of system operations and component compatibility.

SYSTEM OPERATION

Procedures based on vendor-supplied operating manuals are provided. Levy County produces and approves specific operating procedures to be used to operate the system. Training on procedures and protocols to be used to operate the system is provided.

SYSTEM MAINTENANCE

The vendor provides procedures and recommendations for preventative maintenance, inspections, and testing which are used to produce maintenance and test procedures. An adequate supply of parts and components is maintained to facilitate corrective and preventative maintenance.

TESTS

Tests are performed as indicated in NUREG-0654/FEMA-REP-1, Appendix 3 as follows:

- Silent Test - every 2 weeks
- Growl Test (or equivalent) – Quarterly and when preventative maintenance is performed
- Complete Cycle Test – Annually, and as required for formal exercises

INSPECTIONS

An annual inspection is performed for each siren and control point. The sirens' electronics, batteries and transmitters/antennas are tested to vendor specifications. In addition, visual inspections of fixed siren connections and installation are performed annually.

APPENDIX 7
PUBLIC ALERT AND NOTIFICATION SYSTEM

DETAILED DESIGN REQUIREMENTS

This layout is based on sirens that provide a sound level of at least 70 dB at a distance of 6,000 ft from the siren. A detailed acoustical/sound engineering study identifying optimal placement of sirens provides information for final placement of sirens. Availability of power and the ability to obtain necessary rights of way also affect actual siren placement. Unusual topography as well as adjacent river areas are considered in this study.

RESULTS AND CONCLUSIONS

The siren system and administrative controls meet current applicable regulations and guidance and address applicable regional considerations (e.g., demographics and topography). The system provides flexibility to add additional capabilities as future conditions/regulations dictate.

5.0 REFERENCES

1. NUREG-0654/FEMA-REP-1 (Addenda 2002) “Criteria for the Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” 1980.

2. Civil Preparedness Guide 1-17 (CPG 1-17), “Outdoor Warning Systems Guide,” 1980.

3. FEMA REP 10, “Guide for the Evaluation of Alert & Notification Systems for Power Plants,” 1985.

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP 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.*	A.1.a, State, Local, Federal, and Private Organizations Table A-1, Primary Emergency Response Organizations	
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.1.b, Concept of Operations	See respective state and local plans for details of their respective concept of operations and their relationship to the total effort.
Criteria A.1.c. *Each plan shall illustrate these interrelationships in a block diagram.*	Figure A-1, Interrelationships Between Key Response Organizations Figure A-2, Functional Interrelationships Between Key Response Organizations	
Criteria A.1.d. *Each organization shall identify a specific individual by title who shall be in charge of the emergency response.*	A.2, Functions, Responsibilities, and Legal Basis	
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.1.b, Concept of Operations	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.b, Concept of Operations A.2, Functions, Responsibilities, and Legal Basis	See respective state and local plans for additional details related to assignment of responsibilities.
Criteria A.2.b. *Each plan shall contain (by reference to specific acts, codes or statutes) the legal basis for such authorities.*	A.2, Functions, Responsibilities, and Legal Basis	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*	A.3, Written Agreements Appendix 3, Certification Letters	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
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.		
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.b, Concept of Operations	The site emergency response will be initiated and completed under the direction of the on-site emergency organization. Further details of on-site emergency personnel are provided in Section B (On-site Emergency Organization). See respective state and local plans for details of 24-hour per day manning for communication links.
Section B: On-site 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 on-site response activities and off-site support and response activities are specified. (10 CFR 50.47[b][2])***		
Criteria B.1. *Each licensee shall specify the on-site emergency organization of plant staff personnel for all shifts and its relation to the responsibilities and duties of the normal staff complement.*	B.1, On-site Emergency Organization Table B-1, Minimum Staffing Requirements for Emergencies Figure B-1, Levy Emergency Response Organization	
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 off-site emergency measures.*	B.2, Emergency Coordinator	
Criteria B.3. *Each licensee shall identify a line of succession for the emergency coordinator position and identify the specific conditions for higher level utility officials assuming this function.*	B.3, Emergency Coordinator Line of Succession	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
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 off-site emergency measures.*	B.4, Emergency Coordinator Responsibilities	
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 on-site 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.5, Plant Emergency Response Staff	
Criteria B.6. *Each licensee shall specify the interfaces between and among the on-site 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 on-site technical support center and the operational support (assembly) center and the licensee's near-site Emergency Operations Facility (EOF).*	B.6, Interfaces Between Functional Areas Figure A-1, Interrelationships Between Key Response Organization	
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.7, Corporate Support for the Plant Staff	
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.*	A, Assignment of Responsibility (Organizational Control) B, On-site Emergency Organization Table B-1, Minimum Staffing Requirements for Emergencies	
Criteria B.7.b. *Technical support for planning and reentry/recovery operations.*	B.7.b M, Recovery and Re-entry Planning	
Criteria B.7.c. *Management level interface with governmental authorities.*	B.7.c	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
Criteria B.7.d *Release of information to news media during an emergency (coordinated with governmental authorities).*	B.7.d G, Public Education and Information	
Criteria B.8. *Each licensee shall specify the contractor and private organizations that may be requested to provide technical assistance to and augmentation of the emergency organization.*	B.8, Support from Contractor and Private Organizations	
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.*	B.8, Support from Contractor and Private Organizations Appendix 3, Certification Letters	
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:*	C.1, Federal Response Capability	
Criteria C.1.a. *Specific persons by title authorized to request Federal assistance.*	C.1.a	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.*	C.1.b	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.c	See respective state and county plans for state and county details.

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
Criteria C.2.b. *The licensee shall prepare for the dispatch of a representative to principal off-site governmental emergency operations centers.*	C.2, Off-site Organization Representation in the EOF	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.3, Radiological Laboratories	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 Supporting Organizations	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 off-site response measures. (10CFR 50.47[b][4])***		
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 System	
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, 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.*	D.3, State/Local Emergency Action Level Scheme	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 off-site conditions that exist at the time of the emergency.*	D.4, Off-site Emergency Action Procedures	See respective state and county plans.

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
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.1, Notification and Mobilization of Emergency Response Personnel	
Criteria E.2. *Each organization shall establish procedures for alerting, notifying, and mobilizing emergency response personnel.*	E.1.1, Progress Energy Emergency Response Organization E.1.2, Off-site Emergency Response Organizations	
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, Message Content	Also see respective state and county plans.
Criteria E.4. *Each licensee shall make provisions for follow-up messages from the facility to off-site authorities, which shall contain the following information if it is known and appropriate:*	E.3, Follow-up Messages to Off-site Authorities	
Criteria E.4.a. *Location of incident and name and telephone number (or communications channel identification) of caller.*	E.3.a	
Criteria E.4.b. *Date/time of incident.*	E.3.b	
Criteria E.4.c. *Class of emergency.*	E.3.c	
Criteria E.4.d. *Type of actual or projected release (airborne, waterborne, surface spill),and estimated duration/impact times.*	E.3.d	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
Criteria E.4.e. *Estimate of quantity of radioactive material released or being released and the points and height of releases.*	E.3.e	
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.3.f	
Criteria E.4.g. *Meteorological conditions at appropriate levels (wind speed, direction (to and from), indicator of stability, precipitation, if any).*	E.3.g	
Criteria E.4.h. *Actual or projected dose rates at site boundary; projected integrated dose at site boundary.*	E.3.h	
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.3.h	
Criteria E.4.j. *Estimate of any surface radioactive contamination in-plant, on-site or off-site.*	E.3.h	
Criteria E.4.k. *Licensee emergency response actions underway.*	E.3.i	
Criteria E.4.l. *Recommended emergency actions, including protective measures.*	E.3.j	
Criteria E.4.m. *Request for any needed on-site support by off-site organizations.*	E.3.k	
Criteria E.4.n. *Prognosis for worsening or termination of event based on plant information.*	E.3.l	
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.4, Disseminating Information to the Affected Public	See respective state and county plans.
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 EPZ. (See Appendix 3.) It shall be the licensee's responsibility to demonstrate that such means exist, regardless of who implements*	E.5, Instructions to the Public In the Plume Exposure Pathway EPZ	See respective state and county plans.

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
this requirement. It shall be the responsibility of the State and local governments to activate such a system.		
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.6, Written Messages to the Public	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, local, and State response organizations. Such systems should be selected to be compatible with one another. Each plan shall include:*	F, Emergency Communications	See respective state and county plans for additional details.
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.1.a	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.1.b	
Criteria F.1.c. *Provision for communications as needed with Federal emergency response organizations.*	F.1.c	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.1.d	
Criteria F.1.e. *Provision for alerting or activating emergency personnel in each response organization.*	F.1.e	See respective state and county plans for additional details.

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
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.1.f	
Criteria F.2. *Each organization shall ensure that a coordinated communication link for fixed and mobile medical support facilities exists.*	F.2, Communications with Fixed and Mobile Medical Support Facilities	
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.3, Communications System Reliability	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])***		
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, the following:* *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.1, Public Information Program	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
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.2, Distribution and Maintenance of Public Information	
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.3, News Media Coordination	
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.3, News Media Coordination	
Criteria G.4.a. *Each principal organization shall designate a spokesperson who should have access to all necessary information.*	G.4.a	
Criteria G.4.b. *Each organization shall establish arrangements for timely exchange of information among designated spokespersons.*	G.4.b	
Criteria G.4.c. *Each organization shall establish coordinated arrangements for dealing with rumors.*	G.4.c	
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.5, News Media Training	
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 on-site operations support center (assembly area) in accordance with NUREG-0696, Revision 1.*	H.1.2, Technical Support Centers H.1.3, Operations Support Centers	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
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.2, Off-site Emergency Response Facilities	
Criteria H.3. *Each organization shall establish an emergency operations center for use in directing and controlling response functions.*	H.3, State/Counties Emergency Operations Centers	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.4, Activation and Staffing of Emergency Response Facilities	
Criteria H.5. *Each licensee shall identify and establish on-site 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 the following:*	H.5, On-site Monitoring Systems	
Criteria H.5.a. *Geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);*	H.5.a	
Criteria H.5.b. *Radiological monitors, (e.g., process, area, emergency, effluent, wound and portable monitors and sampling equipment);*	H.5.b	
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*	H.5.c	
Criteria H.5.d. *Fire and combustion products detectors.*	H.5.d	
Criteria H.6. *Each licensee shall make provision to acquire data from or for emergency access to off-site monitoring and analysis equipment including:*		
Criteria H.6.a. *Geophysical phenomena monitors, (e.g., meteorological, hydrologic, seismic);*	H.6.a	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
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*	H.6.b	
Criteria H.6.c. *Laboratory facilities, fixed or mobile.*	H.6.c C.3, Radiological Laboratories	
Criteria H.7. *Each organization, where appropriate, shall provide for off-site radiological monitoring equipment in the vicinity of the nuclear facility.*	H.7, Off-site Radiological Monitoring Equipment	
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.*	H.8, Meteorological Instrumentation and Procedures	
Criteria H.9. *Each licensee shall provide for an on-site 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.1.3, Operations Support Center	
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.9, Emergency 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).*	H.10, Emergency Kits Table H-1, Typical Emergency Kit Equipment/Supplies and Locations	
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.11, Receipt of Field Monitoring Data	
Section I: Accident Assessment ***Adequate methods, systems, and equipment for assessing and monitoring actual or potential off-site consequences of a radiological emergency condition are in use. (10CFR 50.47[b][9])***		

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
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, Parameters Indicative of Emergency Conditions	
Criteria I.2. *On-site 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.2, Plant Monitoring Systems	
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.3, Determination of Source Terms and Radiological Conditions	
Criteria I.3.b. *The magnitude of the release of radioactive materials based on plant system parameters and effluent monitors.*	I.3, Determination of Source Terms and Radiological Conditions	
Criteria I.4. *Each licensee shall establish the relationship between effluent Monitor readings and on-site and off-site exposures and contamination for various meteorological conditions.*	I.4, Relationship Between Effluent Monitor Reading and Exposure and Contamination Levels	
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 off-site 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.5, Meteorological Information	
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.6, Determination of Release Rates and Projected Doses	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
Criteria I.7. *Each organization shall describe the capability and resources for field monitoring within the plume exposure EPZ which are an intrinsic part of the concept of operations for the facility.*	I.7, Field Monitoring Capability	
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 Capability I.8, Assessment Hazards through Liquid or Gaseous Release Pathways	
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} μCi/cm^3 (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.9, Measuring Radioiodine Concentrations	
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.10, Relating Measured Parameters to Dose Rates	
Criteria I.11. *Arrangements to locate and track the airborne radioactive plume shall be made, using either or both Federal and State resources.*	I.11, Tracking of Plume Using Federal and State Resources	See respective state plan.
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 on-site individuals and individuals who may be in areas controlled by the operator, including:*	J.1, On-site Notification	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
Criteria J.1.a. *Employees not having emergency assignments;*	J.1, On-site Notification	
Criteria J.1.b. *Visitors;*	J.1, On-site Notification	
Criteria J.1.c. *Contractor and construction personnel; and*	J.1, On-site 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, On-site Notification	
Criteria J.2. *Each licensee shall make provisions for evacuation routes and transportation for on-site individuals to some suitable off-site location, including alternatives for inclement weather, high traffic density and specific radiological conditions.*	J.2, Evacuation Routes and Transportation	
Criteria J.3. *Each licensee shall provide for radiological monitoring of people evacuated from the site.*	J.3, Personnel Monitoring and Decontamination	
Criteria J.4. *Each licensee shall provide for the evacuation of on-site 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.4, Non-essential Personnel Evacuation and Decontamination	
Criteria J.5. *Each licensee shall provide for a capability to account for all individuals on-site 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 on-site individuals continuously thereafter.*	J.5, Personnel Accountability	
Criteria J.6. *Each licensee shall, for individuals remaining or arriving on-site during the emergency, make provisions for:*		
Criteria J.6.a. *Individual respiratory protection;*	J.6.a, Respiratory Protection and Engineering Controls	
Criteria J.6.b. *Use of protective clothing; and*	J.6.b, Use of Protective Clothing	
Criteria J.6.c. *Use of radioprotective drugs, (e.g., individual thyroid protection).*	J.6.c, Individual Thyroid Protection	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP 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 off-site authorities responsible for implementing protective measures within the plume exposure pathway Emergency Planning Zone.*	J.7, Protective Action Recommendations and Bases	
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.*	J.8, 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).*	J.9, State and Local Government Implementation of Protective Measures	See respective state and county plans.
Criteria J.10. *The organization's plans to implement protective measures for the plume exposure pathway shall include:*	J.10, Protective Measures Implementation	
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);*	J.10.a Figure A6-2, Levy Evacuation Routes and Shelters Evacuation Time Estimate Study	
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);*	J.10.b Evacuation Time Estimate Study	
Criteria J.10.c. *Means for notifying all segments of the transient and resident population;*	J.10.c	
Criteria J.10.d. *Means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement;*	J.10.d	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
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;*	J.10.e	See respective state and county plans for additional details.
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 off-site emergency workers;*	J.10.f	See respective state and county plans.
Criteria J.10.g. *Means of relocation;*	J.10.g	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)*	J.10.h Figure A6-2, Levy Evacuation Routes and Shelters	
Criteria J.10.i. *Projected traffic capacities of evacuation routes under emergency conditions;*	J.10.i Figure A6-2, Levy Evacuation Routes and Shelters Evacuation Time Estimate Study	See respective state and county plans.
Criteria J.10.j. *Control of access to evacuated areas and organization responsibilities for such control;*	J.10.j Evacuation Time Estimate Study	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;*	J.10.k Evacuation Time Estimate Study	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*	J.10.l Evacuation Time Estimate Study	
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.10.m	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
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.*	J.11, Ingestion Pathway Protective Measures	See respective state and county plans.
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.*	J.12, Registering and Monitoring Evacuees	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 on-site exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective*	K.1, Emergency Exposures Table K-1, Emergency Worker Exposure Guidelines	
Criteria K.1.a. *removal of injured persons;*	K.1.a	
Criteria K.1.b. *undertaking corrective actions;*	K.1.b	
Criteria K.1.c *performing assessment actions;*	K.1.c	
Criteria K.1.d *providing first aid;*	K.1.d	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
Criteria K.1.e *performing personnel decontamination;*	K.1.e	
Criteria K.1.f *providing ambulance service; and*	K.1.f	See respective state and county plans.
Criteria K.1.g *Providing medical treatment services.*	K.1.g	See respective state and county plans.
Criteria K.2. *Each licensee shall provide an on-site 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 on-site 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.2, Radiation Protection Program	
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.3.a	
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.3.b	
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).*	K.4, State and Local Responder Exposure Authorizations	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.5, Decontamination Action Levels	
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.5, Decontamination Action Levels	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
Criteria K.6. *Each licensee shall provide on-site contamination control measures including:*	K.6, Contamination Control Measures	
Criteria K.6.a. *area access control;*	K.6.a	
Criteria K.6.b. *drinking water and food supplies; and*	K.6.b	
Criteria K.6.c. *Criteria for permitting return of areas and items to normal use, see Draft ANSI 13.12.*	K.6.c	
Criteria K.7. *Each licensee shall provide the capability for decontaminating relocated on-site 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.*	K.7, Decontamination of Relocated LNP Personnel	
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.1, Hospital and Medical Support Appendix 3, Certification Letters	
Criteria L.2. *Each licensee shall provide for on-site first aid capability.*	L.2, On-site First Aid Capability	
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.*	L.3, Emergency Medical Facilities (State of Florida)	See respective state plan.
Criteria L.4. *Each organization shall arrange for transporting victims of radiological accidents to medical support facilities.*	L.4, Medical Emergency Transportation	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
Section M: Recover and Reentry Planning and Post accident 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 Plans and Procedures	
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.2, Recovery Operations	
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 Operations	
Criteria M.4. *Each plan shall establish a method for periodically estimating total population exposure.*	M.3, Updating Total Population Exposure	
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 off-site radiological releases which would require response by off-site authorities. Exercises shall be conducted as set forth in NRC and FEMA rules.*	N, Exercises and Drills N.1, Exercises	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
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 5-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 6 years. Exercises should be conducted under various weather conditions. Some exercises should be unannounced.*	N.1, Exercises	
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 EPZ 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.a, Communication Drills	
Criteria N.2.b. *Fire Drills* *Fire drills shall be conducted in accordance with the plant (nuclear facility) technical specifications.*	N.2.b, 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 off-site medical treatment facility) shall be conducted annually. The off-site portions of the medical drill may be performed as part of the required annual exercise.*	N.2.c, Medical Emergency Drills	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
Criteria N.2.d. *Radiological Monitoring Drills* *Plant environs and radiological monitoring drills (on-site and off-site) shall be conducted annually. These drills shall include collection and analysis of all sample media (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.d, Radiological Monitoring Drills/Health Physics 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 in plant 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.e, Sampling 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.3, Conduct of Drills and Exercises	
Criteria N.3.a. *The basic objective(s) of each drill and exercise and appropriate evaluation criteria;*	N.3.a	
Criteria N.3.b. *The date(s), time period, place(s) and participating organizations;*	N.3.b	
Criteria N.3.c. *The simulated events;*	N.3.c	
Criteria N.3.d. *A time schedule of real and simulated initiating events;*	N.3.c	
Criteria N.3.e. *A narrative summary describing the conduct of the exercises or drills to include such things as simulated casualties, off-site fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities; and*	N.3.d	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
Criteria N.3.f. *A description of the arrangements for and advance materials to be provided to official observers.*	N.3.e	
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.4, Exercise and Drill Evaluation N.5, Exercise and Drill Critiques	
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.5, Exercise and Drill Critiques	
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 ensure the training of appropriate individuals.*	O.1, General Requirements	
Criteria O.1.a. *Each facility to which the plant applies shall provide site specific emergency response training for those off-site emergency organizations who may be called upon to provide assistance in the event of an emergency.*	O.1.a, Off-site Emergency Response Training	
Criteria O.1.b. *Each off-site 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.1, General Requirements	
Criteria O.2. *The training program for members of the on-site 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.2, Progress Energy Emergency Response Training	
Criteria O.3. *Training for individuals assigned to licensee first aid teams shall include courses equivalent to Red Cross Multi-Media.*	O.3, First Aid Team Training	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
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.4, Emergency Response Training and Qualification	
Criteria O.4.a. *Directors or coordinators of the response organizations;*	O.4.a	
Criteria O.4.b. *Personnel responsible for accident assessment;*	O.4.b	
Criteria O.4.c. *Radiological monitoring teams and radiological analysis personnel;*	O.4.c	
Criteria O.4.d. *Police, security and fire fighting personnel;*	O.4.d	
Criteria O.4.e. *Repair and damage control/correctional action teams (on-site);*	O.4.e	
Criteria O.4.f. *First aid and rescue personnel;*	O.4.f	
Criteria O.4.g. *Local support services personnel including Civil Defense/Emergency Service personnel;*	O.4.g	
Criteria O.4.h. *Medical support personnel;*	O.4.h	
Criteria O.4.i. *Licensee's headquarters support personnel; and*	O.4.i	
Criteria O.4.j. *Personnel responsible for transmission of emergency information and instructions.*	O.4.j	
Criteria O.5. *Each organization shall provide for the initial and annual retraining of personnel with emergency response responsibilities.*	O.5, Retraining	
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])***		

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
Criteria P.1. *Each organization shall provide for the training of individuals responsible for the planning effort.*	P.1, Training	
Criteria P.2. *Each organization shall identify by title the individual with the overall authority and responsibility for radiological emergency response planning.*	P.2, Responsibility for Radiological Emergency Response Training	
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.3, Emergency Planning Coordination	
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.4, Plan Reviews and Updates	
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.5, Distribution of Revised Plans	
Criteria P.6 *Each plan shall contain a detailed listing of supporting plans and their source.*	P.6, Supporting Plans Appendix 5, List of Emergency Plan Supporting Procedures	
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.*	P.7, Implementing Procedures Appendix 5, List of Emergency Plan Supporting Procedures	
Criteria P.8. *Each plan shall contain a specific table of contents. Plans submitted for review should be cross-referenced to these criteria.*	See table of contents	

NUREG 0654 Criteria (10 CFR 50.47(b))	LNP Emergency Plan Section(s)	Comments
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.9, Emergency Plan Audits	
Criteria P.10 *Each organization shall provide for updating telephone numbers in emergency procedures at least quarterly.*	P.10, Emergency Telephone Numbers	