



Crystal River Nuclear Plant  
Docket No. 50-302  
Operating License No. DPR-72

Ref: 10 CFR 50.54(q)

December 23, 2010  
3F1210-11

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555-0001

Subject: Crystal River Unit 3 – Radiological Emergency Response Plan, Revision 30

Dear Sir:

In accordance with 10 CFR 50.54(q), Florida Power Corporation, doing business as Progress Energy Florida, Inc., hereby submits Revision 30 to the Crystal River Unit 3 Radiological Emergency Response Plan. A Description of Changes is included with the attached Plan.

This letter establishes no new regulatory commitments.

If you have any questions regarding this submittal, please contact Mr. Charles Polisenno, Supervisor, Emergency Preparedness at (352) 563-4522.

Sincerely,

Daniel R. Westcott  
Superintendent,  
Licensing and Regulatory Programs

DRW/ff

Attachment

xc: NRR Project Manager  
Regional Administrator, Region II  
Senior Resident Inspector

AKYS  
NRR

Progress Energy Florida, Inc.  
Crystal River Nuclear Plant  
15760 W. Power Line Street  
Crystal River, FL 34428



# Progress Energy

## RADIOLOGICAL EMERGENCY RESPONSE PLAN

Revision 30

December 16, 2010

PROGRESS ENERGY

CRYSTAL RIVER UNIT 3

Charles G. Poliseno

Emergency Planning Coordinator

12/16/10  
Date

Jon A. Franke

Vice President, Crystal River Nuclear Plant

12/16/2010  
Date

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Cross-Reference of sections of the RERP to the objectives and criteria in Part II, NUREG-0654 / FEMA-REP-1 (Revision 1).

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**CR3 Radiological Emergency Response Plan, Rev. 30**  
**Description of Changes**  
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**Overview**

Revision 30 of the CR3 Radiological Emergency Response Plan (RERP) was initiated as a result of a review of the Plan and to address / correct inconsistencies between Table 6.1 and Section 6.3 of the Plan with information found in Emergency Preparedness Implementing Procedures EM-102, *Operation of the Technical Support Center (TSC)* and EM-104, *Operation of the Operational Support Center (OSC)*. These inconsistencies are documented and discussed in a "Quick Cause Evaluation Report" under NCR# 418801. The revisions to Table 6.1 and Section 6.3 do not change any staffing levels but are being made to more clearly show what the staffing levels are. A change is made in response to NCR# 398106-21, to correctly identify the position responsible for INPO notifications. Changes to Section 13.2.2 are also made to reflect current procedural instructions for post-accident sampling. Details of these changes are provided in the table below. The remaining changes, also listed and described below, are minor and are considered to be editorial in nature.

This Plan revision was processed under DRR# 426521 and reviewed in accordance with REG-NGGC-0010 under REG AR# 431613. None of the changes decrease the effectiveness of the RERP and the requirements of 10 CFR 50 continue to be met.

<b>Page Numbers</b>	<b>Description of Changes and Comments/Rationale</b>
Cover Page	Updated revision number (to "30") and dates as needed.
Throughout	Updated revision number (to "30") in the footer of the document.
Throughout	Minor punctuation, capitalization, grammatical, etc. changes are made as needed. As these are minor in nature and do not alter the intent of the Plan, they are not listed individually. There is no decrease in effectiveness as a result of these changes.
5-13	Section 5.6.1. Changed from: <i>"The local fire departments are primarily comprised of volunteers and their resources are limited; therefore, except as noted below, no reliance is placed on their ability to support CR3 in the event of fire."</i> Changed to: <i>"The local fire departments are comprised of career and volunteer fire fighters and their resources are limited; therefore, except as noted below, no reliance is placed on their ability to support CR3 in the event of fire."</i> This change is made to more accurately reflect the current staffing of the local fire departments. The change does not alter the support provided by local fire department to CR3 in any way. There is no decrease in effectiveness as a result of this change.
6-2	Section 6.3, third paragraph, last sentence. Changed from: <i>"As noted in the Table, the 30 minute responders are required to respond within 30 minutes from time of notification."</i> Changed to: <i>"As noted in the Table, the TSC and EOF minimum staff must respond within 60 minutes of emergency declaration while some additional responders are required to respond within 30 or 60 minutes from the time they are notified to do so."</i> This change is intended to clarify the information found in Table 6.1. There is no decrease in effectiveness as a result of this change.
6-9 and 6-10	Table 6.1. <ul style="list-style-type: none"> <li>• Adjusted formatting, added gridlines, and added highlighting to the Table to improve readability and the overall appearance of the Table.</li> </ul>

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Page Numbers	Description of Changes and Comments/Rationale
	<ul style="list-style-type: none"> <li>• Swapped the position of the second and third columns to where the “Major Tasks” column is now the second column in the Table and the “Location” column is now the third. This was done to improve the readability of the Table by having the “Major Tasks” column follow “Major Functional Area” column.</li> <li>• Deleted the “Corporate Support by Position, Title, or Expertise” column as the information is no longer applicable at CR3. This additional information was useful at the time when there was non-required corporate support based in St. Petersburg, Florida. That support no longer exists and the information is no longer pertinent.</li> <li>• Removed the asterisk (*) from the top of the “30 Minute-Capability of Additions” column. Asterisks are now placed next to the specific additional response positions whose response requirements are designated as ‘30 minutes from time of notification’.</li> <li>• In the “60 Minute-Capability of Additions” column, added asterisks (*) as needed next to the specific additional response positions that are designated as ‘60 minutes from time of notification’.</li> <li>• To better agree with procedure EM-102, added a superscript 1 (<sup>1</sup>) to the 30 minute “Communications Representative” position along with a corresponding note which states that the function can continue to be performed by the Control Room until such time as the TSC is declared operational following declaration of an ALERT or higher emergency classification. The 30 minute response for the minimum staff position is an expectation. The 60 minute response from time of emergency declaration is required for this minimum staff position.</li> <li>• Added “(Radiation Controls Coordinator)” below “Senior Health Physics Expertise” to indicate the title of the TSC responder who would fill that role.</li> <li>• Changed position title from “Assistant Nuclear Operator” to “Plant Operator” to better describe the Operations personnel who would fill this role.</li> <li>• To better agree with procedure EM-104, added a superscript 2 (<sup>2</sup>) to the 60 minute “Plant Operator” (formerly referred to as “Assistant Nuclear Operator”) position along with a corresponding note which states that this position is filled on an “as available” basis and is sent to the OSC if able to be released from the Control Room.</li> </ul> <p>Adjusted the “Location” of several responders such as:</p> <ul style="list-style-type: none"> <li>• As referenced in the “Location” column, changed “ChemRad” to “Local Assembly Area (LAA)”. The name “ChemRad” is no longer commonly used at CR3 as it once was. Currently, Health Physics and Chemistry personnel would report to a pre-designated Local Assembly Area should non-essential Plant personnel be instructed to do so. This change is made to more accurately reflect current practices at CR3.</li> <li>• Within the “Location” column, changed “TSC” to “OSC” (Operational Support Center) for a number of</li> </ul>

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	<p>positions who would actually report to the OSC which is adjacent to the TSC. This change is made to more accurately reflect the report location for these responders. There are no changes made to actual reporting locations.</p> <ul style="list-style-type: none"> <li>• Other locations are also added or adjusted as needed (i.e., Control Room, Main Assembly Area (MAA), etc.) to more accurately reflect reporting locations for responders.</li> <li>• Changed NOTES 1, 2, and 3 to General Notes as they are applicable throughout the Table.</li> </ul> <p>There is no decrease in effectiveness as a result of these changes.</p>
9-2	<p>Section 9.2.1, 2<sup>nd</sup> paragraph, 4<sup>th</sup> sentence. Changed from: <i>"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."</i> Changed to: <i>"In the event that personnel required to staff emergency teams are not on-site, they may be contacted by commercial telephone which may include land lines and/or wireless devices capable of receiving text messages."</i> To notify its Emergency Response Organization (ERO) members, CR3 has implemented an emergency response organization notification system that is capable of calling land line and cellular telephones, is capable of sending text messages to pagers and cell phones, and can send email messages as well. This change, along with similar changes to Section 9.2.2, 1<sup>st</sup> paragraph, 2<sup>nd</sup> sentence, Section 9.2.2, 1<sup>st</sup> paragraph, 3<sup>rd</sup> sentence, and Section 10.6, 2<sup>nd</sup> paragraph, 2<sup>nd</sup> sentence, are made to recognize all of the devices that can be called by the emergency response organization notification system. At CR3 it is planned that pagers will be phased out for ERO notification, and in anticipation of this, ERO members have been issued cell phones which are capable of receiving text messages. This is primarily due to an on-going decrease in pager reliability as vendor support of these systems has dwindled, and will continue to do so as a result of newer and more reliable wireless technology being readily available. Text messaging to cell phones, along with telephone calls and emails to ERO members is determined to be an effective method of communication that does not result in a decrease in effectiveness.</p>
9-2	<p>Section 9.2.2, 1<sup>st</sup> paragraph, 2<sup>nd</sup> sentence. Changed from: <i>"If off-site in the event of an emergency, the EC may be reached by a commercial telephone and/or telephone-activated pager."</i> Changed to: <i>"If off-site in the event of an emergency, the EC may be reached by a commercial telephone which may include land line and/or a wireless device capable of receiving text messages."</i> To notify its Emergency Response Organization (ERO) members, CR3 has implemented an emergency response organization notification system that is capable of calling land line and cellular telephones, is capable of sending text messages to pagers and cell phones, and can send email messages as well. This change, along with similar changes to Section 9.2.1, 2<sup>nd</sup> paragraph, 4<sup>th</sup> sentence, Section 9.2.2, 1<sup>st</sup> paragraph, 3<sup>rd</sup> sentence, and Section 10.6, 2<sup>nd</sup> paragraph, 2<sup>nd</sup> sentence, are made to recognize all of the devices that can be called by the emergency response organization notification system. At CR3 it is planned that pagers will be phased out for ERO notification, and in anticipation of this, ERO members have been issued cell phones which are capable of receiving text messages. This is primarily due to an on-going decrease in pager</p>

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	reliability as vendor support of these systems has dwindled, and will continue to do so as a result of newer and more reliable wireless technology being readily available. Text messaging to cell phones, along with telephone calls and emails to ERO members is determined to be an effective method of communication that does not result in a decrease in effectiveness.
9-2	Section 9.2.2, 1 <sup>st</sup> paragraph, 3 <sup>rd</sup> sentence. Changed from: <i>“Notification of other key personnel, including those designated for the position of Emergency Coordinator, may be made by commercial telephone and/or telephone-activated pager.”</i> Changed to: <i>“Notification of other key personnel, including those designated for the position of Emergency Coordinator, may be made by commercial telephone which may include land lines and/or wireless devices capable of receiving text messages.”</i> To notify its Emergency Response Organization (ERO) members, CR3 has implemented an emergency response organization notification system that is capable of calling land line and cellular telephones, is capable of sending text messages to pagers and cell phones, and can send email messages as well. This change, along with similar changes to Section 9.2.1, 2 <sup>nd</sup> paragraph, 4 <sup>th</sup> sentence, Section 9.2.2, 1 <sup>st</sup> paragraph, 2 <sup>nd</sup> sentence, and Section 10.6, 2 <sup>nd</sup> paragraph, 2 <sup>nd</sup> sentence, are made to recognize all of the devices that can be called by the emergency response organization notification system. At CR3 it is planned that pagers will be phased out for ERO notification, and in anticipation of this, ERO members have been issued cell phones which are capable of receiving text messages. This is primarily due to an on-going decrease in pager reliability as vendor support of these systems has dwindled, and will continue to do so as a result of newer and more reliable wireless technology being readily available. Text messaging to cell phones, along with telephone calls and emails to ERO members is determined to be an effective method of communication that does not result in a decrease in effectiveness.
9-8	Table 9.1; Note <sup>6</sup> ; Changed “EOF Director, or designee” to “Emergency Coordinator, or designee”. The EOF is not required to be staffed and operational until a Site Area Emergency or higher emergency classification. The Table shows that INPO is notified at an Alert, a Site Area Emergency, and at a General Emergency. Since the EOF Director or designee may not be available to make the INPO notification at an Alert, transferring the responsibility to the Emergency Coordinator or designee better ensures that the notification is made. There is no decrease in effectiveness as a result of this change.
10-1	Section 10.1. Deleted line containing <i>“System - FDLE Radio (by Security) / Use –Tested Weekly”</i> . The change is made to reflect changes to State and local law enforcement radio systems that are currently in place. The State Law Enforcement Radio System (SLERS) is an 800 MHz system that is used by law enforcement and other agencies throughout Florida. This has effectively replaced the FDLE Radio Network (also known as the FDLE Inter-City Radio Network). CR3 has access to the 800 MHz system through an arrangement with the Citrus County Sheriff’s Office (CCSO). Base stations and hand-held radios are available and are in-use at CR3. CR3 Security tests this system from CAS and SAS with the CCSO on a daily basis and CR3 Emergency Preparedness tests the system between the TSC and EOF on a quarterly basis. As this type of emergency communication

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	system would only be used as a back-up to other readily available communication systems, this change is not considered significant. There is no decrease in effectiveness as a result of this change.
10-3	Section 10.6, 2 <sup>nd</sup> paragraph, 2 <sup>nd</sup> sentence. Changed from: <i>"In addition, the designated Emergency Coordinators also carry wireless devices capable of receiving text messages."</i> Changed to: <i>"In addition, the designated Emergency Coordinators also carry telephone activated pagers."</i> To notify its Emergency Response Organization (ERO) members, CR3 has implemented an emergency response organization notification system that is capable of calling land line and cellular telephones, is capable of sending text messages to pagers and cell phones, and can send email messages as well. This change, along with similar changes to Section 9.2.1, 2 <sup>nd</sup> paragraph, 4 <sup>th</sup> sentence, Section 9.2.2, 1 <sup>st</sup> paragraph, 2 <sup>nd</sup> sentence and Section 9.2.2, 1 <sup>st</sup> paragraph, 3 <sup>rd</sup> sentence, are made to recognize all of the devices that can be called by the emergency response organization notification system. At CR3 it is planned that pagers will be phased out for ERO notification, and in anticipation of this, ERO members have been issued cell phones which are capable of receiving text messages. This is primarily due to an on-going decrease in pager reliability as vendor support of these systems has dwindled, and will continue to do so as a result of newer and more reliable wireless technology being readily available. Text messaging to cell phones, along with telephone calls and emails to ERO members is determined to be an effective method of communication that does not result in a decrease in effectiveness.
10-4	Section 10.11. Replaced last sentence with: <i>"The Citrus County 800 MHz radio system is part of the State Law Enforcement Radio System (SLERS) which can be used to communicate with the Florida Department of Law Enforcement (FDLE)."</i> The change is made to reflect changes to State and local law enforcement radio systems that are currently in place. The State Law Enforcement Radio System (SLERS) is an 800 MHz system that is used by law enforcement and other agencies throughout Florida. This has effectively replaced the FDLE Radio Network (also known as the FDLE Inter-City Radio Network). CR3 has access to the 800 MHz system through an arrangement with the Citrus County Sheriff's Office (CCSO). Base stations and hand-held radios are available and are in-use at CR3. CR3 Security tests this system from CAS and SAS with the CCSO on a daily basis and CR3 Emergency Preparedness tests the system between the TSC and EOF on a quarterly basis. As this type of emergency communication system would only be used as a back-up to other readily available communication systems, this change is not considered significant. There is no decrease in effectiveness as a result of this change.
10-6	Table 10.1. Deleted line containing <i>"Communications System – FDLE Radio (back-up system) / Security Operations Center – X"</i> . The change is made to reflect changes to State and local law enforcement radio systems that are currently in place. The State Law Enforcement Radio System (SLERS) is an 800 MHz system that is used by law enforcement and other agencies throughout Florida. This has effectively replaced the FDLE Radio Network (also known as the FDLE Inter-City Radio Network). CR3 has access to the 800 MHz system through an arrangement with the Citrus County Sheriff's Office (CCSO). Base stations and hand-held radios are available

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	and are in-use at CR3. CR3 Security tests this system from CAS and SAS with the CCSO on a daily basis and CR3 Emergency Preparedness tests the system between the TSC and EOF on a quarterly basis. As this type of emergency communication system would only be used as a back-up to other readily available communication systems, this change is not considered significant. There is no decrease in effectiveness as a result of this change.
10-6	Table 10.1. Deleted columns titled, "NRC Resident Inspector's Office (CR3)" and "Areva Resident Engineer's Office". These two columns have been part of the RERP since Rev. 0 and the information they contain has changed over the years. The Areva Resident Engineer's Office no longer exists and the NRC Resident Inspector's Office has been relocated several times. At one time both offices were located within the building that houses the TSC/OSC and it is likely that these locations were included in Table 10.1 because of their close proximity to the TSC/OSC. A review of Rev. 0 of the RERP indicates that there were other locations formerly listed in this Table (e.g., "Nuclear Plant Manager's Office", "ChemRad Manager's Office") that have also been removed over the years likely due to location changes of these offices over the years. The communications systems / equipment listed within the two columns being removed from this revision do not contain any unique items nor do they contain items that are unique to those locations. In fact, the systems / equipment in the list are quite common to numerous locations throughout CR3 including the TSC / OSC. There is no decrease in effectiveness as a result of these changes.
10-7	Table 10.2. Deleted line containing " <i>Communications System – FDLE Radio / CR3 – X / Citrus County Sheriff's Office – X</i> ". The change is made to reflect changes to State and local law enforcement radio systems that are currently in place. The State Law Enforcement Radio System (SLERS) is an 800 MHz system that is used by law enforcement and other agencies throughout Florida. This has effectively replaced the FDLE Radio Network (also known as the FDLE Inter-City Radio Network). CR3 has access to the 800 MHz system through an arrangement with the Citrus County Sheriff's Office (CCSO). Base stations and hand-held radios are available and are in-use at CR3. CR3 Security tests this system from CAS and SAS with the CCSO on a daily basis and CR3 Emergency Preparedness tests the system between the TSC and EOF on a quarterly basis. As this type of emergency communication system would only be used as a back-up to other readily available communication systems, this change is not considered significant. There is no decrease in effectiveness as a result of this change.
12-4	Section 12.2.1; last sentence of first paragraph. Replaced "strip charts" with "electronic recorders". Strip charts were replaced with electronic recorders in the CR3 Main Control Room a number of years ago. This change revises the nomenclature to reflect the current equipment configuration. There is no decrease in effectiveness as a result of this change.
12-12	Figure 12.2. Corrected the location of the Citrus County Emergency Operations Center as shown on the map. The address for the facility was changed upon relocation of the facility in a previous revision to this Plan; however, the location as depicted on the Figure was not changed accordingly. There is no decrease in effectiveness as a

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	result of this change.
12-13	Figure 12.3. Replaced Figure to show the modified Work Area on the south side of the building which has had a partition wall added to it. The new space that this created is currently a storage area. The aperture card files and reader continue to be located within the Work Area. There is no decrease in effectiveness as a result of this change.
13-4	<p>Section 13.2.2; 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> paragraphs of section. Revised the 7<sup>th</sup> and 9<sup>th</sup> paragraphs to better reflect the current instructions as found in Emergency Plan Implementing Procedures CH-631, <i>Post-Accident Sampling and Analysis of Reactor Building Vent, and Reactor Building Atmosphere</i>, and CH-632, <i>Post-Accident Sampling and Analysis of Reactor Coolant, Decay Heat, and Reactor Building Sump</i>. The 8<sup>th</sup> paragraph is deleted in its entirety.</p> <p>As currently written, CH-631 provides guidance for collecting gas grab samples in the grab sampler WSSB-2 from Auxiliary Building (AB) vent, Reactor Building (RB) vent, and RB atmosphere; and particulate and iodine grab samples from RB and AB vents. Analyses are now performed off-site. Consequently, core damage correlations based on RCS samples would be performed using the off-site data. On-site core damage correlations continue to be available through containment high radiation monitoring, estimate of the time the core is uncovered, and RCS pressure/temperature relationship per EM-225.</p> <p>As currently written, CH-632 provides guidance for collecting gas grab samples in the grab sampler CASB-5 for Reactor Coolant System (RCS), Decay Heat (DH) , or RB Sump. Analyses are now performed off-site. Boron continues to be performed on-site by the borometer for RCS, DH, and RB Sump.</p> <p>These changes are primarily as a result of the selected removal and partial abandonment of Post-Accident Sampling System (PASS) components and functions which were performed under Engineering Change (EC) #49486. A 10 CFR 50.54(q) evaluation for the EC was conducted under REG AR# 318622 with a determination that there was no decrease in effectiveness. That determination is applied to this change to the RERP as well.</p> <p>There is no decrease in effectiveness as a result of these changes.</p>
14-6	Table 14.1. Separated NOTE 1 into two (2) separate sentences to match the tables in EM-202 and EM-400. The reformatted verbiage provides clearer guidance with regard to relocation/evacuation versus sheltering. There is no decrease in effectiveness as a result of this change.
A-2	Added the <i>Emergency Action Level Bases Manual (EALBM)</i> to the list of CR3 Emergency Preparedness Implementing Procedures. This addition is as a result of an Emergency Preparedness internal review of the RERP. There is no decrease in effectiveness as a result of this change.

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A-2	Added new Emergency Preparedness Implementing Procedure, EMG-NGGC-0005, <i>Activation of the Emergency Response Organization Notification System</i> . This new procedure became effective at CR3 upon implementation of the new "Everbridge" emergency notification system in July 2010. The procedure was processed under PRR# 357696 and was screened and evaluated under REG AR# 388398. There is no decrease in effectiveness as a result of this change.
A-5	Added new Program Maintenance Procedure, EMG-NGGC-0004, <i>Maintenance of the Emergency Response Organization Notification System</i> . This new procedure became effective at CR3 upon implementation of the new "Everbridge" emergency notification system in July 2010. The procedure was processed under PRR# 357681 and was screened and evaluated under REG AR# 388398. There is no decrease in effectiveness as a result of this change.
APPENDIX B	Page B-2: Replaced "INPO Certification of Assistance" letter dated September 30, 2009 with a new letter dated September 30, 2010. Provisions of the certification letter are unchanged. There is no decrease in effectiveness as a result of this change.
APPENDIX B	Page B-3: Replaced "Nature Coast EMS" letter of agreement dated November 6, 2007 with a new letter dated December 2, 2010. Provisions of the letter of agreement are unchanged. There is no decrease in effectiveness as a result of this change.

## 1.0 PURPOSE

Progress Energy (PE) has developed this Radiological Emergency Response Plan (RERP) to respond to potential radiological emergencies at the Crystal River Unit 3 Nuclear Plant (CR3). The basic purpose of this Plan is to assure an adequate level of preparedness by which to cope with a spectrum of emergencies that could be postulated to occur, including means to minimize radiation exposure to the public and Plant personnel. 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 assure 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 CR3.

## 2.0 DISCUSSION

### 2.1 OVERVIEW OF RERP

Progress Energy (PE) has developed this RERP to describe the elements of an integrated preparedness program to respond to potential emergencies at the CR3 Nuclear Plant. CR3 is a nominal 911 MWe / 2609 MWth Nuclear Power Plant, utilizing a Babcock & Wilcox (B&W) Company (Currently AREVA) pressurized water reactor (PWR) Nuclear steam supply system. The CR3 Plant is located at Red Level, Florida in Citrus County, about 5 miles south of Levy County. The site is 7.5 miles northwest of Crystal River, Florida and 90 miles north of St. Petersburg, Florida. CR3 is situated on the Gulf of Mexico along with four coal units (CR1, 2, 4, & 5). Figure 2.1 illustrates the Plant site and Figures 2.2, 2.3, and 2.4 illustrate the surrounding area. Table 2.1 provides general descriptive information.

In the event of an emergency at the CR3 Plant, prompt actions are required to identify and assess the nature of the emergency and to bring it under control in a manner that minimizes the effects on the health and safety of the public and Plant personnel. Therefore, this Plan has been developed on three basic objectives:

- a. To provide reasonable assurance that appropriate measures can and will be taken to protect public health and safety in the event of an emergency;
- b. To limit public radiation exposure in the event of an emergency at a level of protection consistent with protective action guides specified by the U.S. Environmental Protection Agency (EPA), and to further assure that Plant personnel are protected to the maximum extent possible in accordance with exposure limitations prescribed in 10 CFR 20; and
- c. To provide timely dissemination of accurate information to local, State, and Federal authorities, and to the public.

It describes the organization and responsibilities of Progress Energy for implementing emergency measures. It describes interfaces with Federal, State of Florida, Citrus County, and Levy County organizations which will be notified in the event of an emergency, and may provide, or be requested to provide, assistance. As an integral part of the overall emergency preparedness in support of the CR3 Plant, this Plan describes relationships with the State of Florida Radiological Emergency Management Plan (herein referred to as the State Plan).

To assure that this Plan provides the necessary degree of emergency preparedness that also interfaces efficiently with other response organizations, it has been developed using the guidance of NUREG-0654/FEMA-REP-1. Sections 5.0 thru 20.0 address the specific planning objectives and evaluation criteria of that document. (A cross-reference of the sections of this Plan to the Part II sections of NUREG-0654 is provided in the Table of Contents.) In addition to this guidance, the Plan is also intended to meet appropriate State of Florida and U.S. Nuclear Regulatory Commission (NRC) regulations in accordance with PE's Operating License (No. DPR-72).

Key elements in the planning, development, and implementation of this Plan are the use of a graded emergency classification system and the designation of Emergency Planning Zones (EPZs). Four classifications of emergencies are used as the primary basis for notifications, assessments, and protective actions. These classifications are, in order of increasing severity: UNUSUAL EVENT, ALERT, SITE AREA EMERGENCY, and GENERAL EMERGENCY.

Two EPZs are considered. The first is the Plume Exposure EPZ, a circular area extending to a radius of 10 miles from the CR3 Plant, and including portions of Citrus and Levy Counties. The second is the Ingestion Pathway EPZ, a circular area extending to a radius of 50 miles from the CR3 Plant. Responsibility for the planning and implementing of all emergency measures within the CR3 Site Boundary rests with Progress Energy. This Plan is provided to meet that responsibility and to assist and coordinate measures with the State within the Plume Exposure EPZ. The State of Florida has primary responsibility for the local population and environs outside the CR3 Site Boundary and within both the Plume Exposure and Ingestion Pathway EPZs.

To carry out specific emergency measures discussed in this Plan, detailed implementing procedures are established and maintained. Appendix "A" provides a listing of both the implementing procedures for this Plan and those procedures necessary to maintain the emergency preparedness program.

In addition to the description of activities and steps that can be implemented during a potential emergency, this Plan also provides a general description of the steps taken to recover from an emergency situation. It also describes the training, exercises, planning, and coordination appropriate to maintain an adequate level of emergency preparedness.

**SUMMARY OF EMERGENCY ACTIONS**

This Plan is activated by the Emergency Coordinator upon notification of an emergency situation at CR3. The emergency measures described in the subsequent sections and implementing procedures are also instituted in accordance with the classification and nature of the emergency and directions from the Emergency Coordinator. Regulatory authorities and off-site support organizations are notified in accordance with this Plan and, as required, elements of the State Plan are implemented.

Table 2.2 and Figure 2.5 provide summaries of planned emergency actions. Table 2.2 provides a brief summary of Progress Energy and State actions for each of the four emergency classifications. Figure 2.5 illustrates the types of actions by CR3 and State organizations for complete response to a CR3 emergency. The actions illustrated are those typical for the GENERAL EMERGENCY classification, with variations or reduced activities utilized as appropriate, depending on the specific nature and classification of the emergency. The following sections of this Plan describe the detailed plans and actions of the CR3 Emergency Organization, including interfaces with the State, Corporate, and other off-site support organizations.

**TABLE 2.1**

**CR3 NUCLEAR PLANT GENERAL INFORMATION**

**LICENSEE:** Florida Power (now Progress Energy-Florida)  
P. O. Box 14042  
St. Petersburg, FL 33733

**LOCATION:** 7.5 miles northwest of Crystal River, FL

**DIRECTION AND PROXIMITY TO NEAREST CITY:** Crystal River, FL - 7.5 miles southeast  
**Permanent Population (2006)** ~3,581

**POPULATION AND PROXIMITY TO NEAREST METROPOLITAN AREAS:**  
**Ocala, FL (2006)** ~51,853 - 45 miles northeast  
**Gainesville, FL (2007)** ~122,671 - 60 miles northeast

**APPROXIMATE POPULATION (2000/07):**

	RESIDENTS	TRANSIENTS
<b>Around Site:</b>	0	0
<b>2-mile radius:</b>	0	0
<b>5-mile radius:</b>	2,350	615
<b>10-mile radius:</b>	23,000	3,200
<b>50-mile radius:</b>	370,000	--

**REACTORS:** CR3  
**Type - Size** PWR-860 MWe / (original design);  
Nominal 911 MWe / 2609 MWth (currently)

**COMMERCIAL OPERATION:** March 13, 1977

**NUCLEAR STEAM SUPPLY SYSTEM:** Babcock & Wilcox (B&W) Company (now Areva)

**NUMBER OF STEAM GENERATORS:** 2

**ARCHITECT/ENGINEER:** Gilbert Associates, Inc. (GAI)

**CONSTRUCTOR:** J. A. Jones

**CONTAINMENT:** Dry, reinforced concrete cylinder  
with steel liner

**CONDENSER COOLING METHOD:** Once-through

**COOLING WATER SOURCE:** Gulf of Mexico

**SAFETY-RELATED SERVICE WATER SOURCE:** Gulf of Mexico

**EMERGENCY AC POWER SOURCE:** Emergency Diesel Generators

**SIZE OF SITE:** 4,738 acres

TABLE 2.2

SUMMARY OF EMERGENCY ACTIONS

A. UNUSUAL EVENT CLASS

<u>Class Description</u>	<u>PE Actions</u>	<u>State and/or Local Off-Site Authority Actions</u>
<p>Events are in process or have occurred which indicate a potential degradation of the level of safety of the Plant or indicate a security threat to facility protection. No release of radioactive material requiring off-site response or monitoring are expected unless further degradation of safety systems occurs.</p>	<ol style="list-style-type: none"> <li>1. Promptly inform State and NRC authorities of UNUSUAL EVENT status and reason for emergency; notify EOF Director.</li> <li>2. Assess and respond.</li> <li>3. Augment on-shift resources as needed. Notify CR1&amp;2 and CR4&amp;5.</li> <li>4. Close out by internal procedures; verbally notify off-site authorities alerted and issue press release, if the event warrants.</li> </ol>	<ol style="list-style-type: none"> <li>1. Provide assistance if requested.</li> <li>2. Stand by if requested until verbal close out.</li> <li>OR</li> <li>3. Escalate to a more severe class.</li> </ol>
<p><u>Purpose</u></p>	<p>OR</p>	
<ol style="list-style-type: none"> <li>1. Bring operating staff to a state of readiness in the event of escalation to a more severe action level classification, and</li> <li>2. Provide for systematic handling of event information and its related decision making.</li> </ol>	<ol style="list-style-type: none"> <li>5. Escalate to a more severe class.</li> </ol>	

TABLE 2.2 (Continued)

**SUMMARY OF EMERGENCY ACTIONS**

**B. ALERT CLASS**

<u>Class Description</u>	<u>PE Actions</u>	<u>State and/or Local Off-Site Authority Actions</u>
<p>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 Actions Guideline exposure levels.</p>	<ol style="list-style-type: none"> <li>1. Promptly inform State and NRC authorities of ALERT status and reason.</li> <li>2. Augment resources by activating on-site TSC and on-site OSC; notify EOF Director; notify CR1&amp;2 and CR4&amp;5.</li> <li>3. Assess and respond.</li> <li>4. Bring on-site monitoring teams and associated communications to standby status.</li> <li>5. Provide periodic Plant status updates to off-site authorities (at approximate hourly intervals unless status of event changes significantly).</li> </ol>	<ol style="list-style-type: none"> <li>1. Provide assistance if requested.</li> <li>2. Augment resources and bring primary response centers and EAS to standby status.</li> <li>3. Alert to standby status other key emergency personnel, including monitoring teams and associated communications.</li> <li>4. Provide confirmatory off-site radiation monitoring and ingestion pathway dose projections if actual releases substantially exceed Technical Specifications limits.</li> <li>5. Maintain ALERT status until verbal close out or de-escalation of emergency class.</li> </ol>
<p><b><u>Purpose</u></b></p>		
<ol style="list-style-type: none"> <li>1. Assure that emergency personnel are readily available to respond if situation becomes more serious or to perform confirmatory radiation monitoring if required, and</li> <li>2. Provide off-site authorities with current status information.</li> </ol>		

TABLE 2.2 (Continued)

SUMMARY OF EMERGENCY ACTIONS

B. ALERT CLASS (Continued)

<u>Class Description</u>	<u>PE Actions</u>	<u>State and/or Local Off-Site Authority Actions</u>
	<p>6. If the potential for a release exists, or a release is in progress or has occurred, provide periodic meteorological and radiological assessment to off-site authorities.</p>	<p>6. Escalate to a more severe class.</p>
	<p>7. Close out or recommend reduction in emergency class by verbal summary to off-site authorities followed by written summary the next working day following close out or class reduction. (In some cases, de-escalation to the UNUSUAL EVENT class may be appropriate if the initiating condition cannot be closed out, but it has lost its ALERT class significance.)</p>	
	<p>8. Conduct local assembly and accountability.</p>	
	<u>OR</u>	
	<p>9. Escalate to a more severe class.</p>	

TABLE 2.2 (Continued)

**SUMMARY OF EMERGENCY ACTIONS**

**C. SITE AREA EMERGENCY CLASS**

<u>Class Description</u>	<u>PE Actions</u>	<u>State and/or Local Off-Site Authority Actions</u>
<p>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) prevents effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.</p>	<ol style="list-style-type: none"> <li>1. Promptly inform State and NRC authorities of SITE AREA EMERGENCY status and reason for emergency.</li> <li>2. Augment resources by activating on-site TSC and on-site OSC; notify EOF Director; activate the EOF; notify CR1&amp;2 and CR4&amp;5.</li> <li>3. Assess and respond.</li> <li>4. Dispatch on-site and off-site monitoring teams and associated communications for instances where radiation releases appear imminent.</li> <li>5. Provide a dedicated individual for Plant status updates to off-site authorities and for periodic press briefings.</li> </ol>	<ol style="list-style-type: none"> <li>1. Provide any assistance requested.</li> <li>2. Augment resources by activating the SEOC and any other primary response centers.</li> <li>3. Assure that system for public notification of emergency status is on standby, notify public if appropriate, and initiate preparations for subsequent public notifications.</li> <li>4. Provide public within 10 mile radius with periodic updates on emergency status.</li> <li>5. Dispatch key emergency personnel, including monitoring teams and associated communications.</li> </ol>
<b><u>Purpose</u></b>		
<ol style="list-style-type: none"> <li>1. Assure that response centers are staffed.</li> <li>2. Assure that monitoring teams are dispatched.</li> <li>3. Assure that personnel required for evacuation of near-site areas are at duty stations if situation becomes more serious, and</li> <li>4. Provide for current information for and consultation with off-site authorities and public.</li> </ol>		

TABLE 2.2 (Continued)

SUMMARY OF EMERGENCY ACTIONS

C. SITE AREA EMERGENCY CLASS (Continued)

<u>Class Description</u>	<u>PE Actions</u>	<u>State and/or Local Off-Site Authority Actions</u>
	6. Make senior technical and management staff on-site available for consultation with NRC and State on a periodic basis.	6. Alert to standby status other emergency personnel (e.g., those needed for evacuation implementation) and dispatch personnel to near-site duty stations.
	7. If the potential for a release exists, or a release is in progress or has occurred, provide meteorological and radiological assessments to off-site authorities.	7. Provide off-site monitoring results to licensee, DOE, and others.
	8. Provide release and dose projections based on available Plant condition information and foreseeable contingencies.	8. Continuously assess information from licensee and off-site monitoring with regard to changes to protective actions.
		9. Provide press briefings in conjunction with the licensee.
	9. As warranted, conduct Protected Area evacuation to the Main Assembly Area for non-essential personnel.	10. Maintain SITE AREA EMERGENCY status until close out or reduction of emergency class.

TABLE 2.2 (Continued)

SUMMARY OF EMERGENCY ACTIONS

C. SITE AREA EMERGENCY CLASS (Continued)

<u>Class Description</u>	<u>PE Actions</u>	<u>State and/or Local Off-Site Authority Actions</u>
	10. Close out or recommend reduction in emergency class by briefing off-site authorities at SEOC and EOF, followed by written summary the next working day following closeout.	11. Escalate to GENERAL EMERGENCY class, if appropriate.
	<u>OR</u>	
	11. Escalate to GENERAL EMERGENCY class.	

TABLE 2.2 (Continued)

**SUMMARY OF EMERGENCY ACTIONS**

**D. GENERAL EMERGENCY CLASS**

<u>Class Description</u>	<u>PE Actions</u>	<u>State and/or Local Off-Site Authority Actions</u>
<p>Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or security events that result in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels off-site for more than the immediate site area.</p>	<ol style="list-style-type: none"> <li>1. Promptly inform State and NRC of GENERAL EMERGENCY status and reason for emergency. Recommend evacuation for 5 mile radius.</li> <li>2. Augment resources by activating on-site TSC and on-site OSC; notify EOF Director; activate the EOF; notify CR1&amp;2 and CR4&amp;5.</li> <li>3. Assess and respond.</li> <li>4. Dispatch on-site and off-site monitoring teams and associated communications.</li> <li>5. Provide a dedicated individual for Plant status updates to off-site authorities and for periodic press briefings.</li> </ol>	<ol style="list-style-type: none"> <li>1. Provide any assistance requested.</li> <li>2. Activate public notification of emergency status and provide the public with periodic updates.</li> <li>3. Implement evacuation for 5 mile radius and assess need to extend distances.</li> <li>4. Augment resources by activating the SEOC and any other primary response centers.</li> <li>5. Dispatch key emergency personnel, including monitoring teams and associated communications.</li> </ol>
<p><b><u>Purpose</u></b></p>		
<ol style="list-style-type: none"> <li>1. Initiate predetermined protective actions for public,</li> <li>2. Provide continuous assessment of information from licensee and off-site measurements,</li> <li>3. Initiate additional measures as indicated by event releases or potential releases, and</li> <li>4. Provide current information for and consultation with off-site authorities and public.</li> </ol>		

TABLE 2.2 (Continued)

SUMMARY OF EMERGENCY ACTIONS

D. GENERAL EMERGENCY CLASS (Continued)

<u>Class Description</u>	<u>PE Actions</u>	<u>State and/or Local Off-Site Authority Actions</u>
	6. Make qualified experts on-site available for consultation with NRC and State on a periodic basis.	6. Dispatch other emergency personnel to duty stations within 5 mile radius and alert all others to standby status.
	7. If the potential for a release exists, or a release is in progress or has occurred, provide periodic meteorological and radiological assessments to off-site authorities.	7. Provide off-site monitoring results to licensee and others.
	8. Provide release and dose projections based on available Plant condition information and foreseeable contingencies.	8. Continuously assess information from licensee and off-site monitoring with regard to changes to protective actions.
	9. As warranted, conduct Protected Area and/or Energy Complex evacuation.	9. Provide press briefing in conjunction with the licensee.
	10. Close out or recommend reduction of emergency class by briefing off-site authorities at SEOC and EOF, followed by written summary the next working day following closeout or class reduction.	10. Maintain GENERAL EMERGENCY status until closeout or reduction to SITE AREA EMERGENCY class.

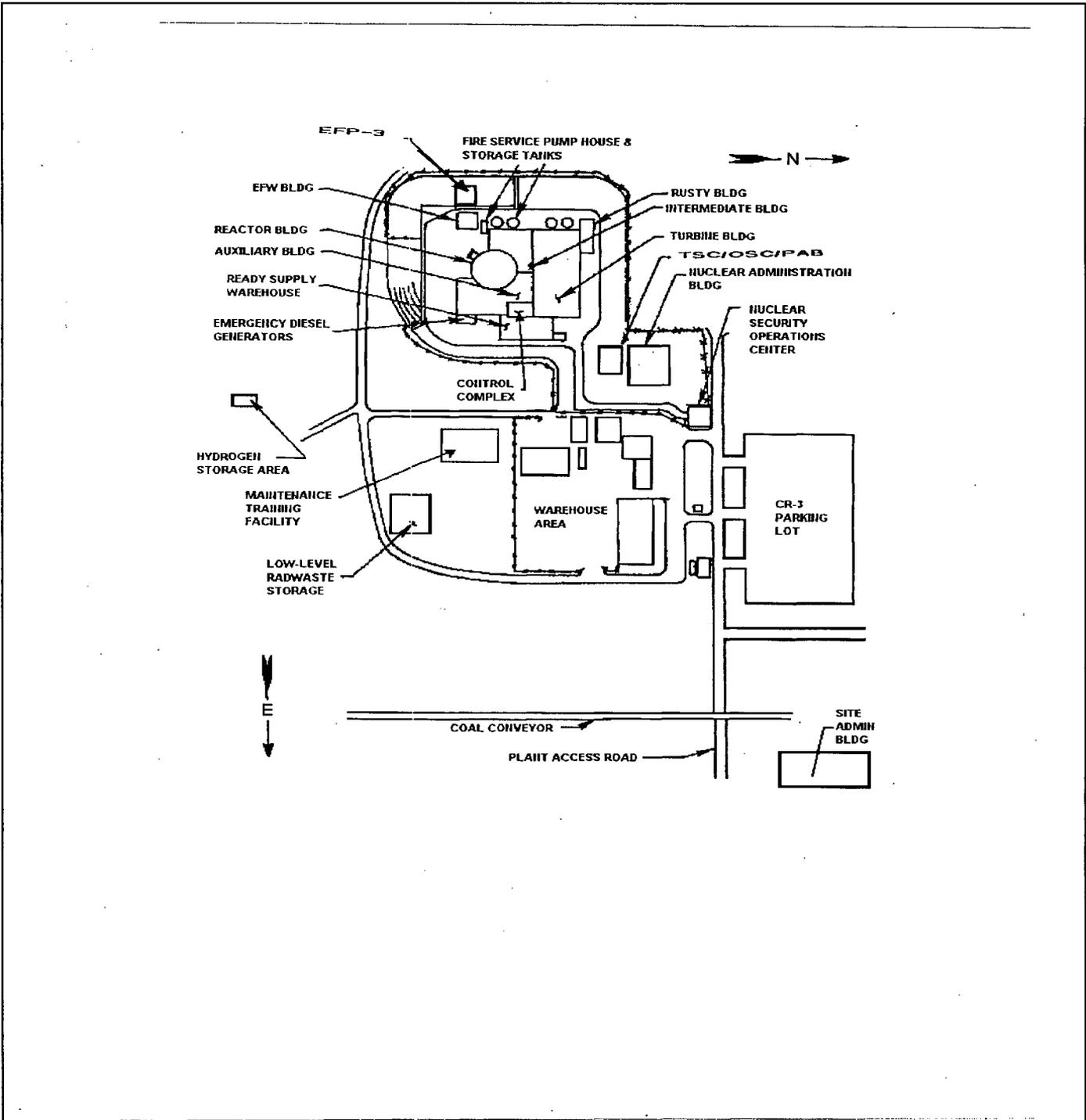
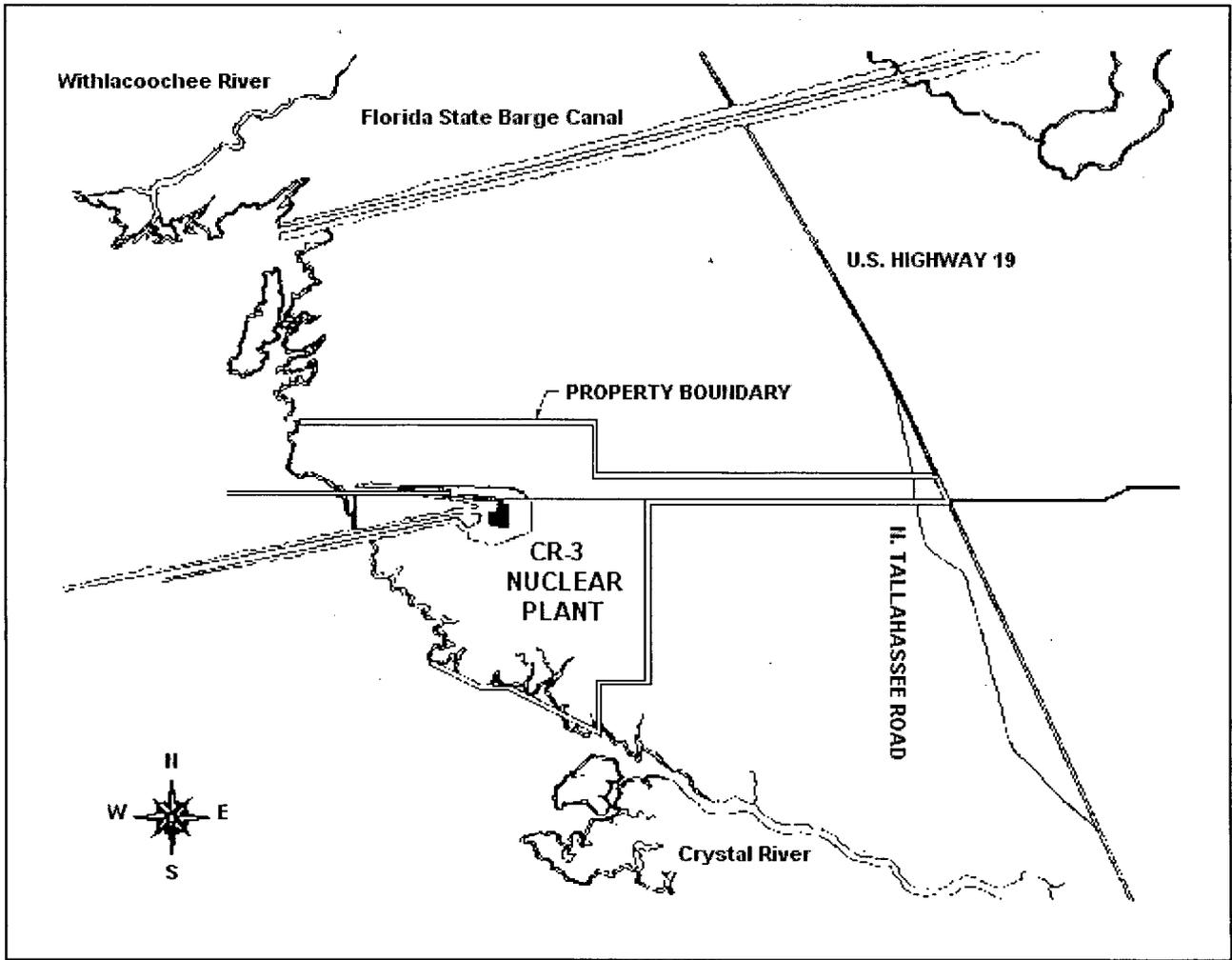


FIGURE 2.1  
CR3 NUCLEAR PLANT SITE



**FIGURE 2.2**  
**CR3 PLANT SITE AND PE PROPERTY BOUNDARY**

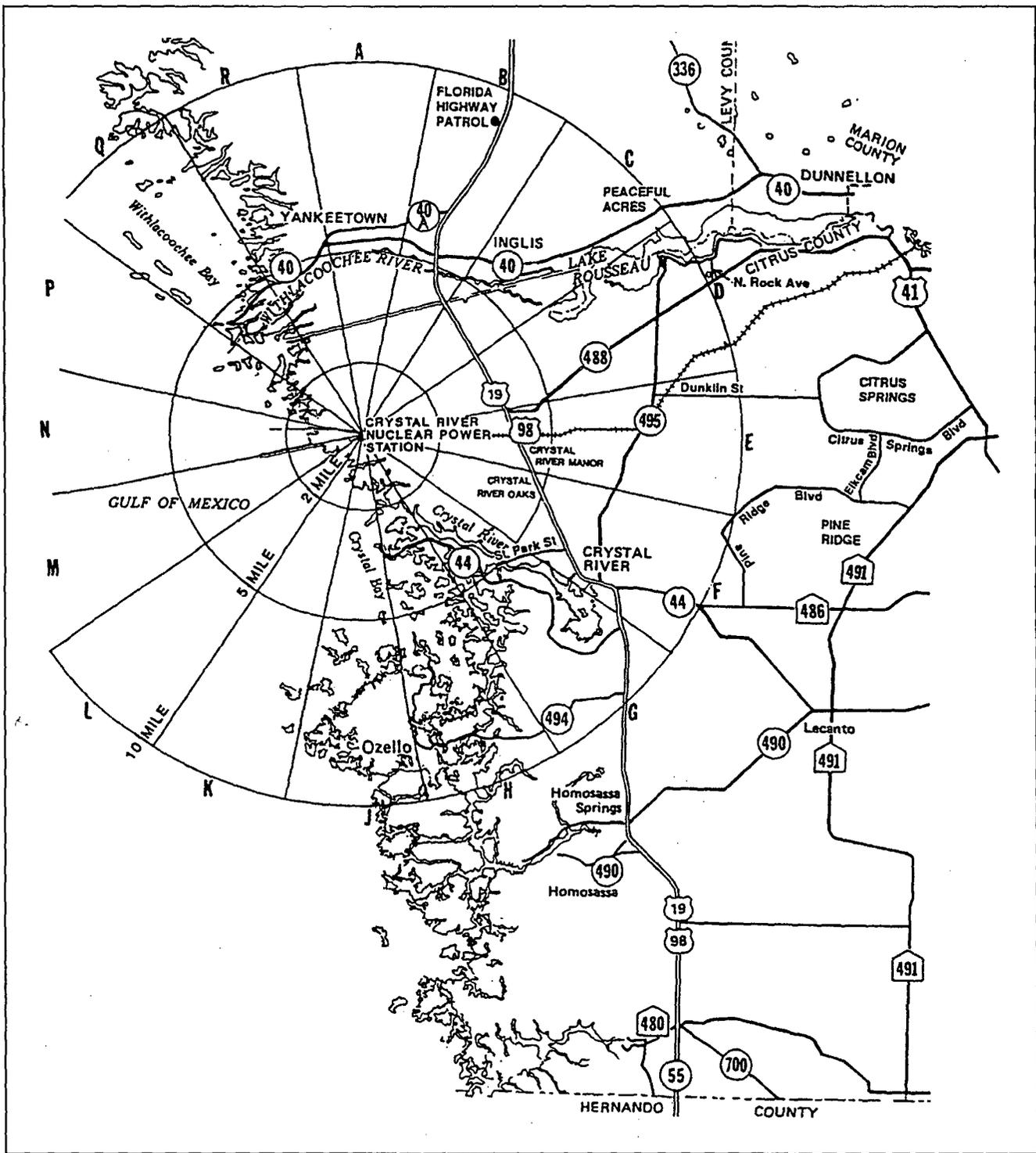
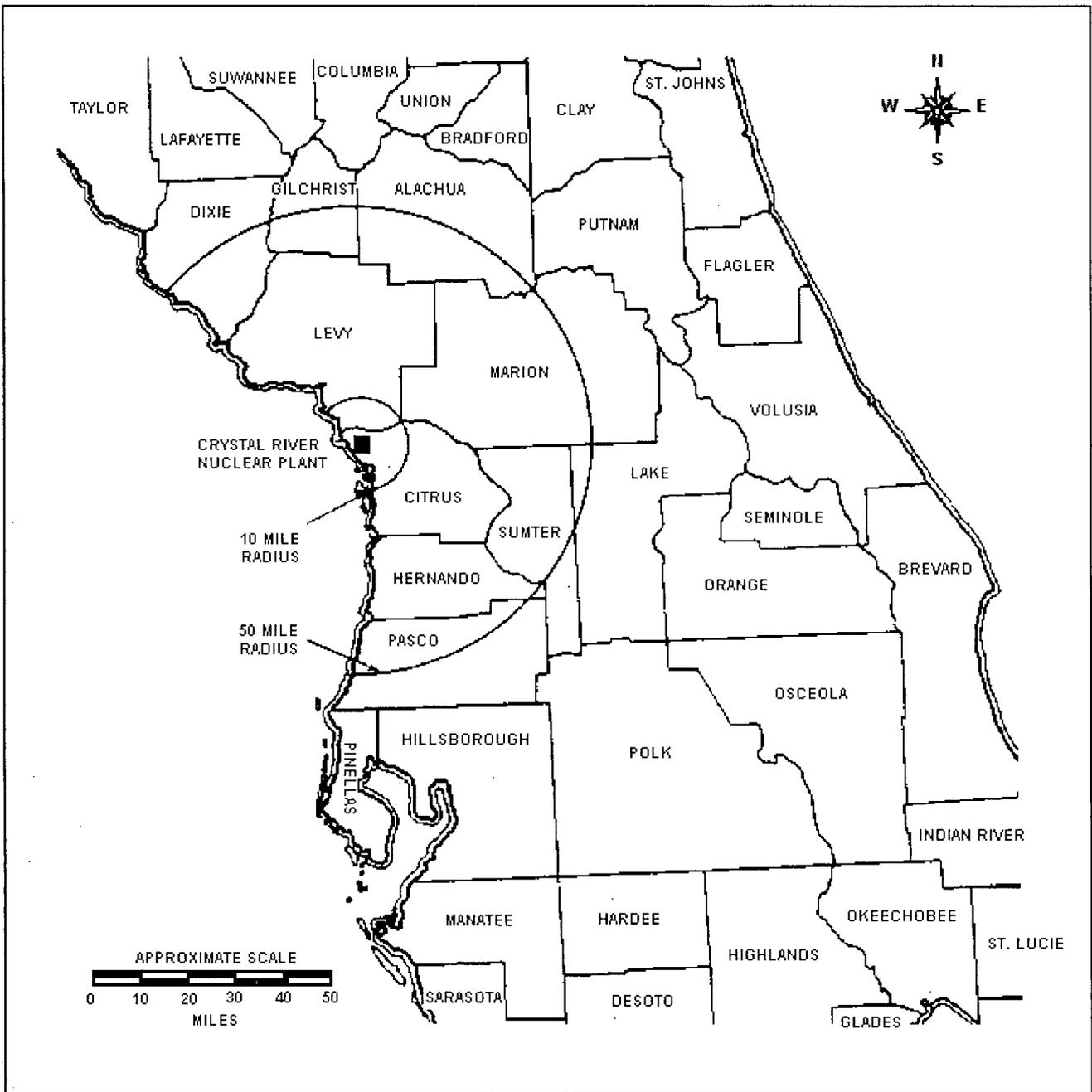
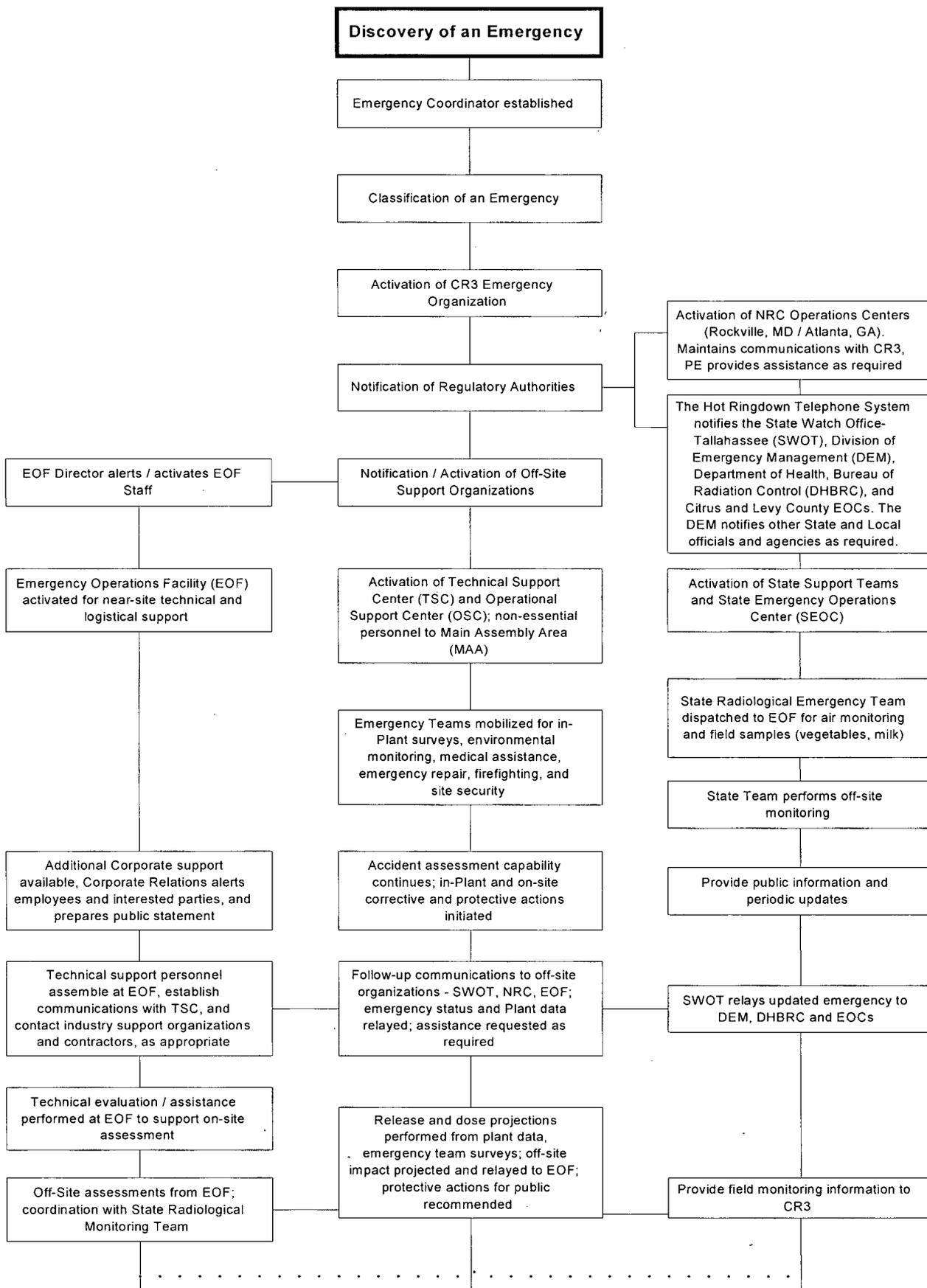


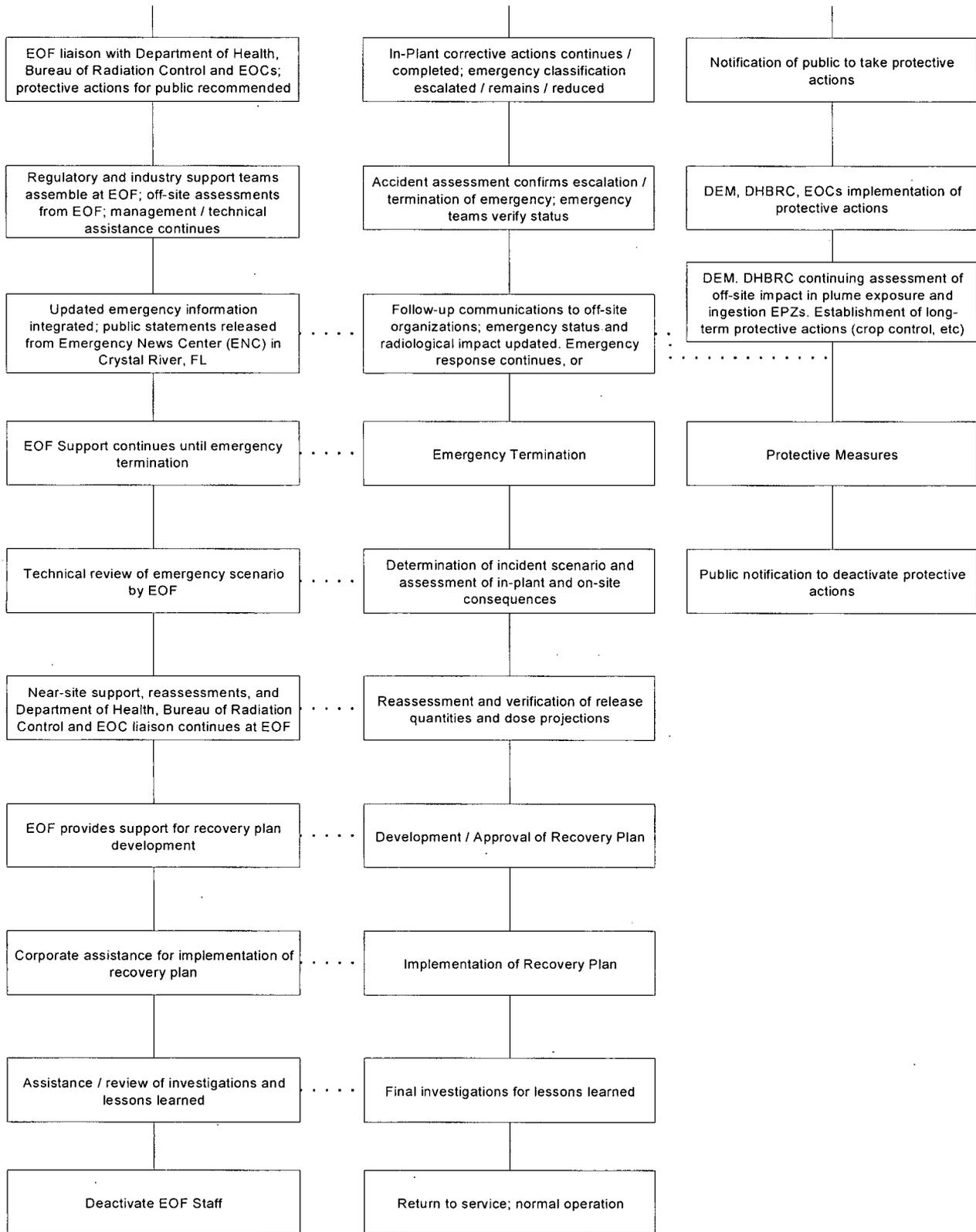
FIGURE 2.3  
CRYSTAL RIVER AREA MAP



**FIGURE 2.4**  
**CRYSTAL RIVER AREA AND SURROUNDING COUNTIES**



**FIGURE 2.5  
SCHEMATIC ILLUSTRATION OF EMERGENCY ACTIONS  
FOR COMPLETE RESPONSE TO A CR3 EMERGENCY**



**FIGURE 2.5 (Continued)  
SCHEMATIC ILLUSTRATION OF EMERGENCY ACTIONS  
FOR COMPLETE RESPONSE TO A CR3 EMERGENCY**

### **3.0 REFERENCES**

- 3.1 10 CFR Part 50, Appendix "E," "Emergency Planning and Preparedness for Production and Utilization Facilities"
- 3.2 10 CFR Part 20, "Standards for Protection Against Radiation"
- 3.3 NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations" (July 1979)
- 3.4 NUMARC/NESP-007, Rev. 2, "Methodology for Development of Emergency Action Levels"
- 3.5 NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (November 1980)
- 3.6 Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors"
- 3.7 EPA-400/R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents" (October 1991)
- 3.8 "State of Florida Radiological Emergency Management Plan" (herein referred to as State Plan)
- 3.9 State of Florida Statutes, Chapter 170J-1, "Control of Radiation Hazards"
- 3.10 CR3 Final Safety Analysis Report (FSAR)
- 3.11 CR3 Improved Technical Specifications
- 3.12 CR3 Plant Operating Manual (POM)  
(See Appendix "A" for list of implementing procedures.)
- 3.13 Emergency Preparedness Procedures (EMs)  
(See Appendix "A" for list of implementing procedures.)
- 3.14 Citrus Memorial Hospital "Nuclear Accident Plan"
- 3.15 Seven Rivers Regional Medical Center "Radioactive Material Contamination Response Plan"
- 3.16 "Crystal River Coal Plant Site Accountability/Evacuation Manual (EMG-CRFF-0004)"
- 3.17 Off-Site Dose Calculation Manual (ODCM)
- 3.18 NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events"
- 3.19 NEI 99-01, Rev. 5, "Methodology for Development of Emergency Action Levels"

## **4.0 DEFINITIONS AND ABBREVIATIONS**

### **4.1 DEFINITIONS**

#### **Annual**

Once per calendar year unless otherwise specifically stated.

#### **Assessment Actions**

Actions taken during or after an emergency for the purpose of obtaining and processing the information that will be used to make the decisions to implement specific emergency measures.

#### **Bomb**

An explosive device suspected of having sufficient force to damage Plant systems or structures. (See **Explosion**)

#### **Civil Disturbance**

A group of persons violently protesting station operations or activities at the site. A civil disturbance is considered violent when force has been used in an attempt to injure site personnel or damage Plant property.

#### **Committed Dose Equivalent (CDE)**

Dose to an organ due to the intake of radioactive materials. For emergency dose assessment, Progress Energy considers dose to the thyroid only when calculating CDE (CDE dose = thyroid dose).

#### **Corrective Actions**

Actions taken at or near the source of an equipment or system failure for the purpose of preventing an uncontrollable release of radioactive material, or to reduce the magnitude of the release.

#### **Credible Site-Specific Security Threat Notification**

A threat specifically to CR3 confirmed and validated by Nuclear 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.)

#### **Deep Dose Equivalent (DDE)**

External whole body dose.

## **Emergency Actions**

Assessment, corrective, and protective actions designed to achieve a safe, stable Plant condition, and to immediately mitigate the effects of the emergency.

## **Emergency Action Level (EAL)**

A pre-determined, observable threshold for Plant conditions that places the Plant in a given emergency classification.

## **Emergency Classification System**

A system of classification in which emergency occurrences are categorized according to specific protective action levels. The four emergency classifications in order of least severe to most severe are UNUSUAL EVENT, ALERT, SITE AREA, and GENERAL. These classifications are defined as follows:

- a. **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.
- b. **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.
- c. **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 needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.
- d. **General Emergency**  
Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or hostile action that results 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.

## **Emergency Coordinator (EC)**

This position is the highest level of authority for the CR3 Emergency Organization and on-site emergency activities. This position is held by the Plant General Manager or designated alternate. The Shift Manager assumes the position until the Plant General Manager or designated alternate arrives to assume Emergency Coordinator responsibilities.

### **Emergency Planning Zones (EPZs)**

Two geographical zones that have been established around each nuclear facility for the purpose of facilitating the off-site protective response. The zones delineate the areas within which personnel are likely to receive radiation exposure externally (10 mile Plume Exposure Pathway) or through ingestion (50 mile Ingestion Exposure Pathway).

### **Emergency Response Data System (ERDS)**

NRC requirement {10 CFR 50.72(a)(4)} to have the ability to acquire data from nuclear power Plants in the event of an emergency at the Plant. ERDS is a direct real-time transfer of data from CR3 to NRC. Once initiated, ERDS operates automatically.

### **Explosion**

A rapid, violent, unconfined combustion, or a catastrophic failure of pressurized equipment that imparts energy of sufficient force to potentially damage permanent structures, systems, or components.

### **Extortion**

An attempt to cause an action at CR3 by threat of force. Bomb threats that are unsubstantiated are NOT included in this definition.

### **Fire**

Combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do NOT constitute fires. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

### **Frequency**

That unit of time specified (monthly, quarterly, etc.) plus or minus 25 percent unless otherwise specifically stated. This definition does not apply to "annual" when it is related to

### **Hostage**

A person or object held as leverage against the station to ensure that demands will be met by CR3.

### **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).

### **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.

### **Incident Report**

A report of the actual scenario of the emergency, the identified cause(s) of the emergency, and the radiological history of the emergency, including released quantities, existing radiological activity, abnormal doses for emergency worker and population doses.

### **Imminent**

Mitigation actions have been ineffective, additional actions are not expected to be successful, and trended information indicates that the event or condition will occur.

### **Intrusion/Intruder**

Suspected hostile individual (outsider) present in the Protected Area without authorization. An intruder also includes a badged employee (insider) attempting to commit or providing assistance to others in committing sabotage. These activities may occur while the insider is either physically inside or outside the Protected Area. Upon identification, the insider's authorization is immediately revoked by Nuclear Security.

### **Local Assembly Area**

A pre-designated area personnel report for organization, roll-call, and supervision following an "Alert" emergency classification.

### **Low Population Zone**

The area within 5 miles of CR3 (as defined in the State Plan).

### **Main Assembly Area (MAA)**

The place personnel report for organization and supervision following an evacuation of the CR3 Protected Area. The Main Assembly Area is the Site Administration Building Auditorium.

### **MODES**

The ITS based designator of Plant status based on Reactivity, Temperature and RCS status and includes operating modes 1 through 6 and defueled (no mode) as applicable.

### **On-Site**

Pertaining to the CR3 site and area within the PE property boundary.

### **Off-Site**

Pertaining to any area outside the property boundary.

### **Population at Risk**

Those persons for whom protective actions are being, or would be, taken.

### **Protected Area**

All areas within the CR3 security perimeter fence that require badged authorization for entry.

### **Protective Actions**

Those emergency measures taken after an uncontrolled release of radioactive material has occurred for the purpose of preventing or minimizing radiological exposures to persons that would be likely to occur if the actions were not taken.

### **Protective Action Guides (PAGs)**

Guidelines for actions to be taken based on the projected radiological dose or dose commitment values to individuals in the general population following a release of radioactive material. Protective actions would be warranted provided the reduction in individual dose expected to be achieved by carrying out the protective action is not offset by excessive risks to individual safety in taking the protective action. The PAG does not include the dose that has unavoidably occurred prior to the assessment.

### **Protective Action Recommendations (PARs)**

Emergency measures recommended for purposes of preventing or minimizing radiological exposures to Energy Complex personnel or members of the public. Protective Action Recommendations are made using all available data, primarily Plant conditions. Off-site dose projections and/or field survey results can also be factored in to Protective Action Recommendations if confidence in their accuracy is high (monitored release, confirmed field survey results).

### **RCS Barrier**

The Reactor Coolant System (RCS) primary side and its' connections up to and including the Pressurizer safety and relief valves, and other connections up to and including the primary isolation valves. An isolable leak in an interfacing or connecting system that contains reactor coolant (MU, DH, SF, WD, etc.) is NOT an "RCS leak."

### **Recovery Actions**

Those actions taken after the emergency to restore the Plant as nearly as possible to its pre-emergency condition.

## **Release**

(Florida Nuclear Plant Emergency Notification Form) - Any of the following:

- Exceeding the warning set-point in count rate on an effluent monitor that is a direct result of an event that has initiated an emergency declaration;  
OR
- Radioactivity detected by environmental monitoring;  
OR

### **NOTE**

Design Basis Leakage or other suspected leakage should NOT be categorized as a release until confirmed by environmental monitoring.

- Radioactivity escaping unmonitored from the Plant.

## **Release, Unplanned**

(Reactor Plant Event Notification Worksheet) - Release is NOT authorized by a Release Permit or exceeds the conditions (e.g., minimum dilution flow, maximum discharge flow, alarm set-points, etc.) on the applicable permit.

## **Sabotage**

Deliberate damage, mis-alignment, or mis-operation of Plant equipment with the intent to render the equipment unavailable. Equipment found tampered with or damaged due to malicious mischief may NOT meet the definition of Sabotage until this determination is made by Nuclear Security.

## **Safe Shutdown Equipment**

Equipment necessary to achieve and maintain the reactor subcritical with controlled decay heat removal to bring the Plant to the ITS applicable shutdown condition / mode.

## **Security Condition**

Any Security Event as listed in the approved Security Contingency Plan that constitutes a threat/compromise to site security, threat/risk to site personnel, or a potential degradation to the level of safety of the Plant. A Security Condition does not involve a Hostile Action.

## **Severe Accident**

An accident beyond that assumed in the CR3 design and licensing basis that results in catastrophic fuel rod failure, core degradation, and fission product release into the Reactor vessel, Reactor Building, or the environment.

## **Significant Transient**

An UNPLANNED event involving one or more of the following:

- (1) Automatic turbine trip at >25% reactor thermal power
- (2) Electrical load rejection >25% full electrical load
- (3) Plant runback
- (4) Reactor trip
- (5) Safety injection system actuation
- (6) >10% thermal power oscillations
- (7) Loss of decay heat removal in Mode 4 ("Significant Transient" is NOT used in any Mode 5 or 6 EAL)

### **Site Boundary**

That area, including the Protected Area that extends 4,400 feet or 0.83 miles in a circle around the Reactor Building. Also referred to as the Owner Controlled Area (OCA).

### **Strike Action**

Is a work stoppage within the Protected Area by a body of workers to enforce compliance with demands made. The strike actions must threaten to interrupt normal Plant operations.

### **Thyroid CDE Dose**

Dose to the thyroid due to intake of radioactive iodine.

### **Total Effective Dose Equivalent (TEDE)**

The sum of the external dose (DDE) and the equivalent amount of whole body dose due to individual organ uptakes.

### **Unplanned**

An event or action is Unplanned if it is NOT the expected result of normal operations, testing, or maintenance. Events that result in corrective or mitigative actions being taken in accordance with abnormal or emergency procedures are Unplanned.

### **Valid**

An indication or report or condition is considered Valid when it is conclusively verified by (1) an instrument channel check, or (2) indications on related or redundant indicators, or (3) by direct observation by Plant personnel, such that doubt related to the indicator's operability, the condition's existence, or the report's accuracy is removed. Implicit in this definition is the need for timely assessment (e.g., within 15 minutes).

### **Visible Damage**

Damage to equipment or structure that is readily observable without measurements, testing, or analyses. Damage is sufficient to cause concern regarding the continued operability or reliability of affected safety structure, system, or component. Example damage includes: deformation due to heat or impact, denting,

penetration, rupture, cracking, paint blistering. Surface blemishing (e.g., paint chipping, scratches) should NOT be included.

#### 4.2 ABBREVIATIONS

AAT – Accident Assessment Team  
ARCA - Area Requiring Corrective Action  
CAS - Central Alarm Station  
CDE - Committed Dose Equivalent  
CR3 - Crystal River Unit 3 Plant  
DAT - Dose Assessment Team  
DDE - Deep Dose Equivalent  
DEM - State of Florida Department of Community Affairs, Division of Emergency Management  
DHBRC - Department of Health, Bureau of Radiation Control (State of Florida)  
DOE - U.S. Department of Energy  
EAL - Emergency Action Level  
EAS - Emergency Alert System  
ECCS - Emergency Core Cooling System  
EM - Emergency Plan Implementing Procedure  
ENC - Emergency News Center  
ENS - Emergency Notification System (NRC Operational Hotline)  
EOC - Emergency Operations Center (Citrus County EOC/Lecanto, FL and Levy County EOC/Bronson, FL)  
EOF - Emergency Operations Facility (Progress Energy/Crystal River, FL)  
EPA - U.S. Environmental Protection Agency  
EPZ - Emergency Planning Zone  
ES - Engineered Safeguards  
ESATCOM - Florida Emergency Satellite Communications System  
FDA - U.S. Food and Drug Administration  
FDLE - Florida Department of Law Enforcement  
FEMA - U.S. Federal Emergency Management Agency  
FRERP - Federal Radiological Emergency Response Plan  
FRMAP - Federal Radiological Monitoring and Assessment Plan  
FSAR - Final Safety Analysis Report  
HEPA - High Efficiency Particulate Air Filter  
HPI - High Pressure Injection  
HPN - Health Physics Network (NRC radiological telephone hotline)  
IRAP - Interagency Radiological Assistance Plan  
KI - Potassium Iodide  
LOCA - Loss-of-Coolant Accident  
LPZ - Low Population Zone

MAA - Main Assembly Area  
MERL - Mobile Emergency Radiological Laboratory (State Mobile Van)  
MHA - Maximum Hypothetical Accident  
MS - Main Steam  
MSIV - Main Steam Isolation Valve  
NCRP - National Council on Radiation Protection and Measurements (U.S.)  
NRC - U.S. Nuclear Regulatory Commission  
NSOC - Nuclear Security Operations Center  
ODCM - Off-Site Dose Calculation Manual  
ORAU - Oak Ridge Associated Universities  
OSC - Operational Support Center (CR3)  
PA - Public Address System  
PAG - Protective Action Guide  
PAR - Protective Action Recommendation  
PAX - Public Address Exchange System  
PE – Progress Energy  
PNSC - Plant Nuclear Safety Committee  
RB - CR3 Reactor Containment Building  
RC - Reactor Coolant  
RCA - Radiation Controlled Area  
RCDT - Reactor Coolant Decay Tank  
RERP - Radiological Emergency Response Plan  
RMS - Radiation Monitoring System  
RO - Reactor Operator  
RPS - Reactor Protection System  
RWP - Radiation Work Permit  
SAS - Secondary Alarm Station  
SEOC - State of Florida Emergency Operations Center (Tallahassee, FL)  
SLERS – State Law Enforcement Radio System.  
SPDS - Safety Parameter Display System  
SRO - Senior Reactor Operator  
STA - Shift Technical Advisor/Work Control Center Supervisor  
SWOT - State Watch Office-Tallahassee  
TEDE - Total Effective Dose Equivalent  
TLD - Thermoluminescent Dosimeter  
TSC - Technical Support Center (CR3)  
VFD - Volunteer Fire Department  
VPI - Valve Position Indication

## **5.0 ASSIGNMENT OF RESPONSIBILITY (ORGANIZATION CONTROL)**

The regular day-to-day Nuclear Plant operating organization at CR3 has complete capability at all times to perform the detection, classification, initial response, and notification functions required in the early phases of an emergency. The Plan considers the capabilities and responsibilities of the normally present Plant operating staff, augmented by support from other utility personnel and local and distant support organizations. Of the numerous off-site organizations, a select number are considered to be key response organizations. However, the initial phases of an emergency situation at CR3 will involve a relatively small number of individuals constituting the CR3 Emergency Organization.

The extended phases of an emergency situation may require an increasing augmentation of the on-site emergency organization. In the case of a SITE AREA EMERGENCY or GENERAL EMERGENCY, such augmentation will result in the mobilization of the EOF Staff, with the Emergency Operations Facility (EOF) Director as the focal point. In addition, the personnel resources of other key off-site emergency support organizations can be mobilized to augment the on-site emergency organization.

This section of the Plan addresses the identification of (a) all the various emergency response organizations and sub-organizations; (b) those organizations having key operational roles, their operations concepts and interrelationships, and their plans to provide 24 hour per day response; and (c) reference to all written agreements between Progress Energy and such key off-site emergency response organizations.

### **5.1 ORGANIZATIONAL PLANNING OBJECTIVE**

The organizational planning objective is to assure that primary emergency preparedness responsibilities in the Nuclear facility staff and in local and State emergency organizations responsible for emergency support within the EPZ have been established and assigned. Furthermore, the objective is to assure that each principal response organization is staffed to respond immediately and is capable of augmenting its initial response on a continuous basis.

## 5.2 NORMAL PLANT OPERATING ORGANIZATION

Progress Energy is responsible for the operation of CR3 in accordance with the State of Florida and NRC regulations, and its NRC Operating License (No. DPR-72). Responsibility for planning and implementing all emergency measures within the Site Boundary rests with PE.

The normal CR3 Plant Operating Organization has an inherent emergency/recovery function in its overall management and operation. This function can be delineated by reviewing management structure and responsibilities as follows:

a. Vice President, Crystal River Nuclear Plant

The Vice President, Crystal River Nuclear Plant is directly responsible for the commercial operation of CR3. He reports to the Senior Vice President and Chief Nuclear Officer, Nuclear Generation and has ultimate responsibility for the overall effectiveness of PE's RERP. In the event of an emergency at CR3, he assumes administrative authority and responsibility for the effective implementation of PE emergency plans. He is responsible for pre-designating an EOF Director.

The EOF Director has authority and responsibility for control and mitigation of the emergency, including emergency response resources, coordination of radiological and environmental assessment, recommendations for public protective actions, recovery implementation, and coordination of emergency response activities with Federal, State, and local agencies.

b. Plant General Manager

The Plant General Manager reports to the Vice President, Crystal River Nuclear Plant and is responsible for the safe operation of CR3 and for the supervision of persons assigned there. During an emergency, he is responsible for the protection of Energy Complex personnel from radiation exposure and/or any other consequence of an accident at CR3. As such, he or his designee serves as Emergency Coordinator and is responsible for the accountability of all personnel within the confines of CR3 as well as initiation of accountability and evacuation of Energy Complex personnel should conditions warrant.

### 5.3 OVERALL EMERGENCY RESPONSE ORGANIZATIONS

During an emergency in which all available assistance is required, numerous response organizations and sub-organizations are available. These emergency response organizations are drawn from local, State, Federal, and private sectors. They are cited in Table 5.1.

### 5.4 RESPONSE ORGANIZATIONS WITH KEY OPERATIONAL ROLES

Of the overall response organizations and sub-organizations, certain groups have key operational roles and are listed in Table 5.2. These key organizations are on immediate call to interrelate along lines of communication, contact, and direct interaction, as shown in Figure 5.1. The key organizations also interrelate to provide technical support; assistance in warning, communications, and evacuation; and medical and public health and radiological support, as shown in Figure 5.2.

### 5.5 INTERRELATIONSHIP OF KEY RESPONSE ORGANIZATIONS

#### 5.5.1 CR3 Emergency Organization

The CR3 Staff has the immediate and continuing responsibility for emergency response and control of emergency activities at the Plant site.

The CR3 Emergency Response Organization and its functions are predefined and personnel assignments are specified and updated on a continuous basis to provide for automatic, unambiguous staffing of the CR3 Emergency Organization to respond effectively within the time designated.

The CR3 Emergency Organization is prepared to function on-call during any 24 hour period.

#### 5.5.1.1 **Relationship to the Total Effort:**

The CR3 Emergency Organization performs the initial and prime emergency technical, radiological, warning, and health support response. This organization is supported directly and indirectly by key off-site emergency response organizations, including EOF Staff. It is also supported on a broad scale by numerous off-site organizations in the local, State, Federal, and private sectors.

### **5.5.1.2 Concept of Operations:**

The CR3 Emergency Organization evaluates the emergency and initiates the necessary technical actions to control it.

The Shift Manager at CR3 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. He also has the responsibility to notify the Plant General Manager as soon as possible after an emergency classification has been determined. The Shift Manager serves as the Emergency Coordinator until the Plant General Manager, or designated alternate, arrives to assume the position of Emergency Coordinator.

The Emergency Coordinator is responsible for the direction of all activities at the Plant site during any emergency, including activities at CR1&2 and CR4&5. Should his evaluation indicate that extreme measures must be taken, he has the authority to direct any or all personnel to evacuate the Plant site, to place any or all site generating Plants in a safe shutdown condition, and to notify all applicable agencies of the Plant status. The Emergency Coordinator 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 Emergency Coordinator reports to the EOF Director once the EOF is operational.

### **5.5.2 EOF Staff**

The EOF Staff is responsible for coordination of emergency response activities with Federal, State, and local agencies which includes notification and Protective Action Recommendations. The EOF staff also provides technical and administrative assistance to the TSC in a timely, effective manner. In addition, the EOF Staff is responsible for the emergency public information activities.

#### **5.5.2.1 Relationship to the Total Effort:**

The EOF Director directs the EOF Staff and is responsible for the direction and control of all emergency phase activities. He has authority and responsibility for management of emergency response resources, coordination of radiological and environmental assessment, recommendation for public protective actions, and coordination of emergency response activities with Federal, State, and local agencies. He also is responsible for the direction and control of all recovery phase activities and has the authority to develop and implement a plan for restoring the Plant (as nearly as possible) to pre-emergency conditions.

### 5.5.2.2 Concept of Operations:

The EOF Staff has the responsibility for notification of off-site agencies and recommending public protective actions. The EOF staff also provides management, technical, and administrative assistance to the CR3 Plant organization during an emergency.

The EOF Staff is designed to utilize the resources and talents of the normal Plant organization to respond to the needs of Unit 3. The EOF Staff provides assistance as described below:

- a. **Management Support** - Management support is provided through essentially the same chain of command that is present for normal CR3 operation. Special interfaces are established to expedite decision making in an emergency situation.
- b. **EOF Staff** - Near-site support is provided in the EOF under the direction of the EOF Director. The personnel assigned to this facility are primarily those personnel assigned to support normal Nuclear Plant operations. Once activated, the EOF assumes the lead in providing emergency response resources; dose assessment; recommendation of protective actions; and Federal, State, and local government liaison. The Organization also includes the ENC Staff which is responsible for dissemination of information to the public and the news media.

Another role of the EOF Staff is to provide support to the State Radiological Emergency Team. The Radiation Controls Manager is responsible for coordinating this support and can call upon the full resources of the EOF Staff to provide assistance.

- c. **Corporate Communications Department** - Dissemination of information to the public and the news media is available through the Corporate Communications organization, led by the emergency position of Public Information Director.

### 5.5.3 State Watch Office-Tallahassee

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 Watch Office-Tallahassee (SWOT) is the primary notification point of contact for the State of Florida for the purpose of activating the State Plan.

#### **5.5.3.1 Relationship to the Total Effort:**

The SWOT (or the Alternate SWOT) is available on a 24-hour basis to receive emergency communications from CR3 and, in turn, contact the State emergency response organizations.

#### **5.5.3.2 Concept of Operations:**

Emergency notification is received from the CR3 Emergency Coordinator via the State Hot Ringdown Telephone System. If the call to the SWOT is made from other than the State Hot Ringdown, the SWOT Duty Officer verifies, with the Emergency Coordinator or his designee, the authenticity of the message before transmission. He also verifies receipt of the message by each of the Risk Counties and the Department of Health, Bureau of Radiation Control (DHBRC). The Duty Officer notifies the Division of Emergency Management (DEM). The Duty Officer, with assistance from the DEM, then notifies all State emergency organizations (as required) as identified in Figure 5.1.

#### **5.5.4 Division of Emergency Management**

The 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.

#### **5.5.4.1 Relationship to the Total Effort:**

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.

#### **5.5.4.2 Concept of Operations:**

The Director, Division of Emergency Management is responsible for coordinating DEM emergency response. The DEM receives notification of an emergency at CR3 via the SWOT; 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. It also is responsible for providing for the public 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 at all times. 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.

#### **5.5.5 Department of Health, Bureau of Radiation Control**

The Director of the Department of Health's 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. The DHBRC will respond to any emergency which involves possible or actual release of radiological materials in order to protect health, safety, and property.

##### **5.5.5.1 Relationship to the Total Effort:**

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.

##### **5.5.5.2 Concept of Operations:**

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. It is also responsible for the following: (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 recommendations to State and local officials and agencies on protective actions; (c) responding to a CR3 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; and (f) providing radiological laboratory capability, including mobile laboratory facilities (MERL) and field radiological instrumentation, equipment, and supplies to assure measurements are properly and effectively carried out.

**5.5.6**      **Citrus County Sheriff's Office, Division of Emergency Management**  
(Hereafter described as 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.

**5.5.6.1**      **Relationship to the Total Effort:**

The Chairperson, 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 their 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 emergency plan.

**5.5.6.2**      **Concept of Operations:**

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

**5.5.7**      **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.

**5.5.7.1**      **Relationship to the Total Effort:**

The Chairperson, 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 their 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 emergency plan.

#### **5.5.7.2 Concept of Operations:**

The Levy County Emergency Management organization operates from the Levy County EOC in Bronson, Florida. It maintains 24 hour daily communications provided through the Sheriff's Office via the State Hot Ringdown Telephone System, ESATCOM, and the State Law Enforcement Radio System (SLERS). It carries out emergency activities based on its emergency plan (Appendix I of the State Plan) and recommendations from PE and State organizations.

#### **5.5.8 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.

##### **5.5.8.1 Relationship to the Total Effort:**

The plan designated by the Hospital for emergency handling of radiation accident cases from CR3 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.

##### **5.5.8.2 Concept of Operations:**

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.

## **5.5.9 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.

### **5.5.9.1 Relationship to the Total Effort:**

The Hospital will acknowledge and respond to all emergency medical requests from those response organizations and management having key operational roles at CR3 and in the EPZ's. Treatment will be provided for non-radiological and radiological injuries. The Hospital also will maintain communications with the Citrus County EOC on support needs and coordination with other agencies.

### **5.5.9.2 Concept of Operations:**

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 CR3 or other sites within the EPZ's 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 CR3 Staff.

## **5.5.10 Local Emergency Medical Services**

Ambulance service is available 24 hours per day through local county ambulance services to provide assistance in the event of an emergency at CR3.

### **5.5.10.1 Relationship to the Total Effort:**

Upon request, local emergency medical services will provide emergency service to Progress Energy employees and members of the public. It also will maintain communication with the Citrus County EOC on support need and coordination with other agencies.

### **5.5.10.2 Concept of Operations:**

Upon request from the CR3 Emergency Coordinator or designee, ambulance service will be provided immediately, which includes emergency medical treatment and/or transportation to a designated hospital facility. The service shall accept all patients dispatched from CR3 and, where necessary, shall utilize the radiological support provided by the CR3 Staff.

#### **5.5.11 NRC - Region II/Atlanta, GA**

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.

##### **5.5.11.1 Relationship to the Total Effort:**

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.

##### **5.5.11.2 Concept of Operations:**

In the event of an emergency at CR3, contact is established and maintained with the Region II Office of Inspection and Enforcement. Operational information and radiological information are communicated to this office over a dedicated telephone from CR3. Emergency notification and operational information is communicated via the Emergency Notification System (ENS); radiological information is communicated via the Health Physics Network (HPN). Other Plant information is communicated via normal telephone service.

#### **5.5.12 NRC - Rockville, MD**

The NRC is the primary Federal agency providing coordination and support in the event of an emergency at CR3.

##### **5.5.12.1 Relationship to the Total Effort:**

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.

#### **5.5.12.2 Concept of Operations:**

In the event of an emergency at CR3, contact is established and maintained with the NRC Operations Center in Rockville, Maryland. Operational information and radiological information are communicated to this office over a dedicated telephone line from CR3.

Emergency notification and operational information are communicated via the Emergency Notification System (ENS); radiological information is communicated via the Health Physics Network (HPN). Other Plant information is communicated via normal telephone service.

#### **5.5.13 FEMA - Atlanta, GA**

The U.S. Federal Emergency Management Agency (FEMA) is the primary Federal agency for coordination of Federal response activities at the national level and at the scene of the emergency in accordance with the Federal Radiological Emergency Response Plan (FRERP).

##### **5.5.13.1 Relationship to the Total Effort:**

FEMA has the lead responsibility for off-site emergency preparedness around Nuclear facilities. To meet this role, 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.

##### **5.5.13.2 Concept of Operations:**

In the event of an emergency at CR3, the primary role of FEMA is to assure that appropriate Federal assistance is available to local and State governments for implementing their radiological emergency response plans. Through prior efforts and coordination with other Federal agencies, assistance and guidance is provided via FEMA, Region IV.

#### **5.5.14 AREVA - Lynchburg, VA**

AREVA provides a readiness to respond by providing technical and operational support to the CR3 Emergency Organization.

#### **5.5.14.1 Relationship to the Total Effort:**

Upon request by the Emergency Coordinator, AREVA provides technical liaison between the NRC and CR3 Operations, as well as between CR3 and the AREVA technical staff.

#### **5.5.14.2 Concept of Operations:**

Upon request, AREVA will assist CR3 in making operations decisions utilizing the AREVA home office staff and expertise. AREVA will also promote and coordinate use of its special skills and equipment for diagnostics design analysis, and for other emergency support activities.

### **5.6 OTHER ESSENTIAL OFF-SITE RESPONSE ORGANIZATIONS**

#### **5.6.1 Local Fire Departments**

The local fire departments are comprised of career and volunteer fire fighters and their resources are limited; therefore, except as noted below, no reliance is placed on their ability to support CR3 in the event of fire. Reliance is placed upon response capabilities within the CR3 on-site fire protection systems and the Nuclear Plant Fire Brigade. In the event of a large area fire at CR3, local fire departments will be called upon for assistance as will larger departments from outside of the immediate area as warranted.

#### **5.6.2 Organizations Utilized By the DEM**

Multiple departments within the State are available to provide support during an emergency at CR3 which has the potential to affect the general public. These organizations have pre-designated emergency functions as defined in Annex "A" of the State Plan.

#### **5.6.3 PE State EOC Representative**

The Progress Energy State EOC Representative operates from the State Emergency Operations Center (SEOC) in Tallahassee, Florida to provide technical expertise and assistance to the Governor and State agency response organizations. The PE State EOC Representative is a technically-oriented representative of Progress Energy management. He is notified when an emergency condition classified as an ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY exists, and will report to the SEOC, as requested, to provide assistance in the event of any radiological emergency affecting the State environs.

**WRITTEN AGREEMENTS FOR EMERGENCY RESPONSE**

Discussions have been held and agreements reached and confirmed, in writing, with emergency response organizations which have responsibilities for coping with radiological emergencies. Appendix "B" contains a copy of each agreement.

Written agreements have not been formally established with the State and county organizations because the response functions for these organizations are established in the Florida Statutes, Chapter 252.

TABLE 5.1

**OVERALL RESPONSE ORGANIZATIONS AND SUBORGANIZATIONS**

<b><u>Organization/Officer</u></b>	<b><u>General Location</u></b>	<b><u>Specific Location</u></b>	<b><u>Classification</u></b>
CR3 Emergency Organization	On-Site	Crystal River, FL	Corporate
EOF Staff	Off-Site	Crystal River, FL	Corporate
State Watch Office-Tallahassee	Off-Site	Tallahassee, FL	State
Division of Emergency Management (DEM)	Off-Site	Tallahassee, FL	State
Department of Health, Bureau of Radiation Control (DHBRC)	Off-Site	Orlando, FL	State
Division of Florida Highway Patrol, Department of Highway Safety and Motor Vehicles	Off-Site	Crystal River, FL	State
Division of Road Operations, Department of Transportation	Off-Site	Tallahassee, FL	State
Department of Agriculture & Consumer Services	Off-Site	Tallahassee, FL	State
Division of Forestry and Consumer Services	Off-Site	Tallahassee, FL	State
Division of Law Enforcement, Department of Natural Resources	Off-Site	Tallahassee, FL	State
Fish and Wildlife Conservation Commission	Off-Site	Crystal River, FL	State
Citrus County Emergency Management	Off-Site	Lecanto, FL	County
Citrus County Health Officer	Off-Site	Inverness, FL	County
Citrus County Sheriff	Off-Site	Inverness, FL	County

TABLE 5.1 (Continued)

**OVERALL RESPONSE ORGANIZATIONS AND SUBORGANIZATIONS**

<b><u>Organization/Officer</u></b>	<b><u>General Location</u></b>	<b><u>Specific Location</u></b>	<b><u>Classification</u></b>
Citrus County Road Department	Off-Site	Inverness, FL	County
Local Emergency Medical Services	Off-Site	Crystal River, FL	County
Levy County Emergency Management	Off-Site	Bronson, FL	County
Citrus Memorial Hospital	Off-Site	Inverness, FL	Local
Seven Rivers Regional Medical Center	Off-Site	Crystal River, FL	Local
NRC, Region II	Off-Site	Atlanta, GA	Federal
NRC, Operations Center	Off-Site	Rockville, MD	Federal
Federal Emergency Management Agency (FEMA), Region IV			
Institute of Nuclear Power Operations (INPO)	Off-Site	Atlanta, GA	Private
Nuclear Safety Department, Nuclear Power Division of Electric Power Research Institute (EPRI)	Off-Site	Palo Alto, CA	Private
AREVA	Off-Site	Lynchburg, VA	Private
Contractors	Off-Site	Various	Private
Radiation Emergency Assistance Center/ Training Site (REAC/TS)	Off-Site	Oak Ridge, TN	Private

TABLE 5.2

**RESPONSE ORGANIZATIONS AND MANAGEMENT HAVING KEY OPERATIONAL ROLES**

<b><u>Key Response Organizations</u></b>	<b><u>Title of Person in Charge of Emergency Response</u></b>
1. CR3 Emergency Organization	Emergency Coordinator
2. EOF Staff	EOF Director
3. State Watch Office-Tallahassee	State Watch Office Duty Officer
4. Division of Emergency Management	Director, Division of Emergency Management
5. Department of Health, Bureau of Radiation Control (DHBR)	Operations Officer
6. Citrus County Emergency Management	Emergency Operations Center Director
7. Levy County Emergency Management	Director, Levy County Emergency Management
8. Citrus Memorial Hospital	Director
9. Seven Rivers Regional Medical Center	Director
10. Local Emergency Medical Services	Director
11. NRC - Region II/Atlanta, GA	Regional Administrator, Region II
12. NRC - Rockville, MD	Project Manager
13. FEMA - Region IV/Atlanta, GA	Director, Region IV
14. AREVA	Resident Engineer

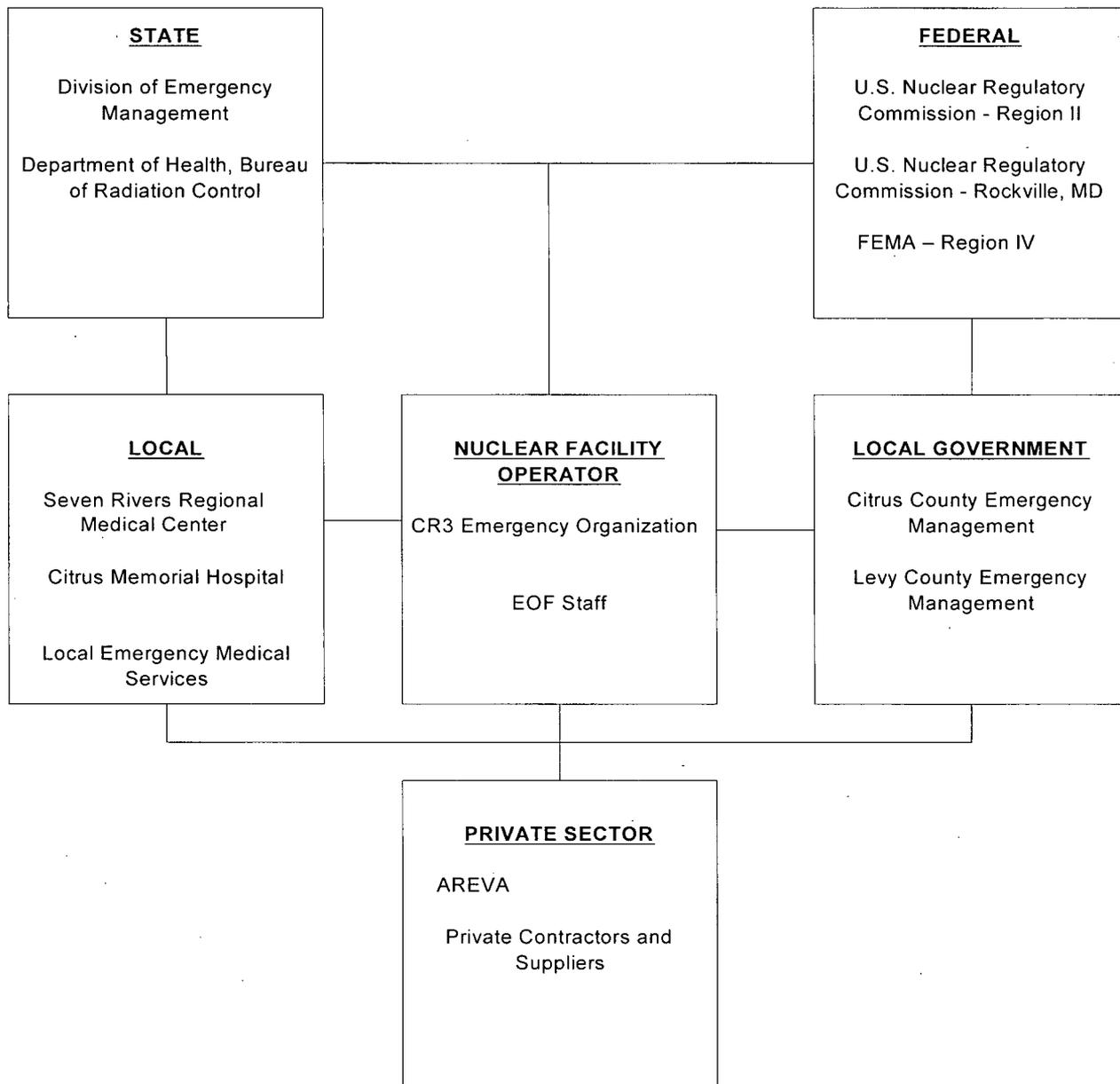
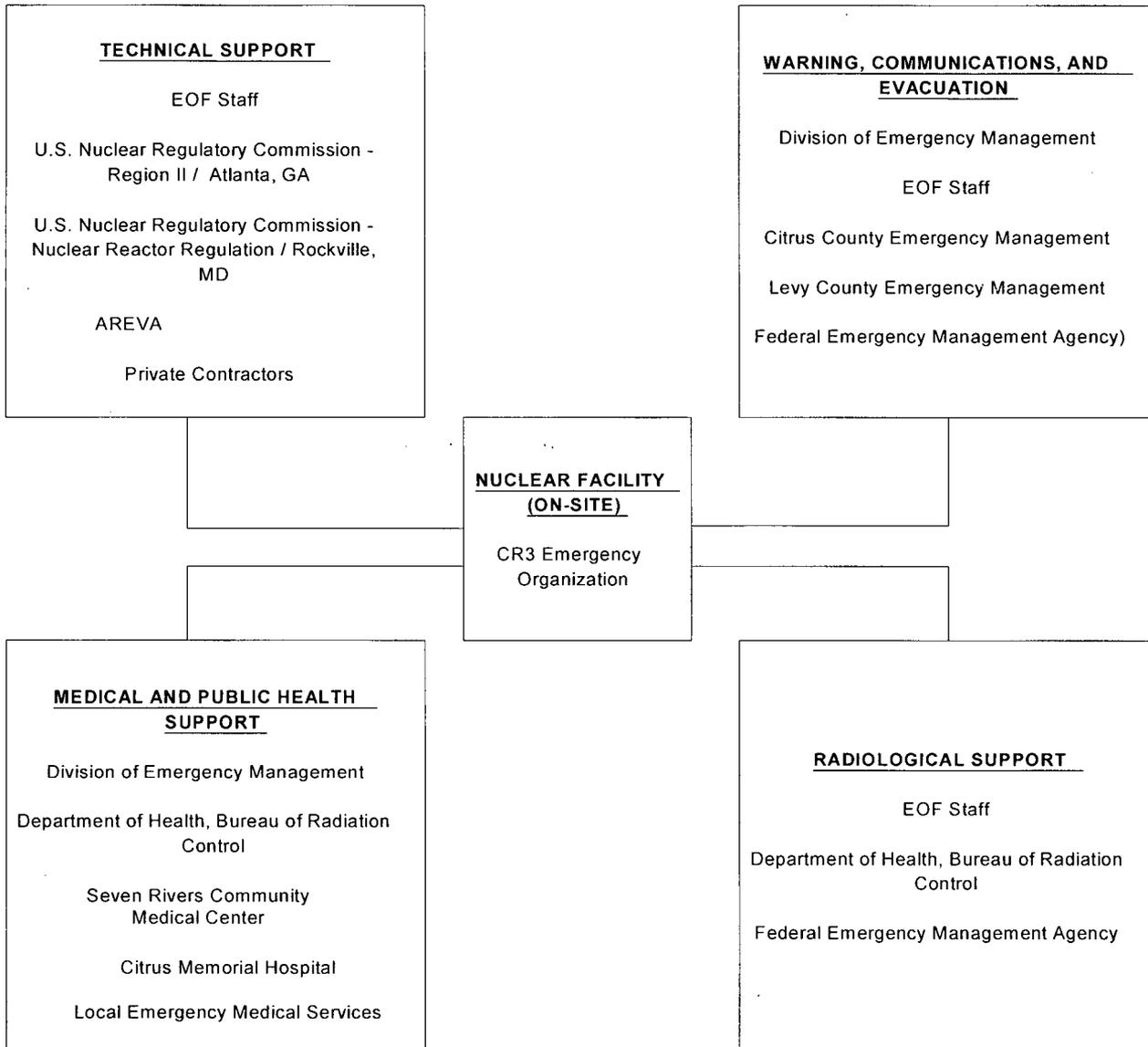
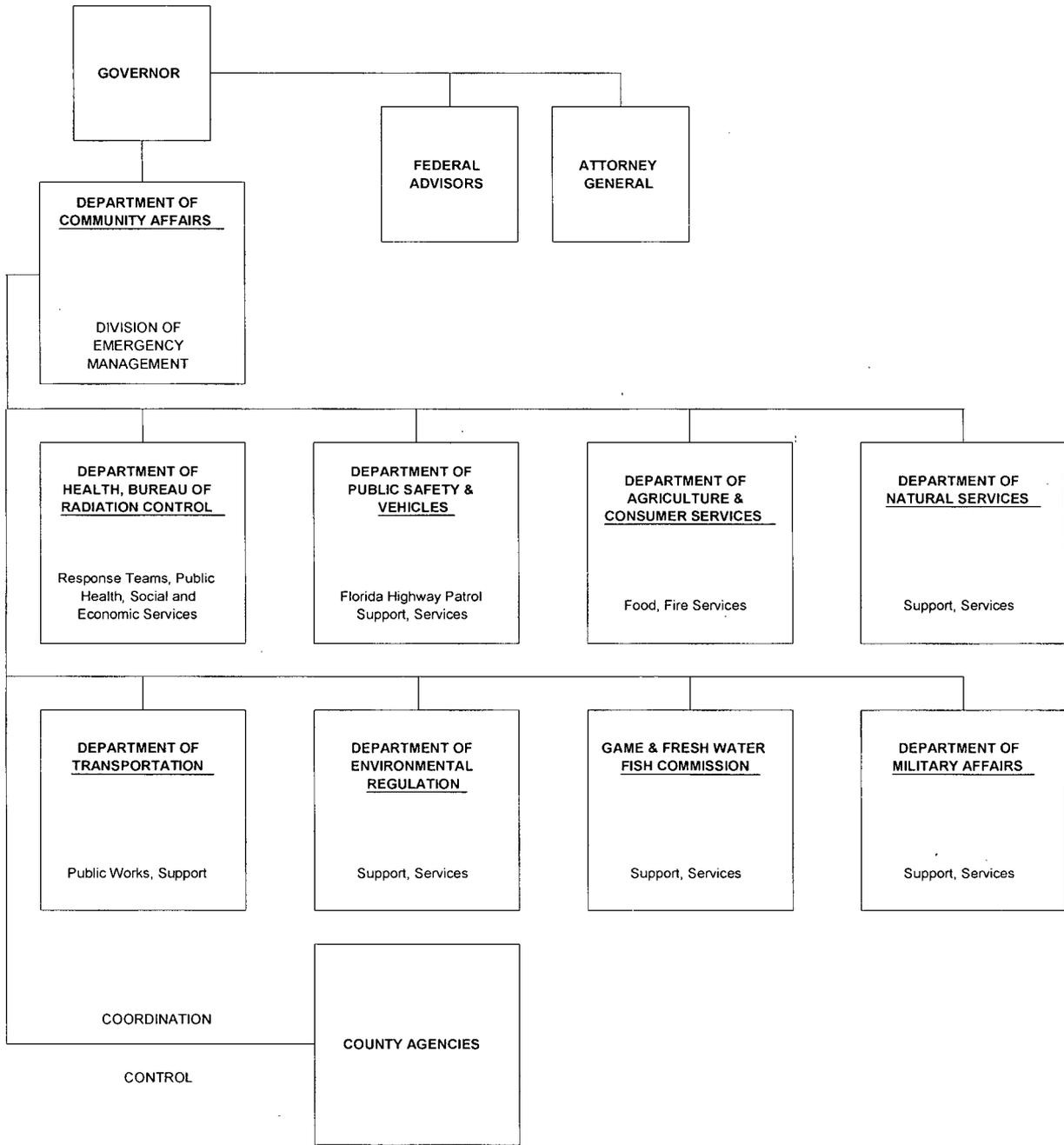


FIGURE 5.1

INTERRELATIONSHIP OF KEY RESPONSE ORGANIZATIONS -  
LINES OF COMMUNICATION, CONTACT, AND DIRECT INTERACTION



**FIGURE 5.2**  
**FUNCTIONAL INTERRELATIONSHIP OF KEY RESPONSE ORGANIZATIONS**



**FIGURE 5.3**  
**STATE ORGANIZATION FOR RADIOLOGICAL RESPONSE**

## **6.0 ON-SITE EMERGENCY ORGANIZATION**

General elements of the CR3 organization are briefly described in the preceding section. This section provides additional detail and outlines those aspects of the CR3 organization considered essential to operational safety under any condition. With the normal Plant operating organization as a base, the emergency organization to be activated on-site and its augmented support from off-site organizations are then described. Mobilization of the emergency organization, including action levels and contact points, are described in Section 9.0, "Notification Methods and Procedures."

### **6.1 NORMAL CR3 ORGANIZATION**

The personnel and resources of the CR3 organization utilized for normal operations provide the basic capabilities that will be utilized in emergency situations. Figure 6.1 illustrates the normal CR3 organization. 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 headed by designated managers. As appropriate, these areas are further subdivided according to specific technical disciplines or support functions.

A key element of the CR3 organization for both normal operation and emergency response is the operating crew. For all operating modes, the normal operating shift crew will include: one (1) Shift Manager and one (1) Control Room Supervisor, each with an SRO License; three (3) Nuclear Operators, each with a Reactor Operator License; and at least three (3) other Operators (not required to be licensed). Additionally, the normal operating shift crew will include at least one (1) Health Physics Technician, one (1) Chemistry Technician, and one (1) Shift Technical Advisor (STA) / Work Control Center Supervisor. With the exception of the two (2) technicians, these individuals will be part of the Nuclear Plant Operations organization. In addition to this normal crew, the full organizational complement of Chemistry, Health Physics, Maintenance, Technical Support, and Administrative personnel will be available during normal working hours.

Minimum shift operating crews are defined in the CR3 Improved Technical Specifications.

The Shift Manager is responsible for all Plant operations on shift and is directly in charge of the shift crew. Only individuals who hold an SRO or Reactor Operator (RO) License are authorized for manipulation of controls in the Control Room, for changing process controls as necessary to match load demand or to respond to other process changes, and for taking immediate actions required to maintain or bring CR3 to a safe condition during abnormal and/or emergency conditions.

## **6.2**      **NORMAL CORPORATE ORGANIZATION**

Within the overall organization of Progress Energy, additional elements exist to directly control and support the operation of CR3. The Plant General Manager and the entire CR3 Staff are a part of the Progress Energy Nuclear Operations organization, headed by the Vice President, Crystal River Nuclear Plant. The Vice President, Crystal River Nuclear Plant reports to the Senior Vice President and Chief Nuclear Officer, Nuclear Generation who, in turn, reports to the Group President, Energy Supply.

In addition to PE Nuclear Plant Operations, the Nuclear Operations organization consists of organizational elements that provide additional administrative and technical support to assure continued safe Plant operation in compliance with operational commitments and applicable licensing requirements and regulations. These elements include: Engineering, Support Services, Training, and Nuclear Oversight.

## **6.3**      **CR3 EMERGENCY ORGANIZATION**

In the event of an emergency at CR3, a pre-established emergency organization is activated. This organization is established to contain all the essential operational and technical capabilities of the normal organization, but is structured to expedite emergency response. The CR3 Emergency Organization is under the direction of the Emergency Coordinator, and consists of operational and technical staffs and emergency teams described below. Figure 6.2 illustrates the CR3 Emergency Organization.

Emergency teams consist of a team leader and team members. Their emergency duties and responsibilities are described in the series of Emergency Plan Implementing Procedures (EMs) and Chemistry Sampling Procedures (CHs), which are a part of the Plant Operating Manual (POM). Personnel assignments will be in accordance with the emergency responsibilities. All personnel will be trained as defined in Section 19.0, "Radiological Emergency Response Training," to fulfill their responsibilities. Mobilization of the emergency teams will be effected under the direction of the Emergency Coordinator, according to personnel assignments and telephone numbers maintained in various phone directories.

In addition to the emergency teams, Progress Energy has designated specific personnel assignments for the functional areas of emergency activities. These assignments are made for all shifts and for Plant Staff members, both on-site and away from the site. Table 6.1, "Minimum Staffing Requirements for CR3 Emergencies," depicts these assignments and further denotes the minimum capabilities and staffing on shift and available within 30 minutes and 60 minutes following the declaration of an emergency. As noted in the Table, the TSC and EOF minimum staff must respond within 60 minutes of emergency declaration while some additional responders are required to respond within 30 or 60 minutes from the time they are notified to do so.

### **6.3.1 Operating Shift**

Under all operating conditions, including emergencies, CR3 will be operated by the normal operating shift crew as described in Section 6.1. Operating personnel are trained in emergency response procedures and have the operational knowledge and capability to institute measures to mitigate the effects of an emergency and to take appropriate actions for monitoring and controlling the emergency situation. Operating personnel required for long-term response or relief is available through notification.

### **6.3.2 Emergency Coordinator**

The Shift Manager 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 that emergency. He also has the responsibility to notify the Plant General Manager, or the designated alternate, who shall assume the position of Emergency Coordinator as soon as possible after an emergency classification has been determined. The Shift Manager will assume the position of Emergency Coordinator until relieved by the Plant General Manager or designated alternate.

The Emergency Coordinator (EC) is responsible for the direction of all activities at the CR3 site during any emergency through the utilization of procedure EM-202. The EC shall evaluate the emergency and take the necessary actions to control it. Should the ECs evaluation indicate that extreme measures must be taken, the EC has the authority to direct any or all personnel to evacuate the CR3 site, to direct placement of any or all site generating Plants in a safe shutdown condition, to initiate accountability and evacuation of Energy Complex 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 Emergency Coordinator shall provide personnel assignments for continuing response.

The designated Emergency Coordinator shall evaluate the situation, based on the criteria presented in Section 8.0, "Emergency Classification System," of this Plan, and either concur with the Shift Manager' evaluation or reclassify the emergency. The Emergency Coordinator is responsible for assuring that appropriate corrective and protective actions are taken to mobilize emergency teams and for notifying PE management and other off-site supporting organizations and regulatory agencies as necessary.

With all provisions of the Plan implemented for deployment of emergency teams, use of the TSC/OSC, and evacuation/protective cover for other personnel, access to the Control Room shall be strictly limited by the Emergency Coordinator to those individuals directly responsible for operation of the Plant (e.g., Shift Manager, Control Room Operators), to technical advisors who may be requested to support operations, and

to NRC personnel. Unless otherwise directed by the Emergency Coordinator, all Control Room operations shall continue to be performed by the crew members described in Section 6.1.

The highest level of authority for on-site emergency activities will remain with the Emergency Coordinator 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) notification; and (3) protective action recommendations to State and local authorities responsible for off-site emergency measures. At the time the EOF is activated and operational by both Progress Energy and the DEM, the EOF Director will assume responsibility for protective action recommendations and notifications to State and local authorities (Items 2 and 3). The Emergency Coordinator reports to the EOF Director.

### **6.3.3 TSC Staff**

The Technical Support Center (TSC) serves as an assembly point for making available the technical expertise of experienced Plant personnel as required to assist the Emergency Coordinator, while at the same time minimizing the number of personnel in the Control Room to those absolutely necessary to bring the Plant to a safe condition. The TSC is further described in Section 12.1.2.

Technical support for planning and re-entry/recovery operations will be provided through the TSC by CR3 personnel not assigned to emergency teams. With the Emergency Coordinator's cognizance, communications will also be maintained with the NRC and other off-site personnel at the EOF. The diversity of technical expertise required to perform this function precludes any definitive advanced planning of designated personnel. Expertise not available on the PE Staff will be obtained via existing relationships with private support organizations that can provide required personnel in sufficient time to perform engineering evaluations and design studies needed for recovery operations. Coordination of the TSC personnel is provided through procedure EM-102.

### **6.3.4 OSC Personnel**

The Operational Support Center (OSC) is located within the TSC. The two combined are referred to as the TSC/OSC. Operational support personnel reporting to the OSC include members of the Emergency Repair Team, Radiation Monitoring Team (both environmental and on-site), and Sample Team. The OSC is further described in Section 12.1.2.

**6.3.5      Medical Response Personnel**

**LEADER:** Any Fossil Emergency Response Coordinator.

**RESPONSIBILITIES:** The responsibilities of the Medical Response Personnel are to provide basic life support to injured persons and transportation to a medical facility, if required.

**AUTHORITY:** The Medical Response Personnel are authorized to release to medical personnel only the required pertinent information necessary to treat the injured, and to deliver the injured to the appropriate medical facility. Implementing instructions are provided in procedure EM-213.

**6.3.6      Emergency Repair Team**

**LEADER:** Any qualified Emergency Repair Team member.

**RESPONSIBILITIES:** The Emergency Repair Team is responsible for repairs to equipment and facilities necessary to return the Plant to a safe condition.

**AUTHORITY:** The Emergency Repair Team has the authority to carry out its responsibilities consistent with directions from TSC/OSC leadership. Implementing instructions are provided in procedure EM-104.

**6.3.7      Radiation Monitoring Team**

**LEADER:** Any qualified Radiation Monitoring Team member.

**IN-PLANT RESPONSIBILITIES:**

- a. Issue protective equipment and monitoring devices to other personnel;
- b. Perform radiological surveys in accordance with both written and verbal instructions from TSC/OSC leadership;
- c. Establish controlled access areas in accordance with surveys;
- d. Provide qualified personnel for re-entry procedures; and
- e. Supervise the survey and release of all personnel who evacuate on-site assembly areas.

**AUTHORITY:** The Radiation Monitoring Team has the authority, through the Emergency Coordinator, to prevent any or all personnel from crossing lines of controlled access into the emergency area; the authority to require individuals to evacuate from the emergency area; and the authority to require decontamination of evacuees. Implementing instructions are provided in procedure EM-210A.

## **ENVIRONMENTAL RESPONSIBILITIES:**

- a. Perform plume tracking from the onset of an emergency until such time as the State team arrives on the scene and assumes this responsibility for the area beyond the Site Boundary.
- b. Assist the State team in off-site surveys to evaluate radiological conditions during unplanned radioactive releases, if requested.

**AUTHORITY:** Within the Owner Controlled Area, the Radiation Monitoring Team has the authority to evacuate personnel from areas where surveys indicate personnel hazards resulting from direct radiation and/or airborne radioactivity. Implementing instructions are provided in procedure EM-210B. Off-site, the Team has no authority to request evacuation except through specific instructions from the Emergency Coordinator.

### **6.3.8 Fire Brigade**

**LEADER:** Fire Team Leader or any other Fire Brigade-trained supervisor, as alternate.

**RESPONSIBILITIES:** To fight fires within the confines of CR3.

**AUTHORITY:** To regulate access into the fire area, consistent with the orders from the Emergency Coordinator and duties of other emergency teams. Implementing instructions are provided in procedure EM-216.

### **6.3.9 Sampling Team**

**LEADER:** Any qualified Sampling Team member.

**RESPONSIBILITIES:** The Sampling Team is responsible for performing any or all chemical or radioisotopic sampling as directed by the Emergency Coordinator via the Chemistry leadership in the TSC/OSC.

**AUTHORITY:** The Sampling Team has the authority to implement any written or verbal instructions consistent with directions from TSC/OSC leadership. Implementing instructions are provided in procedure EM-104.

### 6.3.10 Dose Assessment Team

**LEADER:** Any Dose Assessment Team member.

**RESPONSIBILITIES:** The Dose Assessment Team (DAT) is responsible for dose assessment at the EOF (off-site). The Radiation Controls Coordinator in the TSC is responsible for providing the Emergency Coordinator with the dose assessment information necessary to determine emergency classification and/or protective actions as well as for keeping the appropriate dose assessment status boards and plume tracking maps up-to-date. Implementing instructions are provided in procedure EM-219. The Radiation Controls Manager at the EOF and the Dose Assessment Team are responsible for providing the EOF Director with the same dose assessment information as well as for coordinating dose assessment activities with State Dose Assessment personnel.

**AUTHORITY:** The Dose Assessment Team off-site has the authority to carry out all instructions issued by the EOF Director.

### 6.3.11 Accident Assessment Team

**LEADER:** Accident Assessment Team (AAT) Coordinator with any qualified AAT member as alternate.

**RESPONSIBILITIES:** The AAT is responsible for providing the Emergency Coordinator with Plant status information to determine classification and/or protective action recommendations. The AAT is also responsible for tracking fission product barrier status and for developing accident mitigation strategies.

**AUTHORITY:** The AAT has the authority to carry out all instructions issued by the Emergency Coordinator.

**AUGMENTATION OF CR3 EMERGENCY ORGANIZATION**

In the event of an emergency at CR3 that requires personnel and other support resources beyond those available within the CR3 Emergency Organization, augmentation is available from various off-site organizations. Primary off-site support is available from the Nuclear Operations organization. This support is provided via activation of the EOF by notifying the EOF Director, as described in procedure EM-206. Corporate support is available as described in procedure EM-400. Table 6.1 provides specific indications of Corporate support.

Additional support to CR3 is available from local, State, Federal, and private sector organizations, as previously discussed in Section 5.0 of this Plan. Figure 6.3 illustrates the major interfaces between CR3 and Corporate, and other off-site organizations and emergency centers.

**TABLE 6.1  
SHIFT AND EMERGENCY STAFFING CAPABILITIES**

MAJOR FUNCTIONAL AREA	MAJOR TASKS	LOCATION	CR3 EMERGENCY POSITION, TITLE, OR EXPERTISE	ON-SHIFT	CR3 STAFF RESPONSE CAPABILITY FOR ADDITIONS	
					30 MIN.	60 MIN.
Plant Operations and Assessment of Operational Aspects		Control Room	Shift Manager (SRO)	1	-	-
		Control Room	Control Room Supervisor (SRO)	1	-	-
		Control Room	Nuclear Operators (RO)	3	-	-
		Control Room	Non-Licensed Operators	3	-	-
		Control Room	STA / Work Control Center Supervisor	1	-	-
NOTE: The above represents the normal operating shift in Modes 1-4. Minimum shift composition for Modes 5 and 6 is identified in the CR3 Improved Technical Specifications.						
Emergency Direction and Control (Emergency Coordinator)		Control Room	On-Duty Shift Manager	1**	-	-
Notification / Communication	Notify license and State, Local, and Federal personnel and maintain communications	Control Room / TSC	Communications Representative as designated by the Emergency Coordinator	1**	1* <sup>1</sup>	2*
Radiological Accident Assessment and Support of Operational Accident Assessment	Support of Operational Accident Assessment	EOF	EOF Director	-	-	1
	Off-Site Accident and Dose Assessment	EOF	EOF Director	-	-	1
	Off-Site Dose Assessment	EOF	Radiation Controls Manager	-	-	1
	Off-Site Dose Assessment	TSC	Senior Health Physics Expertise (Radiation Controls Coordinator)	-	1	-
	Off-Site Monitoring	EOF	State of Florida Department of Health / Bureau of Radiation Control (2 hours)			
	On-Site Monitoring (Plume Tracking)	Local Assembly Area (LAA) / OSC	Health Physics Technician	-	2*	2*
	On-Site (Out of Plant)	LAA / OSC	Health Physics Technician	-	1*	1*
	In-Plant Surveys	LAA / OSC	Health Physics Technician	1	1*	1*
	Chemistry / Radiochemistry	LAA / OSC	Chemistry Technician	1	-	1*

**TABLE 6.1 (Continued)**  
**SHIFT AND EMERGENCY STAFFING CAPABILITIES**

MAJOR FUNCTIONAL AREA	MAJOR TASKS	LOCATION	CR3 EMERGENCY POSITION, TITLE, OR EXPERTISE	ON-SHIFT	CR3 STAFF RESPONSE CAPABILITY FOR ADDITIONS	
					30 MIN.	60 MIN.
Plant System Engineering, Repair and Corrective Action	Technical Support	TSC	STA / Work Control Center Supervisor	1**	--	--
		TSC	Reactor Engineer	--	--	1*
		TSC	NIT Process Systems Support Analyst	--	--	1*
	Repair and Corrective Action	OSC	Mechanical Maintenance	1**	--	1*
		Control Room / OSC	Plant Operator	--	--	1* <sup>2</sup>
		OSC	Electrical Maintenance	--	1*	1*
		OSC	Nuclear Technical Support Technician (I&C)	1**	1*	--
Protective Actions (In-Plant)	Radiation Protection a. Access Control b. HP Coverage for Repair, Corrective Actions, Search and Rescue, First Aid, and Firefighting c. Personnel Monitoring d. Dosimetry	MAA, Scene, or OSC	Health Physics Technician	2**	2*	2*
Firefighting	Firefighting	LAA, MAA, or Scene	Fire Brigade	5***	5*	5*
Rescue Operations /First Aid	Rescue and First Aid	MAA or Scene		2**	--	--
Site Access Control and Personnel Accountability	Security, Firefighting, Communications, and Personnel Accountability	MAA	Security Personnel	All per the Physical Security Plan	--	--
<b>TOTAL MINIMUM ON-SHIFT PERSONNEL:</b>				<b>14</b>		
<p>* In accordance with EM-102 and EM-104, these additional responders are required within 30 or 60 minutes from the time they are notified. (60 minute response positions with no asterisk are TSC and EOF minimum staff positions and as such, unless otherwise noted, are required to respond within 60 minutes of an emergency declaration.)</p> <p>*<sup>1</sup> In accordance with EM-102, this function can continue to be performed in the Control Room until the TSC is declared operational. Since the TSC is required to be operational within 60 minutes of a declared ALERT emergency classification or higher, the 30 minute response from time of emergency declaration for this minimum staff position is an expectation. This position must be filled by a qualified minimum staff responder within 60 minutes of the emergency declaration.</p> <p>*<sup>2</sup> In accordance with EM-104, this additional responder is sent to the OSC on an "as available" basis when able to be released from the Control Room.</p> <p>** May be provided by shift personnel assigned other functions. (NOTE: The Site Emergency Response Coordinator (ERC) also provides on-shift rescue, first-aid, and fire response.)</p> <p>*** Normal Fire Brigade consists of two Operations Personnel and three Plant staff personnel. The two Operations Personnel are included in the total minimum on-shift personnel. The three additional Plant staff personnel positions may also be filled by Operations if shift staffing allows.</p> <p>General Notes:</p> <ul style="list-style-type: none"> <li>• Emergency personnel may assemble at the Main Assembly Area (MAA) or a Local Assembly Area (LAA) and then be dispatched to the TSC / OSC, EOF, or Scene as needed following accountability.</li> <li>• The TSC will be operational within 60 minutes of a declared ALERT emergency classification or higher with the minimum staffing as described in procedure EM-102.</li> <li>• The EOF will be operational within 60 minutes of a declared SITE AREA EMERGENCY classification or higher with the minimum staffing as described in procedure EM-400.</li> </ul>						

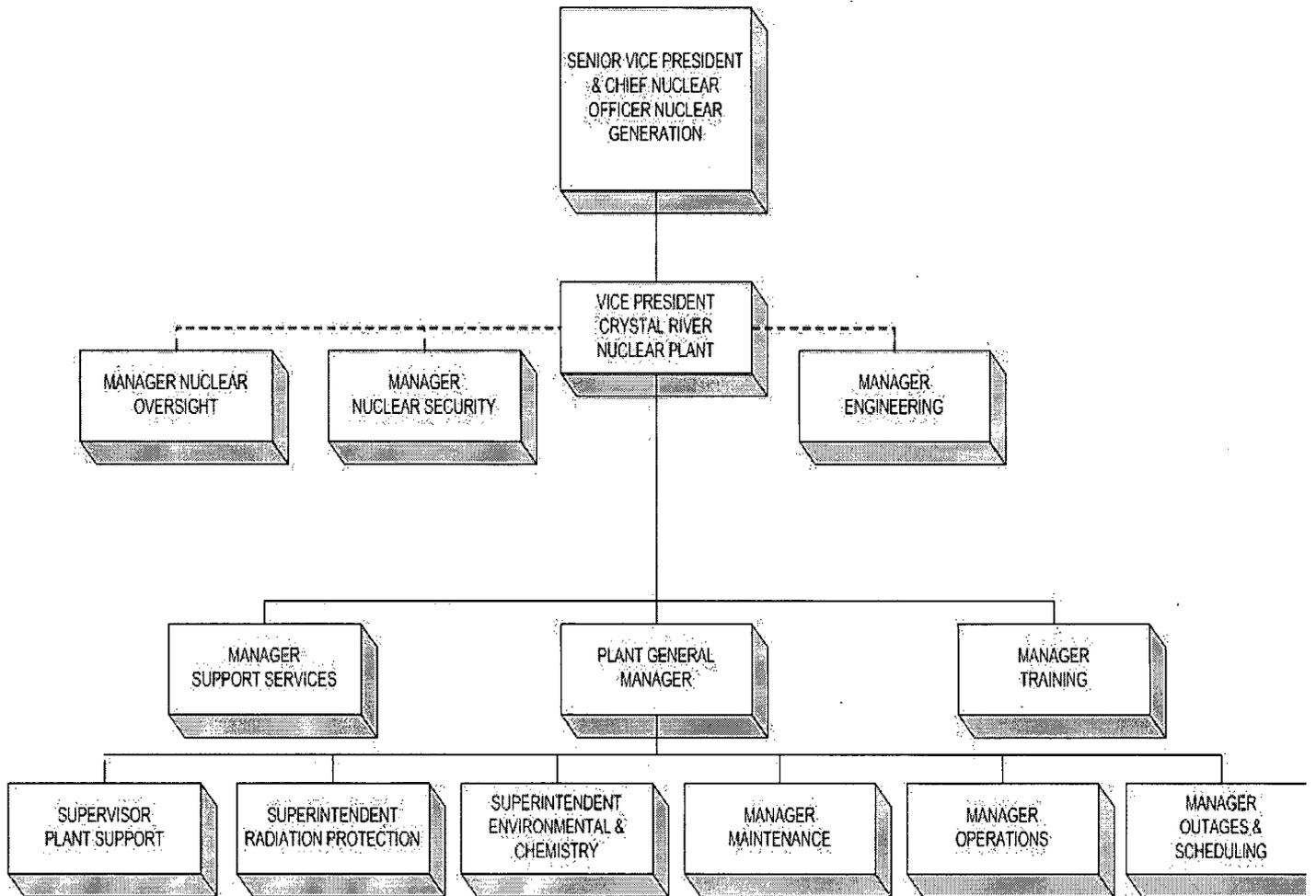
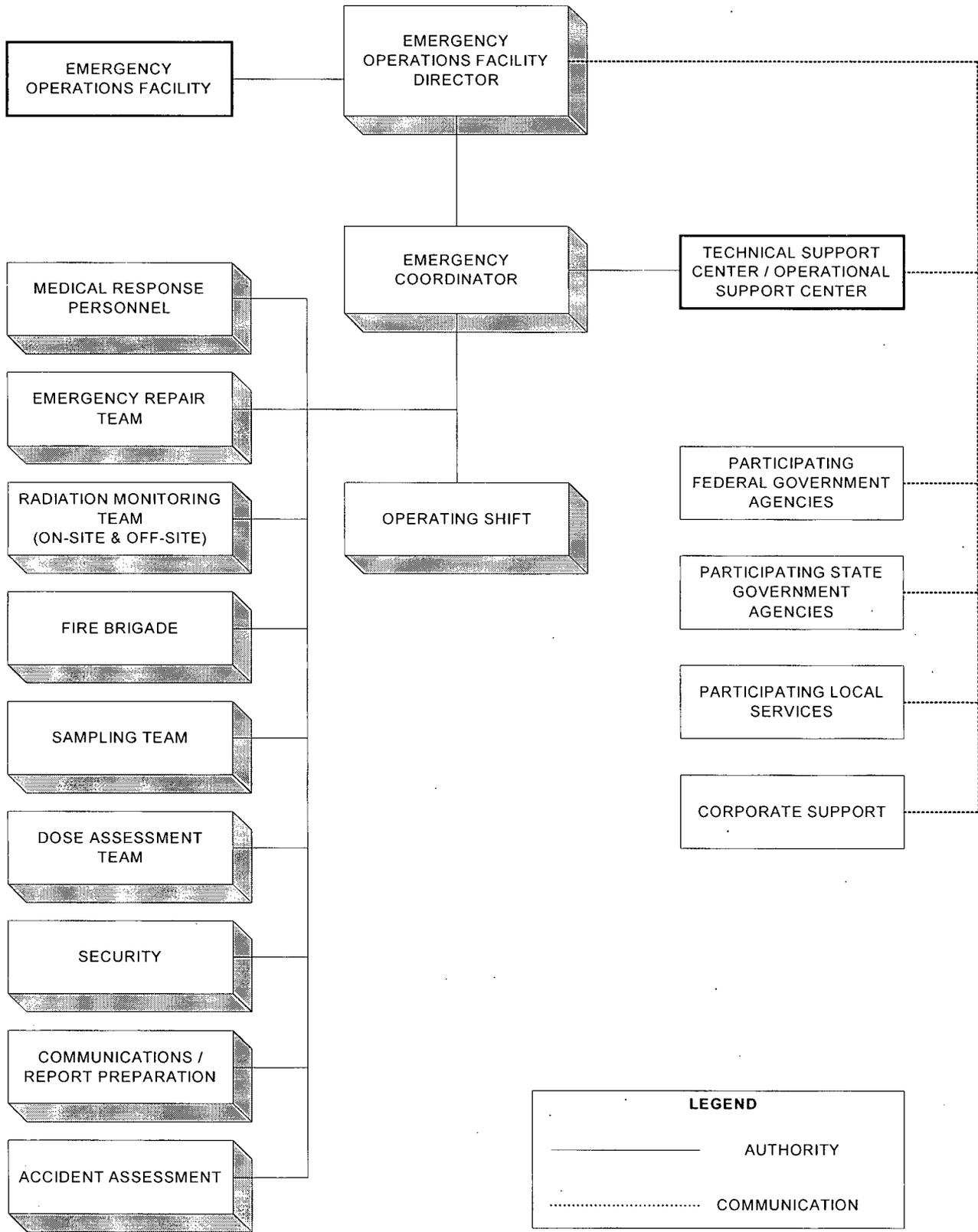


FIGURE 6.1

PROGRESS ENERGY ORGANIZATIONAL ELEMENTS NORMALLY RELATED TO CR3



**FIGURE 6.2**  
**CR3 EMERGENCY ORGANIZATION**

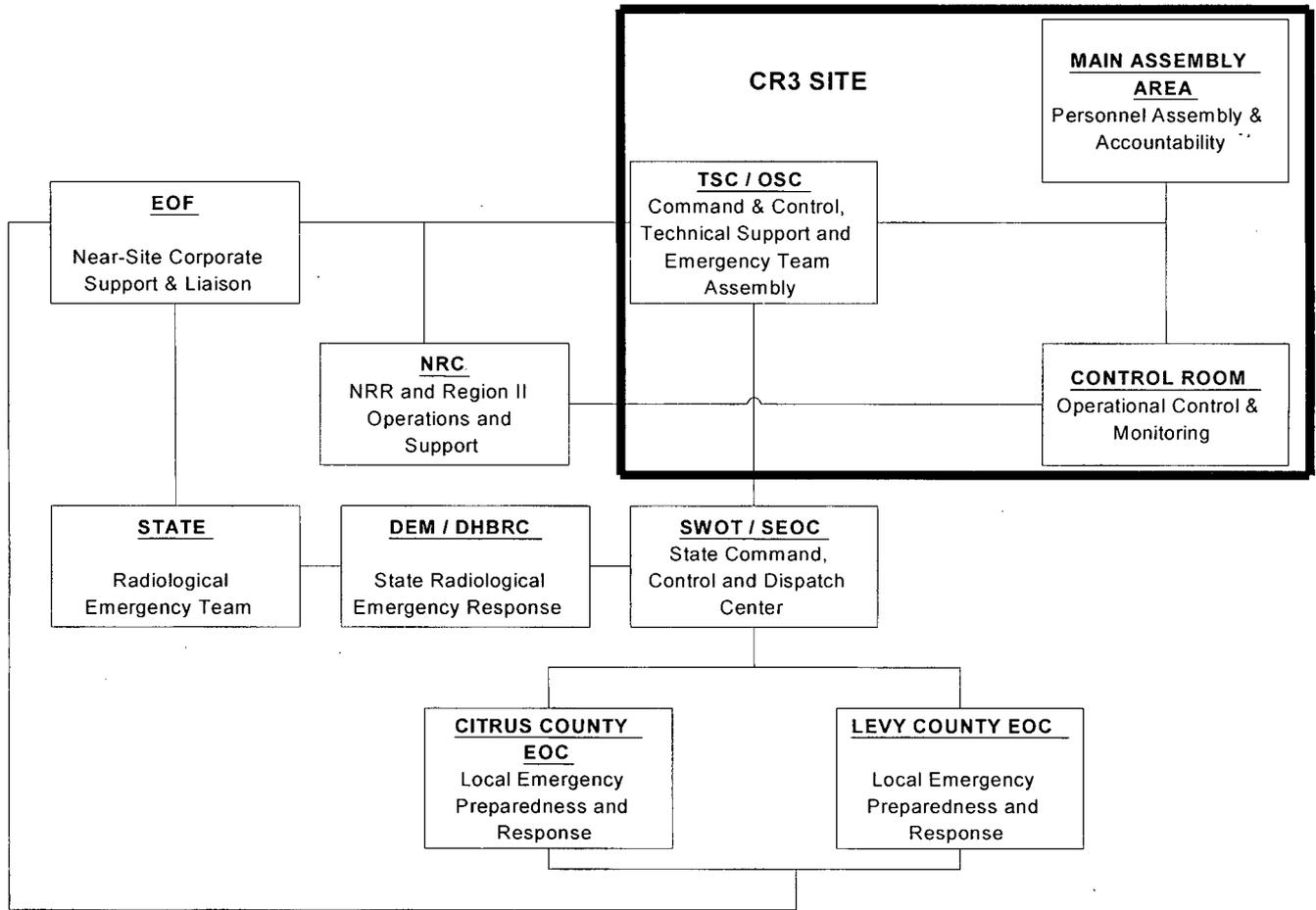


FIGURE 6.3

MAJOR INTERFACES BETWEEN CR3 AND SUPPORT ORGANIZATIONS' EMERGENCY CENTERS

## **7.0 EMERGENCY RESPONSE SUPPORT AND RESOURCES**

Those response support organizations from the local, State, Federal, and private sectors available to assist in an emergency at CR3 are identified and described in Section 5.0, "Assignment of Responsibility (Organization Control)." This section deals with emergency support arrangements among local, State, and Progress Energy facilities and individuals providing emergency services other than those already cited.

### **7.1 LICENSEE, STATE, AND LOCAL RESOURCES**

In order to support the Federal response to an emergency, specific resources have been made available or have been identified by Progress Energy and State and local agencies. Progress Energy has provided for office space and telephone services at the TSC/OSC and EOF for NRC use during an emergency. Company personnel have been designated to assist NRC personnel during the emergency period. State and local representatives will be at the EOF for interface with the NRC for continued support during the emergency period.

### **7.2 FEDERAL RESPONSE AND ASSISTANCE**

Upon notification of a hazard to public health and safety by the Emergency Coordinator, the 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 Federal Radiological Emergency Response Plan 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.

### **7.3 DISPATCH OF REPRESENTATIVES TO EOF FROM KEY OFF-SITE ORGANIZATIONS**

Each principal off-site organization will, upon request, dispatch a representative(s) to the EOF. The EOF organization will, upon request, dispatch a representative to principal off-site local and State governmental EOCs to provide technical expertise and assistance to these organizations. Notification that a representative is needed in response to an incident will be given to CR3 by the DEM.

7.4 **RADIOLOGICAL LABORATORIES**

Radiological laboratories, their capabilities, and expected response times are listed in Table 7.1. These laboratories can be used by the CR3 Emergency Organization in an emergency situation.

Progress Energy's Robinson Nuclear Plant, in Hartsville, SC, and AREVA, in Lynchburg, VA, have the capability to provide post-accident analytical services, particularly for high level radioactivity samples. The DHBRC will provide services for low level radioactivity samples and for environmental monitoring.

7.5 **NUCLEAR AND OTHER FACILITIES, ORGANIZATIONS, AND INDIVIDUALS PROVIDING EMERGENCY ASSISTANCE**

Nuclear and other facilities, organizations, and individuals, other than those already cited in Section 5.0, which can be relied upon in an emergency to provide assistance are listed in Table 7.2.

TABLE 7.1

**RADIOLOGICAL LABORATORIES -  
CAPABILITIES AND EXPECTED RESPONSE TIMES**

<u>Radiological Laboratories</u>	<u>Capabilities</u>	<u>Response Times</u>
H.B. Robinson Nuclear Plant	High level radioactivity samples analytical services	24 hours upon receipt
AREVA	High level radioactivity samples analytical services	24 hours upon receipt
Department of Health, Bureau of Radiation Control	Low level radioactivity samples and environmental monitoring	2 hours

TABLE 7.2

ADDITIONAL NUCLEAR SUPPORT ORGANIZATIONS

<u>Name</u>	<u>Purpose</u>
Oak Ridge Associated Universities (ORAU)	Available for providing back-up support for the definitive care and treatment of seriously irradiated persons.

## **8.0 EMERGENCY CLASSIFICATION SYSTEM**

### **8.1 STANDARD CLASSIFICATION OF EMERGENCIES**

Progress Energy utilizes NUMARC/NESP-007 as its basis for classifying emergencies. This is done since the classification system referenced in NUMARC/NESP-007 is an acceptable system identified by the NRC and offers a standard, informative approach to all emergency response organizations (i.e., local, State, Federal, and private).

This Plan addresses four (4) classifications of emergencies, which 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 paragraphs, is: UNUSUAL EVENT, ALERT, SITE AREA EMERGENCY, and GENERAL EMERGENCY.

#### **8.1.1 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.

#### **8.1.2 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.

### **8.1.3 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.

### **8.1.4 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.

## 8.2 EAL'S AND POSTULATED ACCIDENTS

Each of the four emergency classifications are characterized by Emergency Action Levels (EALs). These levels consist of specific instrument readings, alarms, and observations which are used either in combination or singularly to tell the Operator that an initiating event has occurred, thus allowing the Emergency Coordinator to declare the appropriate level of emergency. These EALs are used to assure that the initial classification of emergencies can be accomplished rapidly, based on specific instrument readings, alarms, and observations, thus allowing for the prompt identification of the nature of assistance and assessment activities needed. They are not used to infer any immediate need to implement protective actions.

Table 8.1, "Emergency Classification Table," provides a listing of postulated accidents at CR3 for which specific physical indications and EALs have been identified to expedite emergency classification. These postulated accidents have been categorized under the following categories:

- a. Abnormal Radiation Levels/Radiological Effluent
- b. Natural/Man-Made Hazards and Emergency Coordinator Judgment
- c. System Malfunction
- d. Loss of Power
- e. Fission Product Barrier Matrix

In order to correlate the basis for this Plan with the accidents evaluated in the FSAR, Table 8.1 has been prepared to provide a summary listing of example conditions for determining the emergency classification. Although it is impossible to provide an all-inclusive listing of examples, these are included to provide sufficient guidance to the Emergency Coordinator in making a determination of emergency classification. As previously discussed, quantifiable measures will be utilized to classify the incident by its potential consequences rather than its causes. In this regard, it is noted that many of the incidents tabulated may be classified in more than one category, depending on their potential consequences.

Postulated accidents beyond those investigated in the FSAR have also been addressed in Table 8.1 regarding their classification, method of detection, and protective actions considered appropriate to the circumstances. Occurrences of some of the events may result in classifications different than those noted. This would depend on the circumstances existing at the time of the occurrence. In some cases, the classification assigned initially may undergo escalation to the next higher classification, depending on the

severity of the accident. Also, failures of any of the required instruments, alarms, or other equipment in any of the accident descriptions may result in a higher classification.

Specific guidance for classifying emergencies is provided to the Emergency Coordinator in PROCEDURE EM-202. This guidance consists of listed events/Control Room indications by tag number, location, and, where possible, additional guidance on interpretation of indications (e.g., changes in level, means of verification). This guidance shall be used to declare the highest classification for which an EAL has been exceeded. In other words, a GENERAL EMERGENCY will be declared directly if a GENERAL EMERGENCY action level is exceeded, without having previously been declared in a lower (SITE AREA EMERGENCY) classification. On the other hand, accidents may be classified in a lower classification at first, then escalate to a higher classification if the situation deteriorates.

EALs are not intended to be used during maintenance and/or testing situations where abnormal instrument readings, alarms, and observations are expected. In some cases, compensatory measures should be considered during maintenance and/or testing situations.

EALs shall be reviewed with State and local Emergency Management personnel on an annual frequency.

**TABLE 8.1  
EMERGENCY CLASSIFICATION TABLE  
EMERGENCY ACTION LEVEL INDEX**

<b>ABNORMAL RAD LEVELS//RADIOLOGICAL EFFLUENT</b>				
<b>CATEGORY</b>	<b>UE</b>	<b>ALERT</b>	<b>SAE</b>	<b>GE</b>
Gaseous Effluents	1.1	1.2	1.3	1.4
Liquid Effluents	1.5	1.6		
Unexpected Radiation Levels	1.7	1.8		
Irradiated Fuel Damage Due to Mechanical Damage or Uncontrolled Loss of Water Level Outside the Reactor Vessel	1.9	1.10		

<b>NATURAL//MANMADE HAZARDS AND EC JUDGEMENT</b>				
<b>CATEGORY</b>	<b>UE</b>	<b>ALERT</b>	<b>SAE</b>	<b>GE</b>
Earthquake Experienced	2.1	2.2		
External Flooding	2.3	2.4		
Hurricane	2.5			
Tornado/High Winds	2.6	2.7		
Aircraft/Vehicle Crash	2.8	2.9		
Toxic or Flammable Gases	2.10	2.11		
Explosions/Catastrophic Pressurized Equipment Failure	2.12	2.13		
Fire	2.14	2.15		
Control Room Evacuation		2.16	2.17	
Security Event	2.18	2.19	2.20	2.21
Internal Flooding	2.22	2.23		
Emergency Coordinator Judgment	2.24	2.25	2.26	2.27

<b>SYSTEM MALFUNCTION</b>				
<b>CATEGORY</b>	<b>UE</b>	<b>ALERT</b>	<b>SAE</b>	<b>GE</b>
Loss of Communications	3.1			
Failure of Reactor Protection		3.2	3.3	3.4
Inability to Reach ITS Time Limits	3.5			
Loss of Alarms/Indications	3.6	3.7	3.8	
Fuel Clad Degradation	3.9			
Turbine Failure	3.10	3.11		
RCS Leakage	3.12			
Inability to Maintain Hot Shutdown			3.13	
Inadvertent Criticality	3.14			
Inability to Maintain Plant in Cold Shutdown		3.15		
Loss of Water Level in Reactor Vessel that has Uncovered or Will Uncover Fuel			3.16	
<b>LOSS OF POWER</b>				
<b>CATEGORY</b>	<b>UE</b>	<b>ALERT</b>	<b>SAE</b>	<b>GE</b>
Loss of AC Power	4.1	4.2	4.3	4.4
Loss of AC Power (Shutdown)		4.5		
Loss of Vital DC Power			4.6	
Loss of Vital DC Power (Shutdown)	4.7			

**MODES: ALL = Modes 1-6 and de-fueled/No mode**

**TABLE 8.1 - EMERGENCY CLASSIFICATION TABLE (Continued)**  
**FISSION PRODUCT BARRIER MATRIX**  
**APPLICABLE MODES: 1-4 COMPLETE FOR ALL BARRIERS**

5.1 LOSS OF FUEL CLAD If any item is checked, barrier is lost. Enter 4 for FUEL CLAD in classification table below		6.1 LOSS OF REACTOR COOLANT SYSTEM If any item is checked, barrier is lost. Enter 4 for RCS in classification table below		7.1 LOSS OF CONTAINMENT If any item is checked, barrier is lost. Enter 2 for CONTAINMENT in classification table below	
1. CORE CONDITIONS IN REGION 3 OR SEVERE ACCIDENT REGION OF ICC CURVES		1. RCS LEAK OR OTSG TUBE LEAK RESULTING IN LOSS OF ADEQUATE SUBCOOLING MARGIN		1. RAPID UNEXPLAINED RB PRESSURE DECREASE FOLLOWING INITIAL INCREASE	
2. RCS ACTIVITY >300 µCi/gm I-131 Dose Equivalent		2. RM-G29 OR 30 > 10 R/hr FOR 15 MINUTES OR LONGER		2. CONTAINMENT PRESSURE OR SUMP LEVEL RESPONSE NOT CONSISTENT WITH LOCA CONDITIONS	
3. RM-G29 OR 30 >100 R/hr FOR 15 MINUTES OR LONGER		3. EC DEEMS RCS BARRIER IS LOST		3. AN OTSG HAS > 10 GPM TUBE RUPTURE WITH PROLONGED STEAMING TO THE ATMOSPHERE FROM THE AFFECTED OTSG OR AN UNISOLABLE STEAM LEAK OUTSIDE RB FROM THE AFFECTED OTSG	
4. EC DEEMS FUEL CLAD BARRIER IS LOST				4. CONTAINMENT ISOLATION IS INCOMPLETE AND RELEASE PATH TO THE ENVIRONMENT EXISTS	
				5. EC DEEMS CONTAINMENT BARRIER IS LOST	
5.2 POTENTIAL LOSS OF FUEL CLAD If any item is checked, barrier is potentially lost. Enter 3 for FUEL CLAD in classification table below		6.2 POTENTIAL LOSS OF REACTOR COOLANT SYSTEM If any item is checked, barrier is potentially lost. Enter 3 for RCS in classification table below.		7.2 POTENTIAL LOSS OF CONTAINMENT If any item is checked, barrier is potentially lost. Enter 1.5 for containment in classification table below	
1. RCS CONDITIONS WARRANT ENTRY INTO EOP-07		1. RCS LEAK OR OTSG TUBE LEAK REQUIRING ONE OR MORE INJECTION VALVES		1. RB PRESSURE >54 psig	
2. CORE EXIT THERMOCOUPLES >700°F		2. RCS LEAK OR OTSG TUBE LEAK RESULTS IN ES ACTUATION ON LOW RCS PRESSURE		2. RB HYDROGEN CONCENTRATION >4%	
3. EC DEEMS FUEL CLAD BARRIER IN JEOPARDY		3. RCS PRESSURE/TEMPERATURE RELATIONSHIP VIOLATES NDT LIMITS		3. RB PRESSURE >30 psig WITH NO BUILDING SPRAY AVAILABLE	
		4. HPI/PORV OR HPI/SAFETY VALVE COOLING IS IN PROGRESS		4. RMG-29 OR 30 READINGS >25,000 R/hr	
		5. EC DEEMS RCS BARRIER IN JEOPARDY		5. CORE CONDITIONS IN SEVERE ACCIDENT REGION OF ICC CURVES FOR >15 MINUTES	
				6. EC DEEMS CONTAINMENT BARRIER IN JEOPARDY	
<b>CLASSIFICATION TABLE</b>					
<b>ENTER LOSS OR POTENTIAL LOSS OR ZERO FOR EACH BARRIER THEN TOTAL AND DETERMINE CLASS BELOW</b>					
FUEL CLAD _____ + RCS _____ + CONTAINMENT _____ = _____					

IF TOTAL IS:	RECOMMENDED EVENT CLASSIFICATION IS:
> 0 BUT ≤ 2	UNUSUAL EVENT
> 2 BUT ≤ 4	ALERT
> 4 BUT ≤ 8.5	SITE AREA EMERGENCY
> 8.5	GENERAL EMERGENCY

**TABLE 8.1 - EMERGENCY CLASSIFICATION TABLE (Continued)**

**ACCIDENT CONDITION:**

**ABNORMAL RAD LEVELS/RADIOLOGICAL EFFLUENT**

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY																
<p align="center"><b>Gaseous Effluents</b></p> <p align="center">MODES: ALL</p>	<p>1.1 MODES: ALL (1 or 2)</p> <p>1. A VALID reading on RM-A1 or RM-A2 gas channel exceeds the high alarm setpoint for 60 minutes or longer</p> <p align="center"><u>OR</u></p> <p>2. Sample analysis confirms gaseous effluent being released exceeds 2 times the ODCM noble gas release setpoint for 60 minutes or longer</p>	<p>1.2 MODES: ALL (1 or 2)</p> <p>1. A VALID reading on RM-A1 or RM-A2 Mid-Range monitor exceeds 6 mR/hr for 15 minutes or longer</p> <p align="center"><u>OR</u></p> <p>2. Sample analysis confirms gaseous effluent being released exceeds 200 times the ODCM noble gas release setpoint for 15 minutes or longer</p>	<p>1.3 MODES: ALL (1 or 2 or 3)</p> <p>1. VALID RM-A1 or RM-A2 Mid-Range monitor reading exceeds the values on the following Table for the current Stability Class for 15 minutes or longer:</p> <table border="1" data-bbox="1255 500 1507 591"> <thead> <tr> <th>Stab. Class</th> <th>Reading (mR/hr)</th> </tr> </thead> <tbody> <tr> <td>A, B or C</td> <td>100</td> </tr> <tr> <td>D or E</td> <td>20</td> </tr> <tr> <td>F or G</td> <td>12</td> </tr> </tbody> </table> <p align="center"><u>OR</u></p> <p>2. Dose Assessment results indicate SITE BOUNDARY dose &gt;100 mR TEDE or &gt;500 mR thyroid CDE for the actual or projected duration of the release</p> <p align="center"><u>OR</u></p> <p>3. Field survey results indicate closed windows dose rates &gt;100mR/hr expected to continue for more than one hour; or analyses of field survey samples indicate thyroid CDE of 500mR for one hour of inhalation, at or beyond SITE BOUNDARY</p>	Stab. Class	Reading (mR/hr)	A, B or C	100	D or E	20	F or G	12	<p>1.4 MODES: ALL (1 or 2 or 3)</p> <p>1. VALID RM-A1 or RM-A2 Mid-Range monitor reading exceeds the values on the Table below for the current Stability Class for 15 minutes or longer:</p> <table border="1" data-bbox="1633 500 1885 591"> <thead> <tr> <th>Stab. Class</th> <th>Reading (mR/hr)</th> </tr> </thead> <tbody> <tr> <td>A, B or C</td> <td>1,000</td> </tr> <tr> <td>D or E</td> <td>200</td> </tr> <tr> <td>F or G</td> <td>120</td> </tr> </tbody> </table> <p align="center"><u>OR</u></p> <p>2. Dose Assessment results indicate SITE BOUNDARY dose &gt;1000 mR TEDE or &gt;5000 mR thyroid CDE for the actual or projected duration of the release AND core damage is suspected or has occurred</p> <p align="center"><u>OR</u></p> <p>3. Field survey results indicate closed windows dose rates &gt;1000mR/hr expected to continue for more than one hour; or analyses of field survey samples indicate thyroid CDE of 5000mR for one hour of inhalation, at or beyond SITE BOUNDARY</p>	Stab. Class	Reading (mR/hr)	A, B or C	1,000	D or E	200	F or G	120
Stab. Class	Reading (mR/hr)																			
A, B or C	100																			
D or E	20																			
F or G	12																			
Stab. Class	Reading (mR/hr)																			
A, B or C	1,000																			
D or E	200																			
F or G	120																			
<p align="center"><b>Liquid Effluents</b></p> <p align="center">MODES: ALL</p>	<p>1.5 MODES: ALL (1 or 2)</p> <p>1. A VALID reading on RM-L2, RM-L7, or sample analysis confirms the release exceeds 2 times the ODCM release setpoint for 60 minutes or longer</p> <p align="center"><u>OR</u></p> <p>2. Release continued for 60 minutes or longer with no dilution flow</p>	<p>1.6 MODES: ALL</p> <p>A VALID reading on RM-L2, RM-L7, or sample analysis confirms the release exceeds 200 times the ODCM release setpoint for 15 minutes or longer</p>	<p align="center"><i>Not Applicable</i></p>	<p align="center"><i>Not Applicable</i></p>																

**TABLE 8.1 - EMERGENCY CLASSIFICATION TABLE (Continued)**  
**ACCIDENT CONDITION:**

**ABNORMAL RAD LEVELS/RADIOLOGICAL EFFLUENT**

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p><b>Unexpected Radiation Levels</b></p> <p>MODES: ALL</p>	<p><b>1.7 MODES: ALL</b></p> <p>One or more VALID radiation monitor readings unexpectedly exceed the values below for 15 minutes or longer:</p> <p>RM-G3 = 400 mR/hr                      RM-G4 = 600 mR/hr                      RM-G5 = 3,000 mR/hr                      RM-G9 = 100 mR/hr                      RM-G10 = 800 mR/hr                      RM-G14 = 1,000 mR/hr                      RM-G17 = 800 mR/hr</p>	<p><b>1.8 MODES: ALL</b></p> <p>(1 or 2)</p> <p>1. VALID radiation reading greater than 15 mR/hr for 15 minutes or longer in the Control Room (RM-G1) or the Central Alarm Station (CAS)</p> <p><u>OR</u></p> <p>2. One or more VALID radiation monitor readings unexpectedly exceed the values below for 15 minutes or longer:</p> <p>RM-G3 = 5,000 mR/hr                      RM-G4 = 5,000 mR/hr                      RM-G9 = 5,000 mR/hr                      RM-G10 = 5,000 mR/hr                      RM-G17 = 5,000 mR/hr</p>	<p><i>Refer to Fission Product Barrier Matrix, Gaseous Effluents, or Emergency Coordinator Judgment</i></p>	<p><i>Refer to Fission Product Barrier Matrix, Gaseous Effluents, or Emergency Coordinator Judgment</i></p>
<p><b>Irradiated Fuel Damage Due to Mechanical Damage or Uncontrolled Loss of Water Level Outside the Reactor Vessel</b></p> <p>MODES: ALL</p>	<p><b>1.9 MODES: ALL</b></p> <p>(1 and 2)</p> <p>1. (a or b)</p> <p>a. Uncontrolled level decrease resulting in indications of -2.5 feet in Spent Fuel Pool</p> <p><u>OR</u></p> <p>b. Confirmed Plant personnel report of uncontrolled significant water level drop in spent fuel pool or transfer canal when Spent Fuel transfer tubes are open</p> <p><u>AND</u></p> <p>2. Fuel remains covered with water</p>	<p><b>1.10 MODES: ALL</b></p> <p>(1 or 2)</p> <p>1. (a and b)</p> <p>a. Plant personnel report damage of irradiated fuel</p> <p><u>AND</u></p> <p>b. VALID high alarm as indicated on RM-G15 or RM-G16</p> <p><u>OR</u></p> <p>2. Plant personnel report Spent Fuel Pool or transfer canal water level drop has or will exceed makeup capacity such that irradiated fuel will be uncovered</p>	<p><i>Refer to Gaseous Effluents or Emergency Coordinator Judgment</i></p>	<p><i>Refer to Gaseous Effluents or Emergency Coordinator Judgment</i></p>

**TABLE 8.1 - EMERGENCY CLASSIFICATION TABLE (Continued)**  
**ACCIDENT CONDITION:**

**NATURAL/MAN-MADE HAZARDS AND EC JUDGMENT**

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p><b>Earthquake Experienced</b></p> <p>MODES: ALL</p>	<p>2.1 MODES: ALL (1 and 2)</p> <p>1. Ground motion sensed by Plant personnel</p> <p><u>AND</u></p> <p>2. Confirmed earthquake causing Annunciator C-3-14 "Seismic System Trouble" alarm</p>	<p>2.2 MODES: ALL (1 and 2)</p> <p>1. Ground motion sensed by Plant personnel or confirmed Annunciator C-3-14 "Seismic System Trouble" alarm</p> <p><u>AND</u></p> <p>2. (a or b)</p> <p>a. Analysis confirms the earthquake at &gt;0.05g</p> <p><u>OR</u></p> <p>b. Indications show degraded SAFE SHUTDOWN EQUIPMENT performance due to the earthquake</p>	<p><i>Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment</i></p>	<p><i>Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment</i></p>
<p><b>External Flooding</b></p> <p>MODES: ALL</p>	<p>2.3 MODES: ALL</p> <p>Intake Canal level or visual observation indicates flood water level <math>\geq</math> 98 feet</p>	<p>2.4 MODES: ALL (1 and 2)</p> <p>1. Intake Canal level or visual observation indicates flood water level <math>\geq</math> 98 feet</p> <p><u>AND</u></p> <p>2. Indications show degraded SAFE SHUTDOWN EQUIPMENT performance due to the flooding</p>	<p><i>Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment</i></p>	<p><i>Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment</i></p>
<p><b>Hurricane</b></p> <p>MODES: ALL</p>	<p>2.5 MODES: ALL</p> <p>The Plant is within a Hurricane Warning area</p>	<p><i>Refer to Fission Product Barrier Matrix, Tornado/High Winds, or Emergency Coordinator Judgment.</i></p>	<p><i>Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment</i></p>	<p><i>Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment</i></p>

**TABLE 8.1 - EMERGENCY CLASSIFICATION TABLE (Continued)**  
**ACCIDENT CONDITION:**

**NATURAL/MAN-MADE HAZARDS AND EC JUDGMENT**

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p><b>Tornado/High Winds</b></p> <p>MODES: ALL</p>	<p><b>2.6 MODES: ALL</b></p> <p>Report by Plant personnel of a Tornado striking within the PROTECTED AREA</p>	<p><b>2.7 MODES: ALL</b></p> <p>(1 or 2)</p> <p>1. Tornado or High Winds or windborne object cause significant VISIBLE DAMAGE to any of the following structures:</p> <ul style="list-style-type: none"> <li>- Auxiliary Building,</li> <li>- BWST,</li> <li>- Control Complex,</li> <li>- Diesel Generator Building,</li> <li>- EFT-2 Building,</li> <li>- Intermediate Building,</li> <li>- Reactor Building</li> <li>- EFP-3 Building</li> </ul> <p><u>OR</u></p> <p>b. Indications show degraded SAFE SHUTDOWN EQUIPMENT performance due to the tornado or high winds or windborne objects</p>	<p><i>Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment</i></p>	<p><i>Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment</i></p>
<p><b>Accidental Aircraft/Vehicle Crash</b></p> <p>MODES: ALL</p>	<p><b>2.8 MODES: ALL</b></p> <p>Report by Plant personnel of Aircraft or Vehicle Crash involving the following structures:</p> <ul style="list-style-type: none"> <li>- Auxiliary Building,</li> <li>- BWST</li> <li>- Control Complex</li> <li>- Diesel Generator Building</li> <li>- EFT-2 Building</li> <li>- Intermediate Building</li> <li>- Reactor Building</li> <li>- EFP-3 Building</li> </ul>	<p><b>2.9 MODES: ALL</b></p> <p>(1 or 2)</p> <p>1. Confirmed report of significant VISIBLE DAMAGE to any of the following structures:</p> <ul style="list-style-type: none"> <li>- Auxiliary Building</li> <li>- BWST</li> <li>- Control Complex</li> <li>- Diesel Generator Building</li> <li>- EFT-2 Building</li> <li>- Intermediate Building</li> <li>- Reactor Building</li> <li>- EFP-3 Building</li> </ul> <p><u>OR</u></p> <p>2. Indications show degraded SAFE SHUTDOWN EQUIPMENT performance due to the Aircraft or Vehicle Crash</p>	<p><i>Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment</i></p>	<p><i>Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment</i></p>

**TABLE 8.1 - EMERGENCY CLASSIFICATION TABLE (Continued)**  
**ACCIDENT CONDITION:**

**NATURAL/MAN-MADE HAZARDS AND EC JUDGMENT**

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p><b>Toxic or Flammable Gases</b></p> <p>MODES: ALL</p>	<p><b>2.10 MODES: ALL</b> (1 or 2)</p> <p>1. Report or detection of Toxic or Flammable Gas within the SITE BOUNDARY that could enter the Protected Area at levels &gt;IDLH or &gt;25% Lower Explosive Limits affecting normal operation of the Plant</p> <p><u>OR</u></p> <p>2. Confirmed notification by PE, County, or State personnel to evacuate or shelter site personnel based on an offsite event</p>	<p><b>2.11 MODES: ALL</b> (1 or 2 or 3)</p> <p>1. Flammable Gas levels &gt; 25% Lower Explosive Limit in areas required to maintain safe operations or establish and maintain cold shutdown</p> <p><u>OR</u></p> <p>2. Toxic Gas levels ≥ IDLH levels in areas that require continuous occupancy to maintain safe operation or establish or maintain cold shutdown</p> <p><u>OR</u></p> <p>3. Toxic Gas levels ≥ IDLH levels within the PROTECTED AREA such that Plant personnel are unable to perform actions necessary to maintain safe operations or establish and maintain cold shutdown using protective equipment</p>	<p><i>Refer to Fission Product Barrier Matrix, System Malfunction, or Emergency Coordinator Judgment</i></p>	<p><i>Refer to Fission Product Barrier Matrix, System Malfunction, or Emergency Coordinator Judgment</i></p>

**TABLE 8.1 - EMERGENCY CLASSIFICATION TABLE (Continued)**  
**ACCIDENT CONDITION:**

**NATURAL/MAN-MADE HAZARDS AND EC JUDGMENT**

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p align="center"><b>Explosions/ Catastrophic Pressurized Equipment Failure</b></p> <p align="center">MODES: ALL</p>	<p>2.12 MODES: ALL</p> <p>Report by Plant personnel of VISIBLE DAMAGE to permanent structures or equipment within the PROTECTED AREA due to an EXPLOSION or catastrophic failure of pressurized equipment</p> <p><i>Refer to Security Event</i></p>	<p>2.13 MODES: ALL (1 and 2)</p> <p>1. EXPLOSION or catastrophic failure of pressurized equipment in any of the following structures:</p> <ul style="list-style-type: none"> <li>- Auxiliary Building</li> <li>- BWST</li> <li>- Control Complex</li> <li>- Diesel Generator Building</li> <li>- EFT-2 Building,</li> <li>- Intermediate Building</li> <li>- Reactor Building</li> <li>- EFP-3 Building</li> </ul> <p><u>OR</u></p> <p>2. Indications show degraded SAFE SHUTDOWN EQUIPMENT performance due to the EXPLOSION or pressurized equipment failure</p>	<p><i>Refer to Fission Product Barrier Matrix, System Malfunction, or Emergency Coordinator Judgment</i></p>	<p><i>Refer to Fission Product Barrier Matrix, System Malfunction, or Emergency Coordinator Judgment</i></p>
<p align="center"><b>Fire</b></p> <p align="center">MODES: ALL</p>	<p>2.14 MODES: ALL (1 and 2)</p> <p>1. FIRE in or threatening one of the following structures:</p> <ul style="list-style-type: none"> <li>- Auxiliary Building</li> <li>- BWST</li> <li>- Control Complex,</li> <li>- Diesel Generator Building</li> <li>- EFT-2 Building</li> <li>- Intermediate Building</li> <li>- Reactor Building</li> <li>- EFP-3 Building</li> </ul> <p><u>AND</u></p> <p>2. FIRE not extinguished within 15 minutes from either Control Room notification or receipt of a VALID fire alarm in the Control Room</p>	<p>2.15 MODES: ALL (1 or 2)</p> <p>1. Report by Plant personnel of VISIBLE DAMAGE to SAFE SHUTDOWN EQUIPMENT due to the FIRE</p> <p><u>OR</u></p> <p>2. Indications show degraded SAFE SHUTDOWN EQUIPMENT performance due to the FIRE</p>	<p><i>Refer to Fission Product Barrier Matrix, Control Room Evacuation, System Malfunctions, or Emergency Coordinator Judgment</i></p>	<p><i>Refer to Fission Product Barrier Matrix, Control Room Evacuation, System Malfunctions, or Emergency Coordinator Judgment</i></p>

**TABLE 8.1 - EMERGENCY CLASSIFICATION TABLE (Continued)**  
**ACCIDENT CONDITION:**

**NATURAL/MAN-MADE HAZARDS AND EC JUDGMENT**

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p><b>Control Room Evacuation</b>  MODES: ALL</p>	<p align="center"><i>Not Applicable</i></p>	<p><b>2.16 MODES: ALL</b>  Control Room evacuation is required per AP-990, "Shutdown Outside of the Control Room"</p>	<p><b>2.17 MODES: ALL</b>  (1 and 2)  1. Control Room evacuation is required per AP-990, "Shutdown Outside of the Control Room"  <u>AND</u>  2. Control of the necessary equipment <u>not</u> established per AP-990 within 15 minutes</p>	<p align="center"><i>Refer to Fission Product Barrier Matrix, System Malfunction, or Emergency Coordinator Judgment</i></p>
<p><b>Security Event</b>  MODES: ALL</p>	<p><b>2.18 MODES: ALL</b>  (1 or 2 or 3)  Report by Security Shift Supervisor or NRC of one or more of the following events:  1. A validated notification from NRC providing information of an AIRCRAFT or AIRLINER threat.  <u>OR</u>  2. A CREDIBLE SITE-SPECIFIC SECURITY THREAT NOTIFICATION  <u>OR</u>  3. A SECURITY CONDITION that does NOT involve a HOSTILE ACTION as reported by the Security Shift Supervisor.</p>	<p><b>2.19 MODES: ALL</b>  (1 or 2)  1. A validated notification from NRC of an AIRLINER attack threat less than 30 minutes away  <u>OR</u>  2. A HOSTILE ACTION is occurring or has occurred within the OWNER CONTROLLED AREA as reported by the Security Shift Supervisor.</p>	<p><b>2.20 MODES: ALL</b>  1. A HOSTILE ACTION is occurring or has occurred within the PROTECTED AREA as reported by the Security Shift Supervisor.</p>	<p><b>2.21 MODES: ALL</b>  (1 or 2)  1. A HOSTILE ACTION has occurred such that plant personnel are unable to operate equipment required to maintain safety functions.  <u>OR</u>  2. A HOSTILE ACTION has caused failure of Spent Fuel Cooling Systems and imminent fuel damage is likely.</p>

**TABLE 8.1 - EMERGENCY CLASSIFICATION TABLE (Continued)**

**ACCIDENT CONDITION:**

**NATURAL/MAN-MADE HAZARDS AND EC JUDGMENT**

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p><b>Internal Flooding</b></p> <p>Modes: ALL</p>	<p>2.22 MODES: ALL (1 and 2)</p> <p>1. Indication of uncontrolled flooding in the Auxiliary Building or Intermediate Building</p> <p><u>AND</u></p> <p>2. Water level/flooding has the potential to affect or immerse SAFE SHUTDOWN EQUIPMENT</p>	<p>2.23 MODES: ALL (1 and 2)</p> <p>1. Water level exceeds 1.5 feet in the Auxiliary Building or Intermediate Building</p> <p><u>AND</u></p> <p>2. (a or b)</p> <p>a. Indications show degraded SAFE SHUTDOWN EQUIPMENT due to the flooding</p> <p><u>OR</u></p> <p>b. Electrical hazards prevent Plant personnel normal access to areas of Plant containing SAFE SHUTDOWN EQUIPMENT</p>	<p><i>Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment</i></p>	<p><i>Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment</i></p>
<p><b>Emergency Coordinator Judgment</b></p> <p>Modes: ALL</p>	<p>2.24 MODES: ALL</p> <p>Other conditions exist which indicate a potential degradation of the level of safety of the Plant</p>	<p>2.25 MODES: ALL</p> <p>Other conditions exist which indicate that events are in process or have occurred which involve potential or actual substantial degradation of the level of safety of the Plant</p>	<p>2.26 MODES: ALL</p> <p>Other conditions exist which indicate actual or likely major failures of Plant functions needed for the protection of the public</p>	<p>2.27 MODES: ALL (1 or 2)</p> <p>Other conditions exist which indicate:</p> <p>1. Actual or imminent substantial core degradation with potential loss of containment integrity</p> <p><u>OR</u></p> <p>2. The potential for uncontrolled radionuclide releases that can be expected to exceed EPA Protective Action Guidelines Plume Exposure Levels beyond the SITE BOUNDARY (see EAL 1.4)</p>

**TABLE 8.1 - EMERGENCY CLASSIFICATION TABLE (Continued)**

**ACCIDENT CONDITION:**

**SYSTEM MALFUNCTION**

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p><b>Loss of Communication</b></p> <p>MODES: ALL</p>	<p>3.1 MODES: ALL (1 or 2)</p> <p>1. Loss of <u>all</u> the following in-Plant communications capability:</p> <p>a. PE Internal Telephone System b. PAX c. Portable UHF Radios</p> <p><u>OR</u></p> <p>2. Loss of <u>all</u> of the following off-site Communication capability:</p> <p>a. PE Telephone System b. State Hot Ringdown (SHRD) c. All FTS 2001 NRC phones (ENS, HPN, etc.) d. State-Wide Emergency Satellite Communication (ESATCOM) System e. Cellular Phones</p>	<p><i>Not Applicable</i></p>	<p><i>Not Applicable</i></p>	<p><i>Not Applicable</i></p>
<p><b>Failure of Reactor Protection</b></p> <p>MODES: 1,2,3 for ALERT</p> <p>MODES: 1,2 for SITE AREA and GENERAL Emergencies</p>	<p><i>Not Applicable</i></p>	<p>3.2 MODES: 1,2,3 (1 and 2)</p> <p>1. RPS Trip setpoint exceeded and no Reactor trip occurred</p> <p><u>AND</u></p> <p>2. Manual Reactor trip from Control Room was successful and reactor is shutdown</p>	<p>3.3 MODES: 1,2 (1 and 2)</p> <p>1. RPS Trip setpoint exceeded and no Reactor trip occurred</p> <p><u>AND</u></p> <p>2. Manual Reactor trip from Control Room was <u>not</u> successful in shutting down the reactor</p>	<p>3.4 MODES: 1,2 (1 and 2 and 3)</p> <p>1. RPS Trip setpoint exceeded and no Reactor trip occurred</p> <p><u>AND</u></p> <p>2. Manual Reactor trip from Control Room was <u>not</u> successful in shutting down the reactor</p> <p><u>AND</u></p> <p>3. (a or b)</p> <p>a. Core exit thermocouple temperatures &gt; 700°F, as indicated on SPDS.</p> <p><u>OR</u></p> <p>b. Adequate Secondary Cooling not available</p>

**TABLE 8.1 - EMERGENCY CLASSIFICATION TABLE (Continued)**

**ACCIDENT CONDITION:**

**SYSTEM MALFUNCTION**

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p><b>Inability to reach required mode within Improved Technical Specification time limits</b></p> <p>MODES: 1,2,3,4</p>	<p>3.5 MODES: 1,2,3,4 (1 and 2)</p> <p>1. Entry into an Improved Technical Specification LCO statement requiring a mode reduction</p> <p><u>AND</u></p> <p>2. The Plant is <u>not</u> in the required operating mode within the time prescribed by the LCO required action</p>	<p><i>Not Applicable</i></p>	<p><i>Not Applicable</i></p>	<p><i>Not Applicable</i></p>
<p><b>Loss of Alarms/Indications</b></p> <p>MODES: 1,2,3,4</p>	<p>3.6 MODES: 1,2,3,4 (1 or 2)</p> <p>1. UNPLANNED loss of Annunciator panels A-L <u>and</u> Annunciator printer for 15 minutes or longer</p> <p><u>OR</u></p> <p>2. UNPLANNED loss of NNI-X and NNI-Y for 15 minutes or longer</p>	<p>3.7 MODES: 1,2,3,4 (1 and 2)</p> <p>1. (a or b)</p> <p>a. UNPLANNED loss of Annunciator panels A-L <u>and</u> Annunciator printer for 15 minutes or longer</p> <p><u>OR</u></p> <p>b. UNPLANNED loss of NNI-X and NNI-Y for 15 minutes or longer</p> <p><u>AND</u></p> <p>2. (a or b)</p> <p>a. SIGNIFICANT TRANSIENT in progress</p> <p><u>OR</u></p> <p>b. Loss of Plant Computer <u>and</u> SPDS</p>	<p>3.8 MODES: 1,2,3,4 (1 and 2 and 3 and 4)</p> <p>1. (a or b)</p> <p>a. Loss of Annunciator panels A-L <u>and</u> Annunciator printer for 15 minutes or longer</p> <p><u>OR</u></p> <p>b. Loss of NNI-X and NNI-Y for 15 minutes or longer</p> <p><u>AND</u></p> <p>2. SIGNIFICANT TRANSIENT in progress</p> <p><u>AND</u></p> <p>3. Loss of Plant Computer <u>and</u> SPDS</p> <p><u>AND</u></p> <p>4. Inability to directly monitor any one of the following: Subcriticality Core Cooling Containment RCS Inventory</p>	<p><i>Refer to Fission Product Barrier Matrix or Emergency Coordinator Judgment</i></p>

**TABLE 8.1 - EMERGENCY CLASSIFICATION TABLE (Continued)**  
**ACCIDENT CONDITION:**

**SYSTEM MALFUNCTION**

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p><b>Fuel Clad Degradation</b></p> <p>MODES: 1,2,3,4,5</p>	<p>3.9 MODES: 1,2,3,4,5 (a or b)</p> <p>Radiochemistry analysis indicates:</p> <p>a. Dose Equivalent Iodine (I-131) &gt;1.0 <math>\mu</math>Ci/gm for 48 hours or longer</p> <p><u>OR</u></p> <p>b. Specific activity &gt;100/E-bar for 48 hours or longer</p>	<p><i>Refer to Fission Product Barrier Matrix</i></p>	<p><i>Refer to Fission Product Barrier Matrix</i></p>	<p><i>Refer to Fission Product Barrier Matrix</i></p>
<p><b>Turbine Failure</b></p> <p>MODES: 1,2,3</p>	<p>3.10 MODES: 1,2,3</p> <p>Report by Plant personnel of main turbine failure causing penetration of the turbine casing <u>or</u> damage to main generator seals</p>	<p>3.11 MODES: 1,2,3 (1 or 2)</p> <p>1. Report by Plant personnel of projectiles generated by a main turbine failure causing significant <b>VISIBLE DAMAGE</b> any of the following structures:</p> <ul style="list-style-type: none"> <li>- Auxiliary Building</li> <li>- BWST</li> <li>- Control Complex</li> <li>- Diesel Generator Building</li> <li>- EFT-2 Building</li> <li>- Intermediate Building</li> <li>- Reactor Building</li> <li>- EFP-3 Building</li> </ul> <p><u>OR</u></p> <p>2. Indications show degraded SAFE SHUTDOWN EQUIPMENT performance due to turbine generated projectiles</p>	<p><i>Refer to Fission Product Barrier Matrix</i></p>	<p><i>Refer to Fission Product Barrier Matrix</i></p>

**TABLE 8.1 - EMERGENCY CLASSIFICATION TABLE (Continued)**  
**ACCIDENT CONDITION:**

**SYSTEM MALFUNCTION**

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<b>RCS Leakage</b>  MODES: 1,2,3,4	3.12 MODES: 1,2,3,4 (1 or 2)  1. Unidentified Leakage $\geq$ 10 gpm or Pressure Boundary Leakage $\geq$ 10 gpm  <u>OR</u>  2. Identified leakage $\geq$ 25 gpm	<i>Refer to Fission Product Barrier Matrix or            Emergency Coordinator Judgment</i>	<i>Refer to Fission Product Barrier Matrix or            Emergency Coordinator Judgment</i>	<i>Refer to Fission Product Barrier Matrix or            Emergency Coordinator Judgment</i>
<b>Inability to Maintain Hot            Shutdown</b>  MODES: 1,2,3,4	<i>Not Applicable</i>	<i>Not Applicable</i>	3.13 MODES: 1,2,3,4 (1 and 2)  1. Complete loss of Main, Emergency, and Auxiliary Feedwater and unable to establish HPI cooling  <u>AND</u>  2. Loss of subcooling margin	<i>Refer to Fission Product Barrier Matrix or            Emergency Coordinator Judgment</i>
<b>Inadvertent Criticality</b>  MODES: 2,3,4,5,6	3.14 MODES: 2,3,4,5,6  An extended and unplanned sustained positive startup rate monitored by Nuclear instrumentation	<i>Not Applicable</i>	<i>Not Applicable</i>	<i>Not Applicable</i>
<b>Inability to Maintain Plant            in Cold Shutdown</b>  MODES: 5,6	<i>Not Applicable</i>	3.15 MODES: 5,6 (1 or 2)  1. Inability to maintain reactor coolant temperature below 200°F  <u>OR</u>  2. Uncontrolled reactor coolant temperature approaching 200°F	<i>Refer to Loss of Water in Reactor Vessel            that has uncovered or will uncover fuel.</i>	<i>Not Applicable</i>

**TABLE 8.1 - EMERGENCY CLASSIFICATION TABLE (Continued)**

**ACCIDENT CONDITION:**

**SYSTEM MALFUNCTION**

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p><b>Loss of Water Level in Reactor Vessel that Has Uncovered or Will Uncover Fuel</b></p> <p><b>MODES: 5,6</b></p>	<p><i>Not Applicable</i></p>	<p><i>Not Applicable</i></p>	<p><b>3.16 MODES: 5,6 (1 and 2 )</b></p> <p>1. Loss of decay heat removal per AP-404</p> <p><u>AND</u></p> <p>2. (a or b)</p> <p>a. Incores indicating superheated conditions</p> <p><u>OR</u></p> <p>b. Incores unavailable and time to uncover exceeded as specified in OP-103H</p>	<p><i>Not Applicable</i></p>

**TABLE 8.1 - EMERGENCY CLASSIFICATION TABLE (Continued)**  
**ACCIDENT CONDITION:**

**LOSS OF POWER**

CATEGORY	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p><b>Loss of AC Power</b></p> <p>MODES: ALL for UNUSUAL EVENT</p> <p>MODES: 1,2,3,4 for ALERT, SITE AREA and GENERAL Emergencies</p>	<p>4.1 MODES: ALL (1 and 2)</p> <p>1. Off-site Power Transformer (OPT) and Backup ES Transformer (BEST) and Auxiliary Transformer not available for 15 minutes or longer</p> <p><u>AND</u></p> <p>2. EDGs supplying power to 4160V ES Busses</p>	<p>4.2 MODES: 1,2,3,4</p> <p>AC power capability to the 4160V ES busses reduced to a single power source for 15 minutes or longer such that only one of the following is available:</p> <ul style="list-style-type: none"> <li>- "A" EDG</li> <li>- "B" EDG</li> <li>- Offsite Power Transformer(OPT)</li> <li>- Backup ES Transformer (BEST)</li> </ul>	<p>4.3 MODES: 1,2,3,4</p> <p>Neither 4160V ES bus is capable of being energized within 15 minutes</p>	<p>4.4 MODES: 1,2,3,4 (1 and 2)</p> <p>1. Neither 4160V ES bus is capable of being energized</p> <p><u>AND</u></p> <p>2. (a or b)</p> <p>a. Restoration of 4160V ES Bus A or 4160V ES Bus B is not likely within 4 hours</p> <p><u>OR</u></p> <p>b. Core exit thermocouples &gt; 700°F as indicated on SPDS</p>
<p><b>Loss of AC Power (Shutdown)</b></p> <p>MODES: 5,6,No Mode (defueled)</p>	<p><i>Not Applicable</i></p>	<p>4.5 MODES: 5,6,No Mode</p> <p>Neither 4160V ES bus is capable of being energized within 15 minutes</p>	<p><i>Not Applicable</i></p>	<p><i>Not Applicable</i></p>
<p><b>Loss of Vital DC Power</b></p> <p>MODES: 1,2,3,4</p>	<p><i>Not Applicable</i></p>	<p><i>Not Applicable</i></p>	<p>4.6 MODES: 1,2,3,4</p> <p>Standby Power Status Lights for BUS A1, A2, and BUS B1, B2 on the Main Control Board (SSF Panel) are out for 15 minutes or longer</p>	<p><i>Refer to Fission Product Barrier Matrix</i></p>
<p><b>Loss of Vital DC Power (Shutdown)</b></p> <p>MODES: 5,6,No Mode (defueled)</p>	<p>4.7 MODES: 5,6, No Mode</p> <p>Standby Power Status Lights for BUS A1, A2, and BUS B1, B2 on the Main Control Board (SSF Panel) are out for 15 minutes or longer</p>	<p><i>Not Applicable</i></p>	<p><i>Not Applicable</i></p>	<p><i>Not Applicable</i></p>

## **9.0 NOTIFICATION METHODS AND PROCEDURES**

In order to assure prompt notification of affected personnel and emergency response organizations in the event of an emergency at CR3, Progress Energy has established means for notification and dissemination of emergency messages. These means are instituted based upon the particular classification of an emergency established by the Emergency Coordinator, and utilize both normal communications systems and those dedicated for emergency use. Emergency message formats have been established to assure dissemination of appropriate emergency information to affected personnel and organizations, including subsequent dissemination to the public.

### **9.1 BASIS FOR NOTIFICATION**

Since the consequences of an emergency at CR3 depend upon the nature of the particular emergency and its potential effect on CR3 personnel and the public in the Crystal River area, the notification of personnel, organizations, and the public also depends on the nature of the emergency. Section 8.0, "Emergency Classification System," describes a standard system for classifying emergencies, based on categories of increasing severity, utilizing the classes of UNUSUAL EVENT, ALERT, SITE AREA EMERGENCY, and GENERAL EMERGENCY. The notification of personnel and emergency response organizations is geared to this same classification system. The use of these emergency classifications as the primary bases for notification has been mutually agreed upon by applicable local, State, and Federal response organizations. Table 9.1 describes the notification steps associated with each emergency classification.

The Emergency Coordinator is responsible for identifying the appropriate emergency classification, for initiating emergency notifications, and for providing protective action recommendations to State and local authorities responsible for off-site emergency measures. Although specific notification steps are established for each emergency classification, the Emergency Coordinator does have some latitude for notifying individuals to make up particular emergency teams or to request particular assistance, such as medical support, based on the specific nature of the emergency. This latitude is appropriate due to the diverse nature and potential effects of emergencies that may fall within a given classification, and should only be utilized to conservatively assure effective emergency response.

As noted in Table 9.1, notification of the NRC, the Florida DHBRC, and the State Watch Office-Tallahassee (SWOT) may be required if any condition involves, or may involve, radioactive releases or property damages, regardless of the emergency classification.

## 9.2 MEANS OF NOTIFICATION

In order to notify emergency response organizations, various communications systems, as described in Section 10.0, "Emergency Communications," are available. As noted above, the Emergency Coordinator is the primary individual for initiating notifications; however, he may designate an individual to carry out appropriate notifications. Implementing procedures identifying organizations and individuals to be notified, and containing appropriate listings of telephone numbers, include procedure EM-202, Emergency Response Personnel Roster and Phone Directory, and Off-site Support Phone Directory.

The following sections describe the means of notifying, alerting, and mobilizing the various emergency response organizations or individuals.

### 9.2.1 CR3 Plant Staff

Discovery of an emergency condition by CR3 Plant Staff could result from surveillance of instrumentation, alarms indicating abnormal conditions, or physical encounter with an emergency situation. CR3 personnel are trained to recognize situations that could cause an emergency and, upon discovery of such a situation, to take the actions described in procedure EM-205. The individual will immediately contact the Control Room via the Plant phone system, portable radio, or directly, and provide descriptive information. The individual will take action they are qualified to perform for controlling the emergency, in accordance with instructions from the Control Room.

The CR3 Plant Staff is informed of an emergency condition through the use of both audible and visual alarms and the Public Address (P.A.) System. Separate, distinct, audible alarms are available to alert personnel of a fire, Auxiliary Building evacuation, Reactor Building evacuation, and Plant site evacuation. The Emergency Coordinator or designee will use the CR3 P.A. System to inform personnel of specific emergency conditions or instructions, and to activate the CR3 Emergency Organization. In the event that personnel required to staff emergency teams are not on-site, they may be contacted by commercial telephone which may include land lines and/or wireless devices capable of receiving text messages. Telephone numbers of Plant personnel who will staff the various emergency teams are available on Emergency Team Rosters.

### 9.2.2 Plant General Manager

The Plant General Manager can be informed of an emergency condition via the Plant phone system or portable transceiver if on-site. If off-site in the event of an emergency, the EC may be reached by a commercial telephone which may include land line and/or a wireless device capable of receiving text messages. Notification of other key personnel, including those delegated for the position of Emergency Coordinator, may be made by commercial telephone which may include land lines and/or wireless devices capable of receiving text messages.

### **9.2.3 EOF Director**

Notification of the EOF Director will be accomplished by commercial telephone and/or Progress Energy microwave system. The Emergency Response Personnel Roster and Phone Directory provides office and after-hours telephone numbers at which to contact the EOF Director. The EOF Director initiates the notification of the EOF Staff as described in procedure EM-400. After activation of the EOF Staff, the EOF Director reports to the EOF.

### **9.2.4 Vice President, Crystal River Nuclear Plant**

Notification of the Vice President, Crystal River Nuclear Plant will be accomplished via commercial telephone and/or Progress Energy microwave system. Emergency telephone directories provide office and after-hours telephone numbers at which to contact the Vice President. The Vice President, Crystal River Nuclear Plant notifies the Senior Vice President and Chief Nuclear Officer, Nuclear Generation whenever an ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY has been declared.

### **9.2.5 CR1 & 2 Control Center**

In the event of a SITE AREA EMERGENCY or GENERAL EMERGENCY, the CR1 & 2 facilities and personnel may be affected. If so, the Emergency Coordinator or a delegate will notify the CR1 & 2 Control Center by Plant phone or other available means, and an appropriate response will be initiated. The Emergency Coordinator or a delegate will provide further instructions, as required.

### **9.2.6 CR4 & 5 Control Center**

In the event of a SITE AREA EMERGENCY or GENERAL EMERGENCY, the CR4 & 5 facilities and personnel may be affected. If so, the Emergency Coordinator or a delegate will notify the CR4 & 5 Control Center by Plant phone or other available means, and an appropriate response will be initiated. The Emergency Coordinator or a delegate will provide further instructions, as required.

### **9.2.7 Other CR3 Personnel**

In the event of a SITE AREA EMERGENCY or GENERAL EMERGENCY, CR3 personnel outside the Protected Area may also be affected. If so, CR3 Security will be notified by phone (commercial or PE microwave) or radio, and appropriate response will be initiated. The Emergency Coordinator or a delegate will provide further instructions, as required.

### **9.2.8 Nuclear Regulatory Commission**

The NRC Operations Center and offices in Rockville, Maryland and Atlanta, Georgia (Region II) are notified of any type of emergency via the Emergency Notification System (ENS). This is a designated phone line, described in Section 10.10. Commercial telephone may be used as an alternate means of notification. Also, a separate line, the Health Physics Network (HPN), is available. Upon contact with the NRC, a description of the emergency is provided, along with potential consequences; the NRC communications channel is held open until notified by the NRC that it can be terminated.

### **9.2.9 State Watch Office-Tallahassee**

To notify the State Watch Office-Tallahassee (SWOT), the State Hot Ringdown Telephone System is the primary means of contact. Separate extensions are available in the CR3 Control Room, TSC/OSC, and EOF. The ESATCOM and commercial telephone system serve as back-up communications systems. The State Hot Ringdown Telephone System consists of three (3) separate networks, each assigned to one of the three Nuclear Plant sites in the State. Each network includes the CR3 Control Room and TSC/OSC, the SWOT, Citrus County and Levy County EOCs, the EOF, and the DHBRC in Orlando, Florida.

In the event that the SWOT cannot be contacted, the Citrus County Emergency Management Office or the Levy County Emergency Management Office will be notified to provide emergency information for transmittal to the SWOT by the most expeditious means. Phone numbers are listed in procedure EM-202 and the Off-site Support Phone Directory.

### **9.2.10 Florida Department of Health, Bureau of Radiation Control (DHBRC)**

In the event that additional assistance for radiological assessments is required, health physics support from the 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 via its Mobile Emergency Radiological Laboratory (MERL). The primary means of notifying the DHBRC is the State Hot Ringdown Telephone System. The ESATCOM and commercial telephones serve as back-up systems. The Off-Site Support Phone Directory provides appropriate telephone numbers for off-site emergency contacts. Contact with the DHBRC may be maintained via the State Law Enforcement Radio System (SLERS) in the MERL, or through various communications systems at the EOF.

### 9.2.11 AREVA

The Emergency Coordinator may, at their discretion, notify either the AREVA Resident Engineer at the CR3 site or the Nuclear Power Generation Division in Lynchburg, Virginia if the EC feels that AREVA' support would be beneficial. Request for assistance by the Emergency Coordinator is directly related to the specific nature of the emergency and the particular systems and components affected, for which AREVA may possess appropriate expertise or experience.

### 9.2.12 Medical Support Organizations

In the event that any emergency may involve personnel injury, the Shift Manager or Emergency Coordinator can notify off-site medical support organizations for assistance or information. The Off-Site Support Phone Directory and procedure EM-213 provide telephone numbers for contacting Seven Rivers Regional Medical Center, Citrus Memorial Hospital, and local emergency medical services. Based on the type of injury and degree of possible contamination, the requirements for medical care will be determined, and the appropriate medical facility and personnel alerted to institute emergency measures. Follow-up contact will be initiated by the Emergency Coordinator or designee, as appropriate. Contacts and actions related to handling injury situations are covered by procedure EM-213.

## 9.3 EMERGENCY MESSAGES

In order to assure complete and clear dissemination of information to emergency response organizations, initial notification and follow-up message formats have been pre-established. As part of this Plan, they are distributed to affected organizations. Use of these message formats expedites preparation of messages by the notifying party at CR3 as well as recording of applicable emergency information by the notified organization. These messages are primarily intended for dissemination of information to the SWOT, but may also be utilized for notifying other support organizations or for subsequent dissemination to the public (also see Section 9.4.1).

Table 9.2 presents a sample message form used for notifying the SWOT of an emergency condition at CR3. For initial notification, it is quite likely that significant details of the emergency situation will not be available. Therefore, the message, as illustrated, indicates the emergency classification, incident involvement, injuries, whether a release is taking place, basic meteorological data, potentially affected population and areas, and whether protective measures may be necessary. Appropriate identification of the caller and time of the emergency incident are also provided. Based primarily on the classification of the emergency, notified organizations will institute emergency response activities and stand-by for further information.

Table 9.3 presents a sample message form used for notifying the NRC of an emergency condition at CR3. This form, although much like the message form utilized for SWOT notification, has space for additional information useful to the NRC. This information includes items such as power level prior to the event, present power level, cooling mode, etc.

As additional information describing the emergency situation and local conditions becomes available, supplemental messages containing more detail than the initial notification will be provided. To the degree that such information is available, these messages provide further description of the emergency, including type and quantitative estimates of any radioactive release, meteorological data, actual or projected dose rates, and special data as required based on available Plant information. Additional remarks or comments may also be provided as warranted.

In order to assure that each notified organization is fully cognizant of the contents of the initial emergency message, the notification form should be faxed or repeated. For the initial message and all follow-up messages, each notified organization shall be provided with a telephone number or other communications channel contact to verify the contents of the emergency messages. The contact for verification need not be the same as the notification source provided the verification contact is fully knowledgeable of the emergency message contents. Messages can be transmitted between and among the Progress Energy emergency centers to facilitate verification and coordination of information.

## **9.4 PUBLIC NOTIFICATION**

### **9.4.1 General Information**

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 (see Section 11.2). The Corporate Communications Department, under the direction of the Public Information (see procedure EM-405), is responsible for the coordination and dissemination of information to the public and the media, including appropriate coordination with local, State, and Federal organizations.

Sample messages for possible dissemination to the public have been prepared and are presented in Tables 9.4 thru 9.7 for the four (4) emergency classifications. In the event of an actual emergency, these messages will be revised or rewritten as appropriate to convey information to the public. Actual messages intended for public dissemination will be developed, in coordination with local, State, and Federal response organizations, under the direction of the Public Information Director.

#### 9.4.2 Early Warning Notification

As noted previously, the responsibility for notification of the public to take protective actions in the event of an emergency at CR3 lies with the local and State Emergency Management organizations. PE recognizes the role and responsibility of the local and State governments to minimize the potential of emergencies and to assure that, if an emergency occurs, any threatened population is promptly notified. In meeting such responsibility, procedures have been established to promptly notify local and State government organizations of the nature of any emergency at CR3, and to recommend protective actions that may include the public. To assure that prompt notification of the public can occur, Progress Energy has worked with both Citrus County Emergency Management and Levy County Emergency Management to provide an Early Warning Notification System as a physical means of public notification.

The Early Warning Notification System consists of a system of sirens that can be utilized to alert the public in the 10 mile EPZ of the recommendation to institute protective action. Citrus County independently controls the activation of the siren system. There is a primary and secondary station from which to activate the siren system. Additionally, Citrus County may utilize an "auto-dialer" phone calling system which is capable of rapidly generating scripted phone messages to any calling area within the EPZ.

The Early Warning Notification System is activated for a GENERAL EMERGENCY or at the discretion of local and State authorities for a SITE AREA EMERGENCY. The specifications of this system are contained in Table 9.8. PE, in coordination with the county organizations, has also developed a program of actions to be taken by the public upon actuation of the warning system (see Section 11.1). 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 assure the implementation of appropriate protective measures.

The sirens are subjected a complete cycle test by Citrus County on a weekly basis.

**TABLE 9.1  
NOTIFICATION OF RESPONSE ORGANIZATIONS FOR EACH EMERGENCY CLASSIFICATION**

<u>NOTIFIED ORGANIZATION OR INDIVIDUAL</u>	<u>EMERGENCY CLASSIFICATION</u>			
	<u>Unusual Event</u>	<u>Alert</u>	<u>Site Area Emergency</u>	<u>General Emergency</u>
CR3 Personnel	X	X	X	X
Plant General Manager <sup>1</sup>	X	X	X	X
EOF Director	X	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>
CR1&2 Control Center	X	X	X	X
CR4&5 Control Center	X	X	X	X
NRC <sup>3</sup>	X	X	X	X
State Watch Office-Tallahassee	X	X	X	X
Citrus/Levy County EOCs	X	X	X	X
Florida DHBRC <sup>3</sup>	X <sup>4</sup>	X <sup>4</sup>	X <sup>4</sup>	X <sup>4</sup>
AREVA	5	5	5	5
Medical Support Organizations	5	5	5	5
Institute of Nuclear Power Operations (INPO)		X <sup>6</sup>	X <sup>6</sup>	X <sup>6</sup>

1. If the Plant General Manager has not already assumed the position of Emergency Coordinator.
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 indicated in procedure EM-202, NRC and DHBRC notification may be required.
4. The Emergency Coordinator notifies the DHBRC only.
5. If the nature of the particular emergency requires specific assistance.
6. The Emergency Coordinator, or designee, notifies INPO.

FLORIDA NUCLEAR PLANT EMERGENCY NOTIFICATION FORM

1. THIS IS CRYSTAL RIVER UNIT 3. A. [ ] This Is A Drill. B. [ ] This Is An Emergency. I HAVE A MESSAGE.
ENSURE: [ ] STATE [ ] CITRUS [ ] LEVY [ ] RADIATION CONTROL-ORLANDO (M-F ONLY) ARE ON LINE.

2. A. Date: \_\_\_/\_\_\_/\_\_\_ B. Contact Time: \_\_\_\_\_ C. Reported By: (Name) \_\_\_\_\_
D. Message Number: \_\_\_\_\_ E. Reported From: [ ] Control Room [ ] TSC [ ] EOF
F. [ ] Initial / New Classification OR [ ] Update

3. SITE: A. [X] CR UNIT 3 B. [ ] SL UNIT 1 C. [ ] SL UNIT 2 D. [ ] TP UNIT 3 E. [ ] TP UNIT 4

4. EMERGENCY CLASSIFICATION: A. [ ] Notification Of Unusual Event B. [ ] Alert
C. [ ] Site Area Emergency D. [ ] General Emergency

5. A. [ ] EMERGENCY DECLARATION: B. [ ] EMERGENCY TERMINATION: Date: \_\_\_/\_\_\_/\_\_\_ Time: \_\_\_\_\_

6. REASON FOR EMERGENCY DECLARATION: A. [ ] EAL Number(s): \_\_\_\_\_ OR B. [ ] Description: \_\_\_\_\_

7. ADDITIONAL INFORMATION OR UPDATE: A. [ ] None OR B. [ ] Description: \_\_\_\_\_

8. WEATHER DATA: A. Wind direction from \_\_\_\_\_ degrees B. Downwind Sectors affected \_\_\_\_\_

9. RELEASE STATUS: A. [ ] None (Go to Item 11) B. [ ] In Progress C. [ ] Has occurred, but stopped (Go to Item 11)

10. RELEASE SIGNIFICANCE CATEGORY: (at the Site Boundary)

- A. [ ] Under evaluation B. [ ] Release is within Normal Operating Limits
C. [ ] Non-Significant (Fraction of PAG Range) D. [ ] Protective Action Guide range
E. [ ] Liquid release (no actions required)

11. UTILITY RECOMMENDED PROTECTIVE ACTIONS FOR THE PUBLIC:

A. [ ] No utility recommended actions at this time. B. [ ] Utility recommends the following protective actions:
EVACUATE ZONES: \_\_\_\_\_
SHELTER ZONES: \_\_\_\_\_
AND consider issuance of Potassium Iodide (KI).

If form is completed in the Control Room, go to item 15. If completed in the TSC or EOF, CONTINUE with item 12.

12. PLANT CONDITIONS:

- A. Reactor Shutdown? [ ] YES [ ] NO B. Core Adequately Cooled? [ ] YES [ ] NO
C. Containment Intact? [ ] YES [ ] NO D. Core Condition: [ ] Stable [ ] Degrading

13. WEATHER DATA: A. Wind Speed \_\_\_\_\_ MPH (m/sec x 2.24 = MPH) B. Stability Class \_\_\_\_\_

14. ADDITIONAL RELEASE INFORMATION: A. [ ] Not Applicable (Go to Item 15)

Table with 3 columns: Distance, Projected Thyroid Dose (CDE) for \_\_\_ Hour(s), Projected Total Dose (TEDE) for \_\_\_ Hour(s). Rows include 1 Mile, 2 Miles, 5 Miles, 10 Miles.

15. MESSAGE RECEIVED BY: (Name) \_\_\_\_\_ Date \_\_\_/\_\_\_/\_\_\_ Time \_\_\_\_\_

THIS IS CRYSTAL RIVER UNIT 3. [ ] This Is A Drill [ ] This Is An Emergency END OF MESSAGE.

[ ] Form FAXED EC or EOF DIRECTOR INITIALS: \_\_\_\_\_





**SAMPLE NEWS RELEASE OR PUBLIC MESSAGE FOR  
UNUSUAL EVENT CLASSIFICATION**



Release #

Date:

Time:

Emergency Classification: **UNUSUAL EVENT**

An Unusual Event has been declared at Progress Energy's Nuclear Plant near Crystal River, Florida. State and federal government authorities have been notified.

An Unusual Event is a minor event which has occurred or which is in progress, which indicates a potential for degradation in the safety and/or security level of the Plant. The Plant operating staff declared the Unusual Event at (time) due to (cause).

Declaration of an Unusual Event is intended to assure that notification is made to off-site agencies and to assure the systematic handling and decision-making involved in dealing with the incident.

The U.S. Nuclear Regulatory Commission (NRC) as well as State and County Emergency Preparedness officials have been notified.

The Crystal River Plant is an approximately 911-megawatt pressurized water reactor. It is located at the Crystal River Energy Complex, 7.5 miles northwest of Crystal River, Florida in Citrus County. The Plant is owned by Progress Energy which is headquartered in Raleigh, North Carolina.

Contact: CR3 Communications 352-563-4489 or  
Progress Energy Florida 24-media line: 866-520-NEWS (6397)

**SAMPLE**

TABLE 9.5

**SAMPLE NEWS RELEASE OR PUBLIC MESSAGE FOR  
ALERT CLASSIFICATION**



Release #

Date:

Time:

Emergency Classification: **ALERT**

An Alert has been declared at Progress Energy's Nuclear Plant near Crystal River, Florida at (time) due to (cause).

An Alert means that events have occurred or events are in progress which involves actual or potential significant degradation in the level of safety and/or Security at the Plant.

The U.S. Nuclear Regulatory Commission (NRC) as well as State and County Emergency Preparedness officials have been notified.

The Crystal River Plant is an approximately 911 MWe pressurized water reactor. It is located at the Crystal River Energy Complex, 7.5 miles northwest of Crystal River, Florida in Citrus County. The Plant is owned by Progress Energy which is headquartered in Raleigh, North Carolina.

Contact: CR3 Communications 352-563-4489 or  
Progress Energy Florida 24-media line: 866-520-NEWS (6397)

**SAMPLE**

TABLE 9.6

**SAMPLE NEWS RELEASE OR PUBLIC MESSAGE FOR  
SITE AREA EMERGENCY CLASSIFICATION**



Release #

Date:

Time:

Emergency Classification: **SITE AREA EMERGENCY**

A Site Area Emergency has been declared at Progress Energy's Nuclear Plant near Crystal River, Florida. State and federal government authorities have been notified and are in communication with the Plant.

A Site Area Emergency means that events have occurred or are in progress which involves the actual or likely failure of Plant and/or security systems. The Site Area Emergency was declared by Plant personnel at (time) due to (cause).

Additional personnel have been assigned to Plant support facilities, and an emergency news office is being opened at the Progress Energy Training Center on West Venable Street in Crystal River. According to Plant procedure, personnel not directly involved in dealing with ongoing events are being removed from the area immediately around the Plant.

The U.S. Nuclear Regulatory Commission as well as State and County Emergency Preparedness officials have been notified.

The Crystal River Plant is an approximately 911-megawatt pressurized water reactor. It is located at the Crystal River Energy Complex, 7.5 miles northwest of Crystal River, Florida in Citrus County. The Plant is owned by Progress Energy which is headquartered in Raleigh, North Carolina.

Contact: CR3 Communications 352-563-4489 or  
Progress Energy Florida 24-media line: 866-520-NEWS (6397)

**SAMPLE**

TABLE 9.7

**SAMPLE NEWS RELEASE OR PUBLIC MESSAGE FOR  
GENERAL EMERGENCY CLASSIFICATION**



Release #

Date:

Time:

Emergency Classification: **GENERAL EMERGENCY**

A General Emergency has been declared at the Progress Energy Nuclear Plant located near Crystal River, Florida.

A General Emergency is the most severe of four (4) emergency conditions. This means that events (which may be security related) are in progress, or events have occurred which involve either actual or imminent substantial damage to the core of the reactor and a potential for the loss of containment integrity.

The General Emergency was declared at (time) due to (cause).

Citrus and Levy Counties are taking actions to protect the public. All personnel at the Crystal River site not directly involved in dealing with the accident have been removed from the site.

Messages to the public are being broadcast on Emergency Alert radio and television stations. Residents should stay tuned to your local Emergency Alert System (EAS) stations for further information and directions from government officials.

The Crystal River Plant is an approximately 911-megawatt pressurized water reactor. It is located at the Crystal River Energy Complex, 7.5 miles northwest of Crystal River, Florida in Citrus County. The Plant is owned by Progress Energy which is headquartered in Raleigh, North Carolina.

Contact: CR3 Communications 352-563-4489 or  
Progress Energy Florida 24-media line: 866-520-NEWS (6397)

**SAMPLE**

TABLE 9.8

**EARLY WARNING NOTIFICATION SYSTEM SPECIFICATIONS**

System consists of 40 Whelen WPS-2908 electronic sirens within the 10 mile EPZ. The sirens are omni-directional, have battery backup and public address capability, and are monitored by a Status Reporting System. Sirens are rated at 127 dBC at 100 feet, 70 dB at 5,400 feet, and 60 dB at 10,800 feet.

**SIREN LOCATIONS**

**Levy County**

- 229 South side of Highway C-40, approximately 600 ft. before the road ends at the Gulf of Mexico
- 230 Highway 40 and 66th Street in Yankeetown, FL
- 231 Highway 40 and 56th Street in Yankeetown, FL
- 232 North side of Highway 40 in front of the Yankeetown School in Inglis, FL.
- 233 North end of Vickie Street north of Highway 40, Carson Acres development
- 234 South side of Highway 40 at the transmission line crossing, approximately 0.2 miles east of U.S. 19
- 235 South side of Highway 40 at Palm Street
- 236 South side of Highway 40 at Buddy Risher Sports Complex
- 237 Highway 40 1.85 miles east of siren #236
- 238 South side of Highway 40 at Kitty Lane
- 239 U.S. 19 at Bethel Church and Highway Patrol Station
- 240 Intersection of Butler Road and Buckhead Road

TABLE 9.8 (Continued)

EARLY WARNING NOTIFICATION SYSTEM SPECIFICATIONS

SIREN LOCATIONS (Continued)

Citrus County

- 101 East side of U.S. 19, south of canal at Florida Wildlife Commission facility
- 102 Near intersection of U.S. 19 and Power Line Road
- 103 Intersection of U.S. 19 and Riverwood Drive
- 104 South side of State Park Drive west of Pelican Cove development
- 105 County Road 488 at Holiday Heights
- 106 Port Paradise Drive west side of U.S. 19, south of Barge Canal at recreation area
- 107 Intersection of Northcut Avenue and Bass Lake Road
- 108 Highway 44W at Connell Heights Fire Department #2
- 109 Intersection of County Road 488 and County Road 495
- 110 Highway 44W at Crystal Shores
- 111 End of Pine Bluff Street off County Road 495 at Citronelle
- 112 Highway 44W at the Islands sub-division
- 113 Intersection of County Road 495 and Far Hills Lane
- 114 Highway 44W at Woods and Waters

TABLE 9.8 (Continued)

EARLY WARNING NOTIFICATION SYSTEM SPECIFICATIONS

Citrus County (Continued)

- 115 N.E. 13<sup>th</sup> St. and N.E.7<sup>th</sup> Ave. near Crystal River High School
- 116 Highway 44W approximately 0.5 miles east of Fort Island Beach
- 117 N.W. 3rd Avenue at Crystal River Fire Department
- 118 West end of County Road 494 at Sunny Isle Estates
- 119 Highway 44E and N. York Road
- 120 County Road 494 at Ozello Fire Station
- 121 N.E. 8th Street and U.S. 19 behind Sweet Bay Shopping Center
- 122 West side of U.S. 19 South across from Crystal River Airport
- 123 West Gum Street near Arid Point
- 124 Intersection of Riverwood Drive and Cockscomb Drive
- 125 Intersection of Dunklin Street and Aden Terrace
- 126 Intersection of County Road 494 and South Winterset
- 127 Intersection of Khyber Avenue and Baghdad Street
- 128 End of West Calvary Lane near N. Sacramento Avenue intersection

## 10.0 EMERGENCY COMMUNICATIONS

### 10.1 GENERAL GUIDELINES

Several modes of communication are available during both normal and emergency conditions to transmit information within CR3; among CR1&2, CR4&5, and CR3; and to locations off-site. In the event of an emergency at CR3, these communications systems provide the appropriate means for alerting or activating emergency personnel in each response organization and allow continued means for contact throughout an emergency.

The various communications systems provided for both on-site and off-site communications are tested or used frequently. Examples of use for particular systems are as follows:

<u>System</u>	<u>Use</u>
Public Address Exchange System	Frequent
Commercial Telephones	Frequent
PE Microwave System	Frequent
PE Low-band Radio	Frequent
Portable Transceivers	Frequent
Maintenance Telephones	Frequent
Evacuation and Fire Alarms	Tested Weekly
Dose Assessment Ringdown	Tested Quarterly
Accident Assessment Ringdown	Tested Quarterly
State Hot Ringdown System:	
in Control Room	Tested Monthly
in TSC and EOF	Tested Monthly
ESATCOM: in Control Room	Tested Quarterly
in TSC and EOF	Tested Monthly
Emergency Notification System (ENS):	
in Control Room	Tested Daily
in TSC and EOF	Tested Monthly
Health Physics Network (HPN)	Tested Monthly
Federal Telephone System (FTS)	Tested Monthly
CCSO 800 MHz Radio System	
in EOF and TSC	Tested Quarterly
in CAS/SAS (Security)	Tested Daily
Emergency Response Data System (ERDS)	Tested Quarterly

The communications systems available between on-site locations and personnel are indicated in Table 10.1. Communications systems available between the Plant and various off-site organizations are indicated in Table 10.2. Sections 10.2 thru 10.15 describe each communications system. All but the State Law Enforcement Radio System (SLERS) is available in the CR3 Control Room on a 24-hour basis to allow prompt notification and activation of emergency response organizations. For each emergency facility or location, because of the presence of multiple communications systems, a primary communicator will assure coordination and awareness of overall communications. The importance of efficient, effective communications during an emergency cannot be overemphasized. Therefore, the primary communicator will assure effective use of communications systems and provide for timely, knowledgeable review and dissemination of messages. Dispatchers and/or log keepers may be utilized, as required, for efficient communications, but the primary communicator is responsible for overall awareness and coordinated dissemination to responsible emergency organization positions.

During an emergency, use of all communications systems is limited to those necessary and appropriate contacts related to the emergency.

Specific individuals are designated to provide notifications and communications (e.g., the primary communicators noted previously; the Emergency Coordinator, per procedure EM-202; and EOF Staff positions noted in procedure EM-400). All personnel are instructed to keep communications contacts as brief as practical, and calls for general information are to be avoided in order to keep all telephones and switchboards open as much as possible. Communications for public information purposes are the responsibility of the Communications Director, and all media questions are to be referred to this contact.

## **10.2        PAX SYSTEM**

The Public Address Exchange (PAX) System consists of a network of phones and speakers strategically located throughout the Plant. The phones are operated in three modes using a switch control, touch-tone (pushbutton) phones, and/or a dialing code. The various features of the phones are Plant Line 1 (PL-1), Plant Line 2 (PL-2), the P.A. system, and other dialing stations. These modes are utilized for mass communications, paging, special instructions, and announcing throughout the Plant (various designated phones do not have the paging capability). In addition, the P.A. system is utilized as an alarm system supported by strobe lights in high noise level areas in the Auxiliary Building to sound and flash the evacuation alarm. Headphones are provided at remote reactor shutdown panels for use in conjunction with PL-1.

### **10.3 COMMERCIAL TELEPHONES**

Commercial telephones are located throughout the CR3 site. These phones operate through the Florida Telephone switchboard located in Leesburg, Florida. Telephone circuitry on the CR3 site is all underground cable to a distance of approximately 5 miles east of CR3.

### **10.4 PE MICROWAVE SYSTEM**

The PE Microwave 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 PE service area. The microwave system is wholly owned and operated by Progress Energy.

### **10.5 PE LOW-BAND RADIO**

A PE Low-band VHF Radio Service Base Station is located at CR1&2. The station uses six (6) frequencies throughout the system in vehicles and remote stations.

### **10.6 PORTABLE UHF RADIOS**

Portable UHF radios are available to emergency teams for limited communication on the CR3 site. During normal day shift operations, key Plant Staff personnel have UHF radios available for communication with the Control Room. 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. In addition, the designated Emergency Coordinators also carry wireless devices capable of receiving text messages.

### **10.7 MAINTENANCE TELEPHONES**

Maintenance telephones are located at various points within the Reactor, Auxiliary, and Turbine Buildings, as well as the Control Room. These telephones are normally used for communication between personnel conducting maintenance operations, and are powered from the Plant's vital buses.

## **10.8**            **EVACUATION ALARMS**

The evacuation alarms are actuated manually from the Control Room when conditions warrant. The evacuation alarm system in the Auxiliary Building is enhanced by strobe lights to assure awareness of the alarms in high noise areas.

## **10.9**            **FLORIDA EMERGENCY SATELLITE COMMUNICATIONS SYSTEM (ESATCOM)**

The ESATCOM is an intrastate communications system which is operated by the State of Florida Division of Emergency Management in Tallahassee, Florida. The system connects the SWOT, 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 CR3 with telephone handsets located in the Control Room, TSC, and EOF. The CR3 Control Room ESATCOM will provide back-up communications for notification of an emergency at CR3.

## **10.10**           **SPECIAL USE TELEPHONES**

The Federal Telecommunications System (FTS) phone system (FTS-2001) is used to provide reliable communications during an emergency at CR3. This system includes the Emergency Notification System (ENS), Health Physics Network (HPN), Reactor Safety Counterpart Link (RSCL), Protective Measures Counterpart Link (PMCL), Management Counterpart Link (MCL), and Local Area Network (LAN). These phones are part of a separate government network that provides essential communicating functions during emergencies and normal operation.

## **10.11**           **LAW ENFORCEMENT RADIO SYSTEMS**

Off-site communications with the Citrus County Sheriff's Office (CCSO) in Inverness, Florida are accomplished through the Citrus County 800 MHz radio system. The system consists of four (4) base stations located in the Central Alarm Station (CAS), Secondary Alarm Station (SAS), the Technical Support Center (TSC), and the Emergency Operations Facility (EOF). Hand-held radios are also available for use with this system. The Citrus County 800 MHz radio system is part of the State Law Enforcement Radio System (SLERS) which can be used to communicate with the Florida Department of Law Enforcement (FDLE).

#### 10.12 COMMUNICATIONS WITH DHBRC

State Law Enforcement Radio System (SLERS) equipment is installed in the Mobile Emergency Radiological Laboratory (MERL) and DHBRC field survey vehicles. The MERL may be stationed at the EOF (Crystal River, Florida) during a declared emergency.

#### 10.13 FACSIMILE TRANSMITTAL EQUIPMENT

Facsimile (fax) transmittal equipment is located in the TSC/OSC, EOF, and ENC for hard copy transmittals between facilities and organizations. The EOCs in Tallahassee, Florida and Citrus and Levy Counties, as well as the DHBRC in Orlando, Florida, also contain this equipment.

#### 10.14 AUTOMATIC RINGDOWN PHONES

The State of Florida Hot Ringdown Telephone System has been established as the primary means of 24 hour per day communications among the CR3 Control Room/TSC/EOF, SWOT, DHBRC, and Citrus and Levy County EOCs. The State Hot Ringdown Telephone System consists of three separate networks utilizing dedicated telephone circuits to communicate with the SWOT. CR3 will be able to dial all stations on the circuit or call a selected station(s). Each network includes CR3, the SWOT, Citrus and Levy 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.

Two (2) separate conference-line phone systems have been established the Control Room, TSC, and EOF for dose assessment information; and between the TSC and Control Room for accident assessment information. Actuation of a phone in one center will actuate the phones located in the other two centers.

#### 10.15 EMERGENCY RESPONSE DATA SYSTEM

The Emergency Response Data System (ERDS) provides a real-time transfer of Plant data from the CR3 Control Room to the NRC Operations Center in Rockville, Maryland. The ERDS is activated within one (1) hour of the declaration of an ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY classification.

TABLE 10.1

ON-SITE COMMUNICATIONS

COMMUNICATIONS SYSTEM	CONTROL ROOM	TSC/OSC	SECURITY OPERATIONS CENTER
Commercial Telephone	X	X	X
PE Microwave System	X	X	X
PE Low-Band Radio		X	
CCSO 800 MHz radio system		X	X
ESATCOM	X	X	
Emergency Notification System (ENS)	X	X	
ERDS	X		
Health Physics Network (HPN)		X	
PAX	X	X	X
Maintenance Telephones	X		
Portable UHF Radios	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>
Evacuation Alarms	X	X	X
State Hot Ringdown System	X	X	
Accident Assessment Ringdown	X	X	
Dose Assessment Ringdown	X	X	
Facsimile Transmittal System	X	X	
PRIMARY COMMUNICATORS	Shift Manager <sup>2</sup>	Emergency Coordinator <sup>2</sup>	Security Shift Supervisor

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

TABLE 10.2

**INTERFACILITY/ORGANIZATION COMMUNICATIONS**

COMMUNICATIONS SYSTEM	CR3	EOF	CR1&2	NRC ATLANTA, ROCKVILLE	CITRUS COUNTY SHERIFF'S OFFICE	COUNTY EOC	CR4&5	SWOT	DHBC
Commercial Telephone	X	X	X	X	X	X	X	X	X
PE Microwave System	X	X	X				X		
PE Low-band Radio	X	X					X		
CCSO 800 MHz radio system	X	X			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
Dose Assessment Ringdown	X	X							
Facsimile Transmittal System	X	X		X	X	X		X	X
PRIMARY COMMUNICATORS	Emergency Coordinator <sup>1</sup>	EOF Director <sup>1</sup>	CR1&2 Plant Manager <sup>1</sup>	Regional Director <sup>1</sup>	Sheriff	Emergency Director	CR4&5 Plant Manager	DEM	DHBC

NOTE: 1. Or designees.

## **11.0 PUBLIC INFORMATION**

Progress Energy acknowledges the importance and necessity of providing accurate, timely information to the public; establishing procedures for coordinated dissemination of information to the public; establishing effective methods of rumor control; and establishing principal points of contact with the news media for dissemination of information. The Public Education and Information Program provides pertinent information that the public and news media must be aware and is described below. The information centers that may be contacted by the public and news media during an emergency condition are discussed in Section 11.2, "Public Information Facilities."

### **11.1 PUBLIC EDUCATION AND INFORMATION PROGRAM**

To avoid misconception and confusion before, or in the likelihood of, an emergency condition at CR3, Progress Energy employs a program of public education and information. This program is described in Section 20.5 of this Plan.

### **11.2 PUBLIC INFORMATION FACILITIES**

Specified facilities have been designated as principal points of contact for the public and news media, and for dissemination of information during an emergency condition at CR3. Throughout the emergency and recovery phases, the Public Information Director, Emergency News Center Coordinator, Public Affairs/Customer Service Liaison, and others (as designated in procedure EM-405) 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. This timely exchange of information among spokespersons will aid in dispelling most rumors. State and local plans and procedures also discuss control of rumors and other misinformation.

#### **11.2.1 Emergency News Center**

An Emergency News Center (ENC), located in the Crystal River Training Center / 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. 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.

## **12.0 EMERGENCY FACILITIES AND EQUIPMENT**

Facilities and equipment available to augment the CR3 Emergency Organization and effectively mitigate and control emergencies will be discussed in this section. Where adequate description is provided in the CR3 FSAR, such information will be incorporated by reference.

### **12.1 EMERGENCY CENTERS**

Progress Energy has designated several key facilities located on the CR3 site and at the Crystal River Training Center / EOF to assure the availability of both personnel and equipment to effectively control and support emergency response activities. Some of these locations are staffed normally while others are conveniently located to facilitate timely activation and staffing in the event of an emergency, per procedures EM-400 and EM-102. The State of Florida and the local county governments also have facilities to carry out their emergency response activities and mutual interface with Progress Energy. The following paragraphs describe these emergency centers. Subsequent sections describe the emergency equipment and other means of providing emergency support through these centers. Communications systems available at each center have been described in Section 10.0, "Emergency Communications." Figure 12.1 shows the locations of on-site emergency centers (also see Figure 2.1); Figure 12.2 shows the location of off-site emergency centers (also see Figure 2.3).

#### **12.1.1 CR3 Control Room**

The principal emergency control center is the CR3 Control Room. It is normally occupied by licensed Operators with routine operating, as well as emergency operating responsibilities. The CR3 Control Room is located in the Control Complex shown on Figure 12.1. The CR3 Control Room contains those instrumentation and control systems appropriate for identifying emergency conditions, for following the course of an incident, and for taking various corrective and protective actions. Section 12.2 describes systems important for emergency response; detailed descriptions are provided in the FSAR.

Control Room activities during an emergency are under the direct supervision of the Shift Manager, who can maintain contact with the Emergency Coordinator located in the TSC by various communications systems. The Control Room is staffed as described in Section 6.0; additional Operators or other supporting individuals can be obtained from the TSC/OSC, as required.

### **12.1.2 Technical Support Center/Operational Support Center**

The Technical Support Center/Operational Support Center (TSC/OSC) is shown in Figure 12.3. Located on-site, it is provided as a point of assembly for necessary technical expertise to assist the Emergency Coordinator in effectively implementing the Plan and, at the same time, keeping as many people away from the Control Room as possible. It also supports the dispatch of emergency teams.

As recommended by NUREG-0578, the TSC incorporates the capability to display and transmit critical Plant data to Engineering and management support personnel. With regard to radiological hazards, when in the emergency recirculation ventilation mode, the TSC/OSC is habitable to the same degree as the Control Room for postulated accident conditions. A set of "as-built" drawings and other records shall be available at CR3 and be accessible to the TSC to permit evaluations and design studies to proceed in parallel, and in close contact, with CR3 emergency activities.

The TSC is provided with a dedicated telephone to allow reliable communications between the TSC and Control Room. Additional communications systems available in the TSC are noted in Table 10.1. Emergency kits containing emergency supplies are also available in the TSC/OSC (see Table 12.1). The TSC/OSC must be activated whenever an ALERT emergency classification is reached, unless the safety and protection of the staff are in question. Events such as a security threat that involves armed intruders or the uninhabitability of the TSC/OSC would prevent activation. The functions of the TSC/OSC would remain in the Control Complex or other designated alternate location during such events. All activities at the TSC/OSC are under the direction of the Emergency Coordinator.

### **12.1.3 Control Complex Support**

Emergency Repair Team personnel may be assigned to the Control Room for repairs. These team members conduct repair activities primarily in the Control Complex area.

### **12.1.4 Nuclear Security Operations Center**

The Nuclear Security Operations Center (NSOC) provides appropriate accountability of individuals leaving the Protected Area and controls access to the facility. This Security Building serves as the key location for security guard activity and control in accordance with procedure EM-211. The NSOC is equipped to implement all appropriate security measures and is the primary location for the badging system used for personnel accountability. Under certain meteorological conditions, evacuation of the NSOC may be prudent. If this occurs, personnel accountability can be conducted at an alternate location as directed by the Emergency Coordinator.

### 12.1.5 Emergency Operations Facility

In addition to on-site facilities, various designated off-site facilities will be utilized for emergency support. These Corporate facilities are described in detail in procedures EM-400 and EM-405.

For near-site Corporate support activity, the Crystal River Training Center / EOF on West Venable Street in Crystal River, Florida is designated as the Emergency Operations Facility (EOF) and Emergency News Center (ENC) as shown in Figure 12.4. Figure 12.2 indicates the location of the Crystal River Training Center / EOF (also see Figure 2.3). The training facility is capable of supporting extended emergency operations. It is 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.

The function of the EOF is to provide a near-site location for assembling the EOF Staff and representatives of Federal, State, county, and industry emergency response agencies. The EOF must be activated whenever a SITE AREA EMERGENCY or GENERAL EMERGENCY classification is reached.

The Emergency News Center is adjacent to the EOF. The function of the Emergency News Center is to provide a near-site location for the dissemination of information to the public and news media. As with the EOF, the Emergency News Center is activated each time a SITE AREA EMERGENCY or GENERAL EMERGENCY classification is reached. (See Section 11.2).

Effective functioning of the EOF and ENC depends heavily on rapid, accurate communication.

The EOF is equipped with communications systems previously noted in Table 10.2. The facilities are equipped with commercial telephones, the PE microwave 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 TSC.

Hard copy transmission of data is available through dedicated facsimile transmittal equipment located in the EOF and the TSC/OSC. 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.

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 three (3) separate networks

utilizing dedicated telephone circuits. Each network connects one of the three Nuclear Power Plant sites in the State with the SWOT, the DHBRC, and the county EOCs. Local Government Radio is also available as a method of communicating with Radiation Monitoring Teams in the field.

Several special telephone links have also been installed for use by NRC personnel. These links are described in Section 10.10.

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.

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

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.

#### **12.1.6 State and Local Government EOCs**

The State Emergency Operations Center (SEOC) is the primary center for coordination of State response for any major emergency or disaster. The SWOT and the Citrus County and Levy County EOCs are also important facilities utilized in the event of a CR3 emergency. The SWOT 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 procedure EM-400) assures prompt emergency response and appropriate actions for all affected organizations and the general public.

### **12.2 ASSESSMENT SYSTEMS AND EQUIPMENT**

In order to adequately assess the nature of a potential emergency and its consequences, various systems and equipment are available both on-site and off-site.

#### **12.2.1 On-Site**

The determination of on-site radiation levels is an important assessment activity. Detailed discussion of the RMS is contained in the FSAR, Section 11.4. Area monitors are provided with readouts and alarms near the detector and with remote readouts on the Radiation Monitoring Panel located in the Control Room. Channels are provided with indicators and alarms, and the radiation levels are constantly recorded on electronic recorders.

A Post-Accident Sampling System (PASS) provides the capability for both in-line and grab sample analysis of RC chemistry, radioactive effluents, and the RB atmosphere. The System at CR3 consists of the following components:

- a. Reactor Coolant Chemistry
  - In-Line Boron Analyzer
  - Grab Sample Arrangement
- b. Radioactive Effluents Monitoring
  - Grab Sample Arrangement (particulate and iodine)
- c. RB Atmosphere
  - Dual Hydrogen Analyzers
  - Grab Sample Arrangement (particulate and iodine)

The control and data retrieval for the PASS (with the exception of the grab sample and the Containment Building hydrogen readout) is located on the 95 foot elevation of the Control Complex. A mimic panel for flow control and settings is located in the Count Room on this elevation. The grab sample stations and various analyzers are located in the Auxiliary Building and are provided with appropriate shielding and access routes.

Meteorological conditions required for dose assessments are measured by on-site instrumentation maintained by Progress Energy with readouts in the Control Room. Specific directions are provided in emergency procedures (see Section 13.0) for incorporating on-site meteorological data into these dose assessment calculations. A 195 foot meteorological tower is located on-site approximately 1.5 miles west of CR3 (primary tower). An additional, alternate tower is located approximately 2,200 feet southwest of CR3. The following meteorological parameters are measured:

- a. Primary Tower
  - Wind Speed, 175 feet
  - Wind Direction, 175 feet
  - Wind Speed, 33 feet
  - Wind Direction, 33 feet
  - Ambient Temperature, 175 feet
  - Ambient Temperature, 33 feet
  - Delta Temperature (Stability Class)
  - Sigma Theta (Wind Range), 33 feet (Stability Class) (Local readout only)
  - Rainfall (near bottom of tower) (Local readout only)
- b. Alternate Tower
  - Wind Speed, 33 feet
  - Wind Direction, 33 feet
  - Sigma Theta (Wind Range), 33 feet (Stability Class)
  - Rainfall (near bottom of tower)

Real time meteorological data is digitally displayed in the Control Room and computerized data acquisition is capable of collecting real time data. The system records, in 1-minute intervals, the 1-minute weighted averages of wind speed and direction, and the instantaneous values of differential temperature, ambient temperature, dew point, and cumulative precipitation. The meteorological system data for the primary tower is maintained on strip charts and on a magnetic tape unit located in the Control Room for historical data retrieval and remote interrogation. Redundancy is maintained by a data logger and chartless recorders located in the meteorological system instrument control stations local to the primary tower. Meteorological instrumentation is additionally described in the FSAR, Section 2.3.3.1.

Process instrumentation is described in Section 7.3.2 of the FSAR. Process variables required on a continuous basis for the startup, operation, and shutdown of the unit are indicated, recorded, and controlled in the Control Room. Four independent measurement channels are provided for process variables that are input to the Reactor Protection System (RPS). Three independent measurement channels are provided for each parameter. The four parameters are RC outlet temperature, RC flow, RC pressure, and RB pressure.

Other instrumentation is provided for measurement and control of process variables for normal reactor operation, including pressurizer level control measured by three (3) differential pressure transmitters.

The Safety Parameter Display System (SPDS) provides information to assist the Control Room personnel in assessing the safety status of the Plant during abnormal and emergency conditions by monitoring reactivity control, reactor core cooling and heat removal from the primary system, RCS integrity, radioactivity control, and containment integrity.

The Engineered Safeguards (ES) sections of the control board include controls and indication required for remote manual control of the safeguards equipment, manual actuation of safeguards functions, and actuation testing of safeguards functions. Indicating lights provide status information on the ES systems and equipment. A dedicated shutdown panel is located on the 108-foot elevation of the Control Complex and provides the necessary indications and controls to safely shut down the Plant from outside the Control Room.

Table 7-8 of the FSAR identifies information readouts or indicators provided in the Control Room to monitor reactor and containment systems. A summary of equipment needed for post-accident operations is provided in Table 7-1 of the FSAR.

Seismic instrumentation is also provided in the Control Room. A strong motion accelerograph is installed to measure ground motion and structural vibrating response caused by earthquakes occurring in the vicinity of the site. The instruments used for this purpose consist of a strong motion recording system described as follows:

Two Triaxial Sensor Units are installed on the north axis of the RB. One unit is attached directly to the RB base mat, including one Seismic Trigger, outboard of the containment wall. The second unit is attached to the RB ring girder. Peak recording accelerographs are installed on representative Class I items.

The capability exists to record and tape the time history of ground motion and resulting vibrating response. An annunciation system, consisting of audio and visual signs, will be energized at a pre-set seismic acceleration for the Triaxial Sensor Unit attached to the RB base mat.

A water level indicator is installed in the Intake Canal to provide hydrologic monitoring.

### 12.2.2 Off-Site

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 National Weather Service in Ruskin, Florida.

Progress Energy has capabilities and resources for field monitoring with additional dosimetry as specified in CR3's Off-Site Dose Calculation Manual (ODCM) concerning the Environmental Radiological Monitoring Program. Thermoluminescent dosimeter (TLD) stations have been placed around the site in each accessible sector at various distances. The locations of the TLD stations are summarized in Appendix "D." Additionally, the NRC TLD Direct Monitoring Network is in place to supplement Progress Energy's Environmental Radiological Monitoring Program.

Off-site hydrologic monitoring data is available to Progress Energy from the Southwest Florida Water Management District which maintains monitoring wells located throughout Citrus County. Additional hydrologic data could be obtained from the public water supplies identified in the FSAR.

Off-site seismic monitoring data is available to Progress Energy from the U.S. Department of Interior, which maintains a seismological station located in Central Florida. Additional seismic data could be obtained from the University of Florida, Department of Geology, which maintains a seismological station located in Gainesville, Florida.

## 12.3 PROTECTIVE FACILITIES AND EQUIPMENT

### 12.3.1 Fire Protection System

Each water extinguishing system (sprinkler and deluge), carbon dioxide system, and Freon FE-1301 system sounds local alarms and audible and visual alarms in the Control Room when any part of the system becomes inoperative or detects fire. The "Fire Protection Plan" outlines fire protection, fire detection, and fire suppression activities at CR3. Plant fire protection systems are described in Section 9.8 of the FSAR. These systems are designed to detect excess temperature or fire conditions in specified areas of the Plant, to activate alarms, and to automatically actuate fixed fire extinguishing systems in affected areas as indicated by alarms. A variety of manual fire extinguishing equipment is also available to the Fire Brigade.

### 12.3.2 Protective Cover

The Control Room has been designed for continuing habitability under foreseeable accident conditions. In addition, the on-site TSC/OSC is designed to remain habitable. Protective cover/assembly areas have also been designated for evacuating CR3 personnel (see Section 14.0).

The Control Room contains communications equipment, emergency radiation monitoring equipment, emergency respiratory devices, and an emergency kit containing protective clothing and other supplies (see Table 12.1). The Control Complex area contains a 7-day supply of food for the Control Room Staff. The Control Room has been designed for safe occupancy during emergency conditions. It is located in a Class I structure and has adequate shielding to permit full control and shutdown procedures following a maximum hypothetical accident without exceeding an integrated personnel dose of 3 REM in a 90 day period. The Control Complex ventilation system has redundant fans, chillers, and HEPA and charcoal filters to permit recirculation of Control Room air. It is provided with radiation and smoke detectors with appropriate alarms and interlocks.

## 12.4 EMERGENCY SUPPLIES

Emergency equipment and supplies to carry out the provisions of the Emergency Plan are specified in procedure HPP-409. Table 12.1 lists typical emergency equipment and supplies and their locations. 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 procedure HPP-409. Sufficient reserves of instruments/equipment are provided to replace those which 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.

Radiological wound monitoring on-site is performed using an appropriate high sensitivity detector (e.g., HP-210 probe). Should the severity of the wound restrict decontamination efforts by Radiation Protection personnel on-site, the injured personnel will be referred to medical personnel or transported to an off-site medical facility for treatment and further decontamination efforts.

#### **12.5        FIRST AID FACILITIES**

First aid supplies and equipment are located throughout the Plant site. Qualified personnel are available 24 hours per day to provide medical treatment as referenced in Section 16.0, "Medical and Public Health Support."

#### **12.6        DAMAGE CONTROL EQUIPMENT**

Fire protection systems described in Section 12.3.1 are designed and maintained to mitigate the effects of fire. As previously mentioned, sole reliance for fire protection is placed on in-house capabilities for this protection. Radiological damage control provisions are incorporated throughout Plant design, including the primary barriers to fission product release (fuel clad, primary system, and Containment Building). The ES Systems described in Section 6.0 of the FSAR have also been designed with the primary objective of mitigating the effects of major radiological accidents.

The Plant elevation has been set at a level in excess of expected water surges, and the buildings have been designed for wind speeds in excess of probable maximum velocities.

In the event mechanical explosions or other conventional incidents occur within the Plant, provisions made for radiological emergencies would facilitate damage control activities. Such provisions include substantial biological shielding which also serves as missile shielding, compartmentalization of equipment to facilitate isolation of damaged equipment/systems, communications as described in Section 10.0 of this Plan, and other provisions for protective and corrective actions as described throughout this Plan.

TABLE 12.1

TYPICAL EMERGENCY EQUIPMENT/SUPPLIES AND LOCATIONS

Kit Contents

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

Kit Locations

CR3 Control Room

Technical Support Center/Operational Support Center (TSC/OSC) Kits for Units 1,2,4,&5 also located at TSC

Control Complex

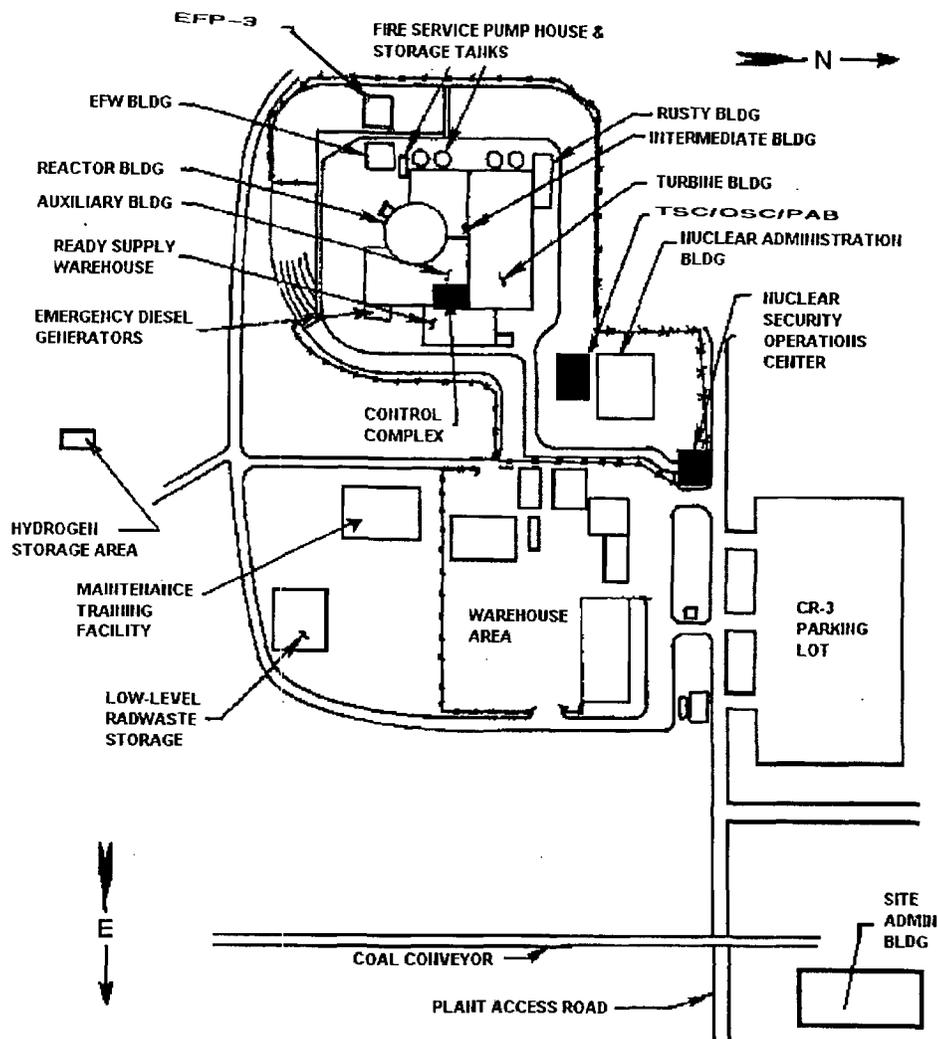


FIGURE 12.1  
ON-SITE EMERGENCY FACILITIES

LEVY COUNTY  
EMERGENCY  
OPERATIONS CENTER  
COUNTY ROADS 337 & 32  
BRONSON, FL

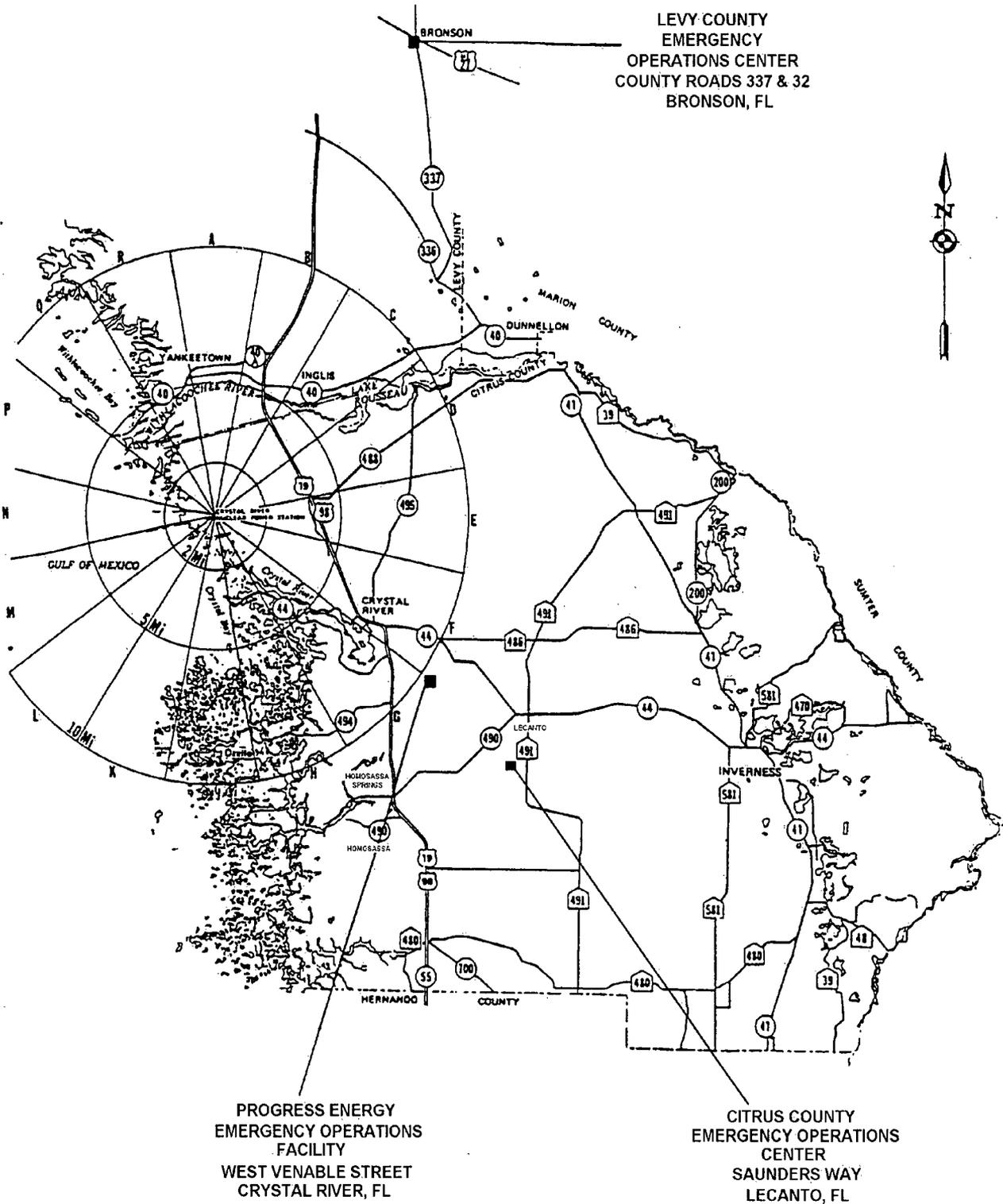


FIGURE 12.2  
EMERGENCY OPERATIONS CENTER LOCATIONS

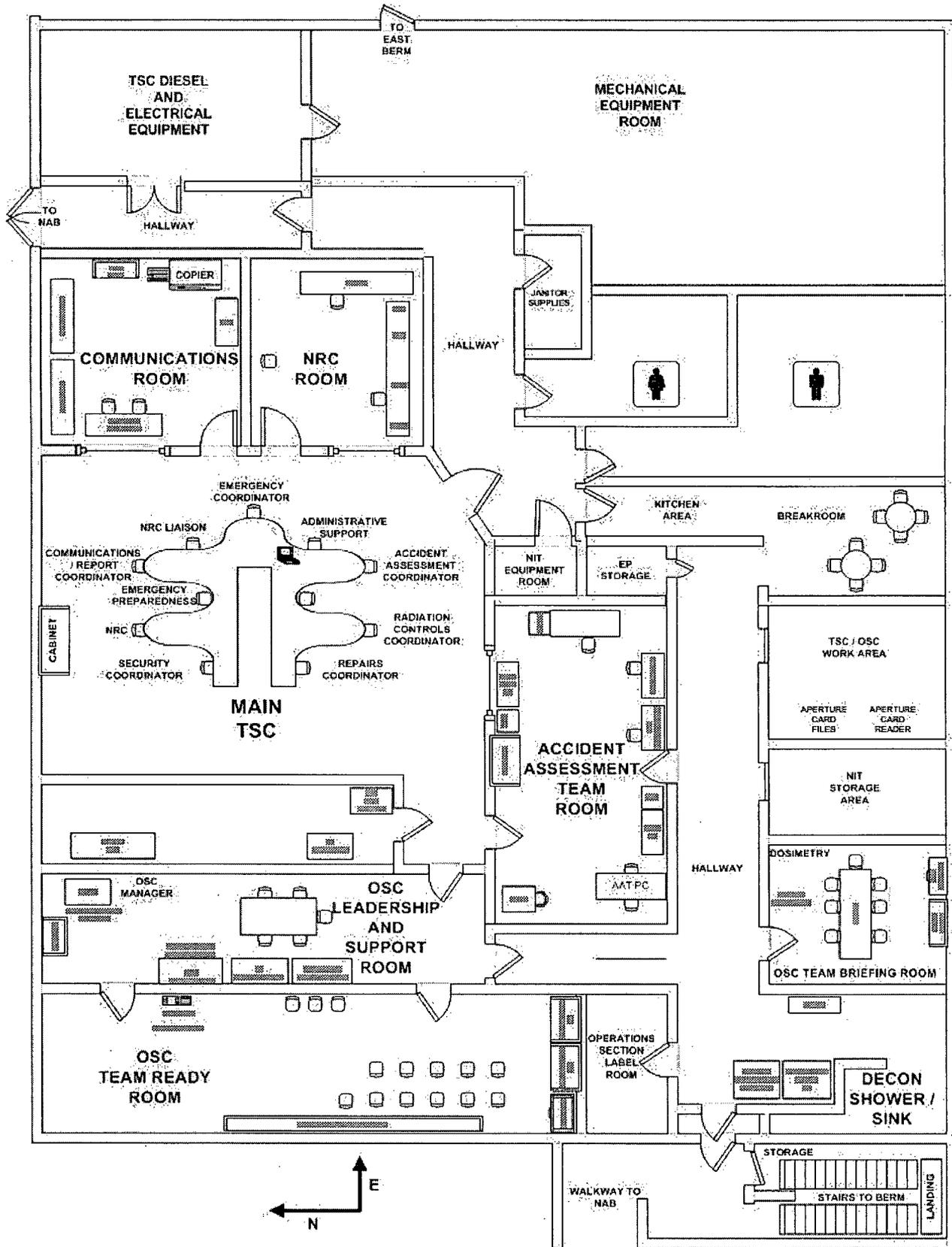
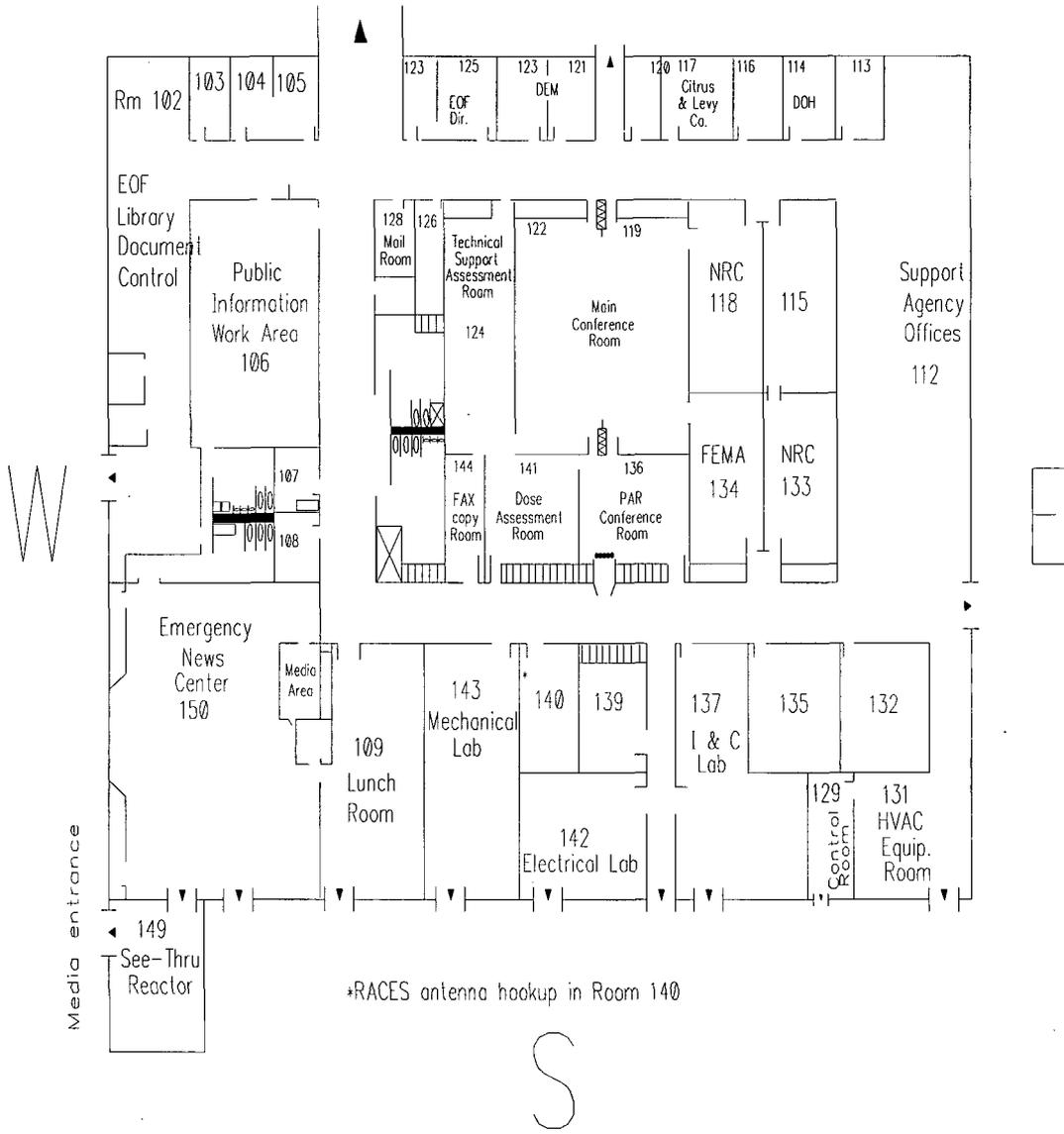


FIGURE 12.3  
TSC/OSC FLOOR PLAN  
SAMPLE

Access Control  
EOF Lobby

N

To Simulator Bldg.



**FIGURE 12.4**  
**EMERGENCY OPERATIONS FACILITY LAYOUT**  
**SAMPLE**

## **13.0 ACCIDENT ASSESSMENT**

Effective response to a potential emergency situation requires assessment to determine the nature of the emergency and its actual and potential consequences. Of particular importance is the assessment of potential radiological effects in order that appropriate protective actions can be taken or recommended. Progress Energy has established various methods to evaluate and monitor the effects of a potential emergency at CR3 and, combined with off-site assessment capabilities provided by the State, has the appropriate means to assure adequate assessment.

### **13.1 RANGE OF ASSESSMENT ACTIVITIES**

The assessment activities required to evaluate a particular emergency obviously depend on the specific nature and classification of the emergency. Therefore, activities could range from increased surveillance of monitors in the Control Room to surveys of affected Plant areas to detailed post-accident sampling and analysis. The initial classification of an emergency is used as the first indicator of the level of assessment activity required. Based upon that classification and identification of the nature of the emergency by the Emergency Coordinator, appropriate evaluations are initiated.

The general types of evaluations and other actions taken by Progress Energy and the State for each emergency classification have been summarized in Table 2.2. For the UNUSUAL EVENT and ALERT classifications, the Emergency Coordinator shall assure that those assessment activities required to fully identify the nature of the emergency are completed quickly in order to determine the possibility of an escalation in the severity of the situation. The CR3 Emergency Organization is immediately brought to a state of readiness and emergency teams are mobilized to assist in assessment functions, such as performing confirmatory surveys or radiation monitoring as required.

For the SITE AREA EMERGENCY and GENERAL EMERGENCY classifications, assessment activities are intended to accomplish similar identification and determination functions, but the magnitude and automatic initiation of these activities is increased. More extensive and detailed evaluations to determine the nature of the emergency and its potential consequences are requested by the Emergency Coordinator. The operating staff, technical staff, and emergency teams, plus Corporate support and off-site assistance, are rapidly activated, as required, to provide the appropriate assessment capability.

The Emergency Coordinator plays a key assessment role regardless of the emergency classification. He determines the initial classification of the emergency based on specific Plant systems and effluent parameter values as presented in Section 8.0 (see Table 8.1). In order to provide effective coordination and direction of the CR3 Emergency Organization, he utilizes the emergency teams and Plant systems and equipment for continuing assessment of accident severity and means of control and potential impact on Plant personnel and the general public. He institutes assessment activities prescribed by detailed

implementing procedures as needed to identify initially the classification of each emergency and to maintain accurate identification throughout the emergency. Procedure EM-202 provides guidance for the Emergency Coordinator in classifying the incident and in initiating appropriate emergency measures, and also provides instructions for assessment of radiological impact.

## **13.2 ON-SITE ASSESSMENT METHODS**

Accident assessment activities carried out at CR3 are aimed at three (3) basic areas: (a) determining the nature of the emergency incident; (b) determining or estimating the nature and quantities characterizing an actual or potential radioactive release; and (c) assessing the actual or potential dose or other radiological impact to affected areas and population. Activities in the first two areas are carried out essentially simultaneously, to the degree appropriate for the specific emergency, and provide information for subsequent and continuing dose assessment.

### **13.2.1 Incident Determination**

Determination of the particular nature of an emergency incident, including identification of affected Plant areas and systems, is an important part of accident assessment. Assessment activities in this area are primarily related to determining means to bring the emergency situation under control and to identify the specific affected Plant areas, systems, and components. These activities also identify the potential sources, mechanisms, or pathways that have or could lead to a radioactive release. Based on these assessments, appropriate corrective actions can be identified and implemented.

Evaluations for incident determination are primarily carried out by the operating staff and the TSC personnel under the direction of the Emergency Coordinator. The operating staff carefully monitors Control Room instrumentation, including key Plant parameters, process and radiation monitoring systems, and provides early identification of Plant and system status and potential for change. TSC personnel are provided appropriate data to assess the nature of the emergency and, in combination with the operating staff, recommend control actions to mitigate the emergency and potential effects.

A series of Abnormal Procedures (APs), Annunciator Response Procedures (ARs) and Emergency Procedures (EPs) have been prepared and provide instructions on identifying and responding to various types of abnormal and emergency situations involving Plant systems.

### 13.2.2 Radiation Monitoring and Estimating Release Potential

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.

Control Room instrumentation is 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 12.0, "Emergency Facilities and Equipment," are utilized for this purpose. RB integrity is also monitored in the Control Room. The Emergency Coordinator can direct a physical inspection of the RB if he determines it necessary and radiological conditions permit.

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 Emergency Coordinator 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 TSC for evaluation and assessment. The Radiation Controls Coordinator will assess survey results and advise the Emergency Coordinator of in-Plant radiological status. The need for additional or continuing surveys is established by the Emergency Coordinator. Specific instructions for in-Plant radiological surveys are provided in procedure EM-210A.

It is important to determine radioactive levels at the Site Boundary and beyond as soon as possible following an accidental release of radioactive gases. These activities are performed by the Radiation Monitoring Team in accordance with EM-210B. TLDs have been strategically placed in such areas as the NSOC, at CR1&2, and at 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 Emergency Coordinator 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 Emergency Coordinator. Results of surveys are appropriately recorded and reported to the TSC via portable transceiver. The TSC transmits the results to the EOF for coordination of analysis, as appropriate, with State survey results.

Silver Zeolite filter media is provided in the emergency kits for use by the Radiation Monitoring Team in measuring gross radioiodine concentrations by utilizing a beta counting system coupled to a shielded G-M detector. A similar system is maintained in the TSC/OSC and Control Room emergency kits for assignment as necessary. Additionally, a single channel analyzer coupled to a shielded sodium iodide detector has been specifically calibrated and discriminated for radioiodine measurements. This equipment is maintained in a mobile configuration and state of readiness at the entrance to the RCA. All described systems can measure gross radioiodine concentrations in air at concentrations greater than  $5 \times 10^{-8}$   $\mu\text{Ci/cc}$ .

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. Provisions have been established through Emergency Plan Implementing Procedures to sample and analyze RC, RB atmosphere, and effluent releases for additional information. As appropriate, the Emergency Coordinator will request such sampling.

Procedure CH-631 provides instruction for obtaining gas, particulate and iodine samples during accident conditions from the Auxiliary Building or Reactor Building vents, and gas samples from the Reactor Building atmosphere using the Post-Accident Sampling System. Instructions for the preparation and shipment of samples for off-site analysis are also included.

Procedure CH-632 provides instruction for obtaining representative samples of the Reactor Coolant and Decay Heat systems and the Reactor Building Sump. The procedure also provides guidance for the analysis of the sample for boron, and for the preparation and shipment of samples for off-site analysis.

Procedure EM-225A describes the actions taken to sample and analyze the containment atmosphere for hydrogen content under accident conditions. The results of this analysis will determine if actions are necessary to maintain hydrogen content below the lower flammability limit. Should purging of the containment be required for hydrogen control, provisions have been established and are described in EM-225A.

### 13.2.3 Dose Assessment

In order to provide for protection of CR3 personnel and the public, the radiological impact in terms of actual or projected doses to individuals and population groups must be determined. Emergency workers and monitoring stations are provided with dose measurement instrumentation, but for some groups and, in particular the affected population in the plume exposure EPZ, dose calculations or projections may be required. Two procedures (EM-204A and EMG-NGGC-0002) have been developed to assess the dose to personnel downwind of an accidental radioactive release.

Procedure EM-204A provides the Operations Staff with a rapid method of determining the magnitude of a radioactive release from CR3 during an accident condition. EM-204A is performed manually. The manual method contains a series of tables, which are used along with meteorological and radiological data displayed in the Control Room to quickly generate off-site dose information. It is intended that this procedure be used in the initial phases of the emergency to determine appropriate protective actions to be recommended to off-site authorities.

Procedure EMG-NGGC-0002 provides Dose Assessment personnel guidance to utilize a computer 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.

Having the capability of performing dose assessment at both the TSC and EOF provides the redundancy necessary to assure 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.

### 13.3 OFF-SITE ASSESSMENT METHODS

#### 13.3.1 Field Monitoring

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 CR3, 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 which has been outfitted to provide radiological laboratory services in emergency situations and mobile laboratory services in routine operations.

Table 13.1 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.

#### 13.3.2 EOF Support

As noted above, support for the State Radiological Emergency Team is available at the EOF in Crystal River, Florida. Logistical and communications support is provided and technical assistance is available through the Assistant EOF Director and Radiation Controls Manager. From the EOF and the MERL, results of field monitoring are provided to the TSC, the State, and other organizations, as required. Primary dose assessment and protective action recommendations are also provided at the EOF, based on data from CR3 and the State team. Since the EOF is also the primary Progress Energy contact and liaison with the Citrus County and Levy County Emergency Management organizations, appropriate information may be promptly passed along with the concurrence of State officials.

Since numerous accident assessment activities involving various teams and facilities associated with different Progress Energy and off-site organizations may be underway, coordination of these activities and integration of the results is an important task. To facilitate this coordination, the Emergency Coordinator is the focus of all on-site assessment activities and the EOF Director is the focus for all off-site activities. Thus, the Emergency Coordinator is the primary recipient of all information relating to the status and potential consequences of the emergency affecting the CR3 Plant and site. Since he has the appropriate personnel and equipment resources to support this function, he is not dependent on outside assistance, but may request Corporate assistance or that of other off-site organizations as he deems necessary. Upon receipt of information from his teams affecting the off-site environs, the Emergency Coordinator immediately transmits such information to the EOF Director. The EOF Director, in conjunction with the State team and other EOF Staff members, integrates appropriate information from CR3 and field monitoring results to determine off-site consequences. The Emergency Coordinator and the EOF Director, based on their combined assessment of the on-site and off-site situation and potentials, may then provide recommendations to the State. With the State team located at the EOF, and with input and communications with Progress Energy and Federal agencies, this coordination will assure the availability of information required for effective decision-making and prompt capability to initiate appropriate corrective and protective actions.

TABLE 13.1

**MOBILE EMERGENCY RADIOLOGICAL LABORATORY**  
**TYPICAL INSTRUMENTATION AND EQUIPMENT**  
(This list is not all inclusive)

1. AC Generator
2. Gamma Spectroscopy System
3. Portable alpha beta probe
4. Portable liquid scintillator counters
5. Computer spectrometer
6. Portable HPGE gamma radioisotope identifier system
7. Beta/gamma probes
8. Low Volume Air Samplers, 12 VDC
9. Ratemeters With Alpha Scintillators; 0-50,000 cpm
10. Single Channel Analyzer; 0-500,000 cpm; with Sodium Iodide Detectors
11. Self-Reading Pocket Dosimeters With Chargers: 0-200 mR, 0-20 R, and 0-5 R
12. Geiger-Müller (G-M) Pancake Probe; 0-350,000 cpm
13. Radiac Sets; 0-10,000 R/hr
14. Frisking Station With G-M Pancake Probe; 0-500,000 cpm
15. G-M Pancake Probe; 0-3,600,000 cpm
16. Electronic Personnel Dosimeters
17. Portable gamma isotopic identifier system
18. Portal monitor.
19. Alarming Personal Radiation Detectors
20. Mini/ultra radiacs

## **14.0 PROTECTIVE RESPONSE**

The Radiation Protection Program at CR3 assures that protective measures are provided for the purpose of safeguarding the health of all personnel working on the Plant site and of the public outside the boundaries of the facility which 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.

### **14.1 ON-SITE PROTECTIVE MEASURES**

At CR3, the on-site protective measures, as identified in NGGM-PM-0002, Radiation Control and Protection Manual for normal operation serve as the basis for additional measures required during an emergency. Some of the standard and emergency measures are discussed in the following sections. A detailed description of the Radiation Protection Program is provided in Section 15.0, "Radiological Exposure Control."

#### **14.1.1 Standard Measures**

The Radiation Protection Program requires the use of protective equipment to minimize personnel exposure and to maintain exposure limits within 10 CFR 20. The Radiation Protection Program includes the following provisions for routine personnel protection that are equally important during an emergency:

- a. All personnel entering the contaminated areas within the RCA will wear appropriate protective clothing as specified by an RWP;
- b. Personnel engaged in maintenance work in the RCA will normally be required to have prior approval through use of an RWP. The RWP will define the job, the physical area of work, the personnel performing the work, additional radiation monitoring requirements, and additional protective clothing and respiratory devices if required;
- c. Personnel in the RCA are controlled by the Radiation Protection Section from a radiological protection standpoint;
- d. To prevent an oral intake of radionuclides, eating, drinking, and smoking inside the RCA are not permitted unless otherwise stated;
- e. All individuals leaving the RCA shall do so only through a checkpoint where they will monitor themselves for radioactive contamination. If contaminated, appropriate decontamination measures will be taken under the direction of the Radiation Protection Section; and

- f. An investigation will be made in appropriate Plant areas to determine the location of contamination and required cleanup to keep it under control.

The use of appropriate instrumentation and observance of Radiological Protection Standard guidelines will eliminate or minimize off-site environmental consequences of personnel contamination.

#### 14.1.2 Emergency Measures

Protective measures of on-site personnel are detailed in implementing procedures (Appendix "A") for circumstances in which Plant personnel exposure may otherwise exceed allowable limits. These procedures address corrective as well as protective actions planned, use of protective equipment, and personnel evacuation and accountability as required by specific circumstances. Additional guidance in effecting emergency measures is provided in procedure EM-202 to assure a properly coordinated and promptly mobilized effort.

These measures are determined from considerations of personnel protection and not by emergency classification. As such, it is expected that they will be implemented as appropriate for any emergency, and no attempt is made in the Plan to compromise the judgment to be exercised by emergency teams under the direction of the Emergency Coordinator.

#### 14.2 PERSONNEL ASSEMBLY, SHELTERING, OR EVACUATION

The Emergency Coordinator has the authority to initiate personnel assembly, sheltering, or evacuation at the Crystal River Energy Complex. The EC will decide to assemble, to shelter, or to evacuate personnel based on a concern for safety and dose reduction.

Personnel assembly can be used to facilitate communication, accountability, and supervision during an emergency. When assembly is requested, non-essential personnel will stop work, shut down potentially hazardous equipment, and proceed to the pre-designated Local Assembly Areas. Local Assembly Area accountability will take place and the results will be reported to the Emergency Coordinator when requested. At the declaration of a SITE AREA EMERGENCY, non-essential personnel will evacuate the Protected Area and report to the designated Main Assembly Area. (Within 30 minutes of an evacuation of the Protected Area following the declaration of a SITE AREA EMERGENCY, or at any time deemed necessary, the Emergency Coordinator must account for all personnel within the Protected Area and ascertain the names of all missing individuals. The EC will be assisted in this effort by CR3 Security.) Personnel will remain in assembly areas until instructed to return to work, to shelter in the assembly areas, or to evacuate.

An evacuation may affect only the CR3 Protected Area, or more widespread areas of the Energy Complex. The Emergency Coordinator will determine the specific areas to be evacuated. Evacuation of the CR3 Protected Area will be coordinated by the Superintendent, Security, or a representative. Evacuation of all other portions of the Energy Complex will be coordinated by CR3 Security.

All evacuations will be staged so the major parking areas are vacated individually. A staged evacuation will reduce the possibility of severe traffic congestion. 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 the parking areas. Based on the results of this monitoring, personnel will be cleared for unrestricted egress or dispatched to an off-site Vehicle Wash-down Station. Coordination with the County Emergency Management personnel is necessary if the latter is chosen. In the event personnel vehicles are unavailable for use, other transportation will be provided.

Procedural guidance has been established as an aid in implementing an evacuation. Procedure EM-211 discusses the duties of the CR3 Security organization during personnel assembly, personnel accountability, and evacuation. Procedure EM-205 addresses personnel assembly and evacuation within the CR3 Protected Area. Additionally, other procedures within CR3's POM contain instructions to evacuate specific work areas or buildings whenever emergency conditions create a localized radiological hazard.

Assembly and evacuation of CR1&2, CR4&5, and associated Coal Yard personnel are addressed in the "Crystal River Coal Plant Site Accountability/Evacuation Manual." Assembly and evacuation of all other portions of the Energy Complex are addressed by internal memoranda. Signs are posted at various locations designating assembly areas.

### **14.3 OFF-SITE PROTECTIVE MEASURES**

Protective actions for the off-site population include notification, protective cover, and, if necessary, evacuation. Off-site protective actions are planned for a region including and surrounding the CR3 site, out a radius of 10 miles from the Plant site (the EPZ). The State Plan provides the capability to extend this EPZ should it become necessary.

Progress Energy shall make prompt notification (within approximately 15 minutes) directly to the off-site authorities responsible for implementing protective measures. Responsibility for public notification to take protective cover or to evacuate rests with various local and State agencies in the State Plan. To assist in that determination, off-site exposure estimates have been provided in terms of the Environmental Protection Agency (EPA) Protective Action Guides in Table 14.1. In the State Plan, key agency roles are assigned to the Division of Emergency Management as coordinator; the DHBRC in an advisory capacity for

determination of the need for protective cover and evacuation; the Division of Florida Highway Patrol for traffic management; the Department of Natural Resources-Marine Patrol for waterborne traffic control; and the County Emergency Management Directors for actual warning and evacuation operations in the two counties involved.

Means of notification and protection of the public are developed in such a way that they are equally applicable to either the Low Population Zone (LPZ) or the total EPZ. (The LPZ is defined in the State Plan as the area within 5 miles of CR3.) The EPZ is segmented into 16 sectors, which are alphabetically designated (refer to Figure 2.3). For public protective action notification purposes, the State and counties have designated six EPZ zones. Sectors designated in PE's protective action recommendations are translated into zones by the State and counties.

The Crystal River EPZ is a low population area. As shown in Figure 14.1, no significant population is anticipated within 3 miles of the Plant. It is also projected that approximately 263 people will be living within 4 miles of the Plant by the year 2010. Approximately 2,000 additional people are projected to be living between 4 and 5 miles of the Plant by the same year, which then completes the LPZ population. As shown in Figure 14.2, at the 5-10 mile distance from the Plant, higher populations exist from several nearby communities. Figure 14.3 gives the population distribution for 20-50 miles from the Plant. The numbers of people involved are served by adequate hard surface roads. If evacuations were to become necessary and nearby school facilities were used for evacuation shelters, no exceptional logistical difficulties are anticipated in taking required protective measures.

Protective measures for the general public address the following exposure risks in the State Plan:

- a. Direct radiation exposure (shine from the facility);
- b. Immersion in a cloud containing radioactive material (plume exposure);
- c. Inhalation of material;
- d. Exposure from material deposited on clothing;
- e. Exposure from material deposited on the ground from passing plume; and
- f. Exposure from ingestion of material deposited in food or water.

Evaluation of exposure per Condition (a) above will be made utilizing fixed TLD dosimeters permanently deployed around the Plant. Condition (b) above will be localized in a downwind direction; close communications with the Emergency Coordinator will maintain information as to current magnitude and direction of the radioactive releases. Protective actions may involve immediate sheltering and/or prompt evacuation; guidance on the degree of protection afforded by various structures is provided in Table 14.2. Regarding exposures from deposited radioactivity, people evacuated from the EPZ will be monitored in accordance with county plans to determine whether any such material is present. Surface contamination

action guides are provided in the State Plan for this evaluation. Except in cases of personnel injury, decontamination of evacuees will take place prior to proceeding to designated reception areas.

Emergency response personnel under the State Plan will be issued dosimeters and carefully monitored during the course of the emergency. As previously mentioned, radiation protection guides based on the EPA Protective Action Guides are provided in the State Plan and Table 14.1. In addition to surface contamination guides, guidelines are provided for determination of necessary controls over milk and/or food pathways, and for evaluating and recommending recovery and re-entry operations.

The county emergency response plans, which are incorporated in the State Plan as Appendix I for Citrus and Levy Counties, provide for notification of the public by the Emergency Alert System (EAS) and Early Warning Notification System (sirens and tone alert radios); monitoring and decontamination of evacuees and vehicles; preparation of designated schools for evacuees; and control of boat traffic by evacuation at designated boat ramps. County agencies have also estimated the time required for public evacuation; a summary of time estimates is provided in Appendix "C," "Public Evacuation Time Estimates."

TABLE 14.1

**GUIDELINES FOR PROTECTIVE ACTION RECOMMENDATIONS FOR  
NON-ESSENTIAL ENERGY COMPLEX PERSONNEL AND GENERAL POPULATION**

PLANT CONDITIONS / OFFSITE DOSE ESTIMATES	RECOMMENDED ACTIONS
<p>1. <b>CONDITION:</b> <b>GENERAL EMERGENCY DECLARED.</b> <b>NO APPARENT CORE DAMAGE.</b></p> <p><u>CORE DAMAGE INDICATIONS:</u> a. RCS pressure vs. temperature in Region 1 or 2 (REFER TO EOP-07); or b. RM-G29/30 reading &lt; 100 R/hr; or c. RCS chemistry results.</p>	<p>Evacuate Zone 1 (See Notes 1 and 2)</p> <p><b>"CONSIDER Issuance of KI"</b></p>
<p>2. <b>CONDITION:</b> <b>GENERAL EMERGENCY DECLARED.</b> <b>CLAD DAMAGE/GAS GAP RELEASE (NO CORE MELT).</b></p> <p><u>CORE DAMAGE INDICATIONS:</u> a. RCS pressure vs. temperature in Region 3 (REFER TO EOP-07); or b. Core uncovered for 15-30 minutes; or c. RM-G29/30 reading of 100-75,000 R/hr (RB spray off) OR 100-25,000 R/hr (RB spray on); or d. RCS chemistry results.</p> <p><b>OR:</b></p> <p>* Dose at the 0.83 mile Site Boundary is projected to be: a) TEDE: ≥ 1.0 Rem b) Thyroid CDE: ≥ 5.0 Rem</p>	<p>Evacuate Zone 1 (See Note 2)</p> <p>Shelter Zones 2 &amp; 3 (See Note 1)</p> <p><b>"CONSIDER Issuance of KI"</b></p>
<p>3. <b>CONDITION:</b> <b>GENERAL EMERGENCY DECLARED.</b> <b>CORE MELT OCCURRING OR LIKELY.</b></p> <p><u>CORE DAMAGE INDICATIONS:</u> a. RCS pressure vs. temperature in the Severe Accident Region (REFER TO EOP-07); or b. Core uncovered for &gt; 30 minutes; or c. RM-G29/30 reading &gt; 75,000 R/hr (RB spray off) or &gt; 25,000 R/hr (RB spray on).</p> <p><b>WITH:</b></p> <p><b>NO</b> projected containment failure and <b>NO</b> release underway.</p> <p><b>OR</b></p>	<p>Evacuate Zone 1 (See Note 2)</p> <p>Shelter Zones 2 &amp; 3 (See Note 1)</p> <p><b>"CONSIDER Issuance of KI"</b></p>
<p>Projected containment failure and/or release underway.</p>	<p>Evacuate Zones 1 and 2 and 3 (See Notes 2 and 3)</p> <p><b>"CONSIDER Issuance of KI"</b></p>

\* PARs within the first hour of an event should be based on PLANT CONDITIONS ONLY until the Dose Assessment Team is operational.

**NOTE 1:** Relocate/evacuate population affected by ground contamination after plume passage. Relocate/evacuate population in any zone any time projected dose from actual release is ≥ 1.0 REM TEDE or ≥ 5.0 REM Thyroid CDE.

**NOTE 2:** Sheltering should be recommended for the following conditions for those areas that cannot be evacuated before plume arrival:

- Core damage is in progress and,
- Containment failure or a controlled release is imminent and,
- The release duration is known to be less than 2 hours

Known impediments to evacuation should also be considered in the decision to evacuate or shelter.

**NOTE 3:** IF projected dose from an actual release is > 1.0 REM TEDE or 5.0 REM Thyroid beyond 10 miles, THEN RECOMMEND evacuation to State and Local government by distance in miles, OR by subdivision and geographic boundaries.

ZONE DESCRIPTIONS	EVACUATION TIME ESTIMATES: Indicates the greatest amount of time to clear 95% of the affected population, but <u>DOES NOT</u> include notification or preparation time for evacuees. (Per 2007 ETE.)
Zone 1: 0-5 miles 360 degrees and out to 10 miles in Gulf	Zone 1: 2 hours 40 minutes (CREC: 90 – 165 minutes (Per 2008 CREC ETE.))
Zones 2 / 3: 5-10 miles in Citrus & Levy County's	Zones 1, 2, and 3: 3 hours 40 minutes

TABLE 14.1 (Continued)

**GUIDELINES FOR PROTECTIVE ACTION RECOMMENDATIONS**

**GUIDELINES FOR PROGRESS ENERGY EMERGENCY WORKER EXPOSURE**

CONDITION	DOSE LIMIT (REM TEDE)	GUIDANCE
1. Emergency conditions not requiring actions to prevent serious injury or protect valuable property.	5	Emergency worker exposure should not exceed 5 REM TEDE.
2. Emergency conditions requiring actions to prevent serious injury or protect valuable property.	10	Exposure greater than 5 REM TEDE should receive approval of the Emergency Coordinator. Appropriate controls for emergency workers include time limitations and respirators.
3. Emergency conditions requiring lifesaving actions or actions to protect large populations.	25	Exposure greater than 5 REM TEDE should receive approval of the Emergency Coordinator. Appropriate controls for emergency workers include time limitations, respirators, and thyroid blocking.
4. Emergency conditions requiring lifesaving actions or actions to protect large populations.	> 25	Exposure greater than 5 REM TEDE should receive approval of the Emergency Coordinator. Exposures at this level should be to volunteers who are healthy, above the age of 45, have an understanding of the health risks involved, and, preferably, be those whose normal duties have trained them for such missions. Appropriate controls for emergency workers include time limitations, respirators, and thyroid blocking.

**NOTE:** Reference for this table is Table 2.2 in the Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (EPA 400/R-92-001).

TABLE 14.2

REPRESENTATIVE SHIELDING FACTORS FOR SURFACE-DEPOSITED RADIONUCLIDES\*

<u>Structures or Location</u>	<u>Representative Shielding Factor<sup>(a)</sup></u>	<u>Representative Range<sup>(a)</sup></u>
1m above an infinite smooth surface	1.00	----
1m above ordinary ground	0.70	0.47 - 0.85
1m above center of 50 ft. roadways, 50% decontaminated	0.55	0.4 - 0.6
Cars on 50 ft. road:		
Road fully contaminated	0.5	0.4 - 0.7
Road 50% decontaminated	0.5	0.4 - 0.6
Road fully decontaminated	0.25	0.2 - 0.5
Trains	0.40	0.3 - 0.5
1- and 2-Story Wood Frame House (no basement)	0.4 <sup>(b)</sup>	0.2 - 0.5
1- and 2-Story Block and Brick House (no basement)	0.2 <sup>(b)</sup>	0.04 - 0.40
House Basement, 1 or 2 walls, fully exposed:	0.1 <sup>(b)</sup>	0.03 - 0.15
1-story, less than 2 ft. of basement, walls exposed	0.05 <sup>(b)</sup>	0.03 - 0.07
2-story, less than 2 ft. of basement, walls exposed	0.03 <sup>(b)</sup>	0.02 - 0.05
3- or 4-story structures, 5,000 to 10,000 ft. <sup>2</sup> per floor:		
First and Second Floors	0.05 <sup>(b)</sup>	0.01 - 0.08
Basement	0.01 <sup>(b)</sup>	0.001 - 0.07
Multi-Story Structures, > 10,000 ft. <sup>2</sup> per floor:		
Upper Floors	0.01 <sup>(b)</sup>	0.001 - 0.02
Basement	0.005 <sup>(b)</sup>	0.001 - 0.015

a. The ratio of dose received inside the structure to the dose that would be received outside the structure.

b. Away from doors and windows.

\* "Public Protection Strategies for Potential Nuclear Reactor Accidents: Sheltering Concepts With Existing Public and Private Structures" (SAND 77-1725)

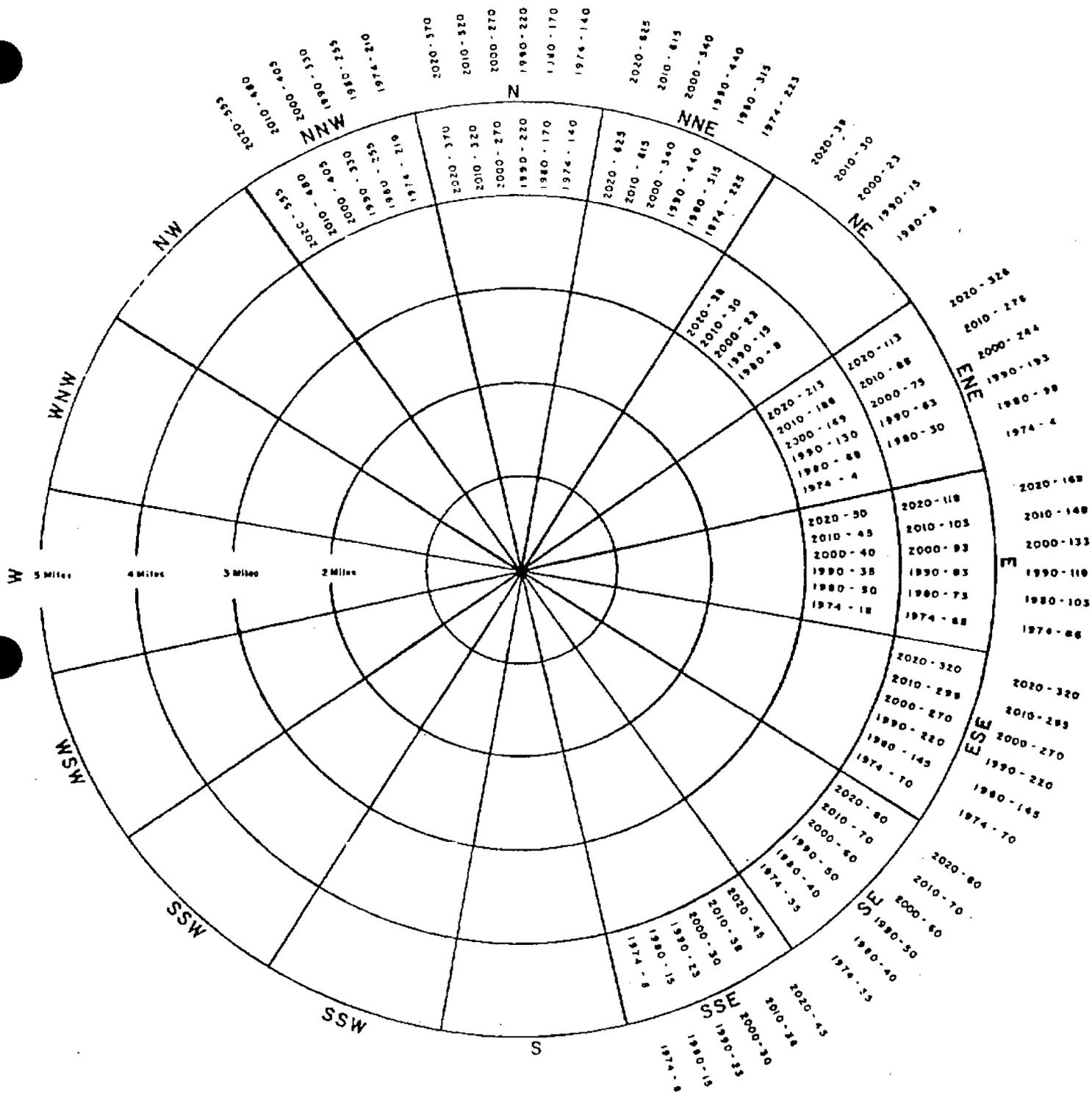


FIGURE 14.1

POPULATION DISTRIBUTION WITHIN 5 MILES OF CR3

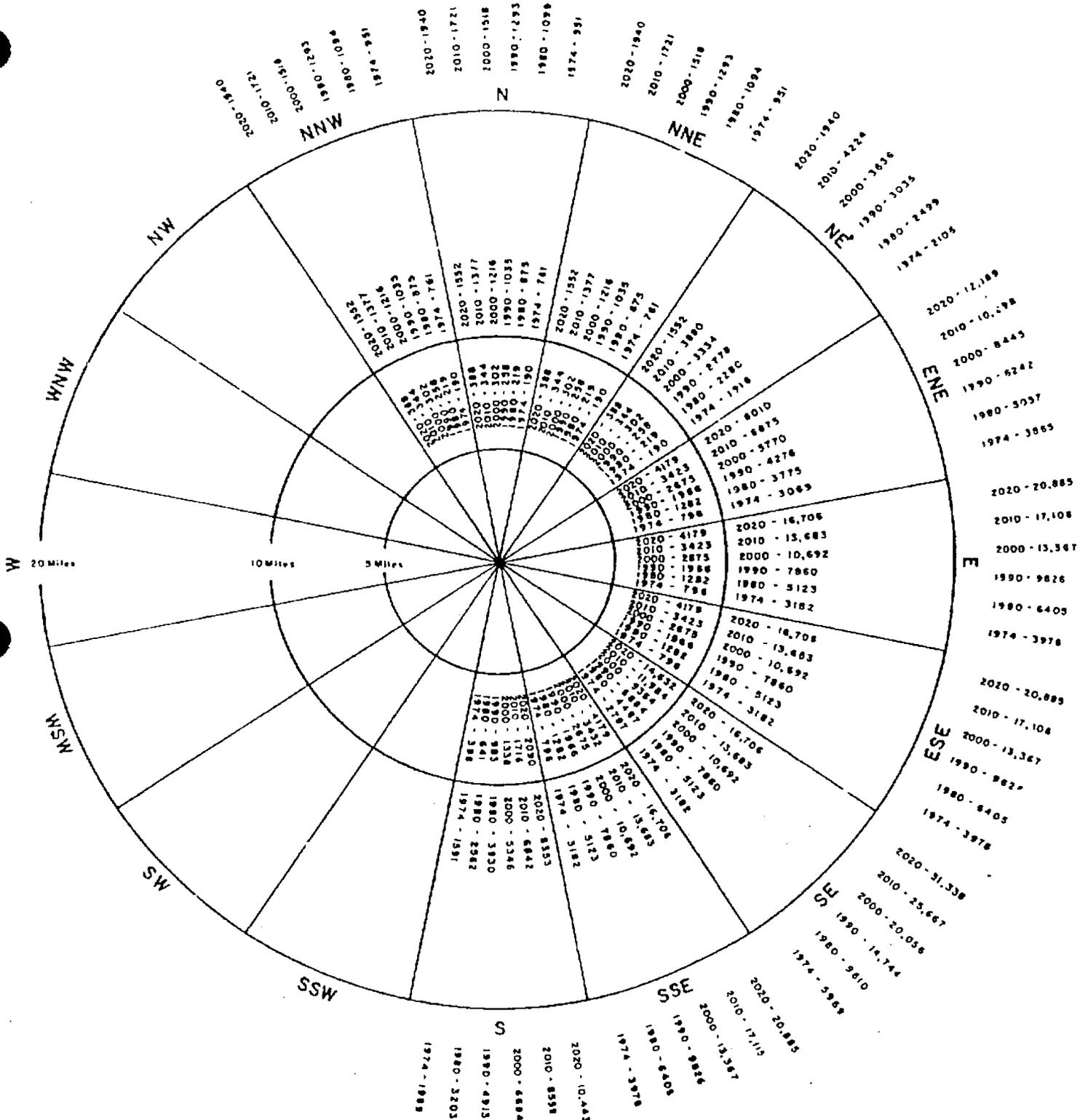


FIGURE 14.2  
POPULATION DISTRIBUTION WITHIN 20 MILES OF CR3

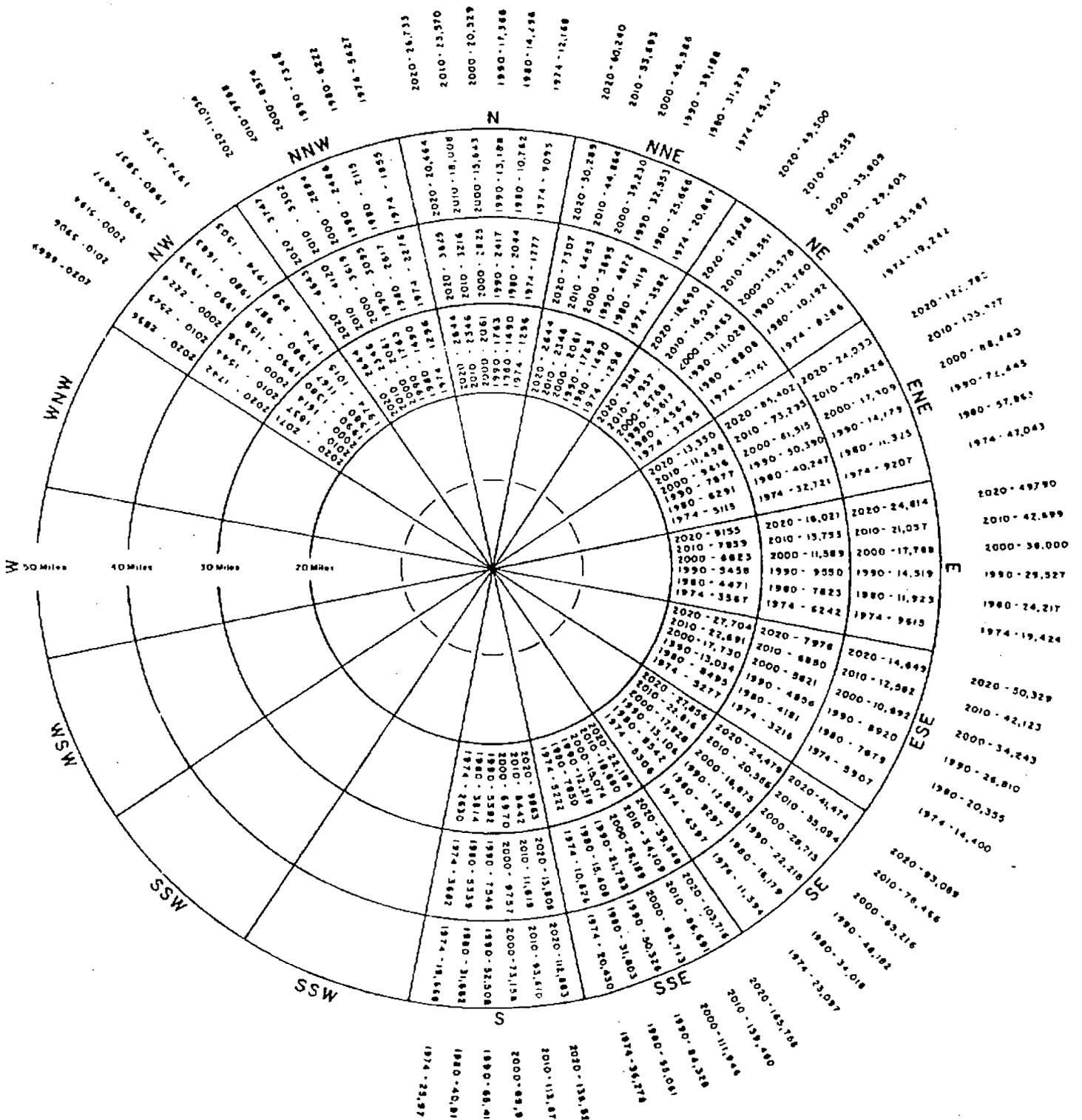


FIGURE 14.3

POPULATION DISTRIBUTION WITHIN 50 MILES OF CR3

## **15.0 RADIOLOGICAL EXPOSURE CONTROL**

As a facility licensed by the NRC, the CR3 Nuclear Plant maintains a radiological exposure control program to assure that protection against radiological exposure, as set forth in 10 CFR 20 and Chapter 170J-1 of the State of Florida Statutes, is provided. This program is implemented through the "Radiological Protection Standard" which covers both normal and emergency radiation protection measures.

### **15.1 EXPOSURE GUIDELINES**

During an emergency operation, doses above normal occupational radiation exposure limits may be involved in activities such as saving a life, preservation of valuable equipment, or controlling exposure to the public. Plant conditions, however, may require individuals to exceed those limits. It is not possible or practical to specify a dose "limit" since the acceptability of the dose will depend on the importance of the objective. However, Table 14.1 provides exposure guidelines for on-site emergency activities.

Actions such as providing first aid or medical treatment, removal of injured personnel, personnel decontamination, or ambulance service could encounter the lifesaving guideline, but even for these actions, depending on the situation at the time, measures to reduce exposure should be considered as practical. Personnel involved in lifesaving actions must be volunteers (healthy and above the age of 45) with the approval and authorization of the Emergency Coordinator. If the situation allows, Health Physics personnel should provide recommended courses of action to minimize exposure.

### **15.2 RADIATION PROTECTION**

The purpose of a Radiation Protection Program is to assure 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 and personnel monitoring are discussed below; contamination control is discussed in Section 15.3.

### 15.2.1 Access Control

During either normal or emergency conditions, strict control of access to areas is a primary means to minimize radiation exposure. At CR3, 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 Emergency Coordinator through the use of the Radiation Monitoring Team as described in procedures EM-210A and EM-210B.

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 RCA's 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 nine categories:

- a. Radiation Area
- b. High Radiation Area
- c. Very High Radiation Area
- d. Locked High Radiation Area
- e. Airborne Radioactivity Area
- f. Contaminated Area
- g. Radioactive Material
- h. Hot Spot
- i. Radiography

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 Emergency Coordinator, 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 cm whole body exposure must be locked, barricaded with flashing lights, or guarded to preclude unauthorized entry.

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 RWP or Specific RWP.

A General RWP is issued by the Health Physics Section and permits entry into specific areas of the RCA to observe, supervise, or perform routine work for authorized personnel. A Specific RWP authorizes specific individuals to enter areas or to work on equipment which requires supplementary administrative controls due to possible changing radiological conditions during the period the work is being performed. Specific RWPs are generally required for non-routine work. For emergency, short-term, or special situations, an Emergency RWP can be initiated in accordance with procedure EM-104. The continuous presence of a qualified Health Physics representative may meet the RWP requirement, provided the job does not interfere with Plant operations. The RWP briefly describes the work to be performed and the radiological conditions

in the work area, and specifies the protective equipment and/or measures to minimize radiation exposures or the spread of contamination.

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.

### **15.2.2 Personnel Exposure Monitoring**

To monitor the exposure of personnel during normal or emergency conditions, personal dosimeters are utilized. Adequate supplies of dosimeters are maintained by the Health Physics Section for use during an emergency. Procedure RSP-101 describes 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: 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.

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 CR3 Radiation Protection Program requires that individual exposure records be documented and maintained in order to: (a) evaluate the effectiveness of the Radiation Protection Program; (b) demonstrate and facilitate compliance with procedural requirements and applicable governmental regulations; and (c) reconstruct for legal or medical purposes situations and conditions for analysis of radiation doses received.

### **15.2.3 Radio-protective Drugs**

As an additional measure of radiation exposure control, the use of radio-protective drugs, namely Potassium Iodide (KI), has been addressed. The guidelines for KI distribution are addressed in procedure EM-104.

Progress Energy maintains a supply of Potassium Iodide that will only be administered to PE employees by the Radiation Controls Coordinator or designee, and on a case-by-case basis with relevant input of radiological conditions pertaining to the specific situation.

### 15.3 CONTAMINATION CONTROL

Various contamination control measures are utilized at CR3 to minimize exposure to Plant personnel, equipment, and potable water and food supplies during an emergency. These include the access control measures discussed above, plus means for the decontamination of personnel, areas, and equipment as required. These measures are covered in detail by procedure and are briefly described below.

#### 15.3.1 Personnel Decontamination

During normal or emergency conditions, contamination should be removed from any part of a person's body prior to their leaving the RCA. 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 caution due to the risk of injury to skin surfaces.

All personnel decontamination, even during an emergency, will be performed under the supervision of the Health Physics Section and in accordance with procedure HPS-NGGC-0013.

Presently, CR3 has dedicated decontamination and clothing kits and two decontamination stations on-site. The kits can be used when decontamination of relocated on-site personnel is required. The kits and clothing can be taken to alternate locations, such as the Receiving Warehouse or parking area. The contents and location of the decontamination kits are listed in procedure HPP-409. The decontamination station, which includes a decontamination shower, is located in the Control Complex near the exit to the RCA. A second decontamination station is located in the TSC/OSC. This facility contains two showers, a decontamination sink, and a decontamination kit.

#### 15.3.2 Area and Equipment Decontamination

The objective of area and equipment decontamination is to minimize the spread of radioactive contamination in and about the facility. This is done in accordance with procedure WP-503.

Areas and equipment are considered contaminated when there is loose, removable, contamination in excess of 20 dpm/100 cm<sup>2</sup> alpha and/or 1,000 dpm/100 cm<sup>2</sup> beta-gamma activity.

Radioactive material would be shipped following an emergency in the same manner as processed for normal operations, in accordance with procedure HPS-NGGC-0001.

### 15.3.3 Control of Potable Water and Food

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

- a. All potable water for the Plant site comes from wells located four (4) miles east of the Plant, through an open lime softener at Unit 1.
- b. No food is permitted in the RCA.
- c. 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 Protective Action Guides in the event of an off-site radiological emergency to assure 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.

## **16.0 MEDICAL AND PUBLIC HEALTH SUPPORT**

Medical assistance is available both on-site and off-site for treatment of CR3 personnel potentially injured during an emergency. Various means of transportation are also available to transport individuals for both radiological and non-radiological injuries. Detailed instructions for handling medical emergency situations are provided by procedure EM-213. The following describes the available medical support; Table 16.1 summarizes the types of medical treatment for various types of injuries.

The individuals and organizations providing emergency medical assistance as identified in this section either have the capability for evaluation of radiation exposure and uptake or they are provided this capability from Progress Energy in the form of manpower and/or equipment. Progress Energy assures that persons providing these services are adequately prepared to handle contaminated individuals through detailed training classes, drills, and exercises. Letters of Agreement with off-site organizations and individuals for medical support are provided in Appendix "B."

### **16.1 ON-SITE FIRST AID**

First aid assistance at CR3 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.

#### **16.1.1 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 EMS and Community Health Resources as described in Section 19.0, "Radiological Emergency Response Training," of this Plan. They are trained to handle injured personnel, with or without radiological considerations, in accordance with procedure EM-213.

#### **16.1.2 First Aid Kits**

"Jump Kits" are located throughout the Plant. The kits are used and maintained by Medical Response personnel.

#### **16.1.3 On-Site Medical Emergency Communications**

An emergency phone system is available for reporting emergencies. This system enables an individual to report an emergency by dialing "555" on any PAX or "5555" on any conventional intra-Plant phone on-site, which activates a dedicated emergency telephone in the Control Room. Other communications systems for medical emergencies are available as discussed in Section 10.0, "Emergency Communications."

## **16.2 MEDICAL TRANSPORTATION**

Transportation for injured personnel at the Crystal River Energy Complex 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 procedure EM-213.

## **16.3 OFF-SITE MEDICAL SUPPORT**

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

### **16.3.1 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.

### **16.3.2 Citrus Memorial Hospital**

Persons who are radiologically-contaminated and have injuries 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.

### **16.3.3 Off-Site Medical Support Plans**

The hospitals will provide for hospital 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 and copies furnished to Progress Energy.

Both Seven Rivers Regional Medical Center and Citrus Memorial Hospital have plans for emergency handling of radiation accident cases from the Crystal River Nuclear Plant to carry out the terms of the hospital's agreement with Progress Energy. The plan 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; and
- 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. 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.

TABLE 16.1

SUMMARY OF ACTIONS FOR EMERGENCY MEDICAL TREATMENT

<u>Type of Injury</u>	<u>DEGREE OF CONTAMINATION</u>	
	<u>Non-Contaminated</u>	<u>Contaminated</u>
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 or Citrus Memorial Hospital.	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 or Citrus Memorial Hospital.	Notify, then transport to Seven Rivers Regional Medical Center or Citrus Memorial Hospital.

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**NOTE:** Citrus Memorial Hospital will be used in the event Seven Rivers Regional Medical Center is not available to receive patients due to adverse weather or evacuation.

## **17.0 RECOVERY AND RE-ENTRY PLANNING AND POST-ACCIDENT OPERATIONS**

Recovery from the effects of an emergency incident will be related to the nature of the incident and its specific consequences. Corrective actions taken during the early stages of an emergency provide the first steps toward recovery. As the emergency situation is brought under control, more deliberate and planned activities can be utilized for complete recovery. All recovery actions cannot be pre-planned; however, Progress Energy has established general plans described in the following sections to yield recovery from potential emergencies at CR3.

### **17.1 RE-ENTRY PLANS**

Re-entry into affected areas of CR3 may be required during the early stages of an emergency to institute corrective actions, and re-entry will be required for complete recovery. Therefore, plans for re-entry have been developed and are provided in procedure EM-104. Entry will be required for one or more of the following reasons:

- a. To search for personnel not accounted for;
- b. To perform operations or repairs to minimize or eliminate the source of the emergency;
- c. To determine more definite emergency Exclusion Area boundaries;
- d. To perform rescue operations; and
- e. To save property.

Personnel for the above will be approved by the OSC Manager or the Emergency Coordinator. As a group, they shall be knowledgeable in radiation protection procedures and should have capabilities in operations or maintenance. The team will be thoroughly briefed beforehand regarding their actions while in the evacuated area and of the risks involved. While efforts will always be made to minimize exposure, all individuals will be briefed on emergency exposure.

Under emergency conditions, not requiring action to prevent serious injury or a catastrophic incident, personnel exposure in excess of 5 REM TEDE may be authorized by the Emergency Coordinator with guidance from the Radiation Controls Coordinator.

Under emergency conditions where immediate action is necessary to prevent serious injury or a catastrophic incident, dose limit exposures authorized by the Emergency Coordinator should not exceed 10 Rem TEDE. Lifesaving actions and actions to protect large populations should not exceed 25 Rem TEDE. For higher exposures (> 25 Rem TEDE), volunteers should be healthy, above the age of 45, have an understanding of the radiation exposure health risks, and, preferably, have normal duties that have trained them for such missions.

## 17.2 EMERGENCY TERMINATION AND NOTIFICATION

Before recovery actions can begin, the emergency situation must be brought under control; the emergency status terminated, and affected emergency response organizations notified accordingly. The final decision for termination of an emergency status is the responsibility of the EOF Director. This decision will be based on satisfactory objective evidence that State and local organizations concur and can support re-entry, that required corrective actions have been completed, that further protective actions on-site are not necessary, that current Plant status is stable and can be sufficiently monitored to detect potential changes, and that conditions permit restoration of normal duty shifts at the Plant without additional risk to Progress Energy personnel or the general public.

The EOF Director is also responsible for providing notification of the emergency termination and initiation of recovery operations to the NRC, State of Florida (SWOT), the Emergency Coordinator, the CR3 Emergency Organization, and other organizations that may be providing on-site support. The EOF Director also provides for notification of the EOF Staff and other organizations that may be providing off-site support. Notification of the public will then be achieved through the Communications Director.

## 17.3 RECOVERY OPERATIONS

Recovery operations begin immediately following emergency termination, but will be divided into two (2) areas of activities: emergency incident determination and development/implementation of the recovery plan.

### 17.3.1 Emergency Incident Determination

The first step of recovery operations involves the detailed investigation and determination of the cause and consequences of the emergency incident. This area of activity represents a transition period between the corrective and protective actions during the emergency and those carefully pre-planned actions for final recovery. Throughout this period the Emergency Coordinator assures that the Plant remains in a safe and stable status. Additionally, as conditions warrant, including objective evidence that additional risks to on-site and off-site personnel will not result, and with the concurrence of the EOF Director, the Emergency Coordinator may relax protective measures instituted on-site during the emergency.

Activities will be performed to determine and document the circumstances under which the emergency took place, the actual scenario of the emergency, and the identified cause(s). The radiological history of the emergency will also be determined and appropriate data such as released quantities and emergency worker and population doses will be re-estimated or verified. If the magnitude of the event warrants it, the Emergency Coordinator will provide for the documentation of these determinations in an incident report and

submit the report to the EOF Director. This report will serve not only as a record of the emergency incident, but also as a basis for recovery operations. Periodic reassessments of the consequences of the emergency may also be required and will be performed as needs or additional information dictates.

At the discretion of the Emergency Coordinator, the organization of the CR3 Staff during the period of incident determination can remain the same as that used during the emergency. This decision will be based on the identified needs for emergency teams to perform specific assessment functions up to and including re-entry into affected areas. When the Emergency Coordinator identifies no further need for the emergency organization, the CR3 Staff reverts to its normal organization and the Plant General Manager may assign specific technical personnel and task forces for assessment and recovery planning.

The EOF Staff remains the same as that used during the emergency throughout the incident determination and subsequent recovery operations. If any change in organizational structure is necessary, the EOF Director will inform affected response organizations. Management, technical, administrative, and informative support to the CR3 Staff thus remains available from the EOF. Corporate support to augment the CR3 Staff for emergency incident recovery will be provided at the direction of the EOF Director. The EOF, during the recovery phase, will continue to be manned at appropriate levels required for near-site support until instructed to de-activate.

### **17.3.2 Recovery Plan**

Following the detailed determination of the cause of the emergency, the combined resources of the CR3 and Corporate Staffs will be utilized to develop and implement a recovery plan. All recovery operations will be carefully pre-planned and, of necessity, be tailored to the specific emergency circumstances. However, certain elements of good practice will be followed in the event of any type of recovery operations. Procedure EM-400 provides a generic outline for a short term recovery plan.

Personnel protection will remain of paramount concern during recovery operations. This consideration will be factored into the recovery plan, and personnel exposure will be limited by standing procedures for radiation protection embodied in the POM, including, but not limited to, those practices described in CR3's "Radiological Protection Standard." Additional consideration will be given during the planning and design phases of Plant modifications to maximize utilization of permanent shielding and additional temporary shielding as required to achieve this objective.

Other areas that the recovery plan should address include, but are not limited to, the following:

- a. The degree of system or equipment damage;
- b. Items to be repaired or replaced;
- c. Re-entry and repair operations;

- d. Procurement efforts;
- e. Licensing implications;
- f. Analyses for licensing or safety assessments;
- g. Decontamination and cleanup;
- h. Radwaste processing;
- i. Measures for minimizing potential further releases;
- j. Isolation of systems and equipment;
- k. Personnel access control;
- l. Need for specific procedures;
- m. Test programs;
- n. Special training requirements;
- o. Off-site organization support; and
- p. Organization and personnel assignments.

Insofar as possible, recovery operations will utilize standing procedures with which emergency teams and Plant personnel are familiar and have received appropriate training. (Appendix "A" provides a listing of implementing procedures for this Plan, including various procedures for post-accident activities.) New procedures specifically related to investigation or recovery from a particular emergency incident, however, will be developed as required.

A particular point of emphasis in recovery operations will be documentation. Recovery plans and execution of recovery operations will be documented to the extent conditions permit. It is expected that conditions will permit more extensive documentation than that practicable during emergency operations.

Upon completion, the recovery plan shall be submitted to the EOF Director for review and approval. The recovery plan and implementing procedures shall also be submitted to the PNSC for approval prior to implementation. The EOF Director shall provide the recovery plan to the NRC and other affected response organizations as required and appropriate.

Following initial assessment, re-entry, and recovery planning, additional personnel may be required to conduct repairs to establish normal conditions. The Emergency Repair Team will perform this function. The Team will work with the radiological controls established by the Radiation Protection Department. Radiation exposures will be kept as low as reasonably achievable but consistent with the emergency criteria delineated in procedure EM-104.

The EOF Director shall be responsible for the implementation of the recovery plan. He shall provide for detailed monitoring of the implementation and status reporting. He also has the authority to revise or halt activities as circumstances dictate.

**RECOVERY COMPLETION AND FINAL INVESTIGATIONS**

Upon completion of recovery activities, the EOF Director will direct a final investigation of the combined emergency/recovery actions to assure that all circumstances and issues have been appropriately considered and that new information and data have been addressed. The results of this final investigation shall be presented to the PNSC and other appropriate management by the EOF Director. The results shall also be provided as required to the NRC to justify return to full power operation. Upon completion of this final investigation and acceptance by management and regulatory authorities, emergency organizations shall be deactivated and the unit returned to service under the direction and control of the normal Corporate and CR3 organizations. Any necessary improvements identified by the final investigation will be factored into the Radiological Emergency Response Program.

## **18.0 EXERCISES AND DRILLS**

### **18.1 PLANNING DRILLS AND EXERCISES**

Periodic drills and exercises are conducted in order to test the state of emergency preparedness of CR3 and response organizations. The primary objective is to evaluate the degree of emergency preparedness of all participating emergency personnel, organizations, and agencies in order to maintain a high state of proficiency in performing emergency duties. Drills or exercises shall be conducted to meet all or part of the following objectives:

- a. Assure that the participants are familiar with their respective duties and responsibilities;
- b. Evaluate the adequacy of the CR3 Emergency Plan and the methods used in the Emergency Plan Implementing Procedures;
- c. Test communications networks and systems;
- d. Check the availability of emergency supplies and equipment; and
- e. Evaluate the operability of emergency equipment.

The Vice President, Crystal River Nuclear Plant is responsible for the planning, scheduling, and coordination of all emergency preparedness-related drills and exercises. When a drill or exercise is to be conducted, the Vice President, Nuclear Operations shall assure that all or part of the following guidelines are utilized:

- a. Personnel are assigned to prepare a scenario;
- b. Efforts are coordinated with other participating emergency personnel, organizations, and agencies;
- c. A date is scheduled for drill/exercise execution and observers are assigned;
- d. A critique of the drill/exercise is conducted;
- e. Personnel are assigned to correct any deficiencies;
- f. Deficiencies are corrected; and
- g. Documentation is prepared for record retention of training conducted.

Scheduled drills and exercises will be held involving appropriate off-site and on-site emergency personnel, organizations, and agencies. These drills and exercises shall be conducted, simulating as closely as possible actual emergency conditions, and may be scheduled such that one or more drills or exercises are held simultaneously. Exercise scenarios can and shall be prepared that involve participation of several emergency teams and all or specific parts of the on-site and off-site emergency organizations, including varying degrees of participation by local, State, and Federal organizations.

In addition, drills serve as elements of training programs in which individuals demonstrate their ability to perform assigned emergency functions. During a drill, on-the-spot correction of erroneous performance

should be made and a demonstration of the proper performance should be offered. Problems should be noted for discussion as part of the drill critique.

## **18.2        SCENARIO DEVELOPMENT**

A scenario will be prepared for each exercise under the direction of the Vice President, Crystal River Nuclear Plant or a designee. The scenario shall include, but not be limited to, the following:

- a. The basic objective(s) of the exercise;
- b. The date(s), time period, location(s), and participating organizations;
- c. The simulated event;
- d. A time schedule of real and simulated initiating event; and
- e. A summary describing the conduct of the exercise. Items which may be addressed include simulated casualties, off-site organization assistance, rescue of personnel, use of protective clothing, deployment of Radiological Monitoring Teams, and public information activities; and
- f. Information describing conduct of the exercise, such as exercise ground rules, instructions for Controllers, etc.

A scenario may also be developed, utilizing all or part of the above guidelines, to conduct a scheduled drill.

## **18.3        DRILL AND EXERCISE REQUIREMENTS**

### **18.3.1     Drill**

A drill is a supervised instruction period aimed at testing, developing, and maintaining skills in a particular operation. It is often a component of an exercise. A drill 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. Drills shall be conducted at the frequencies indicated below:

- a. Communication Drills  
Monthly between CR3 and local and State communications points. Annually between CR3, local, and, during "full-scale" exercise years, State EOCs and field assessment teams. These drills shall also include the aspect of understanding the content of messages.
- b. Medical Emergency Drills  
Annually involving medical response personnel. The drill will include a simulated contaminated individual and may also allow provisions for participation by local support agencies (i.e., ambulance and off-site medical facilities). The off-site portions of the drill may be performed as part of the annual exercise.

c. Radiological Monitoring/Health Physics Drills

Three (3) drills involving members of the CR3 Radiation Monitoring Team. One (1) annual drill will include monitoring of accessible areas within the Plant and include area radiation monitoring and air sampling techniques. Two (2) drills, conducted semi-annually, will include response to and analysis of simulated, elevated radioactive airborne concentrations and direct radiation measurement of the off-site environment. The drills will also allow provisions for evaluating communications and recordkeeping performed by members of the emergency team.

d. Sampling Drills

Annually involving members of the CR3 Emergency Sampling Team. The drill will include analysis of in-Plant samples using emergency sampling procedures. Sample analysis may be simulated or accomplished by using in-line monitors or by drawing samples if Plant conditions permit.

e. Fire Drills

Quarterly (plus or minus one month). These drills shall be conducted in accordance with CR3's Fire Protection Plan, and shall be supervised and evaluated by a drill implementor. Each member shall participate in a fire drill at least annually.

f. Staff Augmentation Drills

Annually. These drills involve the minimum Emergency Response Organization for the TSC and EOF. The drills may include full staffs for these facilities. Augmentation drills will be conducted during off-hours between 6 p.m. and 4 a.m. or on weekends and can be accomplished via phone contacts, actually staffing facilities, or as a part of a training drill or Exercise. Augmentation drills are unannounced. At a minimum, once every six (6) years, an augmentation drill involving staffing facilities and including a scenario to test classification, notification, and protective action capabilities, will be conducted.

It is not intended that all members of the individual teams participate in the required drills, except as specifically stated for members of the Fire Brigade. It should be noted, however, that all members of the Teams (not including Fire Brigade) will benefit from the drill since each will be issued a copy of the drill critique or will review the critique in training. All drills will be as realistic and practical as possible. However, drills shall not impede generation commitments or place the Plant in an unsafe, or potentially unsafe, condition. All operating personnel will be informed, as necessary, of drills in advance, but they will simulate their degree of involvement as far as reasonably practical. Drills may be conducted as part of the Annual RERP Exercise or in integrated training drills.

### **18.3.2**      **Exercise**

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. Local, State, and Federal personnel shall be invited to participate to verify this capability to respond to an emergency scenario requiring response. The exercise may satisfy the requirement for certain drills as required by Section 18.3.1.

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 six (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.

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.

### **18.4**            **CRITIQUE**

An informal participants' critique should be conducted in each emergency response facility immediately following the exercise to obtain preliminary comments from participants.

A formal critique shall be conducted as soon as practicable after the exercise to evaluate the ability of the participating organizations to respond as indicated in this Plan. Qualified observers from local, State, and Federal governments shall be invited to observe and critique the required exercise.

Recommendations for revisions to the CR3 Radiological Emergency Response Plan and/or the implementing procedures and/or the upgrading of emergency equipment and supplies as a result of the

exercise should be forwarded to the Emergency Planning Coordinator who shall review, coordinate, and assure that appropriate changes are implemented to correct any deficiencies.

A formal evaluation shall result from the critique. The Vice President, Crystal River Nuclear Plant shall assure that deficiencies are corrected and implemented, and that documentation is prepared and submitted to the Manager, Training for upgrade of the appropriate training program.

A critique will also be prepared for those drills conducted by the Training Section as specified in procedure TPP-219. The intent of a drill critique is the same as that of the formal exercise critique: to identify and assure correction of noted deficiencies.

## 19.0 RADIOLOGICAL EMERGENCY RESPONSE TRAINING

All personnel at CR3 and Corporate personnel who fill required positions in the Emergency Response Organization will take part in a training program to assure adequate preparedness to assist in an emergency situation at CR3. Specific off-site organizations that may be called upon for emergency assistance will also participate in appropriate training programs. In general, these training programs provide for the indoctrination of Progress Energy employees and off-site organizations to familiarize each individual/organization with their responsibility during an emergency situation. The Manager, Training utilizes Training Section procedures to assure all Plant employees, contractor personnel, and Plant visitors receive appropriate initial indoctrination, training, and requalification.

In conjunction with Plant indoctrination, which familiarizes personnel with Plant layout, structures, and systems, specific training programs are in effect for the Medical Response Personnel, Emergency Repair Team, Radiation Monitoring Team, Fire Brigade and Fire Team Leaders, Sampling Team, Dose Assessment Team, TSC Accident Assessment Team, Communications personnel, Emergency Coordinators, and EOF Staff. Table 19.1 provides a summary of the required initial training topics for these personnel. Requalification training topics are based on student and drill feedback, audits, identified deficiencies from exercises, and results of the program review by the EPC. The Manager, Training is responsible for maintaining appropriate records of emergency preparedness training conducted for the on-site organizations.

Separate training programs will be utilized for non-Progress Energy support organizations and will include appropriate Progress Energy interface. Records of this training will be maintained by the appropriate State or local organization.

**19.1            EMERGENCY TEAMS TRAINING PROGRAM**

**19.1.1        Medical Response Personnel**

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.

**19.1.2        Emergency Repair Team**

The initial training for Emergency Repair Team members consists of topics listed in Table 19.1. Team members will be retrained annually on topics that are determined as discussed in Section 19.0.

**19.1.3        Radiation Monitoring Team**

The initial training for Radiation Monitoring Team members consists of topics listed in Table 19.1. In addition, training is accomplished by performing tasks on a routine basis which involve dose assessments and radiation surveys. Team members will be retrained annually on topics that are determined as discussed in Section 19.0.

**19.1.4        Fire Brigade**

The initial training for Nuclear Plant Fire Brigade members consists of topics listed in Table 19.1.

Additionally, each member of the Fire Brigade attends training sessions at least quarterly. These training sessions are intended to cover fire fighting procedures, procedure changes, Plant modifications related to fire systems, and general changes to fire fighting plans.

**19.1.5        Sampling Team**

The initial training for Sampling Team members consists of topics listed in Table 19.1. In addition, training is accomplished by performing, on a routine basis, tasks which involve chemical sampling, analysis techniques, and procedures. Team members will be retrained annually on topics that are determined as discussed in Section 19.0.

#### **19.1.6 Dose Assessment Team**

The initial training of Dose Assessment personnel consists of topics listed in Table 19.1. Team members are retrained annually on topics that are determined as discussed in Section 19.0.

#### **19.1.7 TSC Accident Assessment Team**

The initial training of TSC Accident Assessment personnel consists of topics listed in Table 19.1. Team members are retrained annually on topics that are determined as discussed in Section 19.0.

#### **19.1.8 Communications Personnel**

The initial training of Communications personnel consists of topics listed in Table 19.1. Team members are retrained annually on topics that are determined as discussed in Section 19.0.

#### **19.1.9 Emergency Coordinators**

The initial training for Emergency Coordinators consists of topics listed in Table 19.1. The training is designed to give the Emergency Coordinator the necessary information, experience, and training required for him to maintain overall control of emergency actions at the Crystal River Energy Complex during an emergency at CR3. Most Emergency Coordinators will be provided training as part of the Licensed Operator Continuing Training Program. Other Emergency Coordinators who are unable to attend the Licensed Operator Continuing Training Program training will also receive training on an annual basis.

### **19.2 ADDITIONAL TRAINING PROGRAMS**

To provide the capability to deal with an emergency situation, training programs for both Progress Energy emergency support personnel and off-site support personnel have been established. General training is provided to all required members of the EOF Staff and specialized training is provided for EOF personnel performing radiological dose assessment. Table 19.1 provides a summary of these training programs, discussed below.

#### **19.2.1 EOF Staff**

The initial training for members of the EOF Staff consists of topics listed in Table 19.1. Required EOF Staff are retrained annually.

### **19.2.2 Medical Support Personnel**

Progress Energy participates in a program of public information and off-site organization training. This training is provided in conjunction with State and local agencies in accordance with Chapter 15 to the State Plan to support service personnel whose assistance may be required in the event of an emergency. Organizations which may be provided with training are: Seven Rivers Regional Medical Center in Crystal River, Florida; Citrus Memorial Hospital in Inverness, Florida; and local emergency medical services.

Content of the training and annual retraining for medical support personnel may include the following:

- a. Radiation Fundamentals
- b. Fundamentals of Nuclear Power
- c. Fundamentals of Radiation Detection and Measurement
- d. Management of Radiation Injuries
- e. Radiation Protection and Decontamination
- f. Warning and Communication, Mobilization and Evacuation Procedures

### **19.2.3 State and Local Support Services Personnel**

The program for training State and local emergency personnel is covered in Chapter 15 to the State Plan. The program is composed of three (3) progressive levels sponsored by the State with supplementary training programs offered by Federal agencies. Instructions will be provided by Federal, State, county, and PE personnel as appropriate. Training of Health Physics personnel with the DHBRC is a State responsibility. Training sessions are planned for Citrus and Levy Counties at least once a year. Progress Energy provides a representative to attend the above training sessions.

TABLE 19.1

**RADIOLOGICAL EMERGENCY RESPONSE TRAINING PROGRAMS**

**I. Medical Response Personnel**

- A. As required by State certification requirements

**II. Emergency Repair Team (ERT)**

- A. Respiratory Protection/SCBA\*
- B. Conduct of Emergency Repair
- C. Re-Entry Procedures
- D. Routine Task Performance
- E. Communications
- F. Review of Applicable Exercise-Identified ARCAs and Human Performance Concerns

**III. Radiation Monitoring Team (RMT)**

- A. Respiratory Protection/SCBA\*
- B. Use of Radiation Protection Procedures
- C. Re-Entry Procedures
- D. Use of Emergency Survey Equipment
- E. Use of Emergency Kit
- F. Routine Task Performance
- G. Communications
- H. Field Surveys
- I. Review of Applicable Exercise-Identified ARCAs and Human Performance Concerns

**IV. Fire Brigade**

- A. Emergency Team Duties
- B. Fire Fighting Procedures
- C. Identification of Fire Hazards
- D. Proper Use of Equipment
- E. Proper Use of Communications
- F. Lighting and Ventilation
- G. Fire Behavior
- H. Fundamentals of Fire Extinguishment
- I. Hose Lines
- J. Fire Streams

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\* Self-Contained Breathing Apparatus (SCBA) training is conducted independently of Emergency Team Training.

TABLE 19.1 (Continued)

**RADIOLOGICAL EMERGENCY RESPONSE TRAINING PROGRAMS**

- K. SCBA
- L. Rescue
- M. Practice Under Fire Conditions
- N. Location of Fire Equipment
- O. Individual Responsibilities in Case of Fire
- P. Plant Fire Fighting Systems and Equipment

**V. Sampling Team (ST)**

- A. Respiratory Protection/SCBA\*
- B. Use of Appropriate Sampling Procedures
- C. Re-Entry Procedures
- D. Use of Emergency Sampling Equipment
- E. Communications
- F. Review of Applicable Exercise-Identified ARCAs and Human Performance Concerns

**VI. Dose Assessment Team**

- A. The Role of Dose Assessment in an Emergency
- B. The Nature of Radioactive Releases
- C. Potential Sources of Radioactive Releases
- D. Monitoring of Radioactive Releases
- E. Computerized and Initial Dose Assessment Methods
- F. Coordinated Dose Assessment During an Emergency
- G. Communications
- H. Overview of Severe Accident Management
- I. Review of Applicable Exercise-Identified ARCAs and Human Performance Concerns

**VII. TSC Accident Assessment Team**

- A. Accident Assessment Procedures
- B. CR3 Severe Accident Guideline
- C. Review of Applicable Exercise-Identified ARCAs and Human Performance Concerns

**VIII. Communications Personnel**

- A. The Role of Communications Personnel in an Emergency
- B. Emergency Facilities
- C. Completion of Appropriate Notification Forms

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\* Self-Contained Breathing Apparatus (SCBA) training is conducted independently of Emergency Team Training.

TABLE 19.1 (Continued)

**RADIOLOGICAL EMERGENCY RESPONSE TRAINING PROGRAMS**

**IX. Emergency Coordinators**

- A. Introduction to Emergency Planning and Regulatory Perspectives
- B. Summary Description of Related Emergency Plans
- C. Overview of the Operation of the TSC
- D. Role of Management During an Emergency
- E. Communications
- F. CR3 Severe Accident Guideline (for TSC Emergency Coordinators only)
- G. Review of Applicable Exercise-Identified ARCAs and Human Performance Concerns

**X. EOF Staff**

- A. Introduction to Emergency Planning and Regulatory Requirements
- B. Summary Description of Related Emergency Plans
- C. Role of EOF Staff During an Emergency
- D. Review of Emergency Facilities
- E. Emergency Response Actions
- F. Overview of CR3 Severe Accident Guideline for EOF Technical Support Personnel
- G. Communications
- H. Review of Applicable Exercise-Identified ARCAs and Human Performance Concerns

**XI. State and Local Support Services, and Medical Support Personnel**

Procedures for training local and State emergency off-site personnel are covered in Chapter 15 to the State Plan.

**20.0 RESPONSIBILITY FOR THE PLANNING EFFORT: DEVELOPMENT, PERIODIC REVIEW, AND DISTRIBUTION OF EMERGENCY PLANS**

**20.1 EMERGENCY PLANNING COORDINATION**

The Vice President, Nuclear Operations has overall authority and responsibility for radiological emergency response planning. The functions of developing and updating emergency plans, coordinating these plans with other response organizations, and coordinating the off-site emergency planning efforts is a continuing responsibility of the CR3 Emergency Preparedness (EP) Unit. In the event that licensing actions by the NRC, or changes in the liaisons with State, county, or other off-site agencies impact this Plan, Emergency Preparedness is responsible for identifying the particular impact and necessary revisions to the Plan. The Emergency Preparedness Supervisor, who reports to the Manager, Support Services, is designated as the Emergency Planning Coordinator, having lead responsibility for these functions. Training for the Emergency Planning Coordinator and Emergency Preparedness Specialists is primarily through on-the-job training related to Plan preparation, periodic revisions, and drills and Exercises. Other training is provided through attending short courses, seminars, and Executive Conferences that deal specifically with radiological emergency preparedness.

**20.2 PLAN/PROCEDURES REVIEW AND UPDATE**

The RERP shall be reviewed and verified to be current on an annual basis by the Emergency Planning Coordinator. Revisions to the Plan will be reviewed in accordance with 10 CFR 50.54(q) requirements and as outlined and documented in procedure REG-NGGC-0010.

Those procedures listed as implementing procedures in Appendix "A" shall be reviewed and verified to be current by the appropriate individual in accordance with the requirements of procedure PRO-NGGC-0204. These procedures will be updated as appropriate and will consider improvements identified by drills and exercises. Comments for changes to these procedures, including observer and participant comments from drill and exercise critiques, will be solicited from those who have emergency responsibilities, or other parties involved in the program. Significant changes should receive, as appropriate, an impact and/or technical review by affected departments. These changes do not include phone number, facility, and assignment changes.

One function of the review will be to assure consistent compliance and appropriate reference between the various documents.

Emergency plans utilized by off-site support organizations shall also be reviewed annually by the Emergency Planning Coordinator to coordinate any update or changes that affect the overall emergency preparedness for CR3. In particular, the following support plans should be reviewed annually or in accordance with applicable governing documents:

- a. Progress Energy "Crystal River Coal Plant Site Accountability/Evacuation Manual"
- b. Progress Energy "Nuclear Material and Contract Services Emergency Support Plan"
- c. Citrus Memorial Hospital "Nuclear Accident Plan"
- d. Seven Rivers Regional Medical Center "Radioactive Material Contamination Response Plan"
- e. "State of Florida Radiological Emergency Management Plan"

In addition, there shall be a quarterly review and update of the notification rosters used to activate and implement the Plan. These rosters are found in the Emergency Response Personnel Roster and Phone Directory and in the Off-Site Support Phone Directory.

Review of the RERP and the plans of support organizations shall consider applicable emergency planning criteria and regulations promulgated by the NRC and/or FEMA).

In addition to the above reviews and updates, the Emergency Planning Coordinator shall review and update appropriate support agreements (see Appendix "B") as required.

### **20.3        TRAINING**

The Emergency Planning Coordinator shall assist the Manager, Training in coordinating and/or providing emergency planning-related training. They shall assure that the training programs described in Section 19.0, "Radiological Emergency Response Training," are properly coordinated to assure adequate qualification, training, and retraining of personnel.

### **20.4        AUDITS**

The Nuclear Oversight Section will be responsible for conducting audits of the Radiological Emergency Preparedness Program. Audits will be conducted as necessary, based on an assessment by the licensee against performance indicators, and as soon as reasonably practicable after a change occurs in personnel, procedures, equipment, or facilities that potentially could adversely affect emergency preparedness, but no longer than 12 months after the change. In any case, all elements of the Emergency Preparedness program must be reviewed at least once every 24 months. The audit will include the Emergency Plan; applicable implementing procedures; and drills/exercises, training, readiness testing, equipment, and

interface with State and local governments. The audit will be conducted in accordance with standard approved audit practices and instructions.

## **20.5 PUBLIC EDUCATION AND INFORMATION**

Progress Energy employs a program of public education and information. This program will be performed in conjunction with the Emergency Management Directors of Citrus and Levy Counties to provide the permanent and transient populations of these counties with emergency plan information. This program will provide for a coordinated, periodic dissemination of information regarding the early warning system and actions to be taken by the general public in the event of an emergency at CR3. This information will include, but not necessarily be limited to:

- a. Educational information on radiation;
- b. Contact for additional information; and
- c. Protective measures (e.g., evacuation routes and relocation centers, sheltering, respiratory protection, and radioprotective drugs).

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 and Levy Counties within a 10 mile radius of CR3, and that will be available to the general public within the same area.
  1. The publication will deal with all aspects of public emergency procedures, including evacuation routes, shelters, and other pertinent information that one should be aware of during an emergency.
  2. The publication will deal specifically with radiation and will be written in easily comprehensible terms for the public.
- b. 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.

Progress Energy will provide briefings to the news media in the proximity of CR3 each year. These briefings will be conducted for the purpose of acquainting the news media with the emergency plans, with information concerning radiation, with information concerning the operation of the Plant, and with points of contact for release of public information in an emergency. The briefings may take the form of a group presentation or may be accomplished by documented individual contacts throughout the year.

**RADIOLOGICAL EMERGENCY RESPONSE PLAN**

**APPENDIX A**

**IMPLEMENTING PROCEDURE LISTING,  
PROGRAM MAINTENANCE PROCEDURE LISTING,  
AND ADDITIONAL PROCEDURES REFERENCED**

**IMPLEMENTING PROCEDURES FOR THE  
RADIOLOGICAL EMERGENCY RESPONSE PLAN**

Implementing procedures specifically address elements of the RERP that directly aid in the mitigation of, or lessen the impact of, an emergency. These procedures provide direction and information used during an actual emergency in areas such as: assessment of the significance of the emergency condition, the staffing and setup of emergency response facilities, responsibilities and actions of emergency and non-essential personnel, development of protective action recommendations, emergency notifications, operation of remote sampling systems, assessment of radiological releases, and dissemination of information to the public.

\*Section(s) of the RERP implemented by or referencing each procedure.

<u>Procedure No.</u>	<u>Title</u>	<u>RERP* Cross-Reference</u>
CH-631	Post-Accident Sampling and Analysis of Reactor Building Vent, Auxiliary Building Vent, and Reactor Building Atmosphere	13.2.2
CH-632	Post-Accident Sampling and Analysis of Reactor Coolant, Decay Heat, and Reactor Building Sump	13.2.2
EALBM	Emergency Action Level Bases Manual	
EM-102	Operation of the Technical Support Center	6.3.3, 12.1, Table 6.1
EM-103	Operation and Staffing of the CR3 Control Room During Emergency Classifications	
EM-104	Operation of the Operational Support Center	6.3.6, 6.3.9, 17.1, 17.3.2
EM-202	Duties of the Emergency Coordinator	6.3.2, 8.2, 9.1, 9.2, 10.1, 13.1, 14.1.2, Table 8.1, Table 9.1, Table 14.1
EM-204A	Off-Site Dose Assessment During Radiological Emergencies (Control Room Method)	13.2.3
EMG-NGGC-0002	Off-Site Dose Assessment	13.2.3
EMG-NGGC-0005	Activation of the Emergency Response Organization Notification System	
EM-205	Personnel Emergency Responsibilities Regarding Discovery, Assembly, Evacuation, and Accountability Within the Protected Area	9.2.1, 14.2
EM-206	Emergency Plan Roster Notification	6.4

<u>Procedure No.</u>	<u>Title</u>	<u>RERP* Cross-Reference</u>
EM-210A	Duties of the Radiation Monitoring Team: CR3 and Energy Complex Personnel and Area Monitoring	6.3.7, 13.2.2, 15.2.1
EM-210B	Duties of the Radiation Monitoring Team: Environmental Sampling and Plume Tracking	6.3.7, 13.2.2, 15.2.1
EM-211	Duties of the CR3 Nuclear Security Organization	12.1.4, 14.2
EM-213	Medical Emergency Response	6.3.5, 9.2.12, 16.0, 16.1.1, 16.2
EM-216	Duties of the Fire Brigade	6.3.8
EM-219	Duties of the Dose Assessment Team	6.3.10
EM-220	Violent Weather	
EM-225	Duties of the Technical Support Center Accident Assessment Team	
EM-225A	Post-Accident RB Hydrogen Control	13.2.2
EM-225B	Post-Accident Boron Concentration Management	
EM-225C	Post-Accident Monitoring of Reactor Building Temperature	
EM-225D	Guidance for OTSG Tube to Shell Delta-T Monitoring and Control	
EM-225E	Guidelines for Long-Term Cooling	
EM-225F	Long-Term Emergency Feedwater Management	
EM-400	Operation of the Emergency Operations Facility	6.4, 9.2.3, 10.1, 12.1, 12.1.5, 12.1.6, 17.3.1, Table 6.1
EM-401	Setup of the Emergency Operations Facility	

**Procedure  
No.**

**Title**

**RERP\*  
Cross-Reference**

EM-402	Emergency Operations Facility Technical Support Team	
EM-405	Operation of the Emergency News Center	9.4.1, 11.2, 12.1.5
EM-911	Security Threats	
EM-912	Large Loss of Plant Equipment	
EM-913	Integrated Response for a Large Area Fire	
EM-913A	Large Area Fire Resulting in Loss of Control Room Command and Control Functions	

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\*Section(s) of the RERP implemented by or referencing each procedure.

**PROGRAM MAINTENANCE PROCEDURES FOR THE  
RADIOLOGICAL EMERGENCY RESPONSE PROGRAM**

Program maintenance procedures describe routine, ongoing actions and responsibilities which enhance and support Progress Energy's state of readiness. While reference to some of these procedures may appear in the RERP, emergency response personnel are not referred to these procedures for guidance during declared emergencies. Program maintenance procedures address areas such as: RERP maintenance schedule, instrument calibration, control of documentation, equipment maintenance schedules, communications system description, personnel conduct, selected training procedures, and emergency supplies inventory. The actions and/or processes described in a number of these procedures are primarily developed for "normal" activities, however, the same processes may be used during emergency conditions as well.

<b><u>Procedure No.</u></b>	<b><u>Title</u></b>	<b><u>RERP Cross-Reference</u></b>
AI-402B	Procedure Writing (Except for APs, EOPs, and TPs)	
AI-500	Conduct of Operations, Operations Department Organization and Administration	
AI-2205	Administration of CR3 Fire Brigade Organization and Duties of the Fire Brigade	
AI-4000	Conduct of Emergency Preparedness and Schedule for Radiological Emergency Response Plan Maintenance	
AI-4001	Conduct of Drills and Exercises Supporting the Radiological Emergency Response Plan	
CAP-NGGC-0200	Corrective Action Program	
CP-151	External Reporting Requirements	
CSP-NGGC-2505	Software Quality Assurance and Configuration Control of Business Computer Systems	
CSP-NGGC-0007	Plant Digital Systems Cyber Security	
EMG-NGGC-1000	Fleet Conduct of Emergency Preparedness	
EMG-NGGC-0004	Maintenance of the Emergency Response Organization Notification System	
HPS-NGGC-0013	Personnel Contamination Monitoring, Decontamination, and Report	
HPP-404	Area Radiation Monitoring System Calibration	15.3.1
HPP-406	Generic Calibration Procedure	
HPP-409	Inventory and Availability of Emergency Supplies/Equipment	

<u>Procedure No.</u>	<u>Title</u>	<u>RERP Cross-Reference</u>
HPS-NGGC-0001	Radioactive Material Receipt and Shipping Procedure	12.4, 15.3.1, 15.3.2
HPP-502	Respirator Inspection and Maintenance	
NGGM-PM-0002	Radiation Control and Protection Manual	15.2.2
OP-417	Containment Operating Procedure	
OP-704	Operation of Communication System	
PM-172	Plant Safety Equipment Checks	
PRO-NGGC-0204	Procedure Review and Approval	
PT-176	Emergency Response Data System (ERDS) Checks	
RDC-NGGC-0001	NGG Standard Records Management Program	
REG-NGGC-0010	10CFR50.59 Reviews	
SP-323	Evacuation and Fire Alarm Demonstration	
SP-443	Master Surveillance Plan	
SP-731A	Auxiliary Building Ventilation Continuous Release	
SP-731B	Reactor Building Purge Batch Release and Batch to Continuous Release	
SP-731C	Reactor Building Ventilation Continuous Release	
SP-731D	Reactor Building Purge System Test Release	
SP-731E	Reactor Building Atmosphere Release After Integrated Leak Rate Testing	
TPP-100	Training Support, Responsibilities and Oversight	19.0
TPP-219	Emergency Response Organization Training Program	18.4
TRN-NGGC-0010	Plant Access, Radiation Worker and Respiratory Protection Training	

<u>Procedure No.</u>	<u>Title</u>	<u>RERP Cross-Reference</u>
TRN-NGGC-0502	Use and Administration of the PassPort Personnel Qualification and Data System (PQD) and the PeopleSoft Training Module	
WP-503	Area and Equipment Decontamination/Radioactive Contamination Control	15.3.2
	Radiological Protection Standard	14.1, 14.1.1, 15.0, 15.2.1, 15.2.3, and 17.3.2
	State of Florida Radiological Emergency Management Plan	2.1, 2.2, 4.1.10, 5.5.3, 5.5.4, 5.5.6.2, 5.5.7.2, 5.6.2, 9.2.10, 9.4.2, 12.2.2, 14.3, 18.3.2, 19.2.2, 19.2.3, Table 19.1, 20.2, Appendix D

**ADDITIONAL PROCEDURES REFERENCED IN THE RERP**

<u>Procedure No.</u>	<u>Title</u>	<u>RERP Cross-Reference</u>
AP-880	Fire Protection	
AP-961	Earthquake	

**RADIOLOGICAL EMERGENCY RESPONSE PLAN**

**APPENDIX B**

**AGREEMENTS WITH SUPPORTING  
ORGANIZATIONS**



*Institute of  
Nuclear Power  
Operations*

Suite 100  
700 Galleria Parkway, SE  
Atlanta, GA 30339-5943  
770-644-8000  
FAX 770-644-8549

September 30, 2010

Dear Ladies and Gentlemen:

This letter certifies that the plant emergency assistance agreement between INPO and its member utilities remains in effect. In the event of an emergency at your utility, INPO will assist you in acquiring the help of other organizations in the industry, as described in Section 1 of the Emergency Resources Manual, INPO 03-001. If requested, INPO will provide the following assistance:

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

This agreement will remain in effect until terminated in writing. Should you have questions, please call Mark Lemke at (770) 644-8761 or e-mail [lemkems@inpo.org](mailto:lemkems@inpo.org).

Sincerely,

Robert L. Gambone  
Vice President  
Operations Division

RLG:mbc

# Nature Coast EMS

Emergency Medical Services

"Serving with Excellence and Compassion"

**BOARD OF DIRECTORS:**

Mrs. Mark Williams,  
Chair

Mrs. Joyce Blangstad,  
Vice Chair

Capt. Joseph Ekstein,  
Secretary

Dr. Bradley Rubin,  
Treasurer

Dr. Joseph Bennett, Jr.

Mr. Gene Davis

Mrs. Mary Hedger

Mrs. Laoghlina McLean

President / CEO  
Mr. Michael G. Hall

Board Attorney  
Mrs. Marie L. Blumé, D.A.

December 2, 2010

Progress Energy Florida, Inc.  
Charles Poliseno  
8200 W. Venable St.  
Crystal River, FL 34429

Dear Mr. Poliseno,

Please accept Nature Coast Emergency Medical Service's commitment to provide emergency medical support to the Crystal River Nuclear Complex. In addition, Nature Coast EMS will participate in any disaster drills or exercises that would enhance our cooperative operation with Progress Energy.

Through a professional relationship with Citrus County Emergency Management, we have maintained the level of training needed to provide Advanced Life Support services in special circumstances related to emergency response to the Crystal River Nuclear Complex. Nature Coast EMS is committed to continuing the ALS service as provided previously.

Nature Coast EMS will respond to any requests, without hesitation, in conjunction with Progress Energy emergency staff.

If you should have any further needs or questions regarding Nature Coast EMS, please do not hesitate to contact me.

Sincerely,



Michael G. Hall  
President/CEO

3876 West Country Hill Drive, Lecanto, Florida, 34461  
Direct (352) 249-4710  
Facsimile (352) 249-4711  
Email [mikeh@naturecoastems.org](mailto:mikeh@naturecoastems.org)





Citrus Memorial Hospital  
502 Highland Blvd.  
Inverness, FL 34452-4754

Attention: Mr. Jerry DeLoach

CONTRACT NO. 53663  
AMENDMENT NO. 02  
EFFECTIVE January 01, 2009

This Amendment is governed by the terms and conditions of the above-referenced Contract. By this Amendment, Progress Energy Florida, Inc. (hereinafter "Owner") offers to change the terms of the above-referenced Contract as follows:

This Amendment extends the completion date of the Contract to December 31, 2013.

All other terms in the Contract or other Contract Amendments remain unchanged.

Please execute this Amendment, retain a copy for your file, and return the original within ten (10) calendar days to Bruce Mikell, Progress Energy Florida, Inc., Crystal River Unit 3, 15760 West Powerline Street, Crystal River, FL 34428-6708.

Sincerely,

Bruce Mikell 11/18/08  
Bruce Mikell  
Senior Engineering Technical Support Specialist  
Progress Energy Florida, Inc.

Accepted:

CITRUS MEMORIAL HOSPITAL

By: [Signature]

Name (printed): Jerry DeLoach

Title: Chief Operating Officer

Date: 12/11/08

Should the person's title who is executing this document not indicate that he/she is a corporate officer, an affidavit signed by a corporate officer shall be provided stating that the person whose name appears above is duly authorized to execute Contracts on behalf of the firm.

In accordance with the Federal Acquisition Regulation section 52.219, please check all that apply to your company. Please provide supporting documentation or certification to confirm the status for any categories checked under Small/Diverse Vendors.

- Certified small business\*  HUBZone, 8(a) or disadvantaged business\*
- Veteran-owned business\*  Minority-owned business \*\*
- Service-disabled veteran-owned business\*  Women-owned small business \*\*
- Not a Small Business

\* As defined by the Small Business Administration (SBA): [www.sba.gov](http://www.sba.gov)

\*\* Certified by Progress Energy and as defined by SBA.

Register online at [www.progress-energy.com/supplierdiversity](http://www.progress-energy.com/supplierdiversity)

Progress Energy Florida, Inc.  
Crystal River Nuclear Plant  
15760 W. Powerline Road  
Crystal River, FL 34428



**BOARD OF COUNTY COMMISSIONERS  
DEPARTMENT OF FIRE RESCUE**

3600 W. Sovereign Path – Suite 291

Lecanto, Florida 34461

Phone (352) 527-5406 Fax (352) 527-5404 TTY (352) 527-5312

January 7, 2010

Mr. Charles Poliseno  
Emergency Preparation Supervisor  
Progress Energy Florida  
8200 W. Venable St.  
Crystal River, FL 34429

Dear Mr. Poliseno:

Please accept this letter as confirmation that Citrus County Fire Rescue will provide fire suppression and rescue support to the Progress Energy complex in Citrus County. This response will be provided with our current manpower and equipment that is in place within the county. In the event that we are overwhelmed by the magnitude of the incident, plans are in place to call upon surrounding agencies to provide mutual aid assistance.

As always, we appreciate the assistance that Progress Energy provides to our agency. It is our pleasure to provide this service to you and all of Citrus County. If I can provide further information, please feel free to contact me.

Sincerely,

Larry Morabito  
Fire Chief

# **RADIOLOGICAL EMERGENCY RESPONSE PLAN**

## **APPENDIX C**

### **PUBLIC EVACUATION TIME ESTIMATES**

This appendix provides information relative to evacuation time estimates resulting from a study performed in 2007 by KLD Associates, Inc. and is provided for supplemental information. The "Table" or "Figure" numbers that are shown on each of the following pages of this Appendix are those that were designated in the original KLD documents they were extracted from and they do not follow the same conventions as used throughout this RERP.

<b>Table 1. Population by Zone</b>			
<b>Zone</b>	<b>Permanent Residents</b>	<b>Transients</b>	<b>Non-EPZ Employees</b>
1	1,526	634	600
2	17,575	2,485	197
3	3,596	95	0
<b>TOTAL:</b>	<b>22,696</b>	<b>3,214</b>	<b>797</b>

<b>Table 2. Summary of Vehicles by Zone</b>			
<b>Zone</b>	<b>Permanent Resident Vehicles</b>	<b>Transient Vehicles</b>	<b>Non-EPZ Employee Vehicles</b>
1	895	467	583
2	10,311	1,613	191
3	2,109	60	0
<b>TOTAL:</b>	<b>13,315</b>	<b>2,140</b>	<b>774</b>

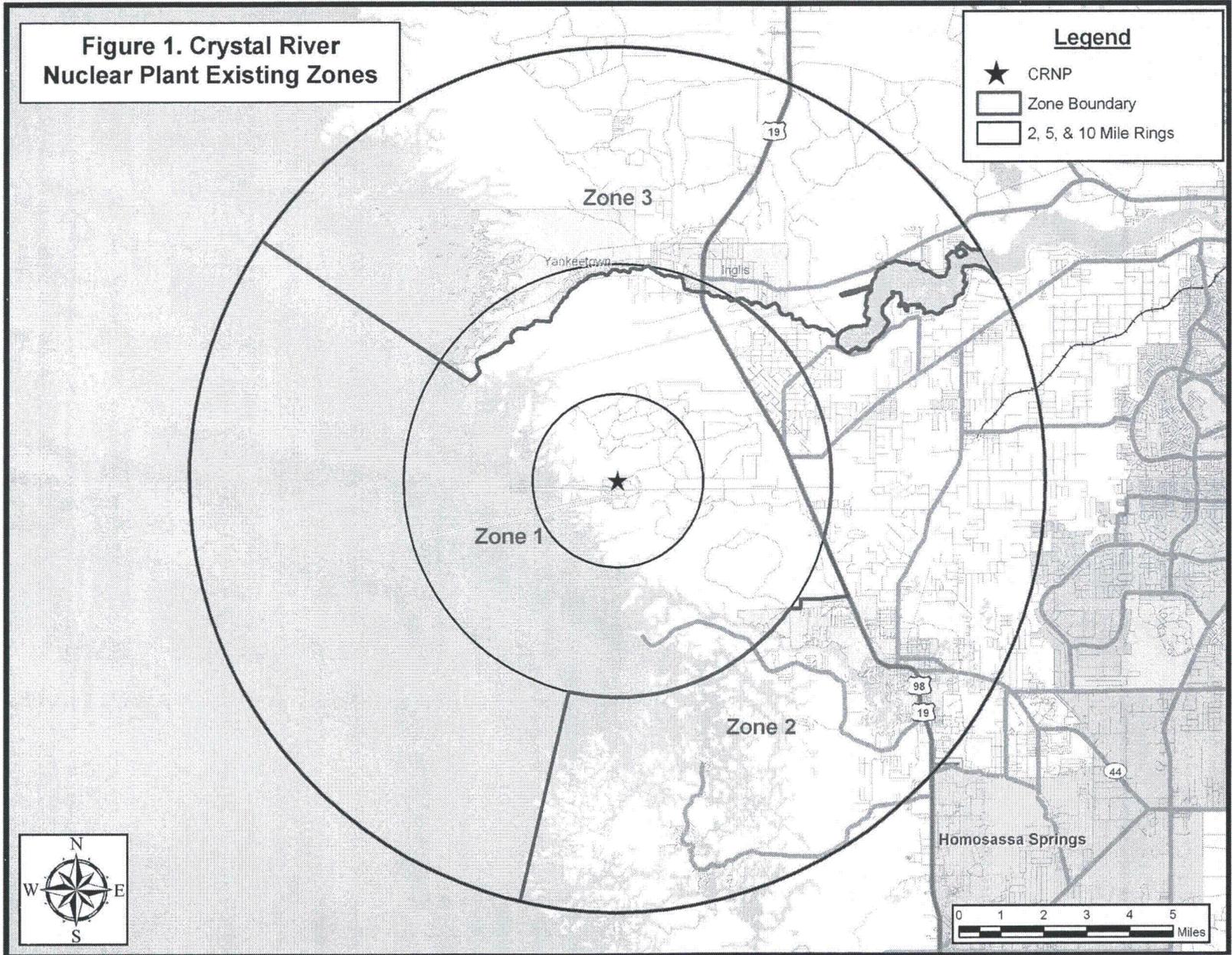
**Table 3. Evacuation Scenario Definitions**

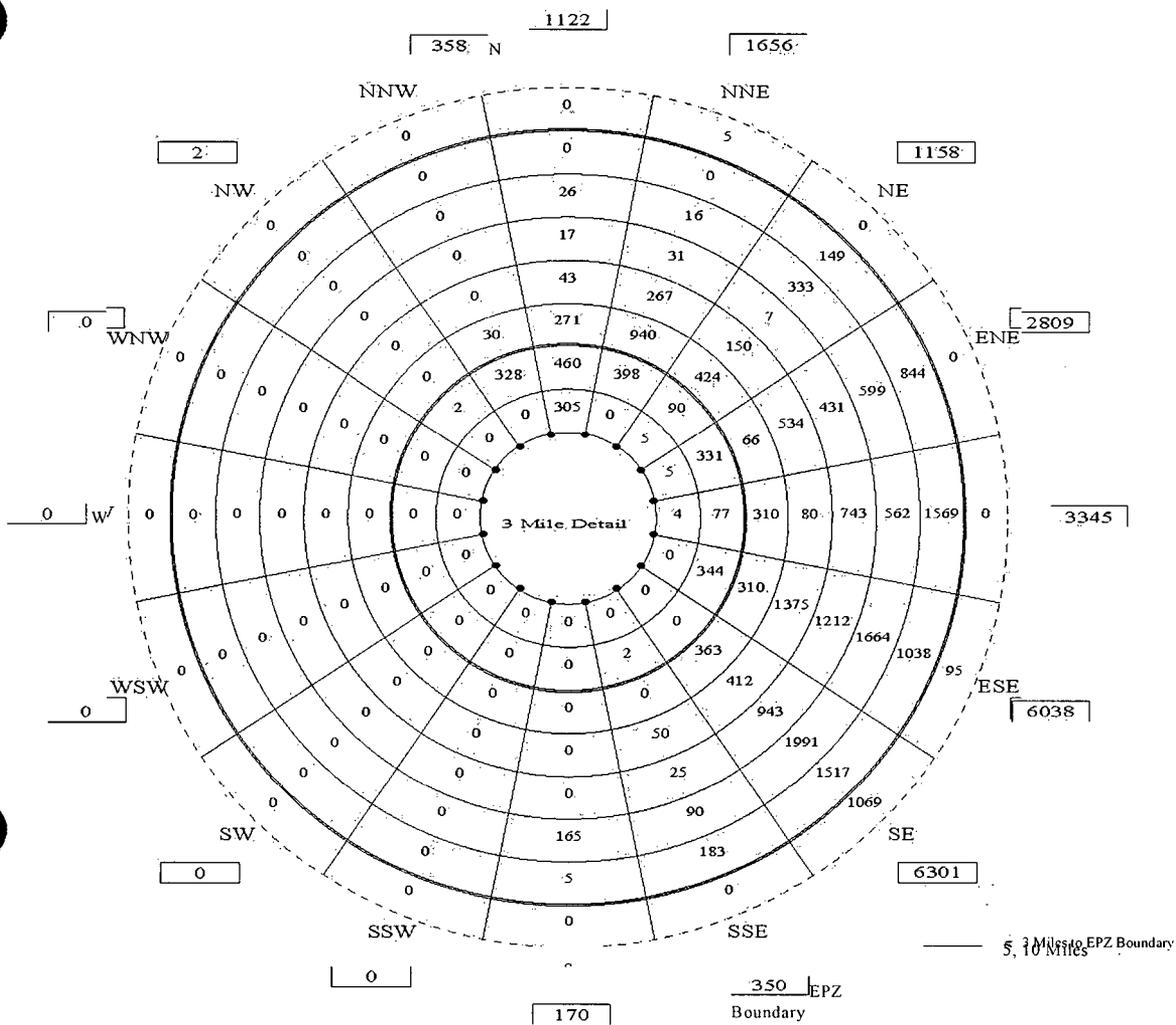
<b>Scenarios</b>	<b>Season</b>	<b>Day of Week</b>	<b>Time of Day</b>	<b>Weather</b>	<b>Special</b>
1	Summer	Midweek	Midday	Good	None
2	Summer	Midweek	Midday	Rain	None
3	Summer	Weekend	Midday	Good	None
4	Summer	Weekend	Midday	Rain	None
5	Summer	Midweek, Weekend	Evening	Good	None
6	Winter	Midweek	Midday	Good	None
7	Winter	Midweek	Midday	Rain	None
8	Winter	Weekend	Midday	Good	None
9	Winter	Weekend	Midday	Rain	None
10	Winter	Midweek, Weekend	Evening	Good	None
11	Winter	Weekend	Midday	Good	New Plant Construction at Proposed Levy site

<b>Table C-4. Description of Regions</b>			
<b>REGION</b>	<b>ZONE</b>		
	<b>1</b>	<b>2</b>	<b>3</b>
<b>Evacuate 5 mile ring</b>			
<b>R01</b>			
<b>Evacuate 5 mile ring + downwind to 10 miles</b>			
<b>R02</b>			
<b>R03</b>			
<b>Evacuate Entire EPZ</b>			
<b>R04</b>			
<i>Evacuating Zones are shaded.</i>			

**Table 5C Time To Clear The Indicated Area of 95 Percent of the Affected Population**

Scenario:	Summer		Summer		Summer	Scenario:	Winter		Winter		Winter	Scenario:	Winter
	Midweek		Weekend		Midweek/Weekend		Midweek		Weekend		Midweek/Weekend		Weekend
	(1)	(2)	(3)	(4)	(5)		(6)	(7)	(8)	(9)	(10)		(11)
Region Zone(s) Evacuating:	Midday		Midday		Evening	Region Zone(s) Evacuating:	Midday		Midday		Evening	Region Zone(s) Evacuating:	Midday
	Good Weather	Rain	Good Weather	Rain	Good Weather		Good Weather	Rain	Good Weather	Rain	Good Weather		New Plant Construction
R01 Zone 1	2:40	2:40	2:10	2:10	2:40	R01 Zone 1	2:30	2:30	2:00	2:00	2:30	R01 Zone 1	2:20
R02 Zones 1 & 3	3:00	3:00	2:40	2:40	2:50	R02 Zones 1 & 3	3:00	3:00	2:30	2:30	2:50	R02 Zones 1 & 3	4:30
R03 Zones 1 & 2	3:40	3:40	3:00	3:10	3:00	R03 Zones 1 & 2	3:40	3:50	3:30	3:40	3:10	R03 Zones 1 & 2	4:10
R04 Zones 1,2,&3	3:40	3:40	3:00	3:10	3:00	R04 Zones 1,2,&3	3:30	3:40	3:20	3:40	3:10	R04 Zones 1,2,&3	4:20





Resident Population			
Miles	Ring Subtotal	Total Miles	Cumulative Total
0-1	0	0-1	0
1-2	0	0-2	0
2-3	5	0-3	5
3-4	318	0-4	323
4-5	2033	0-5	2356
5-6	2712	0-6	5068
6-7	2911	0-7	7979
7-8	3409	0-8	11388
8-9	5447	0-9	16835
9-10	5305	0-10	22140
10-EPZ	1169	0-EPZ	23309

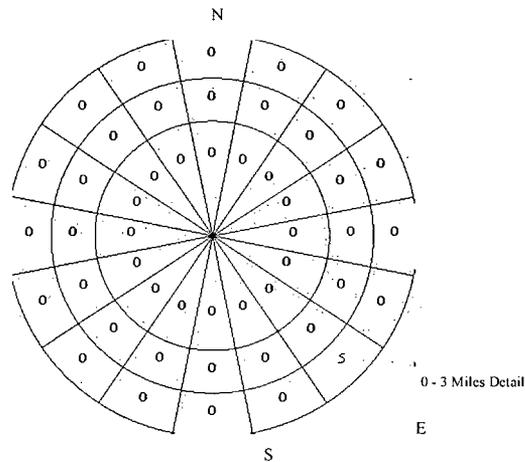
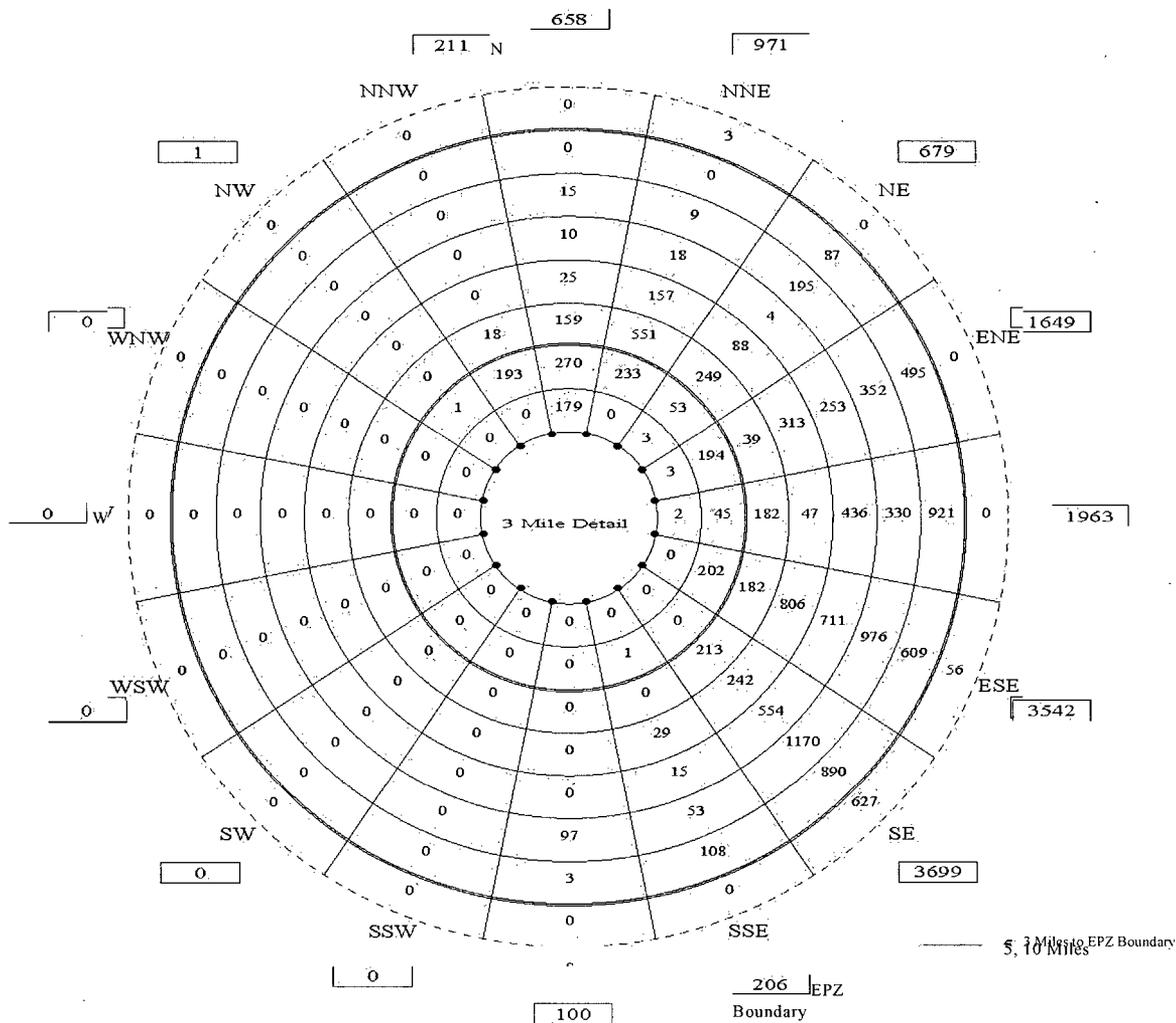


Figure 3-2. Permanent Residents by Sector



Resident Vehicles			
Miles	Ring Subtotal	Total Miles	Cumulative Total
0-1	0	0-1	0
1-2	0	0-2	0
2-3	3	0-3	3
3-4	187	0-4	190
4-5	1192	0-5	1382
5-6	1593	0-6	2975
6-7	1707	0-7	4682
7-8	2001	0-8	6683
8-9	3197	0-9	9880
9-10	3113	0-10	12993
10-EPZ	686	0-EPZ	13679

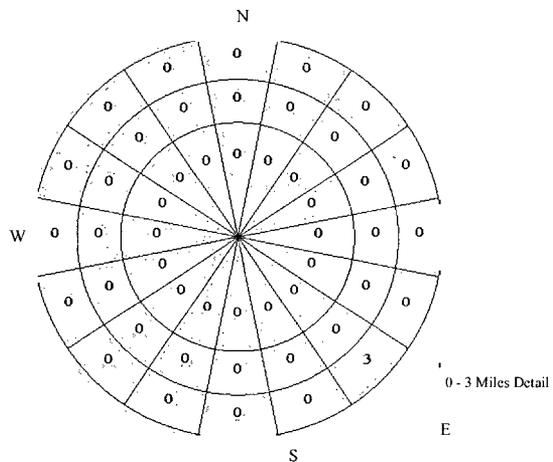
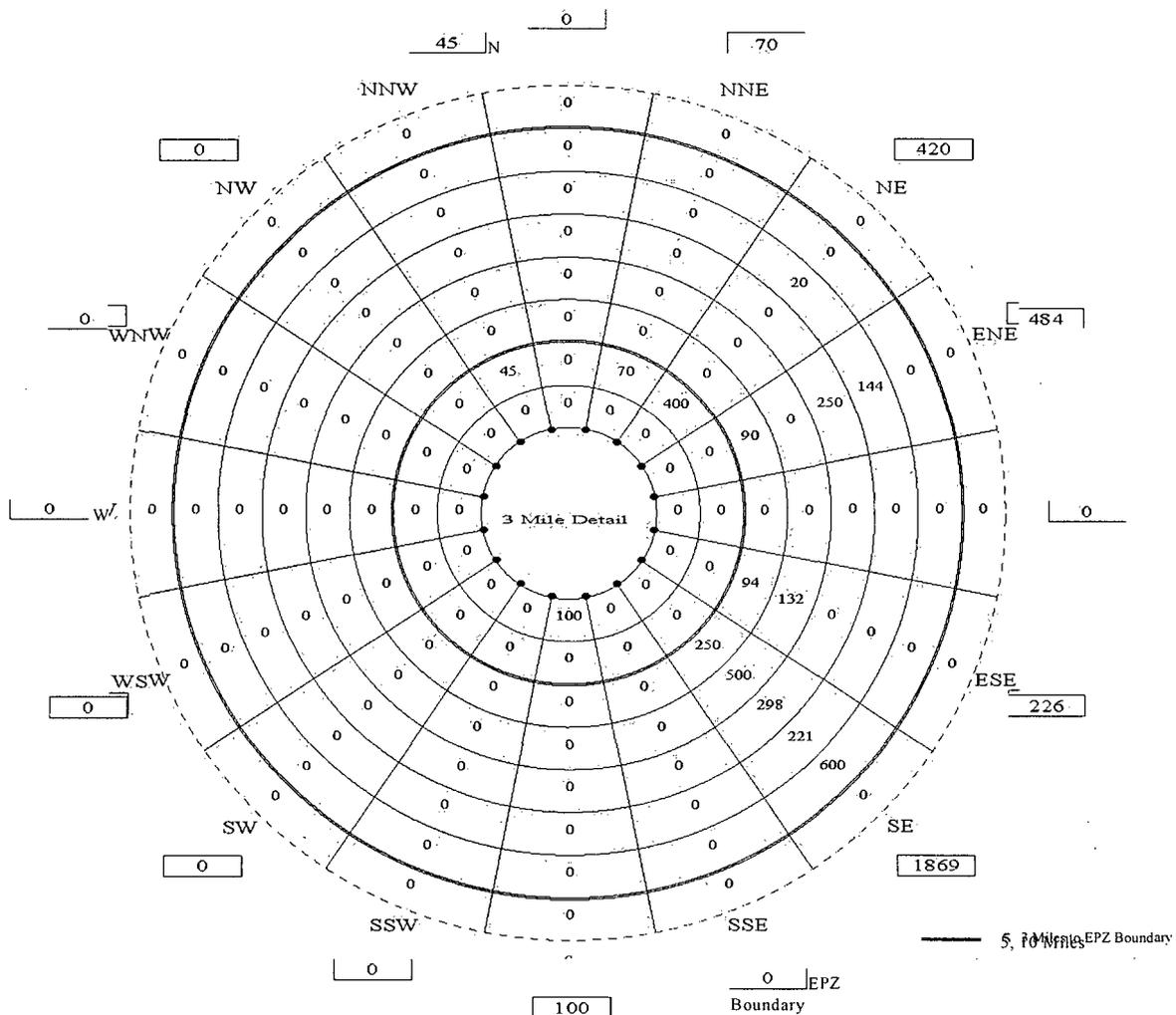


Figure 3-3. Permanent Resident Vehicles by Sector



Transient Population			
Miles	Ring Subtotal	Total Miles	Cumulative Total
0-1	0	0-1	0
1-2	0	0-2	0
2-3	0	0-3	0
3-4	100	0-4	100
4-5	515	0-5	615
5-6	434	0-6	1049
6-7	632	0-7	1681
7-8	548	0-8	2229
8-9	385	0-9	2614
9-10	600	0-10	3214
10-EPZ	0	0-EPZ	3214

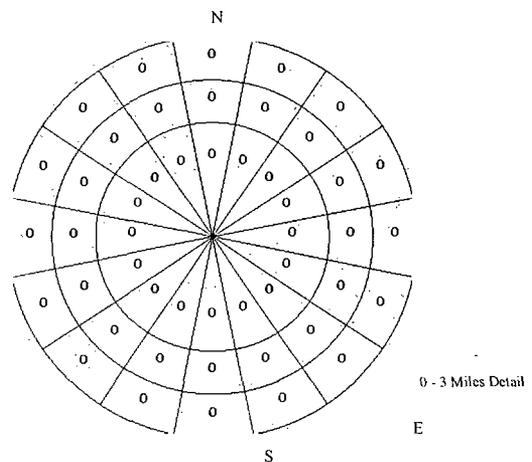
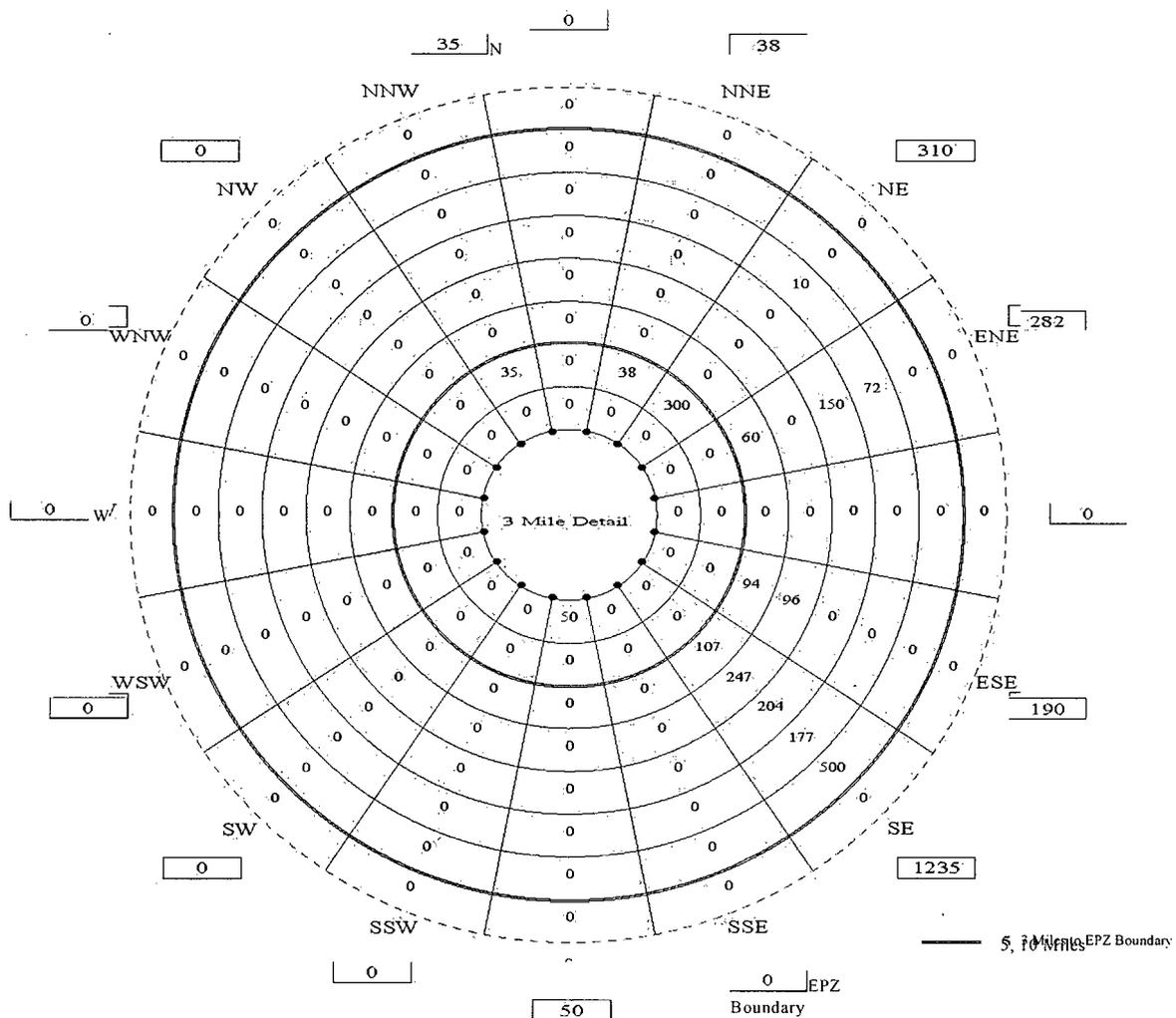


Figure 3-4. Transient Population by Sector



Transient Vehicles			
Miles	Ring Subtotal	Total Miles	Cumulative Total
0-1	0	0-1	0
1-2	0	0-2	0
2-3	0	0-3	0
3-4	50	0-4	50
4-5	373	0-5	423
5-6	261	0-6	684
6-7	343	0-7	1027
7-8	354	0-8	1381
8-9	259	0-9	1640
9-10	500	0-10	2140
10-EPZ	0	0-EPZ	2140

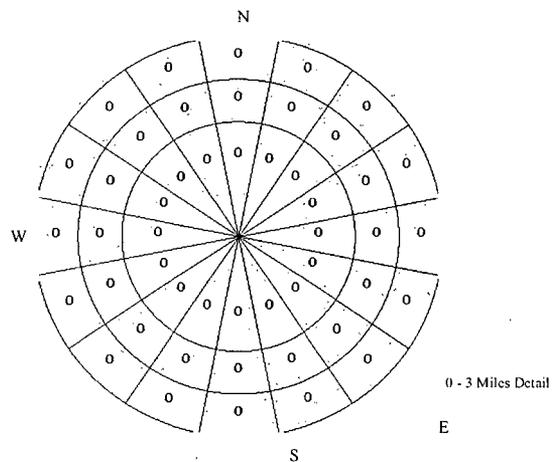
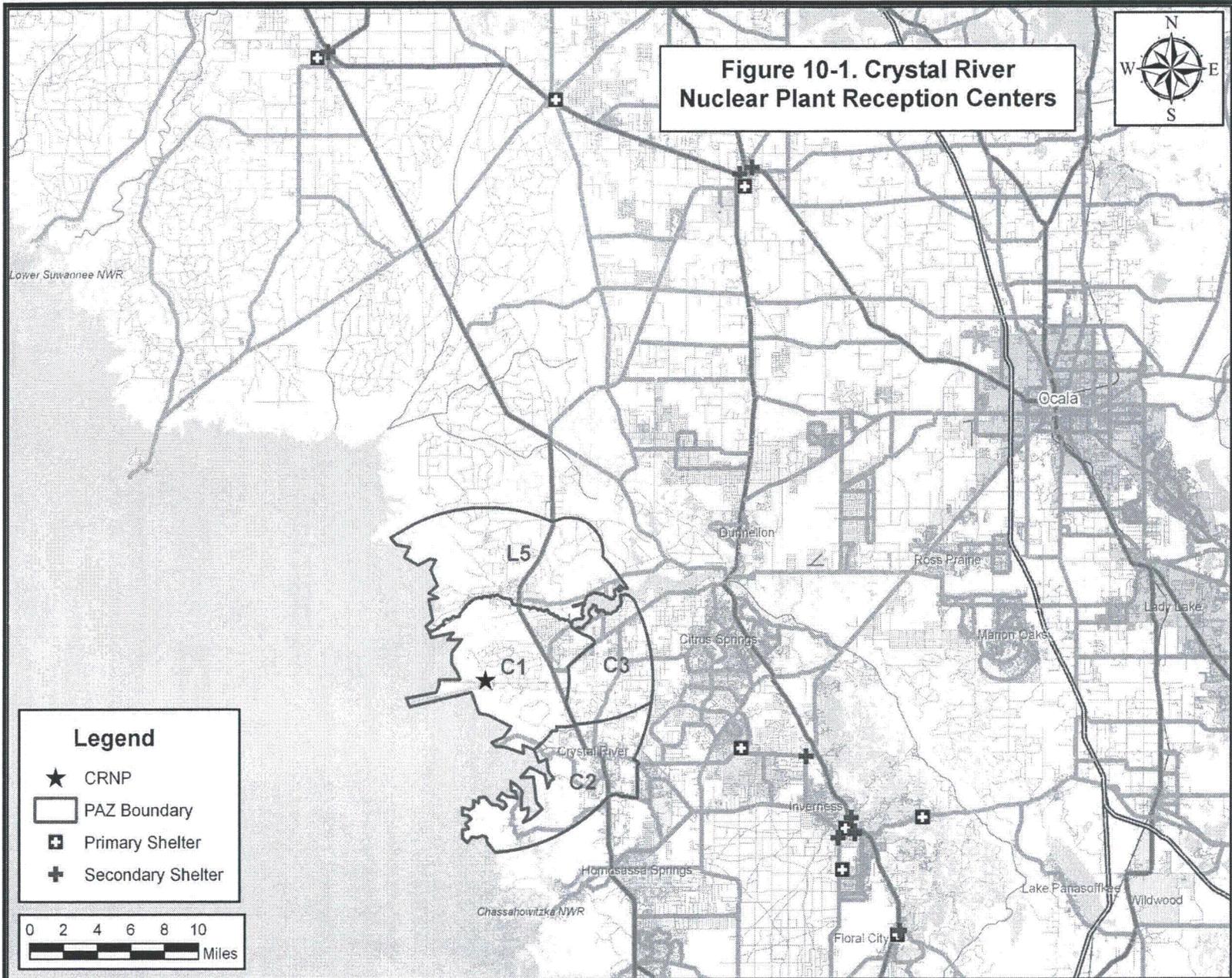


Figure 3-5. Transient Vehicles by Sector

**Table 10-1 Reception Center Details – Name, Type and Location**

Reception Center	Facility Type	Street Address	City	State	ZIP	County
Withlacoochee Technical Institute	Primary / Reception Shelter	1201 W. Main Street	Inverness	FL	34450	Citrus
Renaissance Center	Primary / Special Needs Shelter	3630 W. Educational Path	Lecanto	FL	34461	Citrus
First United Methodist Church	Primary / Daycare Shelter	3896 S. Pleasant Grove Rd.	Inverness	FL	34452	Citrus
Lecanto Primary School	Primary / Pet-friendly Shelter	3790 W. Educational Path	Lecanto	FL	34461	Citrus
Lecanto Middle School	Secondary / Special Needs Shelter	3800 W. Educational Path	Lecanto	FL	34461	Citrus
Lecanto High School	Secondary Shelter	3810 W. Educational Path	Lecanto	FL	34461	Citrus
Crest School	Secondary Shelter	2600 S. Panther Pride Dr.	Lecanto	FL	34461	Citrus
Central Florida Community College	Secondary Shelter	3800 S. Lecanto Hwy.	Lecanto	FL	34461	Citrus
Citrus Springs Elementary School	Secondary Shelter	3570 W. Century Blvd.	Citrus Springs	FL	34433	Citrus
Citrus Springs Middle School	Secondary Shelter	150 W. Citrus Springs Blvd.	Citrus Springs	FL	34434	Citrus
Central Ridge Elementary	Secondary Shelter	185 W. Citrus Springs Blvd.	Citrus Springs	FL	34434	Citrus
Rock Crusher Elementary School	Secondary Shelter	814 S. Rock Crusher Rd.	Homosassa	FL	34448	Citrus
Forest Ridge Elementary School	Secondary Shelter	2927 N. Forest Ridge Blvd.	Hernando	FL	34442	Citrus
Citrus High School	Secondary / Special Needs Shelter	600 W. Highland Blvd.	Inverness	FL	34452	Citrus
Floral City Elementary	Secondary Shelter	8457 E. Marvin St.	Floral City	FL	34436	Citrus
Hernando Elementary School	Secondary Shelter	29 75 E. Trailblazer Lane	Hernando	FL	34442	Citrus
Inverness Middle School	Secondary Shelter	1950 Hwy. 41 North	Inverness	FL	34450	Citrus
Inverness Primary School	Secondary Shelter	206 S. Line Ave.	Inverness	FL	34452	Citrus
Pleasant Grove Elementary	Secondary Shelter	630 Pleasant Grove Rd.	Inverness	FL	34452	Citrus
Bronson High School	Primary / Daycare / Special Needs Shelter	350 School Street	Bronson	FL	32621	Levy
Chiefland Elementary	Primary / Special Needs Shelter	1205 NW 4th Ave.	Chiefland	FL	32626	Levy
Williston Elementary	Primary / Special Needs Shelter	801 S. Main St.	Williston	FL	32696	Levy
Chiefland High (Gym)	Secondary Shelter	816 N. Main St.	Chiefland	FL	32626	Levy
Williston Middle School	Secondary Shelter	1345 NE 3rd Ave.	Williston	FL	32696	Levy
Williston High School	Secondary Shelter	427 W. Noble Ave.	Williston	FL	32696	Levy



**RADIOLOGICAL EMERGENCY RESPONSE PLAN**

**APPENDIX D**

**EMERGENCY RESPONSE TLD LOCATIONS**

**EMERGENCY RESPONSE TLD LOCATIONS**

<b><u>Station No.</u></b>	<b><u>Plant Location</u></b>	<b><u>Distance From Plant</u></b>	<b><u>Direction From</u></b>
C01	Levy County Park, West End of State Road 40	4.8 miles	NW
C03	Inglis, Adjacent to City Hall / Fire Station	4.9 miles	NNE
C04	State Park Old Dam on River, Near Road Intersection	6.0 miles	NE
C08	Corner of SR 44 and Waterwood	5.7 miles	SE
C09	Citrus County Park, West End of State Road 44	3.2 miles	S
C14G	Gulf of Mexico, End of Discharge Canal	2.5 miles	W
C18	Yankeetown City Well	5.3 miles	N
C27	Near Old Primary Meteorological Tower, Between Intake and Discharge Canals	0.4 miles	W
C41	Inside Air Sample Shed Near Back-up Meteorological Tower	0.4 miles	SW
C60	On Units 4&5 Perimeter Fence	0.9 miles	N
C61	On Units 4&5 Perimeter Fence	0.9 miles	NNE
C62	Due East of Units 4&5, on Post	1.2 miles	NE
C63	S.E. Corner of Units 4&5 Perimeter Fence	0.9 miles	ENE
C64	South Side of Access Road, 3,920 ft. from east side of guardhouse	0.8 miles	E
C65	Outside of Railroad Track Loop	0.3 miles	ESE
C66	Just Outside of Railroad Track Loop	0.4 miles	SE
C67	Just Outside of Railroad Track Loop	0.3 miles	SSE
C68	Just Outside of Railroad Track Loop	0.3 miles	S
C69	Due South of Units 1&2, on Southernmost Roadbed	0.3 miles	SSW

<u>Station No.</u>	<u>Plant Location</u>	<u>Distance From Plant</u>	<u>Direction From</u>
C70	South Intake Canal Road	0.7 miles	WSW
C71	West Side of Ash Pond Dike	0.6 miles	WNW
C72	Utility Pole Near Ardelite Plant	0.3 miles	NW
C73	Utility Pole Just East of Conveyor	0.7 miles	NNW
C74	Red Level, 1 mile East of U.S. 19, North of Briarpatch Street to First Utility Pole	5.1 miles	ENE
C75	First Light Pole on South Side of Plant Access Road, 100 ft. West of U.S. 19	4.0 miles	E
C76	U.S. 19, 1.7 miles South of Access Road	5.6 miles	ESE
C77	West SR 44, 1.8 miles Past Marine Science Station, Utility Pole on South Side of Road, 100 meters West of Siren	3.4 miles	SSE
C78	West End of North Intake Dike	4.6 miles	WSW
C79	Yankeetown, SR 40 on Utility Pole, Corner of SR 40 and Riverside	5.0 miles	NNW

In addition to these specific locations, CR3 Radiation Protection maintains numerous TLDs in various locations in and around the CR3 Protected Area for monitoring purposes.