Final Exercise Report

Crystal River
Nuclear Power Plant

Licensee:	**Progress Energy**
Exercise Date:	**May 12, 2004**
Report Date:	**July 13, 2004**

TABLE OF CONTENTS

Page

List of Appendices

List of Tables

I. EXECUTIVE SUMMARY

On May 12, 2004, the Federal Emergency Management Agency (FEMA) Region IV conducted a full participation plume exposure pathway exercise around the Crystal River Nuclear Power Plant. The purpose of the exercise was to assess the level of State and local preparedness in responding to a radiological emergency. This exercise was conducted to evaluate the effectiveness of State and local plans and procedures for reaching a determination of reasonable assurance for the State and County governments to protect the health and safety of the public. Contained herein is the evaluation of this biennial exercise.

The most recent exercise at this site was conducted on May 29-30, 2002. The qualifying emergency preparedness exercise was conducted on March 30, 1982, at the Crystal River Nuclear Power Plant.

FEMA wishes to acknowledge the efforts of the many individuals who participated in this exercise, the State of Florida and the Risk/Support Counties of Citrus and Levy. Protecting the public health and safety is the full-time job of some of the exercise participants and an assigned responsibility for others. Still others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. Cooperation and teamwork of all the participants were evident during this exercise.

The State and local organizations demonstrated knowledge of, and the ability to implement their emergency response plans and procedures. Both counties demonstrated for the first time, the distribution of potassium iodide (KI) to the public. The procedures demonstrated in both counties were excellent and they are to be commended for a job well done. No Deficiencies or Areas Requiring Corrective Action (ARCA) were identified during this exercise. The correction of two prior ARCAs (one in each county) for emergency worker decontamination, identified during the 2002 Crystal River exercise, were successfully demonstrated during out-of-sequence activities on May 11, 2004.

II. INTRODUCTION

On December 7, 1979, the President directed FEMA to assume the lead responsibility for all offsite nuclear planning and response. FEMA's activities are conducted pursuant to 44 Code of Federal Regulations (CFR) Parts 350, 351 and 352. These regulations are a key element in the Radiological Emergency Preparedness (REP) Program that was established following the Three Mile Island Nuclear Station accident in March 1979.

Title 44 CFR 350 establishes the policies and procedures for FEMA's initial and continued approval of State and local governments' radiological emergency planning and preparedness for commercial nuclear power plants. This approval is contingent, in part, on State and local government participation in joint exercises with licensees.

FEMA's responsibilities in radiological emergency planning for fixed nuclear facilities include the following:

- Taking the lead in offsite emergency planning and in the review and evaluation of radiological emergency response plans (RERP) and procedures developed by State and local governments;

- Determining whether such plans and procedures can be implemented on the basis of observation and evaluation of exercises of the plans and procedures conducted by State and local governments;

- Responding to requests by the NRC pursuant to the Memorandum of Understanding between the NRC and FEMA (Federal Register, Vol. 58, No. 176, September 14, 1993).

- Coordinating the activities of Federal agencies with responsibilities in the radiological emergency planning process:

    - Department of Agriculture
    - Department of Commerce
    - Department of Energy
    - Department of Health and Human Services
    - Department of the Interior
    - Department of Transportation
    - Environmental Protection Agency
    - Food and Drug Administration and
    - Nuclear Regulatory Commission

Representatives of these agencies serve on the FEMA Region IV Regional Assistance Committee (RAC), which is chaired by FEMA.

Formal submission of the RERPs for the Crystal River Nuclear Power Plant to FEMA Region IV by the State of Florida was made on August 26, 1983. Formal approval of these RERPs was granted on February 14, 1984.

A REP exercise was conducted on May 12, 2004, by FEMA Region IV to assess the capabilities of State and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving the Crystal River Nuclear Power Plant. The purpose of this report is to present the exercise results and preliminary findings on the performance of the offsite response organizations (ORO) during a simulated radiological emergency.

The findings presented are based on the evaluations of the Federal evaluator team, with final determinations being made by the FEMA Region IV Regional Assistance Committee Chairperson, the Chief Evaluator and final approval by the Regional Director.

The criteria utilized in the FEMA evaluation process are contained in:

- NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980;

- FEMA-REP “Interim REP Program Manual” dated August 2002.

Section III, entitled "Exercise Overview," presents basic information and data relevant to the exercise. This section contains a description of the plume pathway EPZ, a listing of all participating jurisdictions and functional entities, which were evaluated, and a table presentation of the time of actual occurrence of key exercise events and activities.

Section IV, entitled "Exercise Evaluation and Results," presents summary information on the demonstration of applicable exercise criterion at each jurisdiction or functional entity evaluated in a results based format.

III. EXERCISE OVERVIEW

Contained in this section are data and basic information relevant to the May 12, 2004, exercise and out-of-sequence activities on May 10th and 11th, to test the offsite emergency response capabilities in the area surrounding the Crystal River Nuclear Power Plant.

A. Plume EPZ Description

The Crystal River Nuclear Power Plant is owned and operated by Florida Power Corporation, a Progress Energy Company, headquartered in St. Petersburg, Florida. The Crystal River Nuclear Power Plant is located at the Crystal River Energy Complex, 7.5 miles northwest of the town of Crystal River, in Citrus County, Florida. The Florida Power Energy Complex contains five power plants; four coal burning and one 825 megawatt pressurized water reactor. Parts of Citrus and Levy Counties lie within the 10-mile EPZ. There are three EPZ zones with a total resident population of 15,065 persons. Land use in the EPZ is a mix of residential, business and agricultural. The 50-mile IPZ includes portions of Alachua, Dixie, Gilchrist, Hernando, Lake, Marion, Pasco and Sumter Counties.

B. Exercise Participants

The following agencies, organizations, and units of government participated in the Crystal River Nuclear Power Plant exercise on May 29-30, 2002.

STATE OF FLORIDA

Department of Health, Bureau of Radiation Control
Department of Law Enforcement
Department of Transportation
Division of Emergency Management

RISK JURISDICTIONS

Citrus County
Levy County

SUPPORT JURISDICTIONS

Citrus County
Levy County

PRIVATE/VOLUNTEER ORGANIZATIONS

Bronson Volunteer Fire Department
Chiefland Volunteer Fire Department
Citrus County American Red Cross
Crystal River Volunteer Fire Department
Dunnellon Volunteer Fire Department
Ingless Volunteer Fire Department
Levy County Sheriff's VOICE
Morriston Volunteer Fire Department
Otter Creek Volunteer Fire Department
Rainbow Lakes Estate Volunteer Fire Department
South Levy Volunteer Fire Department
Sowlers Bluff Volunteer Fire Department
Williston Volunteer Fire Department
Yankeetown Volunteer Fire Department

C. Exercise Timeline

Table 1, on the following page, presents the time key events and activities occurred during the exercise on May 12, 2004.

Table 1. Plume Phase Exercise Timeline

DATE AND SITE: May 12, 2004 – Crystal River Nuclear Power Plant

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken				
		SEOC	F-SERT	ENC	CITRUS COUNTY	LEVY COUNTY
Unusual Event						
Alert	0838	0852	0911		0852	0855
Site Area Emergency	1003	1013	1014	1004	1014	1019
General Emergency	1126	1149	1128	1126	1140	1149
Rad. Release Started	1115	1115	1128		1140	1115
Release Terminated On Going						
Facility Declared Operational	1037	*	1037	1050	0835	0900
Declaration Of State Of Emergency		1047	1055		0913 - Local	1055 – State
Exercise Terminated	1341	1342	1341	1341	1344	1341
Early Precautionary Actions:						
Evacuate schools					0907	0915
Relocate special needs					1055	
Agricultural embargo recommended		1218				
River clearing					1230	
1st Protection Action Decision						
Stay tuned					1020	1026
1st Siren Activation					1030	1030
1st EAS Message: Stay tuned					1030	1030
2nd Protective Action Decision:						
Evacuate Zones: 1, 2, and 3			1203		1203	1204
2nd Siren Activation					1208	1208
2nd EAS Message					1210	1208
KI Administration Decision:						
Emergency Workers: Ingest			1155		1222	1210
Public: Ingest			1216		1222	1220

* EOC is continuously operational at Level III; ramped up to Level II at 0910; ramped up to Level I at 1031.

IV. EXERCISE EVALUATION AND RESULTS

Contained in this section are the results and preliminary findings of the evaluation of all jurisdictions and functional entities that participated in the May 12, 2004, exercise to test the
offsite emergency response capabilities of State and local governments within the 10-mile EPZ
around the Crystal River Nuclear Power Plant.

Each jurisdiction or functional entity was evaluated on the basis of its demonstration of criteria delineated in exercise criteria contained in Interim REP Manual, dated August 2002. Detailed information on the exercise criteria and the extent-of-play agreement used in this exercise are found in Appendix 3 of this report.

A. Summary Results of Exercise Evaluation - Table 2

The matrix presented in Table 2, presents the status of all exercise criteria scheduled for demonstration during this exercise, by all participating jurisdictions and functional entities. Exercise criteria are identified by number. The demonstration status of those criteria is indicated by the use of the following letters:

M - Met (No Deficiency or ARCAs assessed and no unresolved ARCAs from prior exercises)

D - Deficiency assessed

A - ARCA(s) assessed or unresolved ARCA(s) from prior exercise(s)

N - Not Demonstrated (Reason explained in Subsection B)

Table 2. Summary Results of Exercise Evaluation

DATE AND SITE: May 12, 2004 – Crystal River Nuclear Power Plant

ELEMENT/Sub-Element	STATE	F-SERT	DOSE	DOH	EOF	ENC	CITRUS	LEVY
1. EMERGENCY OPERATIONS MANAGEMENT								
1.a.1. Mobilization		X	X			X	X	X
1.b.1. Facilities								
1.c.1. Direction and Control	X	X	X		X	X	X	X
1.d.1. Communications Equipment		X	X		X	X	X	X
1.e.1. Equipment & Supplies to Support Operations		X	X		X	X	X	X
2. PROTECTIVE ACTION DECISION MAKING								
2.a.1. Emergency Worker Exposure Control			X				X	X
2.b.1. Radiological Assessment and PARs Based on Available Information		X	X		X			
2.b.2. Radiological Assessment and PADs for the General Public		X**					X	X
2.c.1. Protective Action Decisions for Special Populations							X	X
2.d.1. Radiological Assessment & Decision Making for Ingestion Exposure								
2.e.1. Rad Assessment & Decision Making for Relocation, Re-entry & Return								
3. PROTECTIVE ACTION IMPLEMENTATION								
3.a.1. Implementation of Emergency Worker Control							X	X
3.b.1. Implementation of KI Decisions				X			X	X
3.c.1. Implementation of PADs for Special Populations							X	X
3.c.2. Implementation of PADs for Schools							X	
3.d.1. Implementation of Traffic and Access Control							X	X
3.d.2. Impediments to Evacuation and Traffic and Access Control							X	X
3.e.1. Implementation of Ingestion Decisions Using Adequate Information								
3.e.2. Implementation of IP Decisions Showing Strategies and Instructional Materials								
3.f.1. Implementation of Relocation, Re-entry and Return Decisions								
4. FIELD MEASUREMENT and ANALYSIS								
4.a.1. Plume Phase Field Measurement & Analysis Equipment								
4.a.2. Plume Phase Field Measurement & Analysis Management								
4.a.3. Plume Phase Field Measurements & Analysis Procedures								
4.b.1. Post Plume Field Measurement & Analysis								
4.c.1 Laboratory Operations								
5. EMERGENCY NOTIFICATION & PUBLIC INFORMATION								
5.a.1. Activation of Prompt Alert and Notification Systems		X**					X	X
5.a.2. Activation of Prompt Alert and Notification 15 Minute (Fast Breaker) N/A								
5.a.3. Activation of Backup Alert and Notification Systems							X	X
5.b.1. Emergency Information and Instructions for the Public and the Media		X				X	X	X
6. SUPPORT OPERATIONS/FACILITIES								
6.a.1. Monitoring, Decon & Registration of Evacuees/EW Monitoring & Decon							*X-EW	*X-EW
6.b.1. Monitoring and Decontamination of Emergency Worker Equipment								X
6.c.1. Temporary Care of Evacuees								
6.d.1. Transportation and Treatment of Contaminated Injured Individuals								

LEGEND M = Met A = ARCA D = Deficiency ** Coordination roll Only EW = Emergency Worker Monitoring & Decontamination

* = Reception centers will only be set up sufficient for DOH to demonstrate distribution of KI to the public

B. Status of Jurisdictions Evaluated

This subsection provides information on the evaluation of each participating jurisdiction and functional entity in a jurisdictional results based format. Presented below is a definition of the terms used in this subsection relative to Criterion demonstration status.

- **Met** - Listing of the demonstrated exercise criterion under which no Deficiencies or ARCAs were assessed during this exercise and under which no ARCAs assessed during prior exercises remain unresolved.

- **Deficiency** - Listing of the demonstrated exercise criterion under which one or more Deficiencies was assessed during this exercise. Included is a description of each Deficiency and recommended corrective actions.

- **Area Requiring Corrective Actions** - Listing of the demonstrated exercise criterion under which one or more ARCAs were assessed during the current exercise or ARCAs assessed during prior exercises that remain unresolved. Included is a description of the ARCAs assessed during this exercise and the recommended corrective action to be demonstrated before or during the next biennial exercise.

- **Not Demonstrated** - Listing of the exercise criteria which were not demonstrated as scheduled during this exercise and the reason they were not demonstrated.

- **Prior ARCAs - Resolved** - Descriptions of ARCAs assessed during previous exercises, which were resolved in this exercise and the corrective actions demonstrated.

- **Prior ARCAs - Unresolved** – Description(s) of ARCA(s) assessed during prior exercises, which were not resolved in this exercise. Included is the reason the ARCA remains unresolved and recommended corrective actions to be demonstrated before or during the next biennial exercise.

The following are definitions of the two types of exercise issues, which may be discussed in this report.

- A **Deficiency** is defined in FEMA Interim REP Manual as "...an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant."

- An **ARCA** is defined in FEMA Interim REP Manual as "...an observed or identified

inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety."

1. STATE OF FLORIDA

1.1 State Emergency Operations Center

The State Emergency Operations Center (SEOC) was mobilized and staffed by personnel from selected Emergency Support Function (ESF) agencies. Direction and control of activities were professionally managed by the State Emergency Response Team (SERT) Chief, and the SEOC was declared operational at 0910. The transfer of direction and control to the Forward SERT (FSERT) was accomplished at 1145. The SEOC has a state-of-the-art computer message system (EM 2000), which allows efficient receiving, assigning, processing, and reporting completion of work assignments. The Governor signed an Executive Order declaring a State of Emergency at 1047. Support of the emergency response by the SEOC staff continued until termination of the exercise.

a. **MET:** Criterion 1.c.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

1.2 Forward State Emergency Response Team

The Florida Department of Emergency Management's (DEM) Forward State Emergency Response Team (FSERT) Advanced-Team simulated deployment to the operational area and pre-positioned in the Emergency Operations Facility (EOF) following the utility's declaration of emergency classification level (ECL) "Alert." The FSERT demonstrated the coordination that would occur while they were en-route to Crystal River. The collocating of the FSERT, County, and utility decision-makers facilitated the timely protective action decision (PAD) process, and detailed execution of a cohesive response. The FSERT was a well-trained team whose members can be characterized as having a proactive and forward looking mindset and a high degree of professionalism.

a. **MET:** Criteria 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.b.1, 2.b.2, 5.a.1 and 5.b.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. NOT DEMONSTRATED: NONE

e. PRIOR ARCAs - RESOLVED: NONE

f. PRIOR ARCAs - UNRESOLVED: NONE

1.3 Dose Assessment

Independent accident analyses was successfully and professionally demonstrated, to include radiological dose assessment and providing direction and control for the State's radiological field monitoring teams. The determinations resulting from these independent analyses were subsequently coordinated with the analyses conducted by the utility operator and were utilized to develop, formulate, and implement appropriate protective actions in the interest of public health and safety. All State personnel responsible for performing radiological dose assessment and independent accident analyses were well trained, followed applicable procedures, and performed their respective responsibilities in an efficient and professional manner.

a. MET: Criteria 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1 and 2.b.1

b. DEFICIENCY: NONE

c. AREAS REQUIRING CORRECTIVE ACTION: NONE

d. NOT DEMONSTRATED: NONE

e. PRIOR ARCAs – RESOLVED: NONE

f. PRIOR ARCAs - UNRESOLVED: NONE

1.4 Emergency News Center

The State operates in a support role to the counties. The State DEM, BRC, Citrus and Levy County had representatives at the Emergency News Center (ENC). The counties kept in constant contact with their respective Emergency Operations Centers (EOC) to obtain up-to-date information on county activities. The spokespersons for the State and counties effectively communicated their messages to the public through media briefings and media releases. When they were notified that a radio station had actually broadcast the Emergency Alert System (EAS) message concerning the evacuation of schools, they immediately called the radio station to tell them to stop the broadcast because it was an exercise message and then called the EOC to inform them of the problem and their steps to resolve it. The response to the unintentional message broadcast and their work on media briefing and news releases demonstrated the State and Counties commitment to ensure their citizens receive timely and accurate information.

a. **MET:** Criteria 1.a.1, 1.c.1, 1.d.1, 1.e.1 and 5.b.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs – RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

1.5 Emergency Operations Facility

The utility operator's EOF is an excellent facility from which all participating response organizations can effectively manage ongoing emergency operations. Communications, coordination and the flow of technical information between the utility operator and all participating State and local government officials were outstanding. All State and local government officials deployed to the EOF were well trained, followed applicable procedures, and overall, performed their respective responsibilities in an efficient and professional manner.

a. **MET:** Criteria 1.c.1, 1.d.1, 1.e.1 and 2.b.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

2. RISK JURISDICTIONS

2.1 CITRUS COUNTY

2.1.1 Emergency Operations Center

The EOC facility is staffed with highly competent and professional personnel. The Emergency Management Operations Chief did an excellent job of direction and control as well as overseeing all activities in accordance with the emergency response. All PADs were effectively coordinated and disseminated to the public in a timely manner.

a. **MET:** Criteria 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 3.a.1, 5.a.1, 5.a.3 and 5.b.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs – RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.1.2 Traffic and Access Control Points

A Sheriff's Deputy demonstrated traffic control points (TCP) through interview at the EOC during the exercise. This was a representative demonstration of the training program to provide all Deputies the duties and responsibilities of the department during a radiological emergency. The Deputy was familiar with reception center locations, preferred routes, and personal protective measures.

a. **MET:** Criteria 1.e.1, 3.a.1, 3.b.1, 3.d.1 and 3.d.2

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.1.3 Emergency Worker Monitoring and Decontamination

Citrus County government and volunteer personnel established and conducted an emergency worker decontamination (EWD) operation at the Crystal River National Guard Armory. Members of each organization understood their duties and worked as a cohesive unit to provide monitoring and decontamination to two emergency workers. Citrus County workers went above and beyond the required exercise parameters and included emergency worker vehicle decontamination as part of their demonstration. Their extra effort demonstrated their desire to excel in the exercise. Personnel followed procedures. Citrus County's EWD was an exceptional demonstration.

a. **MET:** Criteria 1.e.1, 3.a.1, 3.b.1 and 6.a.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:**

Issue No.: 17-02-6.a.1-A-01

Condition: Vehicle two was found contaminated, decontaminated, re-monitored and found to still be contaminated. The emergency worker who was driving was instructed to park the car and follow the monitor. The monitor took his personal possessions, bagged and tagged them and then led him immediately to the decontamination shower while having never monitored his person and having no idea if he was in fact contaminated or where the contamination might be.

Possible Cause: There was a confusion of understanding the procedures. The first team thought all emergency workers in a contaminated vehicle would be fully decontaminated regardless, while the second team thought all emergency workers in a contaminated vehicle would be monitored before exiting the contaminated vehicle.

Reference: NUREG-0654 K.5.b; Extent of Play Criterion 6.a.1; and HazMat SOP 23 page, 7 number 9.

Effect: The total showering decontamination process of every emergency worker in a contaminated vehicle would potentially affect the number of workers available in the field to help direct and protect the public. This could cause a slowdown of processing not only because of the time taken to shower each person and re-monitor, but because of the waiting for showers for those persons who truly are contaminated but cannot be processed, or may not be contaminated at all and are waiting for showers.

Recommendation: Monitor emergency workers in contaminated vehicles and decontaminate only as appropriate rather than total shower decontamination of every emergency worker in a vehicle; i.e. a dirty hand or foot would not require a full shower; a vehicle dirty only on the bumper may have a totally clean driver. Train all emergency workers in the same manner so that contaminated individuals are processed according to the procedures indicated above.

Corrective Action Demonstrated: The proper decontamination of two emergency workers corrected the previous ARCA. Emergency workers were checked upon entry
to the Armory parking lot where the determination as to the contamination of the

emergency worker was made. If contaminated, the individual was checked again after
passing through the vehicle wash-down. The individual was checked over the entire surface of the body and then processed through the wash area. Upon exiting the wash
the individual was monitored again. Final monitoring was completed when the individual exited into the clean area.

f. PRIOR ARCAs - UNRESOLVED: NONE

2.1.4 Protective Action for Schools

Protective actions for schools within the 10-mile EPZ were evaluated at the Crystal River Middle School. The Middle School and County Board Of Education staff members were interviewed concerning the protective actions to be taken for the students, teachers and staff members. All interviewed were very knowledgeable of their school evacuation plans, duties, and responsibilities. The staffs at this school and the County Board Of Education are very capable of taking the necessary actions to protect the students and staff at the Crystal River Middle School.

a. MET: Criterion 3.c.2

b. **DEFICIENCY:** NONE

c. AREAS REQUIRING CORRECTIVE ACTION: NONE

d. NOT DEMONSTRATED: NONE

e. PRIOR ARCAs - RESOLVED: NONE

f. PRIOR ARCAs - UNRESOLVED: NONE

2.1.5 Distribution of Potassium Iodide to the Public

The State of Florida has elected to provide KI to the general population if conditions warrant. One of the KI distribution centers located at Withlacoochee Technical Institute in Inverness, Florida was evaluated. The facility is equipped to support 24-hour operations, can be enlarged to include adjacent rooms or to the sports stadium depending on the number of citizens needing to be processed. KI distribution is under the direction of the Citrus County Health Department with necessary resources to man three teams. Staff members effectively demonstrated the proper setup of the facility and managed the distribution of KI. Personnel at the KI distribution center were professional and displayed a positive attitude as they processed four female and two male participants.

a. MET: Criteria 1.e.1, 3.b.1 and 6.a.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.2 LEVY COUNTY

2.2.1 Emergency Operations Center

The EOC is a modern freestanding facility, staffed by representatives from the various county agencies. These individuals are professional, well trained, and dedicated. The County Commission Chairperson was present initially before relocating to the EOF, another Commission member was present throughout the exercise. Both the EOC Director and Assistant provided positive leadership and were proactive in meeting the challenges of this exercise, communicating often with the EOF and counterparts in Citrus County. The Director gave frequent briefings regarding ongoing conditions as well as implementation of protective actions. Mobilization of the staff, coordinating and advising on protective action recommendations (PAR), alerting and notification of the public, and rumor control were demonstrated. This was an excellent demonstration of the EOC.

a. **MET:** Criteria 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 3.a.1, 5.a.1, 5.a.3 and 5.b.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs - UNRESOLVED:** NONE

2.2.2 Emergency Worker Monitoring and Decontamination

Emergency worker monitoring and decontamination was successfully demonstrated at Lebanon Station off Highway 19 as an out-of-sequence activity on May 11, 2004. Numerous fire, rescue, state and local law enforcement, emergency management, Red

Cross, and local volunteers contributed to this exercise. The physical arrangement, equipment, and personnel were as stated in their plans and procedures. Two emergency workers were monitored. Both were properly surveyed according to their plans and procedures.

a. **MET:** Criteria 1.e.1, 3.a.1, 3.b.1 and 6.a.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:**

Issue No.: 02-17-6.a.1-A-02

Condition: The established radiological monitoring procedures used to process an emergency worker out of the contamination control area were not followed. The emergency worker was not monitored correctly and thoroughly before being allowed to leave the contamination control line, only the hands and face were checked for contamination and not feet, head and/or torso. No attempt was made to ensure the rest of the body was free of contamination.

Possible Cause: The procedures call for complete monitoring of workers from head to toe before being allowed out of the hot zone. These procedures were not followed.

Reference: NUREG-0654 K.5.b., Criterion 6.a.1.and Levy County Emergency Worker Standard Operating Guidelines.

Effect: The failure to check the entire body surface area of an emergency worker who was inside a possible contaminated area could potentially spread contamination in the designated clean area.

Recommendation: Supervisors should ensure that existing exit monitoring procedures for the processing of emergency workers out of the hot zone are followed. Retrain the response team members in the correct monitoring procedure and schedule periodic refresher training.

Corrective Action Demonstrated: Two emergency workers were successfully monitored and decontaminated. Exit procedures of emergency workers from the “hot zone” were appropriately demonstrated as well. All procedures followed the county plan and protective action guidelines.

d. PRIOR ARCAs – UNRESOLVED: NONE

2.2.3 Traffic Control Points

The Levy County Sheriff's Department and County Road Department personnel demonstrated out-of-sequence TCPs on May 11, 2004. The TCP was set up to intercept northbound traffic on US 19 at the US 121 intersection. The evaluation consisted of observation of the TCP set up an interview. Personnel had the required dosimetry and KI and were knowledgeable of their duties and responsibilities.

a. **MET:** Criteria 1.e.1, 3.a.1, 3.b.1, 3.d.1 and 3.d.2

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs – UNRESOLVED:** NONE

2.2.4 Distribution of Potassium Iodide to the Public

The ability to issue KI to the general public during the registration, monitoring, and decontamination process of evacuees was exceptionally well demonstrated by fulltime employees and volunteers in Levy County. The facilities were well designed, with exterior and interior signage and traffic patterns optimized for positive control. The Levy County Health Department staff efficiently registered the evacuees, explained the characteristics of KI to them, issued the appropriate dosage and maintained proper documentation. The Levy County team was well trained, professional, and capable of operating in a multi-lingual environment.

a. **MET:** Criteria 1.e.1, 3.b.1 and 6.a.1

b. **DEFICIENCY:** NONE

c. **AREAS REQUIRING CORRECTIVE ACTION:** NONE

d. **NOT DEMONSTRATED:** NONE

e. **PRIOR ARCAs - RESOLVED:** NONE

f. **PRIOR ARCAs – UNRESOLVED:** NONE

3. SUMMARY OF AREAS REQUIRING CORRECTIVE ACTION

3.1 PRIOR ARCAs RESOLVED

3.1.1 17-02-6.a.1-A-01 Citrus County Emergency Worker Decontamination

Condition: Vehicle two was found contaminated, decontaminated, re-monitored and found to still be contaminated. The emergency worker who was driving was instructed to park the car and follow the monitor. The monitor took his personal possessions, bagged and tagged them and then led him immediately to the decontamination shower while having never monitored his person and having no idea if he was in fact contaminated or where the contamination might be.

Possible Cause: There was a confusion of understanding the procedures. The first team thought all emergency workers in a contaminated vehicle would be fully decontaminated regardless, while the second team thought all emergency workers in a contaminated vehicle would be monitored before exiting the contaminated vehicle.

Reference: NUREG-0654 K.5.b; Extent of Play Criterion 6.a.1; and HazMat SOP 23 page, 7 number 9.

Effect: The total showering decontamination process of every emergency worker in a contaminated vehicle would potentially affect the number of workers available in the field to help direct and protect the public. This could cause a slowdown of processing not only because of the time taken to shower each person and re-monitor, but because of the waiting for showers for those persons who truly are contaminated but cannot be processed, or may not be contaminated at all and are waiting for showers.

Recommendation: Monitor emergency workers in contaminated vehicles and

decontaminate only as appropriate rather than total shower decontamination of every emergency worker in a vehicle; i.e. a dirty hand or foot would not require a full shower; a vehicle dirty only on the bumper may have a totally clean driver. Train all emergency workers in the same manner so that contaminated individuals are processed according to the procedures indicated above.

Corrective Action Demonstrated: The proper decontamination of two emergency workers corrected the previous ARCA. Emergency workers were checked upon entry to the Armory parking lot where the determination as to the contamination of the emergency worker was made. If contaminated, the individual was checked again after
passing through the vehicle wash-down. The individual was checked over the entire surface of the body and then processed through the wash area. Upon exiting the wash the individual was monitored again. Final monitoring was completed when the individual exited into the clean area.

3.1.2 02-17-6.a.1-A-02 Emergency Worker Monitoring and Decontamination

Condition: The established radiological monitoring procedures used to process an emergency worker out of the contamination control area were not followed. The emergency worker was not monitored correctly and thoroughly before being allowed to leave the contamination control line, only the hands and face were checked for contamination and not feet, head and/or torso. No attempt was made to ensure the rest of the body was free of contamination.

Possible Cause: The procedures call for complete monitoring of workers from head to toe before being allowed out of the hot zone. These procedures were not followed.

Reference: NUREG-0654 K.5.b., Criterion 6.a.1.and Levy County Emergency Worker Standard Operating Guidelines.

Effect: The failure to check the entire body surface area of an emergency worker who was inside a possible contaminated area could potentially spread contamination in the designated clean area.

Recommendation: Supervisors should ensure that existing exit monitoring procedures for the processing of emergency workers out of the hot zone are followed. Retrain the response team members in the correct monitoring procedure and schedule periodic refresher training.

Corrective Action Demonstrated: Two emergency workers were successfully monitored and decontaminated. Exit procedures of emergency workers from the "hot zone" were appropriately demonstrated as well. All procedures followed the county plan and protective action guidelines.

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

The following is a list of the acronyms and abbreviations, which may have been used in this report.

ARCA	Area Requiring Corrective Action
CFR	Code of Federal Regulations
DEM	Division of Emergency Management
DHS-FEMA	Department of homeland Security -Federal Emergency Management Agency
DHHS	Department of Health and Human Services
DOH	Department of Health
DOT	Department of Transportation
EAS	Emergency Alert System
ENC	Emergency News Center
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPA	Environmental Protection Agency
EPZ	Emergency Planning Zone
ESF	Emergency Support Function
EWD	Emergency Worker Decontamination
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FR	Federal Register
F-SERT	Forward-State Emergency Response Team
GE	General Emergency
KI	Potassium Iodide
NRC	Nuclear Regulatory Commission
NUREG-0654	NUREG-0654/FEMA-REP-1, Rev. 1, *"Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, November 1980*
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAR	Protective Action Recommendation

PIO	Public Information Officer
RAC	Regional Assistance Committee
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
SAE	Site Area Emergency
SEOC	State Emergency Operations Center
TCP	Traffic Control Point

APPENDIX 2

EXERCISE EVALUATORS

The following is a list of the personnel who evaluated the Crystal River Nuclear Power Plant exercise on May 12, 2004. The organization represented by each evaluator is abbreviated below.

DHS-FEMA	- Department of Homeland Security - Federal Emergency Management Agency
EPA	- Environmental Protection Agency
FDA	- Food and Drug Administration
ICF	- ICF Consultants, Inc.
NRC	- Nuclear Regulatory Commission

EVALUATION SITE	EVALUATOR	ORGANIZATION
Chief Evaluator	Helen Wilgus	DHS-FEMA
STATE OF FLORIDA		
State Emergency Operations Center	Harry Harrison	DHS-FEMA
Forward SERT	Bill Larrabee	ICF
	James McClanahan	ICF
Emergency News Center	Larry Robertson	DHS-FEMA
	Glenn Kinnear	ICF
Dose Assessment	Robert Trojanowski	NRC
Emergency Operations Facility	Robert Trojanowski	NRC
CITRUS COUNTY		
Emergency Operations Center	Helen Wilgus	DHS-FEMA
	Beth Massey	DHS-FEMA
	Candace Burrell	DHS-FEMA
Schools	Tom Trout	FDA
Traffic Control Points	Beth Massey	DHS-FEMA
	Mark Dalton	NCHP
Emergency Worker Decon	Glenn Kinnear	ICF
	James McClanahan	ICF

Distribution of KI to the Public	Helen Wilgus	DHS-FEMA
	Obhie Robinson	DHS-FEMA
	James McClanahan	ICF

LEVY COUNTY

Emergency Operations Center	Bernis Hannah	ICF
	Jimmie Bell	DHS-FEMA
Emergency Worker Decon	James McClanahan	ICF
	Obhie Robinson	DHS-FEMA
Traffic Control Points	Rick Button	EPA
Distribution of KI to the Public	Glenn Kinnear	ICF
	Bernis Hannah	ICF

APPENDIX 3.

EXERCISE CRITERION AND EXTENT-OF-PLAY AGREEMENT

This appendix lists the exercise criteria scheduled for demonstration in the Crystal River Nuclear Power Plant exercise on May 12, 2004 and the extent-of-play agreement approved by FEMA Region IV.

A. Exercise Criterion

Attached are the specific radiological emergency preparedness criteria scheduled for demonstration during this exercise.

B. Extent-of-Play Agreement

The Extent-of-play agreement on the following pages was submitted by the State of Florida, and was approved by FEMA Region IV.

`APPENDIX 4.

EXERCISE SCENARIO

This appendix contains the exercise scenario submitted by the State of Florida and approved by FEMA Region IV.