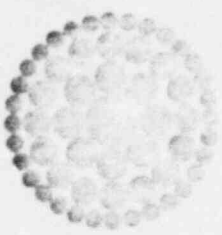


2/22-24/83



**Florida
Power**
CORPORATION

January 7, 1983
3F-0183-03
File: 3-0-5-g

Mr. J. P. O'Reilly
Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
101 Marietta Street N.W., Suite 3100
Atlanta, GA 30303

Subject: Crystal River Unit 3
Docket No. 50-302
Operating License No. DPR-72
Radiological Emergency Exercise Scenario

Dear Mr. O'Reilly:

Attached is Florida Power Corporation's 1983 Radiological Emergency Exercise Scenario. Florida Power Corporation is hosting the full-scale exercise for the State of Florida in 1983, and is expecting full participation by the appropriate Federal, State and local agencies. The exercise is scheduled for February 22 and 23, 1983, with a continuation of State activities in the 50 mile Exposure Pathway Zone on February 24, 1983.

Sincerely,

G. R. Westafer
Manager
Nuclear Licensing and Fuel Management

Attachment

REF/mm

cc: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

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Florida Power Corporation

Crystal River Unit 3

February, 1983

Radiological Emergency Exercise

Scenario Information

January 7, 1983

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I. EMERGENCY EXERCISE SUMMARY

PURPOSE:

This Exercise is planned to test the state of emergency preparedness of Crystal River Unit 3 (CR #3), FPC Corporate emergency support organization, State of Florida, and local response organizations. In keeping with the objectives of annual exercises, this test will provide a basis for individual familiarization with plans and procedures developed to manage emergency situations, as well as strengthen notification and professional interfaces among participating agencies. Following the events of the exercise, a formal critique will provide needed feed-back to resolve issues or problems identified during the mock emergency.

OBJECTIVES:

Notification and Warning

Verify the timeliness and adequacy of procedures and systems necessary for alerting and notification of off-site support agencies as well as Corporate Emergency response organizations.

Emergency Communications

Test the adequacy and function of communication networks and systems among emergency response organizations as outlined in the Radiological Emergency Response Plan for Crystal River Unit 3.

Direction and Control

Verify the adequacy of the Florida Power Corporation Emergency Plans and methods used in the implementing procedures and to assure that the participants are familiar with their respective duties and responsibilities.

Emergency Facilities and Equipment

Verify the operability of emergency equipment and facilities as well as check the availability of emergency supplies.

Radiological Dose Assessment

Test the methodology and implementing procedures for determining dose projections associated with release from the plant during emergency conditions. As a part of the dose assessment activities, the protective action recommendations will be evaluated for consistency and applicability.

Accident Assessment

Test the overall performance of Florida Power Corporation's Emergency Response Organization in the evaluation and mitigation of emergency situations and recovery activities.

Evaluation

Provide the basis for evaluation of performance during simulated emergency operations in order to review and correct identified deficiencies in the Radiological Emergency Preparedness Program.

SCOPE:

The exercise will involve all the emergency classifications by simulating events that will initiate each of the four emergency classifications.

This exercise shall be conducted, simulating as closely as possible, actual emergency conditions.

Throughout this exercise simulated conditions may be scheduled such that one or more drills may be held simultaneously.

Site evacuation will not include Units 1, 2, 4, & 5; however, they will be required to implement their personnel accountability procedures.

The exercise will be conducted in accordance with the pre-established scenario through a team of Implementors, Evaluators, Participants and Observers (See Section II, Definitions). Tentative lists of Implementors/Evaluators and Observers are provided in Exhibits 1 and 2, respectively. The Implementors will initiate exercise activities according to Implementor Instructions, which may in turn provide Message Cards to Participants. (See Exhibits 3 & 4). These Message Cards will contain information requiring the Participants to initiate specific emergency responses. Failure to respond or incorrect response will be corrected after a reasonable time to insure proper response and to keep the exercise on schedule. Evaluators, will assess and record the emergency response via Exercise Evaluation Forms (See Exhibit 5). Separate Observers may also be present.

A critique will be held to the exercise to document the implementation of the emergency plans and include appropriate evaluations and recommendations for corrective action.

Should events outside the control of the scenario or actual emergency conditions exist, the exercise will be terminated and appropriate steps taken to mitigate emergency situations.

II. DEFINITIONS

1. Implementor - A member of the exercise group responsible for initiation of a simulated event.
2. Participant - A person responsible for responding and performing emergency functions or actions during the exercise, and not involved in evaluation, implementation, or observing the emergency exercise.
3. Evaluator - A member of the exercise group responsible for evaluation and documentation of a specific event or events. An Evaluator may also serve as an Implementor.
4. Observer - A person present and generally observing the conduct of the emergency exercise, but not otherwise involved in evaluation, implementation or participation in the exercise.

III. EXERCISE SCENARIO

Background

Crystal River Unit 3 has been operating at full power for 12 weeks with no significant problems. The reactor was shut down 2 weeks ago for refueling and a 10-year in-service inspection, which is currently ongoing.

During the in-service inspection, a loose part has been found in the reactor vessel. The decision has been made to remove the part through the fuel tube and the spent fuel pools. The spent fuel pools contain fuel removed from the reactor for the inspection, as well as older spent fuel.

February 22, 1983

TIME

ACTIVITY/EVENT

Unusual Event

1300	Work crew consisting of a Radiation Protection (R.P.) Technician, Mechanical Supervisor and several mechanics is attempting to correct a malfunction in the Deboration Demineralizer System so that spent resin can be transferred. During this repair effort, a piping connection breaks, spraying resin-slurry in a mechanic's face. The mechanic trips, falls, and is knocked unconscious.
1310	Control Room is notified, and First Aid Team is dispatched.
1315	A general radiation level of 10-20 mR/hr is measured.
1320	First Aid Team arrives at scene, calls Control Room to verify the injury, and reports the need for transport of the injured mechanic to a hospital. The victim's vital signs are as follows: BP - 110/60; pulse - 130/weak; respiration - 28/labored; pupils - slightly dilated. A radiation level of 750,000 dpm is measured on the victim's face, hair, and outer clothing.

TIMEACTIVITY/EVENT

1330 Control Room notifies plant emergency vehicle personnel and hospital and declares an "unusual event," in accordance with Implementing Procedure EM-202.

1335 Injured mechanic is made ready for transport by plant emergency vehicle (PEV).

1345 Injured mechanic is transported to hospital, with First Aid Team leader accompanying the PEV, in accordance with EM-213. (ETA Shands Hospital in Gainesville is 1500 hours).

1350 Remaining mechanics are contaminated at a level of 50,000 dpm on head and shoes.

1400 Decontamination of work crew begins, in accordance with Standard Plant Procedure RP-103.

1445 Decontamination of work crew is completed.

Alert Condition

1500 Smoke is detected in the Rad Waste Area (95 ft. level of Auxiliary Building) and reported to Control Room (CR) by an operator.

1510 CR notifies fire brigade.

1520 Fire brigade arrives in Rad Waste Area but is unable to locate fire immediately because of thick smoke.

1530 Fire brigade notifies CR of situation. CR declares an "alert" due to a fire duration of more than 10 minutes with the potential to affect safety-related systems. Announcement of alert condition results in implementation of personnel accountability procedures, in accordance with EM-205.

TIMEACTIVITY/EVENT

1535 Fire brigade determines that the source of the smoke is a resin-slurry transfer pump which burned up as a result of being left on and running against a closed valve.

Site Emergency

1540 In preparation for removing the loose part found earlier, the missile shields have been removed from the spent fuel pools, and the pool divider gate is being lifted out of the water, using the jib crane and an electric hoist.

1545 Report is received in CR of one person not accounted for. Search Team is dispatched.

1605 Fire brigade notifies CR that fire is out and the only damage is the pump motor and the extensive water sprayed in the area. Clean-up commences.

1615 The pool divider gate is dropped into the spent fuel pool because of a failure in the lifting equipment. The R. P. Technician assigned to the work crew sees the gate strike fuel bundles in the pool and bubbles rise to the surface. The work crew evacuates the building and notifies the CR.

1625 The Spent Fuel Area Radiation Monitor (RM-G15) alarms at its set point. The Fuel Handling and Spent Fuel Area Exhaust Duct Monitor (RM-A4) also alarms and is increasing. The Plant Vent Monitor (RM-A2) is also increasing rapidly.

1630 Spent Fuel Area Exhaust Duct Monitor (RM-A4) and Plant Vent Monitor (RM-A2) have gone off-scale.

1635 Emergency Coordinator declares a "site emergency," and emergency notifications are initiated. Emergency Coordinator (EC) requests a field monitoring team. A sample of plant vent effluent is requested by EC. Dose assessment calculations are initiated. Site evacuation commenced.

TIME

ACTIVITY/EVENT

1650 Missing person confirmed by security staff on Plant Evacuation accountability procedure. Search initiated.

1715 Search for missing person is successful, all persons accounted for.

1730₊ End of day - Restart at this point next day at 0800.

February 23, 1983

<u>TIME</u>	<u>ACTIVITY/EVENT</u>
0800	TSC and EOF have been staffed. State and federal personnel are arriving.
0825	Plant effluent sample taken at 1700 (February 22) reported to TSC.
	<u>General Emergency</u>
0830	Dose calculations indicate a thyroid dose offsite in excess of 5 rem/hr. Actual dose rate to thyroid is approximately 7.5 Rem/hr.
0840	"General Emergency" declared. Notifications and protective action recommendations made including on-site FPC personnel evacuations.
0900	Accident assessment predictions indicate no significant reduction in source term for next 3 hours.
0930	Dose projection data maintains approximately 7.5 Rem/hr thyroid dose rate. Whole body dose rates are estimated at 250 mRem/hr.
0945	Accident assesement indicates charcoal banks not providing reduction factor for iodines as designed. Smoke from Auxiliary Building fire apparently degraded system.
1000	Radiation monitors remain off-scale. Data on source term available by direct sampling of vent. Dose projections remain high.
1015	State field monitoring teams begin making measurements. Plant monitoring team reports dose rates confirming projections.
1030	Information from Shands on injured mechanic indicates patient is in satisfactory condition and decontamination completed. Patient will be held for observation overnight.

TIMEACTIVITY/EVENT

1035 Sample of spent fuel water requested.

1045 No problems with spent fuel cooling system have been identified. High dose rates on clean-up system noted.

1100 Field monitoring teams continue to report data which are compared with dose calculations and relayed to offsite agencies.

1120 Spent Fuel Area Radiation Monitor, Spent Fuel Area Exhaust Duct Monitor, and Plant Vent Monitor are all trending down.

1130 Dose projections indicate reduction in dose rates to offsite areas.

1145 Spent fuel water sample indicates massive fuel failures. Assessment continuing.

1200 Indications continue that concentration of radioactivity in spent fuel area is reducing. Evolution of activity appears to be stopped.

1210 Calculations indicate building air purge will require less than one hour to be at less than a few percent of original concentration once evolution of activity has ceased.

1235 Plant Vent Monitor shows near normal emission rate. Monitoring teams report lower dose rates.

1250 Recovery activities for Florida Power Corporation initiated. Activities include gate recovery, damage estimations, clean-up procedures and equipment operations, etc.

1300 Dose projections continue to indicate reduced dose rates down to near normal emissions from spent fuel area.

TIME

ACTIVITY/EVENT

1315 Reentry teams indicate damage assessments and prognosis for future releases from area. First indications are that releases from fuel have stopped and systems are stable.

1330 - Monitoring teams report lowering levels. State clears areas for reentry as
1700 appropriate. Emergency classification downgraded as appropriate.

1700 Exercise terminated.

Exhibit I

LIST OF LOCATIONS OF FPC IMPLEMENTORS/EVALUATORS

1. Fire Brigade Chief (1)
2. Auxiliary Building (Fire Area) (1)
3. Auxiliary Building (Chem/Rad Area) (1)
4. Control Room (2)
5. Technical Support Center (2)
6. Shands (C/R or knowledgeable in Health Physics - EMT) (1)
7. Guard House (Security Team) (1)
8. Radiation Emergency Team (1)
9. Environmental Survey Team (1)
10. Emergency Repair Team (1)
11. Operations Support Center (1)
12. Emergency Operations Facility (1)
13. Corporate Command Center (2)

Exhibit 2

LIST OF TENTATIVE OBSERVING ORGANIZATIONS

1. U. S. Nuclear Regulatory Commission
2. Industry/Utility Representatives
3. Florida Power Corporation Representatives
4. State of Florida Representatives
5. Federal Emergency Management Agency

EXHIBIT 3
SAMPLE
IMPLEMENTOR
INSTRUCTION
No. 01

Florida Power Corporation
Crystal River Unit 3
April 1981 Emergency Exercise

Time: 10:00

TO: Implementor - Auxiliary Building
(Location)

INSTRUCTION: At the time designated above, perform the following:

XX 1. Give Message Card No. 01 to Any individual in vicinity.
(Exercise Participant;
(see attached copy for complete message)

 2. To maintain the exercise scenario:

If necessary, give Message Card No. _____

to _____.

SUPPLEMENTAL

INFORMATION: For further clarification consider the following:

If no one is in the area at the designated time, report the message to the Control Room yourself.

EXHIBIT 4

MESSAGE CARD

No. 01

Florida Power Corporation
Crystal River Unit 3
April 1981 Emergency Exercise

Time: 10:00

TO: Any individual in vicinity
(Exercise Participant)

For the purpose of this exercise you have just observed or been informed of the following event or information:

MESSAGE:

THIS IS A DRILL.

Smoke and fire in Diesel Generator Room B.

ADDITIONAL INFORMATION:

1. The fire is from diesel fuel and rags on the floor near the diesel fuel day tank.
2. The fire is to be extinguished quickly (<10 minutes) by using a portable dry chemical extinguisher. (Water is not needed.)
3. Light smoke in area, which quickly clears.

EXHIBIT 5
EXERCISE
EVALUATION FORM

Florida Power Corporation
Crystal River Unit 3
April 1981 Emergency Exercise

Date: _____
Evaluator: _____

1. Activity Observed:

2. Location:

3. Answer the following concerning the event if appropriate.
 - A. Was the event organized?
 - B. Equipment & supplies available?
 - C. Did personnel understand their duties?
 - D. Key personnel inform others?
 - E. Were communications adequate?
 - F. What responsibilities were exercised?
 - G. What responsibilities were not exercised? Could they have been performed?

4.

Key Times:	Events:

6. Comments:

(additional information, interview comments, problem areas, recommendations, overall assessment, etc.)

Lined area for handwritten comments.

EXHIBIT 6
TIME LINE

