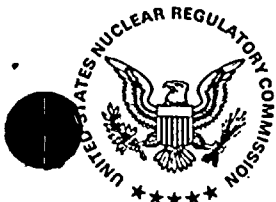


UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA STREET, N.W., SUITE 2900  
ATLANTA, GEORGIA 30323-0199



Report Nos.: 50-335/96-02 and 50-389/96-02

Licensee: Florida Power and Light Company  
9250 West Flagler Street  
Miami, FL 33102

Docket Nos.: 50-335 and 50-389

License Nos.: DPR-67 and NPF-16

Facility Name: St. Lucie Plant Units 1 and 2

Inspection Conducted: February 5-9, 1996

Inspector:

*W. M. Sartor Jr.*  
W. M. Sartor Jr., Team Leader

3/18/96  
Date Signed

Accompanying Personnel: K. Clark, RII  
F. Kantor, NRR  
J. Kreh, RII  
S. Sandin, Resident Inspector

Approved by:

*Kenneth P. Barry*  
Kenneth P. Barry, Chief  
Plant Support Branch  
Division of Reactor Safety

3/18/96  
Date Signed

SUMMARY

Scope:

This routine, announced inspection involved the observation and evaluation of the annual emergency preparedness exercise, conducted from 7:00 a.m. to 1:46 p.m. on February 7, 1996. The onsite inspection focused on the adequacy of the licensee's emergency response program, the implementation of the Emergency Plan and procedures in response to the simulated emergency conditions, and the effectiveness of the emergency response training program as reflected by the players' performance during the exercise. Correlative offsite activities involving State and local emergency response organizations were evaluated by the Federal Emergency Management Agency.

Results:

In the areas inspected, violations or deviations were not identified. The exercise demonstrated that the onsite emergency plans were adequate and that the licensee was capable of implementing them. A significant observation was made by the licensee during its self-evaluation critique process. The observation resulted from the exercise process rather than the exercise itself. The observation consisted of licensee objectively questioning its overall state of emergency response readiness as a result of the need to

conduct two practice drills prior to the graded exercise for management to be satisfied with the performance observed. Management's response to this observation provided a potential for a significantly improved emergency response. Specifically, management indicated a need to conduct periodic drills or exercises that focus on verification of the emergency response organization's capability to respond at any time vice the confirmation of this capability just prior to a graded exercise. Additional observations made as a result of the exercise itself included numerous positive remarks and some areas for improvement. Two areas for improvement included: the need for management to become more involved in assuring the correctness of information being provided in the offsite notification forms (paragraph 7) and the need to refine the command/control coordination between the damage control teams dispatched from the Operational Support Center and the operational teams dispatched by the Control Room (paragraph 10).

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*Bailey, P., Corporate Health Physics, Master Rad Controller
- \*Benken, E., Licensing Engineer
- \*Bohlke, B., Site Vice President
- \*Burton, C., Services Manager
- \*Czarnicki, R., Security Operations Supervisor
- \*Denver, D., Engineering Manager
- \*Fincher, P., Training Manager
- \*Frechette, B., Chemistry Supervisor
- \*Heffelfinger, K., Protective Services Manager
- \*Lavelle, S., Non-licensed Operators' Controller
- \*McCullers, R., Health Physics Operations Supervisor
- \*Mohindrou, K., Chief Site Engineer
- \*Mothena, D., Emergency Preparedness Manager
- \*Paduano, H., Manager, Licensing and Special Programs
- \*Pennenga, R., Simulator Lead Controller
- \*Quillen, T., Licensing Engineer
- \*Revell, J., Emergency Preparedness Coordinator
- \*Rogers, L., System and Component Engineering Manager
- \*Sager, D., Vice President, Nuclear Assurance
- \*Scarola, J., Plant General Manager
- \*Walker, R. (Richard), Emergency Preparedness Coordinator
- \*Walker, R. (Roger), Licensed Operator Instructor
- \*Weinkam, E., Licensing Manager
- \*Welle, R., Nuclear Plant Supervisor
- \*West, J., Operations Manager
- \*Whitwell, D., Emergency Planner

Other licensee employees contacted during this inspection included engineers, technicians, and office personnel.

\*Attended exit interview

### 2. Exercise Scenario (82302)

The scenario for the emergency exercise was reviewed to determine whether provisions had been made to test the integrated capability and a major portion of the basic elements existing within the licensee, State, and local emergency plans and organization as required by 10 CFR 50.47(b)(14), 10 CFR Part 50, Appendix E, Paragraph IV.F, and specific criteria in NUREG-0654, Section II.N.

The scenario was reviewed in advance of the exercise and was discussed with licensee representatives. The scenario developed for this exercise was adequate to drill the onsite and offsite emergency organizations of the licensee. The scenario also prompted a range of response activities sufficient for local government agencies and the State of Florida to exercise the various facets of their respective emergency response plans during this full-participation exercise.

No violations or deviations were identified.

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### 3. Assignment of Responsibility (82301)

This area was observed to determine whether primary responsibilities for emergency response by the licensee had been specifically established and whether adequate staff was available to respond to an emergency as required by 10 CFR 50.47(b)(1) and 10 CFR Part 50, Appendix E, Paragraph IV.A.

The inspectors observed that specific assignments had been made for the licensee's ERO and that there was adequate staff available to respond to the simulated emergency. The initial response organization was augmented by designated licensee representatives. The capability for long-term or continuous staffing of the ERO was discussed, and planning for relief was initiated at each of the ERFs.

No violations or deviations were identified.

### 4. Onsite Emergency Organization (82301)

The licensee's onsite emergency organization was observed to determine whether the responsibilities for emergency response were defined, whether adequate staffing was provided to insure initial facility accident response in key functional areas at all times, and whether the interfaces were specified as required by 10 CFR 50.47(b)(2) and 10 CFR Part 50, Appendix E, Paragraph IV.A.

The inspectors determined that the licensee's onsite emergency organization was well defined and was generally effective in dealing with the simulated emergency. Adequate staffing of the ERFs was provided for the initial accident response, and the interfaces between the onsite organization and offsite support agencies were adequate to ensure prompt notification and support from offsite agencies as required.

No violations or deviations were identified.

### 5. Emergency Response Support and Resources (82301)

This area was observed to determine whether arrangements for requesting and effectively using assistance resources were made, whether arrangements to accommodate State and local personnel in the EOF were adequate, and whether other organizations capable of augmenting the planned response were identified as required by 10 CFR 50.47(b)(2) and 10 CFR Part 50, Appendix E, Paragraph IV.A.

The licensee's Emergency Plan provided information regarding additional support and resources that may be called upon to assist in an emergency. The inspector observed that representatives of the State of Florida were readily accommodated at the EOF, and that arrangements for requesting offsite assistance resources were in place.

No violations or deviations were identified.

## 6. Emergency Classification System (82301)

This area was observed to verify that a standard emergency classification and action level scheme was in use by the licensee as required by 10 CFR 50.47(b)(4) and Paragraph IV.C of Appendix E to 10 CFR Part 50.

Licensee procedures provided for off-normal events to be classified into one of the four emergency classification categories. The licensee's staff made the following emergency classifications during the exercise:

- ▶ A Notification of Unusual Event was declared at 7:40 a.m. based on an unidentified Reactor Coolant System leakage of five gpm and proceeding with plant shutdown.
- ▶ An Alert was declared at 9:20 a.m. based on an increase in RCS leakage to greater than 20 gpm. It was not clear to the inspector whether the Alert classification was anticipatory to the EAL criterion of "RCS leakage greater than 50 gpm", or whether this information was simply erroneous and should have stated 50 gpm. The leakage had been programmed into the simulator as a step function increase to approximately 65 gpm. The 20 gpm entry was not a significant issue because the leak rate was increasing rapidly and the declaration was conservative.
- ▶ A Site Area Emergency declaration was made at 10:18 a.m. based on a rapid decrease in RCS pressure and Safety Injection actuated and flowing to the RCS.
- ▶ A General Emergency was declared at 11:06 a.m. based on no emergency core cooling available.

The inspector concluded the licensee satisfactorily classified exercise events in a timely manner.

No violations or deviations were identified.

## 7. Notification Methods and Procedures (82301)

This area was observed to determine whether procedures had been established for notification by the licensee of State and local response organizations and emergency personnel; whether the content of initial and follow-up messages to response organizations had been established; and whether means to provide early notification to the populace within the plume exposure pathway EPZ had been established as required by 10 CFR 50.47(b)(5) and 10 CFR Part 50, Appendix E, Paragraph IV.D.

The inspector observed that notification methods and procedures had been established and were used to provide information to the offsite government agencies in a timely manner. Several inconsistencies were observed in the use of the State of Florida Notification Message Form. Although none were considered debilitating, they indicated that improvements in training of communicators and a better review of the notification forms by management would be a significant improvement.

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Separately from the exercise, the inspector reviewed the testing of the siren system used to alert the public if offsite protective actions were ordered by governmental authorities. The full network of 85 sirens in the ten-mile EPZ was tested quarterly, at noon on the first Thursday of March, June, September, and December. The responsibility and physical capability to actuate the sirens rested with St. Lucie and Martin Counties, whether for a test or an actual emergency. Prior to each quarterly test involving a full sounding of the sirens, the licensee and counties released statements to the news media (radio, television, and print) to advise residents of the test. Each quarterly test began with an announcement, using the public-address capability of the sirens, stating, "The following will be a test of the Outdoor Warning System." This announcement was made with the siren horns fixed and pointed, in turn, in each of eight compass directions. The sirens were then sounded at full volume (rated at 123 dB at 100 feet) for two minutes with continuous horn rotation. This alerting signal was followed by a closing announcement (made in the same manner as the pretest announcement) stating, "This concludes the test of the Outdoor Warning System." This testing regime required about 15 minutes, according to a licensee representative.

On an annual basis, a booklet on Safety Planning Information for the St. Lucie Power Plant was mailed to each residence in the ten-mile EPZ. In that booklet, residents were told that if they hear an outdoor warning siren, they should promptly tune to a designated local radio or television station for instructions. The public-address capability of the siren system, used only during tests, was not intended to be used in the event of an actual emergency and was not part of the FEMA-approved prompt notification system.

No violations or deviations were identified.

#### 8. Emergency Communications (82301)

This area was observed to determine whether provisions existed for prompt communications among principal response organizations and emergency personnel as required by 10 CFR 50.47(b)(6); 10 CFR Part 50, Appendix E, Paragraph IV.E; and specific criteria in NUREG-0654, Section II.F.

Communications among the licensee's emergency response facilities and emergency organization and between the licensee's emergency response organization and offsite authorities were good. No communications related problems were identified during this exercise.

No violations or deviations were identified.

#### 9. Public Education and Information (82301)

This area was observed to determine whether information concerning the simulated emergency was made available for dissemination to the public as required by 10 CFR Part 50, Appendix E, Paragraph IV.D, and specific criteria in NUREG-0654, Section II.G.

Information was provided to the media and the public in advance of the exercise. During the exercise, the ENC was established and the licensee demonstrated the capability to perform a timely and accurate response to news inquiries. The licensee also effectively demonstrated the ability to coordinate the preparation, review and release of public information with State and local government agencies. The licensee's public spokesperson demonstrated the capability to brief the media in a clear, accurate and timely manner.

No violations or deviations were identified.

#### 10. Emergency Facilities and Equipment (82301)

This area was observed to determine whether adequate emergency facilities and equipment to support an emergency response were provided and maintained as required by 10 CFR 50.47(b)(8); 10 CFR Part 50, Appendix E, Paragraph IV.E; and specific criteria in NUREG-0654, Section II.H.

The inspectors observed the activation, staffing, and operation of selected ERFs and evaluated equipment provided for emergency use during the exercise.

- a. Control Room Simulator - The CRS staff operated as an effective team in its response to, and management of, the simulated emergency. The NPS/EC demonstrated able command and control during the portion of the exercise observed in the CRS by the inspector. The EC correctly classified the conditions that initiated the emergency as a NOUE, and notified designated State authorities within 15 minutes. The inspector noted that crew briefings by the EC would have been helpful in ensuring that all personnel were fully aware of changing plant conditions.
- b. Technical Support Center - The inspector observed the latter stages in the process of activating the TSC following the Alert declaration. The ED declared the TSC operational at 10:06 a.m., about 45 minutes after the Alert declaration. TSC personnel appeared to understand their emergency duties and responsibilities, and executed their functions in an organized manner. The staff's demeanor and the EC's command and control in the TSC were very good. Half-hourly briefings in the TSC were concise and informative, although some personnel used more abbreviations and acronyms than actual words in their briefings. The ERDADS printers in the TSC produced a very high noise level which was unnecessarily obtrusive. When those printers were not running, the TSC noise level was quite low.

Communications systems appeared to function properly. Status boards were updated at least every 15 minutes and were well maintained throughout the exercise. The functional and operational adequacy of the TSC were demonstrated in this exercise.

- c. Operations Support Center - The inspectors observed the activation and staffing, establishment of communications, briefing and dispatch of in-plant repair teams, radiological controls, and operation of the facility. The OSC was activated in a timely manner. The requirements on the OSC were not very challenging during this exercise as only five teams were dispatched. However, this was due in part to the non-licensed operators not being dispatched from the OSC. The inspector accompanying one of the repair teams noted confusion as to who had primary control of the repair mission when repair personnel from both the OSC and the NLO's dispatched from the Control Room were at the same location. Although this did not have a negative impact, the licensee was going to review this for possible refinement of the command/control of damage repair teams.
- d. Emergency Operations Facility

Activation of the EOF was not an objective for this exercise. Although the scenario showed activation of the EOF as an objective, the team was informed at the scenario briefing that the EOF staff would be prestaged. The initial EOF staff comes from the plant while the majority of the EOF staff is from FP&L corporate offices in Juno Beach. It is the latter staff that was prestaged. The prestaging, while well meaning in intent to assist the State and counties in achieving their objectives, introduced an air of artificiality into the exercise play and interfered with the TSC in fully achieving some of its objectives.

The initial EOF staff from the site were notified to report to the EOF following the declaration of the Alert at 9:20 a.m. in accordance with EPIP-1102. The minimum staff needed for EOF operation is specified in EPIP-1102 and includes the Recovery Manager (RM), the RM Operations Advisor, an ERDADS operator, two dose assessment coordinators, and a communicator. The RM declared the EOF in standby mode (per EPIP-1102) at 0956. The decision was made by the Emergency Control Officer (ECO) to fully activate the EOF with the corporate emergency response organization shortly after the declaration of the Alert. As indicated in the emergency plan and EPIP-1101, the activation of the EOF at the Alert stage is optional and the ECO was requested by the controllers to activate the EOF to maintain the scenario timeline. At the time the ECO was under the mistaken impression that the leak rate which caused the Alert was 20 gpm due to an erroneous message from the Control Room when in actuality the leak rate was 65 gpm. The RM declared the EOF operational at 1006 at which time the EOF assumed responsibility for offsite communications and PARs.

Offsite organizations represented in the EOF included the State of Florida Division of Emergency Management (DEM), the State of Florida Department of Health and Rehabilitative Services (DHRS) which included dose assessment personnel and field team controllers, and St. Lucie County and Martin County emergency response personnel. The senior DEM person in the EOF was the Governor's Authorized Representative (GAR) who along with the senior St. Lucie and Martin County representatives had decisionmaking authority. This is a unique arrangement to have

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onsite and offsite decisionmakers both in the EOF and it greatly facilitated the exchange on information and the development of protective actions for the public.

As plant conditions deteriorated, the RM made effective use of his staff and consulted frequently with the Emergency Coordinator (EC) in the TSC. The RM and his Operations Advisor frequently referred to the EALs in the site emergency plan and the PAR flowchart in the plan and EPIP-1102. The PAR flowchart is consistent with current NRC guidance and properly emphasizes the development of PARs based on plant conditions for severe core damage accidents. The Site Area Emergency (SAE) was declared at 1018 and the General Emergency (GE) at 1106. Following the declaration of the GE by the EC in the TSC, the EOF staff quickly developed PARs using the PAR flowchart. The GE declaration and the PARs were based on plant conditions prior to the release of any radioactive material from the plant. The licensee's PARs, to evacuate 0 to 2 miles in all directions and 2 to 5 miles in the downwind direction, were given to the GAR and County representatives in the EOF. The GAR in coordination with the DHRS and County representatives in the EOF concurred in the PARs upon confirmation from the County EOCs that there were no impediments to evacuation in any of the offsite evacuation areas.

A release occurred about 1100 and began to increase in severity. The EOF dose assessment staff developed dose projections utilizing the FP&L dose model in accordance with EPIP-3100033E. Based on monitor readings from the plant stack and plant information from ERDADS and other sources, the Health Physics Manager recommended at about 1215 that the PARs be expanded in accordance with the PAR flowchart to include evacuation to 5 miles in all directions and 5 to 10 miles in the downwind directions. The RM concurred in the recommendation and the PARs were given to the GAR and subsequently issued to the public. The decision to expand the PARs was based on calculated thyroid doses which in turn were based on a default iodine to noble gas ratio in the dose model. Although the development of the expanded PAR based on dose projections was in accordance with procedure, in retrospect it would have been prudent for the staff to acquire more information on plant conditions and the composition of the release prior to modifying the PARs. From a programmatic standpoint, the EOF staff adequately demonstrated the capability to perform dose assessments and met their exercise objective in this regard.

The EOF staff performed core damage assessment in accordance with EPIP-1302, a comprehensive procedure for assessing core damage under emergency response conditions. The EOF staff's understanding of the core status and their eventual estimate of the extent of core damage agreed reasonably well with the scenario value of core damage. The EOF staff met their objective to perform core damage assessment.

The RM exhibited good command and control in the EOF, effectively directed and utilized his staff, and provided periodic briefings to the general EOF staff as the accident progressed. The RM was assisted in his decisionmaking efforts by the ECO who is a member of senior

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corporate management. The support for and coordination with the State and county representatives in the EOF was excellent. At all times the RM and his staff maintained an awareness of the need to coordinate closely with the offsite representatives in the EOF.

Communications with the other response facilities including the Emergency News Center which is co-located with the EOF was good. Messages to the offsite response organizations utilizing the State of Florida notification form were issued within the prescribed time limits. Some minor discrepancies were noted in the information on the forms. A discrepancy involving the PARs at the General Emergency stage was identified and corrected by the licensee. This error had no adverse impact as the correct information was given to the State and county representatives in the EOF.

Overall the EOF staff adequately demonstrated their capability to perform their assigned emergency response functions in a manner consistent with program requirements and guidance.

No violations or deviations were identified.

#### 11. Exercise Critique (82301)

The licensee's critique of the emergency exercise was observed to determine whether deficiencies identified as a result of the exercise and weaknesses noted in the licensee's emergency response organization were formally presented to licensee management for corrective actions as required by 10 CFR 50.47(b)(14); 10 CFR Part 50, Appendix E, Paragraph IV.E; and specific criteria in NUREG-0654, Section II.N.

The licensee conducted player critiques following termination of the exercise. A detailed controller/evaluator critique was conducted on the day after the exercise. A formal presentation of the licensee's critique conclusions was made on February 9, 1996, with exercise controllers, licensee management, and NRC personnel attending. The licensee reviewed the exercise objectives and evaluated the performance of the emergency organization in meeting the objectives. It was during this process that the licensee acknowledged the basis of the results paragraph of the summary portion of this report. i.e., Licensee management objectively questioned its overall state of emergency response readiness as a result of the need to conduct two practice drills prior to the graded exercise for management to be satisfied with the performance observed. As a result, management identified the need to consider conducting periodic drills or exercises that focus on verification of the emergency response organization's capability to respond at any time vice the confirmation of this capability just prior to a graded exercise.

No violations or deviations were identified.

## 12. Review of UFSAR Commitments

A recent discovery of a licensee operating its facility in a manner contrary to the UFSAR description highlighted the need for a special focused review that compares plant practices, procedures, and/or parameters to the UFSAR descriptions. While performing the inspection discussed in this report, the inspectors reviewed the applicable portions of the UFSAR that related to the areas inspected. The inspectors verified that the UFSAR wording was consistent with the observed plant practices, procedures, and/or parameters.

The UFSAR contains specific references to the site emergency plan. However, the site Emergency Plan is maintained as a separate document from the UFSAR.

## 13. Exit Interview

The inspection scope and results were summarized on February 9, 1996, with the persons whose names are listed in Paragraph 1. The Team Leader described the areas inspected and discussed observations made during the inspection. Licensee management was informed that the NRC considered the exercise to have been successful. The Team Leader acknowledged the licensee's comments made regarding doing periodic drills. Dissenting comments were not received from the licensee. Proprietary information was reviewed during the inspection but none is contained in this report.

## 14. Federal Evaluation Team Report

The report by the Federal Evaluation Team (Regional Assistance Committee and Federal Emergency Management Agency, Regions IV staff) concerning the activities of offsite agencies during the exercise will be forwarded by separate correspondence.

## 18. Index of Abbreviations Used in This Report

CFR	Code of Federal Regulations
CRS	Control Room Simulator
dB	decibel
DEM	Division of Emergency Management
EAL	Emergency Action Level
EC	Emergency Coordinator
ECO	Emergency Control Officer
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPIP	Emergency Plan Implementing Procedure
EPZ	Emergency Planning Zone
ERDADS	Emergency Response Data Acquisition Display System
ERF	Emergency Response Facility
ERO	Emergency Response Organization
FEMA	Federal Emergency Management Agency
FP&L	Florida Power and Light
GAR	Governor's Authorized Representative
GE	General Emergency

gpm	gallons per minute
NLO	Non-licensed Operator
NOUE	Notification of Unusual Event
NPS	Nuclear Plant Supervisor
NRC	Nuclear Regulatory Commission
OSC	Operations Support Center
PAR	Protective Action Recommendation
RCS	Reactor Coolant System
RM	Recovery Manager
SAE	Site Area Emergency
TSC	Technical Support Center
UFSAR	Updated Final Safety Analysis Review

Attachment (10 pages):  
Scope and Objectives, and  
Narrative Summary and Timeline

**FLORIDA POWER AND LIGHT COMPANY  
ST. LUCIE PLANT  
1996 EMERGENCY PREPAREDNESS EVALUATED EXERCISE  
FEBRUARY 7, 1996**

**2.1 SCOPE**

To assure that the health and safety of the general public is protected in the event of an accident at St. Lucie Nuclear Plant (PSL), it is necessary for Florida Power and Light Company (FPL) to conduct an annual emergency preparedness exercise. This is the 1996 Evaluated Exercise at St. Lucie Nuclear Plant. This exercise involves mobilization of FPL, State of Florida and Local Government Agency personnel and resources to respond to a simulated accident scenario. The exercise will be observed and evaluated on-site by the Nuclear Regulatory Commission (NRC). An FPL Controller/Evaluator organization will control, observe, evaluate and critique the PSL portion of the exercise so that the emergency response capabilities of the utility may be assessed. The exercise will be observed and evaluated off-site by the Federal Emergency Management Agency (FEMA). A State of Florida and Local Government Agency Controller/Evaluator organization will control, observe, evaluate and critique the off-site portion of the exercise so that the emergency response capabilities of the off-site agencies may be assessed.

Due to the compressed timeline of the exercise, some portions of the FPL Emergency Response Organization may be prepositioned. All on-site Emergency Response Facilities (ERFs) will be activated in accordance with simulated conditions and appropriate emergency response procedures for the exercise. Exercise participants ("players") will not have any prior knowledge of the simulated accident events, operational sequence, radiological effluents or weather conditions.

The operations portion of the exercise will be performed from the Plant Simulator. Operations data will be generated and supplied real-time by the Plant Simulator.

State and Local Government Agencies will participate in the off-site portion of the exercise.

The following drills are incorporated into the exercise scenario and will be demonstrated concurrently in the course of the exercise:

**Radiological Monitoring Drill:** Both on-site and off-site teams will be dispatched during the drill to obtain required air samples and measurements associated with a simulated off-site release of radioactivity and communicate these results to the appropriate Emergency Response Facility (ERF). (Field monitoring team protective clothing and respiratory protection will be simulated in the field.)

**Health Physics Drill:** Involves the response to and analysis of simulated elevated activity airborne or liquid samples, radiation exposure control, emergency dosimetry and the use of protective equipment on-site.

2.1 **SCOPE** (continued)

**Communications Drill:** Actual usage and demonstration of the integrity of emergency response communications links and equipment between St. Lucie Plant and the FPL off-site Emergency Response Organization (ERO) and off-site response agencies. Since the details of the exercise are held confidential, this drill also satisfies the annual Unannounced Communications Drill.

**Medical Emergency Drill:** Demonstrates the ability of the off-site medical support facility (Martin Memorial Medical Center) to treat an injured and contaminated individual.

The overall intent of the exercise is to demonstrate that the FPL staff assigned responsibilities in an emergency situation are adequately trained to perform in accordance with emergency preparedness plans and procedures.

**FLORIDA POWER AND LIGHT COMPANY**  
**ST. LUCIE PLANT**  
**1996 EMERGENCY PREPAREDNESS EVALUATED EXERCISE**  
**FEBRUARY 7, 1996**

**2.2 OBJECTIVES**

The St. Lucie Plant (PSL) 1996 emergency preparedness exercise objectives are based upon Nuclear Regulatory Commission requirements provided in 10 CFR 50, Appendix E, *Emergency Planning and Preparedness for Production and Utilization Facilities* and inspection criteria listed in the NRC Inspection Manual. Additional guidance provided in NUREG-0654, FEMA-REP-1, Revision 1, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants*, was utilized in developing the objectives.

The exercise will be conducted and evaluated using a realistic basis for activities. Scenario events may escalate to a release of radioactive material to the environment.

The following objectives for the exercise are consistent with the aforementioned documents:

**A. Accident Assessment and Classification**

1. Demonstrate the ability to assess accident conditions.
2. Demonstrate the ability to identify initiating conditions, review conditions against the Emergency Action Level (EALs), and correctly classify the emergency throughout the exercise.

**B. Notification**

1. Demonstrate the ability to alert, notify and mobilize Florida Power and Light (FPL) emergency response personnel.
2. Demonstrate the ability to alert and notify non-emergency response personnel.
3. Demonstrate appropriate procedures for both initial and follow-up notifications.
4. Demonstrate the capability to promptly notify the State of Florida and Local Authorities of an emergency declaration or change in emergency classification.
5. Demonstrate the capability to promptly notify the U.S. Nuclear Regulatory Commission (NRC) of an emergency declaration or change in emergency classification.
6. Demonstrate the ability to provide accurate and timely information to State, Local and Federal Authorities concerning class of the emergency plant status/conditions and whether a radioactive release is in progress, as appropriate.
7. Demonstrate the ability to provide periodic plant status updates to State, Local and Federal Authorities.

## 2.2 OBJECTIVES (continued)

### C. Communications

1. Demonstrate the availability and operability of emergency communications equipment for notification of State, Local and Federal Authorities.
2. Demonstrate the means to provide follow-up information to State, Local and Federal Authorities.
3. Demonstrate the availability and operability of communications equipment in the Emergency Response Facilities (ERFs) for interfacility communications.
4. Demonstrate the availability and operability of emergency communications equipment necessary for off-site monitoring activities.
5. Demonstrate the means to acquire meteorological data necessary for emergency response.

### D. Emergency Response

1. Demonstrate staffing of Emergency Response Facilities (ERFs).
2. Demonstrate planning for 24-hour per day emergency response capabilities.
3. Demonstrate the activation of the Technical Support Center (TSC) and Operational Support Center (OSC).
4. Demonstrate the activation of the Emergency Operations Facility (EOF).
5. Demonstrate the functional and operational adequacy of the Emergency Response Facilities, TSC, OSC, EOF.
6. Demonstrate the ability of each Emergency Response Facility Manager to maintain command and control over the emergency response activities conducted within the facility throughout the exercise.
7. Demonstrate the ability of each facility manager to periodically inform facility personnel of the status of the emergency situation and plant conditions.
8. Demonstrate the transfer of Emergency Coordinator (EC) function from the Nuclear Plant Supervisor (NPS) to designated senior plant management and transfer of Emergency Coordinator responsibilities [(1) off-site notification to the State and Local Authorities and (2) recommending protective actions] to the Recovery Manager (RM).



**2.2**    **OBJECTIVES** (continued)

**D.**    **Emergency Response** (continued)

9.    Demonstrate the ability to promptly and accurately transfer information between Emergency Response Facilities (ERFs).
10.   Demonstrate the ability of the TSC to request and prioritized Emergency Response Teams (ERTs) in a timely manner.
11.   Demonstrate the ability of the OSC to assemble, dispatch and control ERTs in a timely manner.
12.   Demonstrate the capability for development of the appropriate Protective Action Recommendations (PARs) for the general public within the 10 Mile Emergency Planning Zone (EPZ).
13.   Demonstrate that the appropriate PARs can be communicated to State and Local Authorities within the regulatory time constraints.
14.   Demonstrate the activation, staffing and control of the Emergency News Center (ENC).

**E.**    **Radiological Assessment and Control**

1.    Demonstrate the capability to provide radiological monitoring for people evacuated from the site.
2.    Demonstrate the coordinated gathering of radiological data necessary for emergency response, including collection and analysis of in-plant surveys and samples, as applicable.
3.    Demonstrate the capability to calculate radiological release dose projections and perform timely and accurate dose assessment, as appropriate.
4.    Demonstrate the ability to compare on-site and off-site dose projections to the EPA protective action guidelines and determine and recommend the appropriate protective actions.
5.    Demonstrate the ability to provide dosimetry to emergency response personnel as required and adequately track personnel exposure.
6.    Demonstrate the capability to confirm and periodically assess the habitability of the on-site Emergency Response Facilities (ERFs).



2.2 **OBJECTIVES** (continued)

E. **Radiological Assessment and Control** (continued)

7. Demonstrate the capability for on-site contamination control.
8. Demonstrate the ability to adequately control radiation exposure to on-site emergency workers, as appropriate to radiological conditions.
9. Demonstrate the decision making process for authorizing emergency workers to receive radiation doses in excess of 10 CFR Part 20 limits, as appropriate.
10. Demonstrate the ability to control and coordinate the flow of information regarding off-site radiological consequences between radiological assessment personnel in the TSC and EOF.
11. Demonstrate the ability of field monitoring teams to respond to and analyze an airborne radiological release through direct radiation measurements in the environment, as appropriate.
12. Demonstrate the means to determine the necessity of and the capability for decontamination.
13. Demonstrate the ability to assemble and dispatch field monitoring teams.
14. Demonstrate the collection and analysis of air samples and provisions for effective communications and recordkeeping, as appropriate.
15. Demonstrate the ability to control and coordinate the flow of information regarding off-site radiological consequences with State radiological assessment personnel in the EOF.

F. **Public Information Program**

1. Demonstrate the timely and accurate response to news inquiries.
2. Demonstrate the ability to brief the media in a clear, accurate and timely manner.
3. Demonstrate the ability to coordinate the preparation, review and release of public information with State and Local Government Agencies, as appropriate.

2.2 **OBJECTIVES** (continued)

**G. Medical Emergency**

1. Demonstrate the ability to respond to a radiation medical emergency in a timely manner.
2. Demonstrate the capability of the First Aid and Personnel Decontamination Team to respond to a medical emergency, administer first aid and survey for contamination on a simulated contaminated injured individual.
3. Demonstrate the capability to arrange for and obtain transportation and off-site medical support for a radiological accident victim.
4. Demonstrate the ability of Martin Memorial Medical Center personnel to treat an injured and/or contaminated patient.

**H. Evaluation**

1. Demonstrate the ability to conduct a post-exercise critique to determine areas requiring corrective action or improvement.

**I. Clarifications/Exemptions**

Areas of the PSL Emergency Plan that will NOT be demonstrated during this exercise include:

1. (E.1) Actual radiological monitoring of evacuated personnel (off-site HP monitoring resources will be identified and allocated to the off-site Assembly Area).
2. (E.9) Credit will be taken for discussion of the decision-making process during evaluation of the need for dose extension(s).
3. Site evacuation of non-essential personnel.
4. On-site personnel accountability.
5. Availability and operability of backup communications equipment.

FLORIDA POWER AND LIGHT COMPANY  
ST. LUCIE PLANT  
1996 EMERGENCY PREPAREDNESS EVALUATED EXERCISE  
FEBRUARY 7, 1996

3.1 NARRATIVE SUMMARY

Unit 2, which is operating at 100% power, has a Health Physics (HP) team performing a containment entry. When the team is notified to leave containment due to the initiation of a Reactor Coolant System (RCS) leak, the utility worker, in his haste, trips and falls in the airlock. The Radiation Protection Man (RPM) assists the utility worker out of containment and secures the personnel hatch. The contaminated injured utility worker is transported offsite for medical treatment.

The Operators have commenced a downpower when the RCS leakage increases to greater than 10 gallons per minute (gpm) and an (Notification of) Unusual Event is declared. The RCS leakage continues to increase to greater than 50 gpm and an Alert is declared. Operators increase the rate of the downpower.

When the Operators trip the Unit, or shortly thereafter, a large break occurs in the "2A1" Cold Leg. As the Loss of Coolant Accident (LOCA) is initiated the 2B3 4.16 KV bus experiences a differential current fault which disables all B side safety systems. A Site Area Emergency is declared at this time.

The Control Room (Simulator) receives an inadvertent Recirculation Actuation Signal (RAS) which results in the isolation of the Refueling Water Storage Tank (RWST), the RWST Suction Valve fails to reopen. Both trains of the Emergency Core Cooling System (ECCS) are lost and cause the declaration of a General Emergency.

ECCS will be reestablished but not until after Core Exit Thermocouple (CET) temperatures exceed 700 degrees Fahrenheit and a core melt sequence is initiated. The radiological release, monitored by the plant vent, requires a recommended protective action of evacuation out to five miles downwind of the release.

**FLORIDA POWER AND LIGHT COMPANY  
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**3.2 SCENARIO TIMELINE**

TIME (all times approximate)		EVENT
Scenario	Clock	
00/00	0700	Shift Turnover - Initial Conditions.
00/30	0730	Reactor Coolant System (RCS) leakage increases to greater than 1 gallon per minute (gpm).  Nuclear Plant Supervisor (NPS) should declare an (Notification of) <b>UNUSUAL EVENT</b> due to <u>RCS leakage GREATER THAN allowed by Technical Specifications.</u>
00/45	0745	Operators initiate a downpower.
01/00	0800	A Medical Emergency is reported to the Unit 2 Control Room (Simulator).  <i>Contingency Message for the Unusual Event</i>
01/05	0805	The First Aid/Personnel Decontamination Team is activated to respond to the injured person.
01/50	0850	The contaminated injured person leaves the Radiation Controlled Area (RCA) and is taken to Martin Memorial Medical Center.
02/15	0915	RCS leakage increases to 65 gpm.  The Emergency Coordinator (EC) should declare an <b>ALERT</b> due to <u>RCS leakage GREATER THAN 50 gpm.</u>  Operators increase the rate of the downpower.
02/45	0945	<i>Contingency Message for the Alert</i>  (Depending on rate of downpower, Operators take Unit offline.)

3.2 SCENARIO TIMELINE (continued)

TIME (all times approximate)		EVENT
Scenario	Clock	
03/15	1015	<p>A large break occurs on the 2A1 Cold Leg resulting in a Loss of Coolant Accident (LOCA).</p> <p>The 2B3 4160 volt Bus is lost due to a differential current fault.</p> <p>The EC should declare a <b>SITE AREA EMERGENCY</b> due to <u>LOCA GREATER THAN capacity of charging pumps.</u></p> <p>Operators trip the Unit, if the Unit is not already offline.</p>
03/45	1045	<p>On the unexplained A side Recirculation Actuation Signal (RAS), the Refueling Water Storage Tank (RWST) Suction Valve fails closed, but the Containment Sump Suction Valve fails to open.</p> <p>All Emergency Core Cooling System (ECCS) capability is lost.</p> <p>The EC should declare a <b>GENERAL EMERGENCY</b> due to <u>Emergency Coordinator's judgement that plant conditions exist that make release of large amounts of radioactivity in a short period appear possible or likely.</u> (Any core melt situation)</p> <p style="text-align: center;"><i>Contingency Message for Site Area Emergency</i></p>
04/15	1115	<p>Core Exit Thermocouple (CET) temperatures exceed 700 degrees Fahrenheit.</p> <p>A release of radiation is initiated.</p>
04/15	1115	<i>Contingency Message for General Emergency</i>
04/45	1145	ECCS is restored and radiation levels start to diminish.
07/00	1400	Exercise is terminated.