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

JAN 29 1987

Report No.: 50-250/87-03 and 50-251/87-03

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

Docket No.: 50-250 and 50-251 License No.: DPR-31 and DPR-41

Facility Name: Turkey Point

Inspection Conducted: January 13-16, 1987

Inspector: A. L. Cunningham 01/29/87
Date Signed

Accompanying Personnel: L. K. Cohen
J. M. Will, Jr.
J. D. Jamison
E. E. Hickey

Approved by: T. R. Decker 1/29/87
T. R. Decker, Section Chief
Division of Radiation Safety and Safeguards
Date Signed

SUMMARY

Scope: This routine announced inspection involved evaluation of the annual radiological emergency preparedness exercise.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*J. W. Dickey, Vice President, Nuclear Operations
C. M. Wethy, Vice President, Nuclear Site
*C. J. Baker, Plant Manager
*D. Grandage, Operations Superintendent
*J. W. Kappes, Maintenance Superintendent
*H. N. Paduano, Manager, Nuclear Energy Services
*B. Abrishami, Acting Technical Department Supervisor
*E. R. LaPierre, Chemistry Department Supervisor
*J. Maisler, Emergency Planning Manager
*G. Casto, Emergency Planning Coordinator
*S. J. Vaughn, Corporate Communications
*J. Arias, Jr., Regulation and Compliance Supervisor
*R. J. Spooner, Quality Assurance

Other licensee employees contacted included construction craftsmen, engineers, technicians, operators, mechanics, security office members and office personnel.

NRC Resident Inspector

*D. R. Brewer

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on January 16, 1987, with those persons indicated in Paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings. The exercise weakness identified was fully discussed with the licensee (Paragraph 10). No dissenting comments were received from the licensee. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspector during this inspection.

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed during this inspection.

4. Exercise Scenario (82301)

The scenario for the emergency exercise was reviewed to assure that provisions were made to test the integrated capability and a major portion of the basic elements defined in the licensee's Emergency Plan and organization pursuant to 10 CFR 50.47(b)(14), Paragraph IV.F of Appendix E

to 10 CFR 50, and specific guidance promulgated in Section II.N of NUREG-0654.

The scenario was reviewed in advance of the scheduled exercise date and discussed in detail with licensee representatives on several occasions. While no major scenario problems were identified, several inconsistencies became apparent during the exercise. The inconsistencies, however, failed to detract from the overall performance of the licensee's emergency organization.

The scenario developed for this exercise was detailed, and fully exercised the onsite emergency organization. The scenario provided sufficient information to the State, counties, local governments and Federal agencies consistent with their participation in the exercise.

The licensee demonstrated a significant commitment to training and personnel through the use of controllers, evaluators, and specialists participating in the exercise. The controllers provided adequate guidance throughout the exercise. The inspectors observed neither prompting nor undue interaction between controllers and players. The scope and objectives of the exercise were fully satisfied.

No violations or deviations were identified.

5. Drill Scenarios (82301)

The scenarios for the medical emergency and fire drills were reviewed to assure that provisions were made to test specific functions in the licensee's Emergency Plan pursuant to 10 CFR 50.47(b)(14), Paragraph IV.F of Appendix E to 10 CFR 50, and specific guidance promulgated in Section II.N of NUREG-0654.

a. The scenario developed for the medical emergency drill was explicit, and adequately exercised the participating licensee organization and offsite emergency support agencies. The scenario provided sufficient information to the support agencies consistent with the scope of their participation in the drill.

   The licensee and offsite support agencies demonstrated a significant commitment to training and personnel through controllers, evaluators, and specialists participating in the drill. The controllers provided adequate guidance throughout the drill. Neither prompting nor undue interaction between controllers and players was observed.

b. The scenario developed for the fire drill was explicit, and adequately exercised the participating licensee organization and offsite support agencies. The scenario provided sufficient information to the offsite support organizations consistent with the scope of their participation in the drill.

Licensee and offsite support organizations demonstrated a significant commitment to training and personnel through controllers, evaluators, and specialists participating in the drill. The controllers provided adequate guidance throughout the drill.

No violations or deviations were identified.

6. Assignment of Responsibility (82301)

This area was observed to assure that primary responsibilities for emergency response by the licensee were specifically established, and that adequate staff was available to respond to an emergency pursuant to 10 CFR 50.47(b)(1), Paragraph IV.A of Appendix E to 10 CFR 50, and specific guidance promulgated in Section II.A of NUREG-0654.

The inspectors observed that specific emergency assignments were made for the licensee's emergency response organization, and that adequate staff was available to respond to the simulated emergency. The initial response organization was augmented by designated licensee representatives; however, because of the scenario scope and conditions, long term or continuous staffing of the emergency response organization was not required. Discussions with licensee representatives and detailed review of the site Radiological Emergency Plan indicated that a sufficient number of trained technical personnel were available for continuous staffing of the augmented emergency organization, if needed.

The inspectors also observed activation, staffing, and operation of the Technical Support Center (TSC), Operations Support Center (OSC), and the Emergency Operations Facility (EOF). At the response facilities cited, required staffing and assignment of responsibility were consistent with the licensee's Emergency Plan and approved Implementing Procedures.

No violations or deviations were identified.

7. Onsite Emergency Organization (82301)

The licensee's onsite emergency organization was observed to assure that the following requirements were implemented pursuant to 10 CFR 50.47(b)(2), Paragraph IV.A of Appendix E to 10 CFR 50, and specific guidance promulgated in Section II.B of NUREG-0654: (1) unambiguous definition of responsibilities for emergency response; (2) provision of adequate staffing to assure initial facility accident response in key functional areas at all times; (3) specification of onsite and offsite support organizational interactions.

The inspectors observed that the initial onsite emergency organization was adequately defined, and staff was available to fill key functional positions within the organization. Augmentation of the initial emergency response organization was accomplished through mobilization of available onshift personnel. The on-duty Shift Supervisor assumed the duties of Emergency Coordinator promptly upon initiation of the simulated emergency, and

directed the response until formally relieved by the Plant Manager. Required interactions between the licensee's emergency response organization and State and local support agencies were adequate and consistent with the scope and objectives of the exercise.

No violations or deviations were identified.

8. Emergency Response Support and Resources (82301)

This area was observed to assure that the following arrangements for requesting and effectively using assistance resources were made pursuant to 10 CFR 50.47(b)(3); Paragraph IV.A of Appendix E to 10 CFR 50, and guidance promulgated in Section II.C of NUREG-0654, namely: (1) accommodation of selected State emergency response representatives at the licensee's near-site Emergency Operations Facility; and (2) identification of organizations capable of augmenting the planned response.

Licensee contact with offsite organizations was prompt, effective, and consistent with the scope and objectives of the exercise. Assistance resources from offsite support organizations included a fire brigade and hospital emergency facilities. Representatives of the State of Florida, and Dade and Monroe Counties were accommodated at the licensee's Emergency Operations Facility and Emergency News Center (ENC). State and county representatives were factored into the decisionmaking process regarding protective action recommendations, recovery planning, offsite dose assessment and projections, and public information. Licensee and offsite support emergency response personnel demonstrated a significant commitment to training.

No violations or deviations were identified.

9. Emergency Classification System (82301)

This area was observed to assure that a standard emergency classification and action level scheme was in use by the nuclear facility licensee pursuant to 10 CFR 50.47(b)(4), Paragraph IV.C of Appendix E to 10 CFR 50, specific guidance promulgated in Section II.D of NUREG-0654, and guidance recommended in IE Information Notice 83-28.

An Emergency Action Level (EAL) matrix was used to promptly identify and properly classify an emergency and escalate it to more severe emergency classifications as the simulated accident sequence progressed. Licensee actions in this area were timely and effective. Inspection confirmed that the Emergency Action Levels were consistent with the Radiological Emergency Plan and the regulatory requirements and guidance cited above.

No violations or deviations were identified.

10. Notification Methods and Procedures (82301)

This area was observed to assure that procedures were established for notification of State and local response organizations and emergency personnel by the licensee, and that the content of initial and followup messages to response organizations were established. This area was further observed to assure that means to provide early notification to the populace within the plume exposure pathway were established pursuant to 10 CFR 50.47(b)(5), Paragraph IV.D of Appendix E to 10 CFR 50, and specific guidance promulgated in Section II.E of NUREG-0654.

The inspectors observed that notification methods and procedures were established and available for use in providing emergency information to Federal, State, and local response organizations, and to alert the licensee's augmented emergency response organizations, if required. Inspection disclosed that the licensee notified the subject offsite agencies of the following emergency classifications with fifteen minutes, as required by the above regulatory requirements and guidance, namely: Notification of Unusual Event, Alert and General Emergency, respectively. It was also disclosed, however, that the notification of the State of Florida following declaration of the Site Area Emergency exceeded the assigned fifteen minute limit. This subject notification was completed within 25 minutes, contrary to the respective emergency preparedness implementing procedure. This finding was also identified by the licensee during their Controller/Evaluator critique conducted on January 15, 1987, and documented as an item assigned for prompt review and effective corrective action. The subject finding was also fully discussed during the Licensee/NRC critique conducted on January 16, 1987, following completion of the exercise. The inspector informed licensee representatives that notwithstanding their identification of the delayed notification, the subject finding would be classified as an exercise weakness and would be reviewed during subsequent exercises. The licensee acknowledged this finding.

Exercise Weakness 50-250/87-03-01, 50-251/87-03-01: Failure to notify the State within 15 minutes following declaration of the Site Area Emergency.

The prompt notification system (PNS) for alerting the public within the plume exposure EPZ was in place and operational. The system was actuated during the exercise to simulate warning the public of significant events occurring at the plant site.

No violations or deviations were identified.

11. Emergency Communications (82301)

This area was observed to assure that provisions existed for prompt communications among principal response organizations and emergency personnel pursuant to 10 CFR 50.47(b)(6), Paragraph IV.E of Appendix E to 10 CFR 50, and specific guidance promulgated in Section II.F of NUREG-0654.

The inspector observed communications within and between the licensee's emergency response facilities (Control Room, TSC, OSC, EOF), the licensee and offsite response organizations, and the offsite environmental monitoring teams and the TSC/EOF. The inspectors also observed information flow among the various groups within the licensee's emergency organization. It was noted that the ENN phone in the Control Room was inoperative. The licensee promptly reported the finding to NRC via the alternate commercial system. A malfunctioning ENN phone in the EOF was also identified and promptly reported as above. Notwithstanding the above, emergency communications and communication systems were significantly improved, and consistent with emergency response requirements.

No violations or deviations were identified.

12. Emergency Facilities and Equipment (82301)

This area was observed to assure that adequate emergency facilities and equipment to support an emergency response were provided and maintained pursuant to 10 CFR 50.47(b)(8), Paragraph IV.E of Appendix E to 10 CFR 50, and specific guidance promulgated in Section II.H of NUREG-0654.

The inspectors observed activation and staffing of the emergency response facilities, and observed the use of equipment at the facilities. Emergency response facilities used by the licensee during the exercise included the Control Room, TSC, OSC, and EOF.

a. Control Room - Consistent with the exercise scenario, management of the simulated accident sequence was initiated by the Control Room Shift Supervisor. Effective management of personnel gaining access to the Control Room precluded overcrowding, and served to maintain an ambient noise level required for orderly conduct of operations under emergency conditions.

The Shift Supervisor demonstrated proficiency in the following critical areas: (1) evaluation of conditions for classification of events; and (2) assessment of radiation levels associated with operation of specific reactor systems to identify the location of leakage sources.

Review of the Control Room records and logs disclosed that following the transfer of the Emergency Director's log to the TSC, the Control Room operators maintained a detailed log of the emergency during the remainder of the exercise. A detailed log of Control Room activities during emergency conditions provided a record of required assessment and mitigation of the simulated accident sequences.

Procedures were routinely followed in implementing indicated mitigating actions. It was observed that the Emergency Preparedness procedure requiring specific public address system announcements to the plant staff during emergency conditions was not consistently implemented. The Control Room staff failed to keep all plant personnel informed of plant conditions, and associated directives, e.g., announcement of

emergency status and updates thereof, during the initial phase of the exercise including the Alert classification. This item was also identified by the licensee and documented for required review and corrective action. The inspector informed licensee representatives, however, that the subject finding would be carried as an inspector followup item, and would be reviewed during subsequent exercises.

Inspector Followup Item (IFI) 50-250/87-03-02, 50-251/87-03-02: Failure to consistently inform plant staff, via public address system, of emergency status and associated directives during simulated emergency conditions.

b. Technical Support Center - The TSC was activated and staffed promptly following notification by the Emergency Coordinator of the simulated emergency conditions leading to the Alert emergency classifications. The TSC staff appeared to be knowledgeable concerning their emergency responsibilities, and TSC operations proceeded smoothly. The TSC was provided with adequate equipment for support of the assigned staff. TSC security was promptly established.

During operation of this facility, radiological habitability was routinely monitored and documented, and personnel dosimetry was distributed as required. Status boards and related visual aids were strategically located to facilitate viewing by the TSC staff. Dedicated communicators were assigned to the facility to assure required communications with offsite support agencies, offsite radiological monitoring teams, flow of information among the emergency response facilities, and implementation of emergency notifications. Delayed notification of the State attending the Site Area Emergency declaration is discussed in Paragraph 10, above.

Inspection disclosed the following additional findings, namely: (1) engineering, maintenance, and other technical support functions were readily implemented and factored into problem solving exercises; (2) assumption of duties by the Emergency Director was definite and firm; (3) transfer of certain emergency responsibilities from TSC to EOF was firmly declared and announced to the TSC staff; (4) briefings of the TSC staff were frequent and consistent with changes in plant status and the related emergency conditions; (5) accountability, including identified missing personnel, was readily implemented within the accepted time regime and was consistent with the scenario scope.

c. Operations Support Center - The OSC was promptly staffed following activation of the Emergency Plan by the Emergency Coordinator. An inspector observed that investigative and repair teams were promptly selected, assembled, briefed, and dispatched. The OSC supervisor appeared to be cognizant of his duties and responsibilities. During operation of the facility, radiological habitability was routinely monitored and documented.

d. Emergency Operations Facility - The EOF is located in the licensee's General Office in Miami, Florida. The facility was adequately equipped and staffed to support the required emergency response defined in the exercise scenario.

EOF security was promptly established and was included as a routine requirement for preparation and activation of the facility. Status boards and other related visual aids were strategically located, readily accessible, and frequently updated for viewing by the EOF staff. Dedicated communicators were assigned to the facility, and all required notifications and followups were promptly made.

The EOF principal staff freely interacted with State and county representatives assigned to the facility. The subject representatives were routinely informed of plant status, and were consistently factored into the decision making process addressing required and proposed protective measures and actions. The Recovery Manager frequently consulted the EOF technical support staff. These meetings were routinely announced, and included representatives of the cited offsite agencies and support groups.

It was noted by licensee QA representatives and NRC inspectors that a significant number of copies of uncontrolled procedures were routinely used in the EOF. This item was discussed in detail during the licensee's Controller/Evaluator critique convened on January 15, 1987, and was documented for review and required corrective action. The subject finding was also discussed during the licensee/NRC critique following the exercise. To assure that procedures used in the EOF are solely limited to controlled, approved copies, this finding will be carried as an inspector followup item, and will be reviewed during subsequent exercises.

Inspector Followup Item 50-250/87-03-03, 50-251/87-03-03: Failure to limit or confine all procedures used in the EOF to controlled copies of such procedures.

No violations or deviations were identified.

13. Accident Assessment (82301)

This area was observed to assure that adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition were in use as required by 10 CFR 50.47(b)(9), Paragraph IV.B of Appendix E to 10 CFR 50, and specific criteria in Section II.I of NUREG-0654.

The accident assessment program included an engineering assessment of plant status, and an assessment of radiological hazards to onsite and offsite personnel resulting from the accident. During the exercise, the engineering accident assessment team functioned effectively in analyzing plant status to provide recommendations to the Site Emergency Manager concerning mitigating

actions required to reduce damage to plant systems and equipment, prevention of releases of radioactive materials, and termination of the emergency condition.

Radiological assessment activities involved several groups. An inplant group was effective in estimating the radiological impact within the plant based upon inplant monitoring and onsite measurements. Offsite radiological monitoring teams were dispatched to determine the level of radioactivity in those areas within the influence of the plume. Radiological effluent data was received in the EOF. The EOF dose calculations were computed and compared on a timely basis with results received from the TSC and offsite monitoring groups. The licensee's dose assessment group, freely interacted with the assigned State dose assessment specialists resident in the EOF. Dose assessments and projections were compared with the TSC and State data. All resultant data agreed within acceptable limits. It was observed that offsite radiological monitoring teams were frequently updated on emergency status and associated plant conditions and varying meteorological parameters throughout the exercise.

No violations or deviations were identified.

14. Protective Response (82301)

This area was observed to determine that guidelines for protective actions, consistent with federal guidance, were developed and in place, and protective actions for emergency workers, including evacuation of non-essential personnel, were implemented promptly pursuant to 10 CFR 50.47(b)(10) and specific criteria promulgated in NUREG-0654, Section II.J.

The prompt notification system in the 10-mile exposure EPZ was actuated. All sirens were operational. Protective action recommendations regarding sheltering and evacuation of area occupants, where indicated, were promptly made as required. Prompt notification of the public via radio and television media, and the prompt notification system was successfully implemented.

The protective measures decision making process was observed by the inspectors. Recommendations implemented by the EOF staff were timely, effective, and consistent with the above criteria. Protective measures recommendations were provided by the licensee to the State of Florida, designated counties, and local offsite organizations. It was noted that all protective action responses recommended by the EOF staff represented the combined input and concurrence by State and county representatives assigned to that facility.

No violations or deviations were identified.

15. Radiological Exposure Control (82301)

This area was observed to determine that methods for controlling radiological exposures in an emergency were established and implemented for emergency workers, and that these methods included exposure guidelines consistent with EPA recommendations pursuant to 10 CFR 50.47(b)(11), and specific criteria defined in Section II.K of NUREG-0654.

An inspector noted that radiological exposures were controlled throughout the exercise by issuing supplemental dosimeters to emergency workers and by conducting periodic radiological habitability surveys in the emergency response facilities. Exposure guidelines were in place for various categories of emergency actions, and adequate protective clothing and respiratory protection was available and used as appropriate.

Health Physics control of radiation exposure, contamination control, and radiation area access appeared adequate. Health Physics Supervisors were observed to thoroughly brief survey teams prior to their deployment. Dosimetry was available and was used. High range dosimeters were also available in case they were needed. A communicator and data logger were established at the health physics access point and appeared to function in a satisfactory manner.

No violations or deviations were identified.

16. Public Education and Information (82301)

This area was observed to assure that information concerning the simulated emergency was made available for dissemination to the public pursuant to 10 CFR 50.47(b)(7), Paragraph IV.D of Appendix E to 10 CFR 50, and specific criteria promulgated in Section II.G of NUREG-0654.

Information was provided to the media and public in advance of the exercise. The information included details on how the public would be notified and the initial actions which should be taken in an emergency. A rumor control program was also in place.

The licensee activated and fully staffed the Emergency News Center (ENC). The facility was used by the licensee for preparation, coordination and dissemination of emergency news information. Written press releases were prepared and issued from the ENC. Releases issued were timely, and adequately reflected plant emergency conditions. A corporate spokesman was designated to conduct periodic press briefings. The briefings were technically accurate and presented in a manner readily understood by laymen. Visual aids were provided and effectively used. Question and answer sessions were held after each briefing.

Interaction and direct cooperation of the licensee with the State and counties was effective. Representatives of State, counties and Federal agencies were accommodated at the ENC. The cited representatives fully participated in the composition of news releases. In essence, each news

release was the product of the integrated activity of the licensee and the above cited support groups.

Similarly, State, Federal and county representatives assigned to the ENC, fully participated in planning and presentation of periodic press briefings held during the exercise. Operation and management of the ENC was effectively implemented, and was consistent with emergency plan requirements and approved procedures.

No violations or deviations were identified.

17. Recovery Planning (82301)

This area was reviewed pursuant to the requirements in 10 CFR 50.47(b)(13), 10 CFR 50, Appendix E, Paragraph IV.H, and the specific criteria in NUREG-0654, Section II.M.

The licensee conducted a detailed recovery planning session prior to termination of the exercise. Licensee planners discussed the need for administrative and logistical support, manpower needs, engineering service needs, radiological surveillance, and implementation of the recovery organization.

No violations or deviations were identified.

18. Exercise Critique (82301)

The licensee's critique of the emergency exercise was observed to determine that shortcomings identified as part of the exercise were brought to the attention of management and documented for corrective action pursuant to 10 CFR 50.47(b)(14), Paragraph IV.F of Appendix E, 10 CFR 50, and the specific criteria promulgated in NUREG-0654, Section II.N.

The licensee's Controller/Evaluator critique conducted on January 15, 1987, was observed to verify that deficiencies, weaknesses and indicated improvements were identified, discussed, and documented for required review and corrective action. Inspection disclosed that the subject critique was comprehensive, and all findings were fully discussed and documented.

The Licensee/NRC critique was held on January 16, 1987, with exercise controllers and observers, licensee management, and NRC representatives. Weaknesses identified during the exercise and plans for corrective action were discussed. Licensee action on identified weaknesses will be reviewed during subsequent inspections. The licensee's critique was detailed, and addressed both substantive deficiencies and indicated improvement items. The conduct and content of the critique were consistent with regulatory requirements and guidance cited above.

No violations or deviations were identified.

19. Followup Items (92703)

(Closed) IFI 50-250/86-01-01, 50-251/86-01-01: Post security at designated medical emergency facility emergency entrance and emergency treatment room area. Observation of the offsite phase of the medical emergency drill disclosed that adequate security was posted to preclude intrusion into the cited areas.

(Closed) IFI 50-250/86-01-02, 50-251/86-01-02: Provide procedure for bleed and feed of the power operated relief valves (PORVs). Inspection disclosed that a procedure was provided for controlled bleed and feed of PORVs regarding depressurization of the reactor coolant system (RCS).

(Closed) IFI 50-250/86-01-03, 50-250/86-01-03: Update offsite radiological monitoring teams on plant status and emergency classifications. Observation of the dedicated dose assessment communicators in the TSC and EOF disclosed that the subject teams were frequently updated regarding the above cited items.

Attachment:
Turkey Point Exercise Objectives
and Timeline

87-13

II 2

FLORIDA POWER & LIGHT COMPANY
TURKEY POINT PLANT
EVALUATED EXERCISE OBJECTIVES
JANUARY 14, 1986

A. General Objectives

1. Notification of Emergency Response Personnel

   a. Demonstrate the ability to promptly notify and communicate information to NRC, State and local authorities.

2. Emergency Response Facilities, Equipment, and Communications

   a. Demonstrate the ability to staff the Technical Support Center (TSC), the Operations Support Center (OSC), the Emergency Operations Facility (EOF), and the Emergency News Center (ENC).

   b. Demonstrate the functional and operational adequacy of the TSC, OSC, EOF, and ENC.

   c. Demonstrate the adequacy, operability, and effective use of designated emergency response equipment.

   d. Demonstrate the adequacy, operability, and effective use of emergency communication equipment.

3. Direction and Control

   a. Demonstrate the ability of the emergency response facility manager to maintain command and control over the emergency response activities conducted within the facility throughout the exercise.

   b. Demonstrate the ability to gather, assess, and disseminate information regarding the status of the emergency conditions and the status of emergency response activities in a timely manner.

   c. Demonstrate the ability to initiate and coordinate emergency response activities in an efficient and timely manner.

   d. Demonstrate the functional responsibilities and/or problem solving capabilities of emergency response personnel.

e. Demonstrate the ability of emergency response personnel to execute the Turkey Point Radiological Emergency Plan through its associated Emergency Procedures.

4. Accident Assessment

a. Demonstrate the ability of the Control Room, TSC, and EOF to analyze current plant conditions, and their potential consequences, and provide recommendations for mitigating actions.

b. Demonstrate the ability for the FPL Emergency Response organization to inform and update appropriate internal, State, and local emergency response personnel regarding the status of an emergency condition in a timely manner.

5. Radiological Assessment

a. Demonstrate the ability to coordinate on-site, in-plant, and off-site radiological monitoring activities.

b. Demonstrate the ability to coordinate dose assessment activities conducted within the TSC with those conducted at the EOF.

c. Demonstrate the ability to control and coordinate the flow of information regarding off-site radiological consequences between radiological assessment personnel stationed at the TSC and the EOF.

6. Protective Response

a. Demonstrate the ability to adequately control radiation exposure to on-site emergency workers.

7. Reentry and Recovery

a. Demonstrate the ability to identify and discuss appropriate on-site reentry and recovery activities based upon the current or projected conditions in the affected on-site areas.

B. Specific objectives for those activities conducted from the Control Room, Technical Support Center, and Operations Support Center.

1. Direction and Control

a. Demonstrate the precise and clear transfer of responsibilities from the Control Room to the TSC.

b. Demonstrate the ability of the Plant Supervisor-Nuclear and/or Emergency Coordinator to periodically inform Control Room personnel and/or TSC personnel of the status of the emergency situation and the plant conditions.

2. Accident Assessment

a. Demonstrate the ability of the Control Room staff to make a timely determination of the probable cause of the incident, and perform mitigating actions to place the affected unit in a safe, stable condition.

b. By providing accurate technical engineering decisions in a timely manner, demonstrate the ability of the TSC staff to support the Control Room efforts to identify the probable cause of an incident, mitigate the consequences of that incident, and place the affected unit in a safe, stable condition.

c. Demonstrate the ability of the Plant Supervisor - Nuclear or Emergency Coordinator to classify an emergency condition.

3. Radiological Assessment

a. Demonstrate the ability of the TSC and OSC staffs to direct and coordinate the deployment of on-site and off-site radiological monitoring teams in a timely manner.

b. Demonstrate the ability of the on-site survey teams personnel to efficiently and effectively utilize their procedures to perform dose rate surveys, collection and analysis of radiological samples, and other prescribed on-site and in-plant radiological monitoring activities.

c. Demonstrate the ability to perform timely assessments and projections of on-site and off-site radiological conditions to support the formulation of protective action recommendations.

d. Demonstrate the ability to assess information available from the containment and effluent high-level radiation monitoring systems and respond accordingly.

e. Demonstrate the ability to analyze samples drawn from the in-plant normal or post-accident sampling systems, and assess the resultant data.

4. Protective Response

a. Demonstrate the ability to formulate and implement on-site protective action measures in a timely manner.

b. Demonstrate the ability of the on-site fire team to timely respond to a fire.

C. Specific Objectives for those Activities Conducted from the Emergency Operations Facility and Emergency News Center.

1. Emergency Response Facilities and Communications

a. Demonstrate that adequate communications exist between personnel stationed at the EOF and other response facilities.

2. Direction and Control

a. Demonstrate the precise and clear transfer of responsibilities from the TSC to the EOF.

3. Accident Assessment

a. Demonstrate the ability of the EOF staff to support the TSC staff's efforts to identify the cause of an incident, mitigate the consequences of that incident, and place the affected unit in a safe, stable condition.

b. Demonstrate as necessary, the ability to utilize vendor and other outside resources to assist accident analysis and mitigation efforts.

4. Radiological Assessment

a. Demonstrate the ability to coordinate FPL off-site radiological monitoring activities with those conducted by the State.

b. Demonstrate the ability to perform timely assessments and projections of off-site radiological conditions to support the formulation of protective action recommendations.

c. Demonstrate the ability to coordinate FPL off-site dose assessment activities with those conducted by the State.

d. Demonstrate the ability to control and coordinate the flow of information regarding off-site radiological consequences with State radiological assessment personnel.

TSC
EOF
EMT

5. Protective Response

   a. Demonstrate that decisions can be made regarding protective action recommendations for the general public within the Plume Exposure (10-mile) Emergency Planning Zone (EPZ), and can be communicated to State and local authorities in a timely manner.

6. Public Information

   a. Demonstrate the ability to coordinate the preparation, review and release of information with State and local government agencies as appropriate; and provide accurate and timely information releases to the news media.

D. Specific Portions of the Emergency Response that will not be tested.

1. Real time staff augmentation for off-shift response personnel.

2. Site evacuation.

3. Real time activation of the Emergency Operations Facility, Emergency News Center, and on-site Emergency Response Facilities.

4. On-site Medical Response.

Medical Drill
(Was Conducted

Turkey Point
Radiological Emergency Preparedness
Evaluated Exercise
January 14, 1987
6:00 pm to 01:00 am
Rev. 11/27/86

18:00 pm Initial Conditions:
Turkey Point Unit 3 is in Cycle X with a burnup of 8500 MWD/MTU, at 100 % power and has operated for 97 EFP days. The 3A Charging Pump was tagged out of service at 1600 today for preventive maintenance. The unit has been operating with a .65 GPM unidentified RCS leak since the last maintenance outage (120 days ago). The 3A CCW Heat Exchanger is out of service for cleaning (since 0800 today) and it is expected to be returned to service on this shift. The #3A to 3B 480 Volt Load Center tiebreaker (30110) has been removed from service and taken to the Electrical Shop for repair. The worm gear is worn beyond repair.

Turkey Point Unit 4 is 30 days into a 65 day refueling outage. The RWST is completely empty due to tank repair being performed. They have currently moved one third of the fuel to the spent fuel pool. The refueling process is at a halt due to the fact that a twice burned fuel assembly is stuck in the spent fuel pool upender just short (10° off) of full up. The 4B Safety Injection Pump is out of service for overhaul. The C BAST is out of service to backfit for a heat tracing PCM.

Common: South Florida is currently under high customer power demand (11,555 MWE). The projected system load for the evening peak is 11,750 MW. All available units are operating and the available reserve margin is at a minimum (250 MWE).
Turkey Point Units 1 and 2 are at 100 % power with no major problems.

18:15 pm An unidentified RCS leak in the containment is indicated by VCT level hard to maintain constant and containment sump level increasing. The Plant Supervisor Nuclear requests a primary leak rate calculation.

18:20 pm Control Room indication shows a greater than 1 GPM leak via containment sump level.

18:30 pm RCS inventory indicates a greater than 1 GPM primary leak rate, efforts to identify the source are unsucessful. The Plant Supervisor Nuclear determines that an Unusual Event should be declared based on an unidentified RCS leak rate greater than Technical Specifications (1.2 GPM).

18:40 pm Efforts to identify the source of the leak remain unsucessful, the Emergency Coordinator/Plant Supervisor Nuclear directs Health Physics to prepare an RWP for a Containment entry. PRMS R-11 and R-12 indicate that the Containment air activity is slightly above normal. Control Room indication started trending up at the approximate time the RCS leak went to 1.2 GPM.

19:00 pm The RCS leak rate suddenly increases (9 GPM) as indicated by a charging /letdown flow mismatch. R-11 and R-12 take a step increase.

19:16 pm The #3 Start-up transformer explodes and catches on fire, the transformer oil ignites and smoke covers the area. The installed fire supression system does not function. Security notifies the Control Room of the fire.

19:20 pm The onsite fire team arrives on the scene only to realize the need for off-site assistance. The Fire Team Leader requests that the EC/PSN contact Metro-Dade and Homestead Air Force Base Fire Dept.'s for assistance.

19:25 pm The EC/PSN declares an Alert based on damage to an onsite structure or component from an explosion and/or a fire potentially effecting a safety system and requiring off-site assistance.

19:50 pm Metro-Dade and Homestead Air Force Base Fire Department's arrive onsite.

19:55 pm The onsite Emergency Response Facilities are manned and operational. The Emergency Coordinator has received an adequate turnover and assumes the EC duties from the PSN.

20:00 pm Channel 7 News contacts the Corporate Communications Duty Officer / Emergency Information manager to confirm information/rumor of a terrorist attack on Turkey Point. Their information tells of an explosion onsite.

20:00 pm An RCS inventory balance confirms an increase in the leak rate to 55 GPM. Adequate charging pump capability exists to continue making up to the RCS. The PSN directs the console operator to commence a shutdown at 5%/minute.

20:10 pm The #3 Start-up Transformer fire is out and the offsite assistance leaves.

20:15 pm The 3B 4kv Bus lock out relay actuates due to a impedance breaker failure. The Reactor trips due to low RCS flow.

20:20 pm The unit is in hot standby (Mode 3) and in natural circulation.

20:30 pm The RCS leak suddenly increases into a Large Break LOCA (greater than charging pump capacity). All engineered safety features are operating as designed with the exception of a 3B 4kv bus. During the LOCA, a small percent of the gap activity is released and the Containment High Range Radiation Monitor(CHRRM) reads 10 R/hr. The RCS pressure drop allows the Accumulators to discharge, borating and cooling the core. The 3C Emergency Cooler starts but no component cooling water flow is indicated. The outlet valve to the Emergency Cooler (CV-3-2907) failed to open with the SI signal.

20:35 pm The Emergency Coordinator declares a Site Area Emergency based on a known LOCA greater than available charging pump capacity as indicated by RCS pressure decreasing uncontrollably and high containment sump, pressure, and radiation.

21:20 pm With RWST water inventory rapidly depleting, the PSN asks for a line up for entering into the recirc mode.

21:30 pm The injection phase of ECCS operation ends,a NPSH light comes on in the control room, and the switch over to recirculation is attempted. MOV 861A has failed closed and cannot be opened from the Control Room. With the 3B 4kv bus lockout (3B RHR) and MOV-861A failed, a recirculation flow path cannot be established. Control Room indication shows fuel temperature and containment pressure increasing.

21:45 pm With the containment pressure exceeding 20 psig , the Emergency Coordinator declares a General Emergency based on a known LOCA greater than charging pump capacity with containment pressure exceeding 20 psig. Protective Action Recommendations are made to the public. They are a 0-2 mile evacuation of a complete radius around the plant, 2-5 mile evacuation in the downwind sectors, and in place sheltering for all the remaining sectors out to 10 miles.

22:00 pm Containment pressure reaches 27 psig. A MSIV opens and fails to close. The DAM 1 monitor shows no increase above background. Reactor Vessel Level Measurement System indicates the top of the fuel is now exposed. A PRMS R-14 increase indicates a release.

22:15 pm The CHRRM exceeds 1.3 e5 R/hr indicating that 100 % Gas Gap activity has been released to the containment.

22:15 pm A thyroid dose at the site boundary of 1091 mr/hr is projected based on CHRRM and design basis leakage.

22:30 pm Protective Action Recommendations are upgraded to 0-5 miles evacuation of a complete radius around the plant, 5-10 mile evacuation in the downwind sectors and in place sheltering in the remaining sectors.

CHRRM increases to 1.7E5 R/hr indicating additional fuel damage.

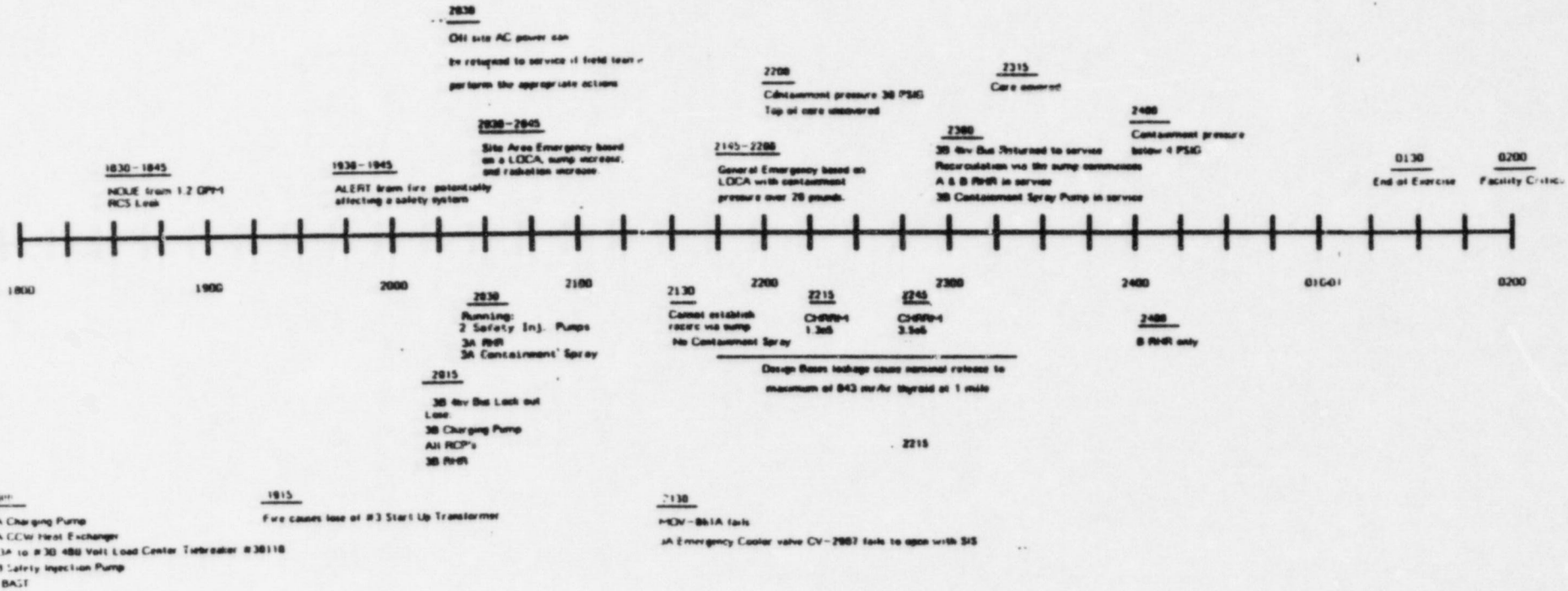
23:00 pm An Emergency team assisted by the Relay Department has evaluated the bus lock out and deemed safe to restore power to 3B 4kv bus. After a proper lineup flow is restored to the core. The core exit thermocouples start trending down. The 3B Containment Spray Pump and Emergency Containment Coolers are returned to service and containment pressure starts to trend down.

24:00 pm Containment pressure is now less than 4 PSIG and there is no indication of containment leakage. The release is terminated.

00:30 am State and County organizations commence recovery and reentry discussions.

01:00 am The excercise is terminated.

01:30 am A facility critique is conducted in each area.


1830 - 1845
NOUE from 1.2 GPM RCS Leak
1930 - 1945
ALERT from fire potentially affecting a safety system
2030
Off site AC power can be restored to service if field team performs the appropriate actions
2030 - 2045
Site Area Emergency based on a LOCA, sump recirc. and radiation increase
2145 - 2200
General Emergency based on LOCA with containment pressure over 20 pounds.
2200
Containment pressure 30 PSIG
Top of core uncovered
2315
Core covered
2300
3B 4kv Bus Returned to service
Recirculation via the sump commences
A & B RHR in service
3B Containment Spray Pump in service
2400
Containment pressure below 4 PSIG
0130
End of Exercise
0200
Facility Critic.
1800
1900
2000
2100
2200
2300
2400
0100
0200
2030
Running:
2 Safety Inj. Pumps
3A RHR
3A Containment Spray
2015
3B 4kv Bus Lock out
Lose:
3B Charging Pump
All RCP's
3B RHR
2130
Cannot establish recirc via sump
No Containment Spray
2215
CHRRM-4
1.3e6
2245
CHRRM-4
3.3e6
2400
B RHR only
Design Basis leakage cause personal release to maximum of 843 mrAv thyroid at 1 mile
2215
1800
3A Charging Pump
3A CCW Heat Exchanger
#3A to #3B 480 Volt Load Center Tiebreaker #3B118
4B Safety Injection Pump
C BAST
1915
Fire causes loss of #3 Start Up Transformer
2130
MOV-8814A fails
3A Emergency Cooler valve CV-2987 fails to open with SIS