



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

NOV 03 1988

Report Nos.: 50-335/88-22 and 50-389/88-22

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 1 and 2

Inspection Conducted: September 26-29, 1988

Inspector: James L. Kreh
 for A. L. Cunningham

3 Nov. 1988
 Date Signed

Accompanying Personnel: G. L. Paulk
 M. E. Stein

Approved by: James L. Kreh
 for T. R. Decker, Section Chief
 Division of Radiation Safety and Safeguards

3 Nov. 1988
 Date Signed

SUMMARY

Scope: This routine, announced inspection involved observation and evaluation of the Annual Radiological Emergency Response Exercise. The limited participation exercise was initiated at 8:00 a.m. on September 27, 1988, as an announced exercise. Federal, State and county participation was limited to receipt and acknowledgement of emergency notifications and periodic follow-ups of same. The exercise was terminated at 4:00 p.m. on the above referenced date. Medical emergency and fire drills were integrated into the scenario as a routine part of the exercise. Offsite support, assistance, and resources were limited to performance of the emergency medical drill. The medical drill was not evaluated by the inspectors; however, the Federal Emergency Management Agency (FEMA) evaluated the portion of the emergency medical drill conducted at the receiving hospital treating the contaminated injured person.

Results: No violations or deviations were identified. The exercise was fully successful, and the licensee demonstrated the capability to effectively assess, control, and mitigate the postulated casualty presented in the exercise scenario. Additionally, onsite and offsite protective action recommendations were promptly made and were consistent with the Plan, procedures, and prevailing radiological conditions.



REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *R. Acosta, Quality Assurance Director
- *J. Barrow, Operations Superintendent
- *G. Boissy, Plant Manager
- *H. Buchanan, Health Physics Supervisor
- *W. Conway, Senior Vice President
- *R. Frechette, Chemistry Supervisor
- *J. Harper, Quality Assurance Superintendent
- *K. Harris, Plant Vice President
- *G. LeGarde, Emergency Planning Coordinator
- *J. Maisler, Emergency Preparedness Manager
- *D. Miller, Emergency Planner
- *K. Scott, Senior Communications Coordinator
- *D. Sipos, Plant Service Manager
- *T. Veenstra, Senior Communications Coordinator
- *T. Vogan, Engineering Manager
- *J. Walls, Quality Assurance Auditor
- *C. Ward, Site Emergency Coordinator
- *D. West, Technical Staff Supervisor

Other Organizations

- *C. Hultquist - Governor's Authorized Representative
- *J. Sirmons - U. S. Public Health Service (FEMA)

NRC Resident Inspector

- *G. Paulk

- *Attended exit interview

2. 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 exercise 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 States, counties, local government and Federal agencies consistent with the scope of their participation in the exercise.

The licensee demonstrated a significant commitment to training and personnel through use of controllers, evaluators, and specialists participating in the exercise. The controllers provided adequate guidance throughout the exercise.

The scenario developed for the medical emergency drill appeared adequate to exercise the participating groups of the licensee's organization and offsite local emergency support agencies. The medical emergency drill was not evaluated by NRC inspectors; however, drill activities conducted at the receiving hospital treating the contaminated injured worker were evaluated by a FEMA contractor.

No violations or deviations were identified.

3. 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 inspector 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 (REP) indicated that a sufficient number of trained technical personnel were available for continuous staffing of the emergency organization, if needed.

The inspector also observed activation, staffing, and operation of the emergency organization in the Technical Support Center (TSC) and Operations Support Center (OSC). The Emergency Operations Facility (EOF) and near-site Emergency News Center (ENC) were evaluated. The required staffing and assignment of responsibility at these facilities were consistent with the licensee's Emergency Plan and approved implementing procedures.

No violations or deviations were identified.

4. 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; and (3) specification of onsite and offsite support organizational interactions.

The inspector observed that the initial onsite emergency organization was adequately defined, and that staff was available to fill key functional positions within the organization. Augmentation of the initial emergency response organization was accomplished through mobilization of off-shift and available on-shift 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 Station 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.

5. 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 developed in NRC 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.

Observations confirmed that the emergency classification system was effectively used and was consistent with the REP and Implementing Procedures. The system was observed to be adequate for classification of the simulated accident sequences. The emergency procedures provided for initial and continuing mitigating actions during the simulated emergency.

No violations or deviations were identified.

6. 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 follow-up messages to response organizations was 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.

An inspector observed that notification methods and procedures were established and available for use in providing information regarding the simulated emergency conditions to Federal, State, and local response organizations, and to alert the licensee's augmented emergency response organizations, if required. Inspection also disclosed that the licensee consistently implemented prompt notification of the State and counties within the 15-minute time regime following declaration of each emergency classification throughout the exercise. Periodic updating of the State regarding plant status via telephone and hard copy was consistently implemented during the exercise.

No violations or deviations were identified.

7. 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 inspector also observed information flow among the various groups within the licensee's emergency organization. Emergency communications and communication systems were significantly effective, and consistent with emergency response requirements.

No violations or deviations were identified.

8. 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 inspector observed activation, staffing, and operation of the emergency response facilities, and observed the use of equipment therein. Emergency response facilities used by the licensee during the exercise included the Control Room, TSC, OSC, and EOF.

- a. Control Room - Unit 1 Control Room was provided for the exercise Shift Supervisor and his staff. Required communications equipment,

Control Room procedures and documents were readily available. The inspector observed that, following review and analysis of the sequence of accident events, Control Room operations personnel promptly initiated required responses to the simulated emergency. Emergency procedures were readily available, routinely followed, and factored into accident assessment and mitigation exercises.

Control Room personnel involvement was essentially limited to those personnel assigned routine and special operational duties. Effective management of personnel gaining access to the Control Room precluded overcrowding, and maintained an ambient noise level required for orderly conduct of operations under emergency conditions.

The Shift Supervisor and the Control Room Operators were cognizant of their duties, responsibilities, and authorities. These personnel demonstrated an understanding of the emergency classification system and the proficient use of specific procedures to determine and declare the proper emergency classification. The staff also demonstrated the capability to consistently and effectively assess the initial conditions and implement required mitigating actions in a timely manner. It was noted that a detailed log of the facility's activities was maintained by the Shift Supervisor throughout the exercise. The Shift Supervisor demonstrated effective management and control of the facility and staff throughout the exercise.

- b. Technical Support Center (TSC) - The TSC was activated and promptly staffed following notification by the Emergency Coordinator of the simulated emergency conditions and declaration of the Alert classification. The facility staff appeared to be cognizant of their emergency duties, authorities, and responsibilities. Required operation of the facility proceeded in an orderly manner. The TSC was provided with adequate equipment for support of the assigned staff.

During operation of the TSC, 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. Status boards were maintained by communicators assigned to the facility. The inspection also 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 Coordinator was definite and firm;
- (3) transfer of certain emergency responsibilities from the Control Room to the TSC 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 related emergency conditions;
- (5) accountability, including identifying missing personnel, was readily implemented within the required time regime, and was consistent with the scope and objectives of the scenario; and
- (6) TSC Controllers were effective in identifying minor scenario problems and

effectively interacted with players without prompting. The transfer of authority and specific responsibilities by the Emergency Coordinator to the EOF Recovery Manager following activation of the EOF was prompt, effective and consistent with the REP and Implementing Procedures. Frequent and effective communications occurred between the respective facility managers and principal staffs.

- c. Operations Support Center (OSC) - The OSC was promptly staffed following activation of the Emergency Plan by the Emergency Coordinator. An inspector observed that teams were promptly assembled, briefed, and dispatched. A health physics technician accompanied each team. The OSC Supervisor appeared to be cognizant of his duties and responsibilities. During operation of this facility, radiological habitability was routinely monitored and documented.

The OSC Supervisor demonstrated effective management and control practices. The facility staff was frequently updated regarding plant status. The supervisor assured that investigation and repair teams were thoroughly briefed regarding their tasks prior to their deployment to the accident areas. It was observed, however, that the fire brigade, dispatched in response to the fire drill, failed to conduct an evaluation and assessment of fire damage. This item was fully discussed with licensee representatives prior to and during the exit interview. This finding will be tracked as an Inspector Follow-up Item (IFI) and reviewed during future inspections.

IFI 50-335, 389/88-22-01: Ensure that damage assessment is conducted and documented following fire drills.

Status boards were effectively used in posting the status of repair and investigative teams' deployment, destination, and return. The facility was well managed during loss of power. It was noted that additional flashlights and radios were needed; however, operation of the facility was not adversely affected. This finding was also identified by the licensee and documented as an item requiring detailed review.

- d. Emergency Operations Facility (EOF) - Consistent with the exercise scope and objectives, the EOF was promptly staffed and activated following declaration of the Site Area Emergency. The Emergency Director demonstrated effective management and control of the facility. The staff was frequently updated regarding plant status and progress in accident management and mitigation. Communications between the EOF, TSC, and Control Room were frequent and effective throughout the exercise. Exchange of technical information and frequent consultation with the TSC was routinely implemented by the staff.

Dose assessment and projections were effectively performed. The dose assessment group demonstrated proficiency in both manual and computerized dose assessment. Close contact between assessment groups in the EOF and TSC were maintained. Offsite dose projections were accurate and performed in a timely manner. Results were incorporated in follow-up notification messages which originated from the radiological assessment group. The dose assessment staff demonstrated a significant commitment to training throughout the exercise.

Access and contamination control were effectively maintained throughout the exercise. Notification of participating offsite agencies was consistently performed in a timely manner. The Recovery Manager demonstrated effective management and control of the facility, staff, and support equipment throughout the exercise.

No violations or deviations were identified.

9. 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 guidance promulgated 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 and providing recommendations to the Emergency Director concerning mitigating actions required to reduce damage to plant systems and equipment, prevention and/or control of radioactive releases, and prompt termination of the emergency condition.

Radiological assessment activities involved several groups. An inplant group was effective in projecting 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 radioactive plume. Radiological effluent data provided by inplant and offsite teams was received in the EOF where dose calculations were computed and factored into the exercise. All resultant data were consistent with projected scenario parameters. Offsite monitoring teams were neither observed nor evaluated by NRC during this exercise; however, inspectors observed that the Field Team Coordinator frequently briefed and updated the offsite monitoring teams on periodic meteorological changes, plant release data, and plant status. Communications between the subject entities were effective throughout the exercise.

No violations or deviations were identified.

10. Protective Response (82301)

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

The protective measures decision-making process was observed by the inspectors. For each emergency classification defined, appropriate inplant and offsite protective measures were reviewed. Protective measures recommendations were consistent with the limited scale and scope of the exercise.

11. Radiological Exposure Control (82301)

This area was observed to determine whether methods for controlling radiological exposures in an emergency were established and implemented for emergency workers, and whether these methods included exposure guidelines consistent with Environmental Protection Agency (EPA) recommendations pursuant to 10 CFR 50.47(b)(11) and specific guidance promulgated 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 conducting periodic radiological surveys in the emergency response facilities. Exposure guidelines were in place for various categories of emergency actions taken. Adequate protective clothing and respiratory protection was available for use as required.

Health Physics control of radiation exposure, contamination, and access to radiation areas was determined to be adequate. Health Physics Supervisors were observed to thoroughly brief survey, investigative, and repair teams prior to their deployment into radiation controlled areas. Dosimetry was available and effectively used. High-range dosimeters were also available if needed.

No violations or deviations were identified.

12. Public Education and Information (82301)

This area was observed to determine whether information concerning the simulated emergency had been made available for dissemination to the public as required by 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 the public in advance of the exercise.

Inspection disclosed that all press releases disseminated to the media were initially reviewed in detail, checked for technical accuracy, and formally approved. This approach precluded the release of technically inaccurate information and related errors.

The inspector also observed a press conference convened by the licensee. The conference was considered adequate based upon the following: the licensee spokesperson's presentation and response to requested information, and presentations and responses provided by the State and county representatives.

No violations or deviations were identified.

13. Status of Previous Findings (92701)

- a. (Closed) IFI 50-335, 389/87-19-01: Notification of Emergency Classifications within the required 15-minute time regime.

Inspection disclosed that all emergency classifications involved during the subject exercise were reported to the State, counties, and local agencies within 15 minutes following declaration of the emergencies.

- b. (Closed) Exercise Weakness 50-335, 389/87-19-02: Failure of ENC Emergency Control Officer to properly approve all news releases prior to issuance of same to public.

Observation and evaluation of the ENC disclosed that all press releases were reviewed in detail for technical accuracy and approved by the Emergency Control Officer prior to dissemination to the media.

14. Exit Critique

The licensee's critique of the emergency exercise was observed to determine whether 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 to 10 CFR 50; and specific guidance promulgated in Section II.N of NUREG-0654.

The licensee conducted a players' critique in each emergency facility immediately after the exercise, followed by a comprehensive Controller/Evaluator critique. The Licensee/NRC critique was conducted on September 28, 1988, with exercise controllers and observers, licensee management, and NRC representatives. The licensee's critique was detailed and comprehensive. Following the management critique, the NRC inspector provided preliminary findings observed during the exercise.

The inspection scope and results were summarized with those persons indicated in Paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results listed herein.

Although proprietary information was reviewed during the inspection, none is contained in this report. Dissenting comments were not received from the licensee.

Item Number

Description and Reference

50-335, 389/88-22-01

Ensure that damage assessment is conducted and documented following fire drills.

Attachment:
Exercise Scope and Objectives
and Narrative Summary

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE
EVALUATED EXERCISE OBJECTIVES

September 27, 1988

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 each 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 to the public and governmental officials regarding the status of the emergency conditions and the status of emergency response activities within regulatory defined time limitations.



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.

5. Radiological Assessment

- a. 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.
- b. Demonstrate the ability for the Emergency Coordinator and/or Recovery Manager to determine Protective Action Recommendations for the public, as appropriate to the emergency condition.

7. Training and Exercise

- a. Demonstrate the effectiveness of the emergency preparedness training program in a practical demonstration.
- b. Demonstrate the effectiveness of actions taken to correct past identified weaknesses in the emergency preparedness program.
- c. Demonstrate the ability of participants and controller/evaluators to evaluate and critique exercise performance.

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 Emergency Coordinator responsibilities from the Nuclear Plant Supervisor to senior plant management.

- b. Demonstrate the ability of each facility manager to periodically inform facility personnel of the status of the emergency situation and the plant conditions.
 - c. Demonstrate the ability to timely and accurately transfer information between emergency response facilities.
 - d. Demonstrate the ability of the TSC and OSC to coordinate the deployment of emergency teams.
 - e. Demonstrate the ability of emergency teams to respond to and treat contaminated and injured personnel.
2. Accident Assessment
- a. Demonstrate the ability of the Nuclear Plant Supervisor and Emergency Coordinator to classify an emergency condition.
 - b. Demonstrate the ability of the TSC staff to support the Control Room efforts to identify the probable cause of an accident, mitigate the consequences of that accident, and place the affected unit in a safe, stable condition.
3. Radiological Assessment
- a. Demonstrate the ability of the on-site survey team 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.
 - b. 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.
 - c. Demonstrate the ability to analyze samples drawn from the in-plant normal and/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 to account for all personnel on-site after a site evacuation within prescribed time limits.

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 FPL and offsite agency emergency facilities.

2. Direction and Control

- a. Demonstrate the precise and clear transfer of procedurally defined responsibilities from the Emergency Coordinator to the Recovery Manager.

3. Accident Assessment

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

4. Radiological Assessment

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

5. Protective Response

- a. Demonstrate that decisions can be made in a timely manner 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 within regulatory time restraints.

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, clear, and timely information releases to the news media.

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

1. Real time activation of the Emergency Operations Facility/Emergency News Center.
2. Actual performance of the evaluated exercise on the plant control room simulator.

1988 PRACTICE DRILL
ST. LUCIE PLANT
SEPTEMBER 27, 1988

Initial Conditions:

Unit 1 has been operating at 100 percent power for 34 days since returning to service from a 64 day refueling outage. No Steam Generator (S/G) problems or fuel problems were encountered in the previous cycle.

The following items are of interest:

- o 1B Start-up (S/U) transformer is out of service for repair of oil pump. Estimated time to completion is 3:00 p.m. today.
- o Flow transmitter FT 3313, (HPSI to Loop 1A2) is out of service. I&C is waiting on parts to finish repairs, estimated to be completed on peak shift today.
- o 1A Auxiliary Feedwater (AFW) pump has a worn pump shaft coupling. Mechanical maintenance wants to repair coupling on day shift today.

Unit 2

Unit 2 is in day 15 of a scheduled 55 day outage. The upper internals are scheduled to be removed this shift.

Meteorological Information:

A weak cold front, associated with a dissipating tropical wave has passed over the area during the night, leaving about one inch of rain. Conditions today call for mostly cloudy conditions, with a 70 percent chance of rain. Highs will be in the mid 80's. Wind will be out of the North to Northwest at 10 to 15 miles per hour, but higher in thunderstorms.

System Information:

Peak demand is expected in the 10,000 to 10,500 MWe range today. Rain and cloudy conditions may lessen demand. System foresees no problem in meeting demand, as both PTN units and all base load fossil plants are in full operation.

- | | |
|-----------|--|
| 8:00 A.M. | Exercise commences |
| 8:30 A.M. | Control room gets indications that an RCS leak is in progress, Containment (CTMT) gas monitor, (#32), is also increasing, as is Area Radiation monitors in CTMT. |

- 8:35 A.M. Shutdown (S/D) ordered by NPS when it becomes obvious that significant RCS leak exists. S/D rate at 2.0%/minute.
- 8:40 A.M. Inventory evaluation of the leak indicates a >50 gpm leak (65 gpm leak).
- 8:45 A.M. An ALERT should be declared by the Emergency Coordinator by this time, based on RCS leak >50 gpm, with CTMT radiation monitors increasing.
- 9:15 A.M. When switch to 1A S/U transformer the 1A-2 (4160 KV) Buse Feeder breaker (20102) trips on phase differential fault. The unit remains at 20 percent power.
- Repair team is organized and set to investigate the problem.
- 9:31 A.M. RCS break occurs, (2.7" diameter break, or 3" not quite severed), RX trip.
- Commercial telephones in the Control Room, TSC, and OSC will temporarily go dead, until vital buses are loaded to a EDG (3 to 5 minutes).
- Lighting in TSC will temporarily go out until vital buses are loaded. Most but not all power returns.
- OSC power will remain off for the rest of the exercise.
- A AFW Pump fails to pump. Pressure and flow read 0. Investigation will reveal a broken coupling. Emergency D/G's start.
- 9:35 A.M. 1B Emergency Diesel Generator (D/G) trips, cause is not apparent.
- Repair team is organized to investigate. Team will not be able to repair D/G. Replacement power will not be able to be restored prior to 10:15 a.m., (when 1B EDG is restored).

10:05 A.M.

Core uncover should be occurring at about this time.

Emergency Coordinator should have declared a SITE AREA EMERGENCY by this time based on loss of subcooling and loss of capacity > charging pumps with CTMT pressure > 2 psig.

EOF activation should be initiated at this time.

Indications of core uncover and fuel clad damage:

- o H₂ in CTMT
- o Pressure and Temperature increase in CTMT.
- o RCS activity increase to pronounced level.
- o CTMT ARM's offscale, CHRRM'S show indication.
- o CET temperature greater than 1200°F.

CTMT integrity remains in tact.

10:15 A.M.

B train power returns as B EDG is repaired.

10:30 A.M.

EOF should be operational by this time.

Flow indication on FT 3311, (loop 1A2 to HPSI), reads 0 in Control room High sump level indication is seen. Repair team should be organized to investigate. Leaking flange at flow element is the cause of the loss of flow indication.

10:45 A.M.

Auxiliary Building sump, and a ECCS exhaust effluent monitor show increases.

11:15 A.M. Contaminated injury occurs when repair team is sent to investigate flow indication problem. Leak is repaired prior to occurrence of contaminated injury.

12:00 Noon Contaminated injury leaves site for Martin Memorial at about this time.

1:00 P.M. Fire detectors 7A-3, 4, and 5 alarm from a smoldering fire in the cable trays in Radiological Auxiliary Building (RAB) 43' 480 volt switchgear that threatens loss of safety systems.

1:15 P.M. CTMT cooler trips, breaker trip light indication observed in the Control room.

Repair team will be organized to investigate and track potential losses of power to equipment from fire.

1:45 P.M. Plant continues cooldown to cold Shutdown (S/D). Repair teams and support groups continue evaluation of event, and monitoring of plant conditions.

2:00 P.M. Exercise is terminated.