EDWIN I. HATCH
NUCLEAR PLANT

EMERGENCY PREPAREDNESS 1989
OFF-HOURS
SEMI-ANNUAL HP EXERCISE

SUMMARY REPORT

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GEORGIA POWER COMPANY
EDWIN I. HATCH NUCLEAR PLANT
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1.0 INTRODUCTION

In the interest of assuring that the health and safety of the general public is protected in the event of and accident at the E. I. Hatch Nuclear Plant (HNP), it is necessary for the Georgia Power Company (GPC) to conduct emergency preparedness drills and exercises. Pursuant to current regulations State and local agencies are not required to participate in these drills.

This exercise was an announced after hours (6:00 p.m. to midnight) drill and involved only "limited participation" by State and local agencies. The term is defined to mean response by communications only.

In accordance with NUREG 0654, "An exercise is an event that tests the integrated capability and a major portion of the basic elements existing within emergency preparedness plans and organizations." This exercise included elements of a communication drill, radiological monitoring drill, Health Physics drill, PASS drill and fire drill requiring the activation of the onsite Emergency Response Organization and Facilities.

The exercise was conducted after hours on May 31, 1989, and included a callout of emergency response personnel. The intent of the exercise was to demonstrate that those individuals who are assigned responsibilities in a radiological emergency are adequately trained to perform according to emergency preparedness plans and procedures.

2.2 OBJECTIVES

The E.I. Hatch Nuclear Plant (HNP) 1989 emergency preparedness exercise objectives were based upon NRC requirements provided in 10 CFR 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities". 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 following objectives for the exercise were consistent with the aforementioned documents:

A. Accident Assessment and Classification

1. Demonstrate the ability to identify initiating conditions, determine emergency action level (EAL) parameters and correctly classify the emergency throughout the exercise.

2. Demonstrate the ability to provide core damage assessments.

B. Notification

1. Demonstrate the ability to alert, notify and mobilize appropriate station emergency response personnel between the hours of 6 P.M. and midnight.

2. Demonstrate the ability for prompt notification of the State, local and Federal authorities.

3. Demonstrate the ability to warn or advise onsite individuals (including employees, visitors and contract personnel) of an emergency condition.

C. Emergency Response

1. Demonstrate that an individual is assigned and is in charge of the emergency response.

2. Demonstrate planning for 24-hour per day emergency response capabilities.

3. Demonstrate the line of succession for the Emergency Director.

4. Demonstrate timely response of station and corporate management, administrative and technical staff.

C. Emergency Response (Cont.)

5. Demonstrate the ability to evacuate onsite personnel (sample population) to a relocation center/rally point.

- *This objective was not demonstrated due to the lack of time and current revision process to the 73EP-EIP-011-OS, "Assembly, Accountability and Evacuation" procedure.*

6. Demonstrate the timely activation of the Technical Support Center (TSC), Operations Support Center (OSC) and Emergency Operations Facility (EOF).

7. Demonstrate the adequacy of equipment, security provisions and habitability precautions for the TSC, OSC and EOF.

8. Demonstrate satisfactory communications ability of all emergency support resources.

D. Radiological Assessment and Control

1. Demonstrate the coordinated gathering of radiological and non-radiological (meteorological) data necessary for emergency and environmental response including collection and analysis of in-plant surveys and samples.

2. Demonstrate the ability to develop dose projections, compare the projections to Protective Action Guidelines (PAGs) and determine and recommend the appropriate protective actions.

3. Demonstrate onsite contamination control measures including area access control.

4. Demonstrate the ability for determining projected doses from available plant instrumentation.

5. Demonstrate the ability to take and analyze a post accident sample.

6. Demonstrate onsite PAGs for a select number of personnel.

7. Demonstrate the decision making process for authorizing workers to receive radiation doses in excess of Plant Hatch administrative limits.

E. Evaluation

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

Areas of the HNP Emergency Plan that were NOT demonstrated during the drill included:

- Onsite personnel accountability
- Actual shift turnover (long term shift assignments were demonstrated by rosters)
- Relocation to the backup EOF
- Utilization of offsite fire support
- Conduct of reentry and recovery operations
- Offsite GPC response activities (Public Information and General Office)

3.0 NARRATIVE SUMMARY

The scenario included the following events; Low river level resulting in a declaration of Notification of Unusual Event (NUE). An inadvertent initiation of High Pressure Coolant Injection (HPCI) which spiked reactor power, with a resultant fire in the HPCI room (electrical circuit) lasting greater than ten minutes affecting safety system for a declaration of Alert. A short time later a sudden Main Steam Line (MSL) break in the steam tunnel gives a release of radioactivity to secondary containment, and inboard Main Steam Isolation Valve (MSIV) remains open, resulting in an unisolable MSL break outside containment for a Site Area Emergency (SAE).

Initial conditions established Unit 2 operating at 90% power, late in core life. Power history has been 90% power for the last 8 hours, and full power operation for the previous 92 days. Unit 1 is operating at 90% power. Low river level forced the plant into Technical Specification 3.7.1.2.a.2 Limiting Condition for Operation (LCO) which calls for throttling the discharge flow for each Plant Service Water (PSW) pump such that the maximum flow does not exceed 7000 gpm. Power level was reduced to lessen the cooling load of the PSW system.

Demand on the system was very high. A long period of unseasonably high temperatures and lack of rainfall had combined to cause low river level and at the same time increased the electrical demand for the region. The National Oceanic and Atmospheric Agency (NOAA) weather forecast called for heavy thunderstorms within the next 4 to 6 hours that would break the dry spell. A large low pressure system moving up the Gulf was expected to reach the state by midnight. Current temperature was 88 degrees with winds out of the west at 5 mph.

Drill activities started with an indication of low river level which placed the plant in a Technical Specification LCO for a hot shutdown within 12 hours. This placed the plant in an NUE based on natural phenomenon. Shortly after this, the Control Room received indications of an inadvertent initiation of HPCI due to an electrical short in the vessel level circuitry, which added cold water to the vessel and caused a power spike. Operator action was taken to secure HPCI and investigate the initiation and at the same time Unit 1 reported receipt of a fire alarm for the Unit 2 HPCI room.

3.0 NARRATIVE SUMMARY (Cont.)

Upon investigation of the HPCI room, black smoke and heat were observed and called in to the Control Room. The fire brigade was called away to investigate and fight the fire. The first report from the scene indicated a fire burning in the control boxes for HPCI speed control. After approximately 10 minutes, the On-Shift Operations Supervisor (OSOS)/Emergency Director (ED) declared an ALERT based upon a fire potentially affecting Safety Systems. Notifications, call-outs and activation of Emergency Response Facilities (ERFs) were begun at that time.

A short time later, an unisolable MSL leak inside the steam tunnel occurred. This caused a Group I isolation on steam tunnel high temperature, and/or a MSL high flow, causing a reactor SCRAM. One MSIV (F022A) remained open (bent stem) supplying steam to the steam tunnel and causing vessel level to decrease due to the loss of feedwater on MSIV closure. A SITE AREA EMERGENCY was declared based upon an unisolable Main Steam Line break outside containment. Prompt offsite dose assessment was conducted to determine any releases in progress and external Radiological Emergency Teams (RETs) were dispatched to verify offsite dose rates and track the release.

The Health Physics (HP) exercise terminated at 2045 CDT.

4.0 HEALTH PHYSICS EVALUATION

Evaluation Method

Controller/Evaluators were assigned to key locations in order to track activities, evaluate response and to keep the exercise on schedule. In addition, Controller/Evaluators provided comments on the effectiveness of the emergency response with emphasis on the exercise objectives. The comments by the various Controller/Evaluators have been reviewed, assessed and organized to identify problems or areas needing improvement.

A review of the Controller/Evaluator critique comments by the Emergency Preparedness Department was held after the exercise. The overall opinion of the Controller/Evaluators was that the emergency response was satisfactory such that each facility was able to perform their intended functions and the exercise objectives were satisfied; however, there were several areas of concern, and each Controller/Evaluator summarized major comments.

Items Requiring Corrective Action

This section presents comments on those areas of emergency response which will be addressed to improve HNP emergency preparedness. The Onsite Nuclear Emergency Preparedness Supervisor will be responsible for tracking these items and will be made cognizant of all actions and changes related to these items.

Item 1.: Several Communicator/Recorder (C/R) positions were not filled in an expedient manner which caused a delay in critical data transfer between facilities. This also hindered the initial offsite dose assessment effort due to a lack of data for dose assessment personnel to utilize. Excessive time spent activating facilities with no thought of easing the work load of the Emergency Director in the Control Room (Simulator).

For Example:

a. During the exercise, we were 5 Communicator/Recorders short due to the inability to reach these personnel during the callout. The following facilities were short the indicated numbers of C/R positions; Simulator Control Room-1, OSC-1,TSC-3.

b. Two problems with C/R personnel not performing their position responsibilities.

   1. In the OSC, no information was kept when repair teams were dispatched and when they returned. The Supervisors in the OSC did not provide this information to C/R #5 and he did not actively pursue this information.

   2. In the TSC, there was no C/R #8, the OSC called the TSC several times for plant status and parameter data. Reluctantly the TSC C/R #8 position was manned by an engineer who protested his unqualified status although he had been a C/R for the last three years, however he did not establish the loop.

Items Requiring Corrective Action (Item 1, Cont.)

Recommended Corrective Action:

a. The Callout List will be revised to show a larger pool of personnel that may be called upon to fill Communicator/Recorder positions by adding another Alternate to each list of personnel. This second alternate category will be any qualified Communicator/Recorder, this will allow for the callout of any other Communicator/Recorder available. Training for Facility Managers in the future will stress the need to prioritize personnel assignments during emergency conditions to provide maximum support in the transfer of data between facilities.

b. Facility Managers should be alert for any breakdown in the communications process. Such a breakdown requires immediate attention to rectify. All personnel should be aware of their responsibilities which are not limited to the positions identified in a matrix, but to any function needed to support the overall effort. Emergency Preparedness Training will stress that during an emergency the Facility Manager has the authority to make reassignments based upon the current need, and response personnel may be called upon to provide support in areas outside their assigned duties.

c. Facility Managers and Emergency Responders should be reminded to prioritize their activities. Delaying activation and assumption of responsibility while moving tables and phones around the room prevents the OSOS/ED from performing his primary duties of stabilization and mitigation of the reactor system. Emergency Preparedness Training will reinforce the prioritizing of tasks to be accomplished during the initial stages of an emergency.

Responsible Department: Emergency Preparedness

Items Requiring Corrective Action (Cont.)

Item 2.: Lack of knowledge by support personnel in the Control Room (Simulator) on where to obtain plant readings and values. Communicator/Recorders were unfamiliar with where to obtain Reactor Building and Main Stack monitor readings in counts per second (cps) and counts per minute (cpm) to supply to dose assessment personnel.

Recommended Corrective Action:

This information was available on the Safety Parameter Display System (SPDS). Incorporate information on where to find required readings during training for Communicator/Recorders.

Responsible Department: Emergency Preparedness Training

Item 3.: Communications problems using the plant page from the Simulator.

Recommended Corrective Action:

Continuing problems using the plant page to contact personnel from the Simulator. The TSC and OSC could not hear announcements or requests to perform vital tasks. Although this is not a problem with plant page use from the Main Control Room, it decreases the training effectiveness of drills and exercises. Investigate a cost-effective repair or alternative system to enable adequate communications between the Emergency Response Facilities and the Simulator.

Responsible Department: Emergency Preparedness

Item 4.: OSC Manager never declared the OSC activated or gave a status briefing to the OSC staff. There was confusion in the OSC over the status of the plant, what events were taking place and what would be expected. This lack of information and data caused a general lack of concern and lax attitude demonstrated in the OSC. The Manager should have made status announcements and maintained control of the noise level.

Recommended Corrective Action:

Facility Managers should be reminded that they control the facility and to take appropriate actions to maintain order during the operation of the facilities. This should be stressed during emergency preparedness training.

Responsible Department: Emergency Preparedness Training

Items Requiring Corrective Action (Cont.)

Item 5.: Lack of space in the OSC after remodeling of the breakroom, there is not as much space available for the number of persons responding in the facility. In addition, McDaniel vending locked the doors to their serving line area and the OSC Manager did not have working space to talk with his Supervisors.

Recommended Corrective Action:

Obtain key to the locked doors and place it in the OSC keybox for use during drills and exercises. Investigate alternate staging areas for workers and technicians to await assignments in the plant.

Responsible Department: Emergency Preparedness

Item 6.: Radiological data for use inside the Control Building and Service Building was not in the scenario. Controllers had to interpolate from Reactor Building data and gave out confusing data to Players, which caused a delay in dispatching post-accident sampling system (PASS) team.

Recommended Corrective Action:

Have HP personnel not playing in drill or exercise review scenario radiological data fidelity in plant between airborne levels, surface contamination, etc.

Responsible Department: Emergency Preparedness

Item 7.: The TSC activation procedure does not adequately address the emergency heating ventilating and air-conditioning (HVAC) system or radiation/contamination surveys outside the facility.

Recommended Corrective Action:

The HVAC problem has been identified in the past and a new TSC HVAC procedure is being written to provide guidance an the operation of the system. Currently the procedure 73EP-EIP-063-OS, "Technical Support Center Activation" step 7.8 reads, "Have Health Physics personnel check operability of HP instruments and initiate general area dose rate readings and air samples per Attachment 10." This statement should be expanded to provide some guidance on external surveys and contamination control in the TSC.

Responsible Department: Emergency Preparedness

Items Requiring Corrective Action (Cont.)

Item 8.: Players were not aware from the time of callout until the time of arrival at the plant what radiological conditions existed, if there was a release in progress or the route they should take to the plant.

Recommended Corrective Action:

Change callout practice to include information given onsite by 73EP-EIP-005-OS including; release in progress, best route to travel to the plant, onsite rally point.

Responsible Department: Emergency Preparedness

Item 9.: Several problems occurred with equipment in the EOF including:

1. Failure of uninterruptable power supply (UPS) for the dose assessment computer.
2. Clocks set to the wrong time and dead or missing batteries.
3. Personnel unfamiliar with phone headsets
4. Field Team Coordinator wall map is worn-out and needs to be replaced.
5. Facility set up diagrams for the State and Local area were not posted on the wall.
6. Emergency Notification Network (ENN) notifications from the Simulator were not heard over the ENN speaker box in the EOF.
7. The Security boat had no navigation lights.
8. Need emergency core cooling systems (ECCS) information on plant parameter board including residual heat removal (RHR) and core spray (CS) (ie: loops in service and flowrates).
9. Continuing problem with securing ENS/ENN auto ringdown phones when not in use, currently they are taped-down.

Recommended Corrective Action:

1. Repair or replace UPS power supply for dose assessment computer.
2. New digital clocks have been ordered for all facilities.
3. Training required for C/Rs on headset usage and general transfer of data.
4. Replace map for Field Team Coordinator with new map.
5. Place facility set up diagrams for State/Local areas on wall in EOF.
6. Repair ENN speakers in EOF.
7. Install new lights on the Security boat for night use.

Items Requiring Corrective Action (Item 9, Cont.)

8. Modify Plant Parameter Board to include ECCS information. This information is currently included on the Equipment Status Boards by C/R #1 loop in the TSC, this is the same position that receives plant parameters in the EOF.
9. Devise a more efficient way to secure the ENN and ENS phones in their cradles.

Responsible Department: Emergency Preparedness

Item 10.: An additional person is needed to assist the Field Team Coordinator to plot field team positions and communicate instructions to the field teams.

Recommended Corrective Action:

Evaluate dose assessment staffing to determine if additional staffing is required to support the Field Team Coordinator.

Responsible Department: Emergency Preparedness

Item 11.: Several equipment and procedure problems identified during the PASS portion of the exercise included:

a. Labels are worn off valve toggle switches and make valve lineups very difficult for Chemistry personnel, could contribute to incorrect lineup.
b. Valve indication lights were blinking instead of steady. Chemistry personnel indicated that this situation has existed for a long time with no corrective action.
c. Procedure problems include a critical warning note after the step instead of prior to performing the step. This could allow an incorrect valve lineup to occur. Secondly, the procedure calls for an unrealistic sample flow for Reactor Coolant. The Chemistry Foreman present indicated to the Technicians that this was a problem with the procedure and then continued with the next step.

Recommended Corrective Action:

a. Make and install new valve labels to identify PASS switches and valves.
b. Repair PASS valve indicator lights at the panel to correct the blinking problem.
c. Review and implement changes to the PASS procedures.

Responsible Department: Chemistry Department