



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

DEC 10 1992

Report No.: 50-416/92-23

Licensee: Entergy Operations, Inc.
Jackson, MS 39205

Docket No.: 50-416

License No.: NPF-29

Facility Name: Grand Gulf

Inspection Conducted: October 19-23, 1992

Inspector: F. N. Wright
F. N. Wright, Team Leader

12/8/92
Date Signed

Team Members: E. Fox, Emergency Preparedness Specialist, NRR
C. Hughey, Resident Inspector
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Approved by: K. P. Barr
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Emergency Preparedness Section
Radiological Protection and Emergency
Preparedness Branch
Division of Radiation Safety and Safeguards

12/8/92
Date Signed

SUMMARY

Scope:

This routine, announced inspection involved the observation and evaluation of the annual emergency preparedness exercise. Emergency organization activation and response were selectively observed in the licensee's Emergency Response Facilities including: the Simulator Control Room; Technical Support Center; Operational Support Center; Emergency Operations Facility and the Backup Emergency Operations Facility. The inspection also included a review of the exercise scenario and observation of the licensee's post exercise critique.

Results:

In the areas inspected, violations or deviations were not identified. One exercise weakness, concerning information provided to off-site emergency agencies, was identified. The licensee's performance during the exercise was good, with the licensee successfully meeting most of their exercise objectives. Overall, the exercise demonstrated an effective capability to protect the public health and safety in the event of a radiological emergency.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. Armstrong, Engineering Technician
- *D. Bost, Principal Civil Engineer
- *J. Christin, Supervisor Security Operations
- *L. Daughtery, Superintendent, Plant Licensing
- *W. Deck, Superintendent, Security
- *M. Dietrich, Manager, Nuclear Training
- *D. Ellis, Emergency Preparedness
- *J. Faiku, Nuclear Specialist
- *W. Garner, Supervisor Audits
- *M. Harrigill, Supervisor WCG
- *C. Hayes, Director, Quality Programs
- *C. Hicks, Superintendent, Operations
- *C. Hutchinson, General Manager
- *R. Jacks, Technical Specialist
- *D. Jackson, Supervisor Chemistry
- *J. Klyng, Auditor, Quality Programs
- *M. Larson, TSU, Quality Programs
- *F. Mangan, Director, Plant Projects and Support
- *M. Meisner, Director, Design Engineering
- *A. Morgan, Manager, Emergency Preparedness
- *L. Moulder, Technical Coordinator
- *D. Pace, Director, Design Engineering
- *R. Patterson, Assistant to General Manager
- *S. Puttman, Auditor, Quality Programs
- *J. Reaves, Assistant Director Quality Programs
- *J. Roberts, Manager, Plant Maintenance
- *W. Russell, Operations Coordinator, Emergency Preparedness
- *D. Smith, Senior Emergency Planner
- *J. Summers, Specialist, Plant Licensing
- *D. Townsend, Senior Emergency Planner
- *R. VanDerAkker, Emergency Planner
- *T. Williamson, Superintendent, Chemistry

Other licensee employees contacted during this inspection included engineers, operators, mechanics, security force members, technicians, and administrative personnel.

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- *C. Hughey, Resident Inspector
- *R. Bernhard, Senior Resident Inspector

*Attended Exit Interview

2. Exercise Scenario (82302)

The scenario for the emergency exercise was reviewed to determine that provisions had been made to test the integrated capability and a major portion of the basic elements existing within the licensee's Emergency Plan and organization as required by 10 CFR 50.54(t), CFR 50.47(b)(14), 10 CFR 50, Appendix E, Paragraph IV.F, and specific criteria in NUREG-0654, Section II.N.

The scenario was reviewed in advance of the scheduled exercise date and was discussed with licensee representatives. The exercise scenario was organized, and adequate to exercise the participants. However, there were several scenario/exercise problems identified during the exercise which included the following:

- The controller at the site of the plane crash did not communicate the correct conditions to the players reporting the status of the crash. In accordance with the licensee's Emergency Plan an airplane crash on site meets the conditions for a Notification of Unusual Event (NOUE) classification while an airplane crash into plant non-vital structures meets the requirement for an Alert classification. The initial report did not include information that the plane had struck a non-vital structure. This drill simulation weakness resulted in insufficient information being reported to the Shift Superintendent (in the Simulator) who then properly classified, with the information provided, the emergency as an Unusual Event. As a result, the Lead Controller in the Control Room had to provide a contingency message to the Shift Superintendent to classify the event as an Alert which noticeably disturbed the Shift Superintendent's train of thought for several minutes thereafter.
- Prior to the exercise, the scenario developers did not have any air flow rate information for the release path through the containment air lock access door, when containment pressurized. The controllers were able to generate values when they were requested by the players.
- The licensee also experienced drill equipment failures. Problems with the simulator Emergency Response Facility Information System (ERFIS) data link delayed the start of the exercise and the quantity of information available to the Emergency Response Organization (ERO). The Technical Support Center (TSC) and Emergency Operations Facility (EOF) exercise computers had to be disconnected from the simulator to allow simulator operation and controllers were required to provide the requested ERFIS data.

The problems were identified by the licensee and included in critique findings for evaluation and corrective action.

No violations or deviations were identified.

3. Assignment of Responsibility (82301)

This area was observed to determine that primary responsibilities for emergency response by the licensee had been specifically established and that adequate staff was available to respond to an emergency as required by 10 CFR 50.47(b)(1), 10 CFR 50, Appendix E, Paragraph IV.A, and specified criteria in NUREG-0654, Section II.A.

The inspector observed that the onsite and offsite emergency organizations were adequately described and the responsibilities for key organization positions were clearly defined in approved plans and implementing procedures.

No violations or deviations were identified.

4. Onsite Emergency Organization (82301)

The licensee's onsite emergency organization was observed to determine that the responsibilities for emergency response were unambiguously defined, that adequate staffing was provided to insure initial facility accident response in key functional areas at all times, and that the interfaces were specified as required by 10 CFR 50.47(b)(2), 10 CFR 50, Appendix E, Paragraph IV.A, and specific criteria in NUREG-0654, Section II.B.

The inspector observed that the initial onsite emergency organization was adequately defined; the responsibility and authority for directing actions necessary to respond to the emergency were clear; and that staff was available to fill key functional positions within the organization.

The licensee adequately demonstrated the ability to alert, notify, and mobilize licensee response personnel. Augmentation of the initial onsite emergency response organizations was accomplished through activations of the Emergency Response Facilities (ERFs). The inspector observed the activation, staffing, and operation of the emergency organizations in the Simulator Control Room (SCR), Technical Support Center (TSC), Operations Support Center (OSC), Emergency Operations Facility (EOF) and the Backup Emergency Operations Facility (BEOF). The inspector determined that the licensee was able to staff and activate the facilities in a timely manner. The required staffing and assignment of responsibility was effective and consistent with the licensee's approved procedures. Because of the scenario scope and conditions, long term or continuous staffing of the emergency response organization was not required.

The inspector observed excellent command and control in the SCR, EOF and BEOF facilities.

No violations or deviations were identified.

5. Emergency Response Support and Resources (82301)

This area was observed to determine that arrangements for requesting and effectively using assistance resources have been made, that arrangements to accommodate State and local staff at the licensee's onsite EOF have been made, and that other organizations capable of augmenting the planned response have been identified as required by 10 CFR 50.47(b)(3), 10 CFR Part 50, Appendix E, Paragraph IV.A and specific criteria in NUREG-0654, Section II.C.

The inspector determined that State and local staff could be accommodated at the EOF and arrangements for requesting offsite assistance resources were in place.

No violations or deviations were identified.

6. Emergency Classification System (82301)

This area was observed to determine that a standard emergency classification and action level scheme was in use by the nuclear facility licensee as required by 10 CFR 50.47(b)(4), 10 CFR 50, Appendix E, Paragraph IV.C, and specific criteria in NUREG-0654, Section II.D.

The licensee's Emergency Plan and 10-S-01-1, "Activation of the Emergency Plan" (EPP-1), Revision 8, dated February 2, 1992, established the Emergency Action Level (EAL) scheme to identify and classify the simulated emergency conditions. All emergency classifications were made in accordance with the licensee's Emergency Plan and implementing procedures.

No violations or deviations were identified.

7. 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 was established. This area was further observed to assure that means to provide early notification to the population 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 inspector reviewed the licensee's implementing procedures for notifying offsite authorities and the NRC. The procedures were described in 10-S-01-06, "Notification of Offsite Agencies and Plant On-Call Emergency Personnel" (EPP-6), Rev. 22, July 17, 1992. The inspector observed that notification methods and procedures were used to provide information concerning the simulated emergency conditions to Federal, State, and local response organizations and to alert the

licensee's augmented emergency response organization.

Emergency Notification Message Forms were consistently approved with information errors or information blocks incomplete. The inspector observed the following problems with offsite notification messages generated during the emergency exercise:

- The Shift Superintendent as the Emergency Director did not consistently complete the New/Unchanged blocks for Emergency Classification and Release Information (Parts 3 and 9 of the form) for Message numbers 1, 2, and 3;
- The initial General Emergency notification message described the event as a "Loss of EOF Power" on Message number 7 in Incident Description/ Update/Comments (Part 6 of the form);
- The initial General Emergency notification, stated a potential for a release existed (Part 9 of the form) while reporting actual release rates and estimated projected dose calculations;
- Bases (field data, plant data or default data) for projected dose calculations were not completed for Message number 8;
- Protective Action Recommendations (PARs) were not completed on Message number 8; and
- Agency roll calls were often incomplete.

Additionally, emergency notification Message number 7 reporting the General Emergency classification was not timely. The General Emergency was declared at 11:10 a.m. The Emergency Director approved the message for release at 11:28 a.m. and transmission of the message began at 11:30 a.m., approximately 20 minutes after the General Emergency classification was made. The offsite dose projections for the release were reported at 11:36 a.m. and the message transmission was not until 11:38 a.m., approximately 28 minutes after the General Emergency classification was made.

The numerous problems identified above were minor when considered individually, however, in aggregate they indicated a general weakness in the licensee's ability to provide clear and accurate Emergency Notification messages to State and local agencies. The inspector stated that failure to provide clear and accurate messages to the State and local agencies was an exercise weakness.

Exercise Weakness 50-416/92-23-01: Failure to provide clear and accurate Emergency Notification messages to the State and local agencies.

No violations or deviations were identified.

8. Emergency Communications (82301)

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

The inspector observed that adequate communications existed among the licensee's emergency organizations, and between the licensee's emergency response organization and offsite authorities.

In addition to the exercise communication problem, discussed in Paragraph 2, with the ERFIS data link; the licensee did experience some minor problems with communication equipment. Communications between the TSC and the OSC and SCR were weak. The sound powered phones between the facilities operated intermittently during the exercise. The licensee identified the issues during their critique process.

Players did a good job of transmitting drill messages and identifying the messages as drill messages.

No violations or deviations were identified.

9. Emergency Facilities and Equipment (82301)

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

Prior to the exercise, the inspectors toured the ERFs and determined that the facilities were in a state of operational readiness along with appropriate equipment and supplies. Previous observations by the resident inspectors were similar.

The inspector observed the activation, staffing and operation of key ERFs, including the SCR, TSC, OSC, EOF and BEOF. All ERF's were promptly staffed and activated with qualified personnel. The licensee also activated its Emergency News Media Center and the Emergency Information Center/Media Monitor personnel to respond to the media and public concerning real or rumored events at the facility. However, activities at the News Media and Information Centers were not observed by the inspection team.

a. Simulator Control Room

The SCR staff exhibited a very professional attitude towards operating the simulator as the plant. Overall, operations personnel adequately assessed the problems faced during the exercise and their responses were timely and appropriate to the circumstances. Operators were very aggressive in pursuing equipment repairs and restorations and the supervisors maintained

strong command and control of the plant. Appropriate emergency operating procedures were implemented in a timely and controlled manner. The operations staff worked well as a team. The inspectors noted that the turnover briefing from the Shift Superintendent to the Emergency Director was effective. The Shift Superintendent demonstrated excellent command and control throughout the exercise.

No violations or deviations were identified.

b. Technical Support Center

The TSC was activated and staffed promptly upon notification by the Emergency Director of the emergency condition leading to an Alert emergency classification. The TSC appeared to have adequate equipment for the support of the assigned staff.

No violations or deviations were identified.

c. Operational Support Center

The OSC was staffed expeditiously following the order to activate. The inspector determined that necessary emergency equipment was available to support OSC repair teams and radiation monitoring teams.

The teams were briefed, dispatched and retrieved in a timely manner. Communications between the OSC and the teams were adequate. When a base radio malfunctioned, the OSC quickly recovered from the failure of the base radio by using a hand-held unit with no difficulties. Health Physics controls and support of teams in the field were a strength, especially during the changing radiological conditions described in the exercise scenario.

During the exercise, the OSC coordinator never briefed his staff on current plant conditions or ongoing priority plant activities. Obtaining information from the plant status board was difficult. Although periodically updated, at times, actual plant conditions were not as indicated on the status board. The importance of the accuracy of the board was amplified by the lack of briefings, on current plant conditions, provided by the OSC Coordinator. Although team leaders adequately briefed teams prior to being dispatched, teams were occasionally not fully aware of general plant conditions.

No violations or deviations were identified.

d. Emergency Operations Facility

The EOF was promptly staffed and activated. Licensee Emergency Plan and implementing procedures require the EOF to be activated at the declaration of a Site Area Emergency or General Emergency.

It must be declared operational within approximately 60 minutes following the declaration of either classification. The Site Area Emergency was declared at 10:05 a.m. The EOF was activated at 10:50 a.m., approximately 45 minutes after the request for staffing was made. The licensee's goal was to have the facility fully operational within 60 minutes of activation.

The EOF was located onsite in the Simulator/Training Building. The facility appeared to be adequately designed, equipped and staffed to support an emergency response.

The Offsite Emergency Coordinator provided timely and accurate status updates to the EOF staff. Command and Control in the EOF/BEOF were excellent.

In accordance with 10-S-01-14, Radiological Monitoring (EPP-14), Rev 14, dated May 9, 1990, the EOF Plume Tracker was responsible for forming and dispatching the Offsite Radiological Monitoring Teams (The HP Coordinator assumes the responsibility when the EOF is not activated.) However, the procedure does not describe the process for forming the Radiological Monitoring Team. The inspector determined from interviews, with licensee personnel, that when an offsite monitoring team was formed a driver for the team was requested from the plant Decon staff. During the exercise a request for a Monitoring Team driver was made to the Decon staff at 09:07 a.m. At 10:13 a.m. a request for a second driver was made as above. The second driver reported to the EOF at 10:28 a.m. and was dispatched with the initial monitoring team. The delay of the initial driver resulted in the delay of offsite monitoring capabilities, however, the offsite release did not begin until about 10:30 a.m. The inspector learned from the licensee's staff that the first driver from the Decon staff never reported to the EOF. A non-essential member of the EOF staff was utilized as a driver for the second team. Following the exercise licensee representatives reported that the method for obtaining monitoring team drivers needed review and corrective action.

10-S-01-24, Emergency Plan Procedure, Maintenance of Emergency Preparedness (EPP-24), Revision 6, dated July 9, 1990, provided guidance for inventorying emergency equipment. The procedure required quarterly inventory and inspection of the emergency equipment and kits and the replacement of items having expired calibration dates.

During the licensee's Controller Critique, the Lead Controller for the Environmental Monitoring Teams reported environmental monitoring personnel had found a survey instrument in an environmental monitoring kit that was out of calibration. However, other calibrated instruments were available for use and no instruments with expired calibration dates, were utilized during the exercise. The licensee was required to have one survey instrument in each kit but some kits contained 2 survey

instruments, therefore, additional survey instruments were available.

Following the exercise, the licensee inventoried all of the emergency monitoring kits and replaced the instrument with a calibrated one. The licensee also documented the problem in a Quality Deficiency Report, QDR-0254-92. The inspectors requested a review of the licensee's Emergency Equipment Surveillances and interviewed the individual which had performed them. The individual reported that he had records that showed the instrument in the Emergency Kits was approaching a calibration due date and checked out a replacement instrument from the Radiation Protection Staff. The worker stated that he must have replaced the instrument, approaching calibration due date, back into the emergency kit and turned the replacement instrument back into the Radiation Protection Staff. Inventory records indicated that the kit contained a calibrated instrument. The licensee's inventory form did not include a space for specific instrument identification. The inspector verified that the environmental monitoring kits contained calibrated survey instruments. The inspector stated that the licensee's corrective actions for the issue would be reviewed in a future inspection as an Inspector Follow-up Item (IFI).

IFI 50-416/92-23-02: Review licensee corrective action for radiation survey instrument found with expired calibration date in an Offsite Monitoring Kit.

No violations or deviations were identified.

e. Backup EOF

During the exercise, the EOF emergency organization evacuated the EOF. Shortly after activation, at approximately 11:10 a.m. the EOF lost both normal and backup power supplies by scenario. The Offsite Emergency Coordinator ordered the relocation of the EOF emergency organization from the EOF to the BEOF and transferred EOF emergency responsibilities back to the TSC. The licensee's BEOF was located at the Baxter Wilson Steam Electric Station in Vicksburg, MS, which was approximately 20 miles by road from the site. The licensee's response to the relocation was very good. The relocation and activation of the BEOF was completed in about 1 hour and 5 minutes. The BEOF was efficiently set up and EOF functions were transferred again from the TSC to the EOF. From the EOF and BEOF, the transfer and resumption of emergency duties was timely and effective. In an effort to improve ERO proficiency, the licensee had conducted a EOF relocation drill several weeks prior to the graded exercise. Licensee representatives reported the relocation drill had helped the licensee improve response capabilities.

No violations or deviations were identified.

10. Accident Assessment (82301)

This area was observed to determine whether 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), 10 CFR 50, Appendix E, Paragraph IV.B, and specific criteria in NUREG-0654, Section II.I.

The accident assessment program included an engineering assessment of plant status and assessment of radiological hazards to both onsite and offsite personnel resulting from the accident.

No violations or deviations were identified.

11. Protective Responses (82301)

This area was observed to determine that guidelines for protective actions during the emergency, consistent with Federal guidance, were developed and in place, and protective actions for emergency workers, including evacuation of nonessential personnel, were implemented promptly as required by 10 CFR 50.47(b)(10), and specific criteria in NUREG-0654, Section II.J.

The inspector verified that the licensee had and used emergency procedures for formulating PARs for offsite populations within the 10-mile emergency planning zone (EPZ).

Protective actions were initiated for onsite personnel following the Alert declaration by conducting a personnel accountability of those personnel inside the protected area. The site accountability process was achieved and reported to the TSC within 38 minutes. Scenario problems reduced the effectiveness and usefulness of the site accountability drill. A large number of plant personnel were added to a drill exemption list prior to the start of the exercise. Determining who was exempt from the exercise play slowed down the accountability process. It also took approximately an hour to generate a list of persons not accounted for.

No violations or deviations were identified.

12. Radiological Exposure Control

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

Health Physics controls and support of teams in the field were a strength. The Radiation Protection Manager (RPM) was proactive in directing and providing guidance to the Health Physics Staff in the ERO. The RPM exercised strong command and control of the required radiological monitoring and protection functions to include the dispatching of Field Radiation Monitoring

Teams and the coordination of Health Physics activities required to support maintenance activities. The RPM identified the potential for a radioactive release from the plant and took early aggressive action to monitor the onset of any releases.

Radiological monitoring and access controls around all ERFs was proceduralized, established and maintained during the exercise.

No violations or deviations were identified.

13. Exercise Critique (82301)

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

The licensee conducted facility critiques with exercise players immediately following the exercise termination. OSC, EOF, and TSC player critiques were effective and resulted in several self-identified strengths, weaknesses and improvement items. The SCR player critique was not observed. Licensee controllers and observers conducted additional critiques prior to the formal critique to management on October 23, 1992. The critique process including the critique to management was well organized and included a review of the objectives that had been established for demonstration during the exercise. Issues identified during the exercise were discussed by licensee representatives which included both substantive deficiencies and improvement areas. The conduct of the critique was consistent with the regulatory requirements and guidelines cited above and considered a program strength. Licensee action on identified findings will be reviewed during subsequent NRC inspections.

No violations or deviations were identified.

14. Action on Previous Inspection Findings (92701)

(Closed) IFI 50-416/91-15-01: Restricting the use of emergency organization trainees as players in undesignated positions during exercises. This involved an observer that became a player during an exercise performing tasks in a position that was not identified in the ERO. This impacted the inspectors ability to evaluate the performance of the ERO as defined. No interference was observed or identified during the 1992 graded exercise and this item is closed.

(Closed) Exercise Weakness 50-416/91-15-02: Failure to activate the EOF in a timely manner. In an 1991 off-hours exercise, activation of the EOF took approximately 95 minutes, following an alert classification. Failure to activate the EOF within 1 hour was made an exercise weakness. The inspector

reviewed documentation of a subsequent off-hours EOF augmentation drill conducted December 18, 1991, in which the EOF was activated in approximately 50 minutes. The drill was observed by the Resident NRC Inspector. This item is closed.

15. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on October 23, 1992. The inspector summarized the scope and findings of the inspection, including the exercise weakness. The licensee did not identify any such documents or processes as proprietary. Dissenting comments were not received from the licensee. Licensee management was informed that one previous open item (listed in Paragraph 14) was reviewed and considered closed.

<u>Item Number</u>	<u>Description and Reference</u>
50-416/23-25-01	Exercise Weakness: Failure to provide clear and accurate Emergency Notification messages transmitted to the State and local agencies (Paragraph 7).
50-416/92-23-02	Inspector Followup Item: Review licensee corrective action for radiation survey instrument found with expired calibration date in an offsite monitoring kit. (Paragraph 9).

Attachments:
Exercise Objectives, Narrative
Summary, and Time Line

SECTION 2.0

SCOPE AND OBJECTIVES

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2.1 SCOPE

The scope of this exercise, with some exceptions, will endeavor to demonstrate by actual performance a number of primary emergency preparedness functions. At no time will the exercise be permitted to interfere with safe operations, and plant management may, at their discretion, suspend the exercise for any period of time necessary to assure this goal.

The exercise will include the appropriate notifications to Federal, State, Local and plant emergency personnel. Participation by the states of Mississippi and Louisiana, Claiborne County and Tensas Parish is expected to be limited to receipt of notification messages only.

2.2. GENERAL OBJECTIVES

The Grand Gulf Nuclear Station 1992 Emergency Preparedness Exercise program objectives are based on the Nuclear Regulatory Commission requirements delineated in 10CFR50.47 and 10CFR50 Appendix E. Additional guidance is provided in NUREG-0654 and FEMA, REP-1.

The primary objective of the 1992 Emergency Preparedness Exercise is to evaluate the adequacy of the emergency response organization during a simulated accident. The scope of the exercise is sufficient to test the following emergency response capabilities:

1. The ability of Emergency Response Organization to classify actual or simulated emergencies through the understanding of emergency action levels (EAL) and initiating conditions.
2. The ability of Emergency Response Organization to activate the station emergency plan and procedures.
3. The ability of Emergency Response Organization to respond to an emergency, make proper and timely notifications through each emergency classification (Notification of Unusual Event, Alert, Site Area Emergency, General Emergency), and activate the emergency response facilities in an efficient and timely manner.
4. The adequacy, effectiveness, and proper utilization of emergency response facilities and their emergency response equipment (Control Room, OSC, TSC, EOF).
5. The ability of Emergency Response Organization to formulate and make protective action recommendations to protect station personnel and the general

public based on plant parameters, in-plant and on-site field surveys, and/or off-site field monitoring information.

6. The ability of Emergency Response Organization to evaluate the source term and make dose projections based on plant parameters and field surveys.

2.3. SPECIFIC OBJECTIVES

The following specific objectives are broken down by emergency response facility or function. These objectives were used to develop an exercise scenario sufficient to realize the general objectives and provide an aid to drill observers evaluating the exercise.

1. Control Room

- a. Demonstrate the capability of the Control Room staff to classify emergencies in accordance with emergency action levels and initiating conditions until the TSC is operational.
- b. Demonstrate the capability of the Control Room staff to notify the Federal, State and Local agencies in accordance with established protocols (Operational Hot Line (OHL), NRC Emergency Notification System (ENS)).
- c. Demonstrate the capability of the Control Room staff to activate the station emergency plan and make appropriate notifications to activate emergency response personnel during an emergency.
- d. Demonstrate the capability of the Control Room staff to communicate technical information to the Operations Support Center, Technical Support Center, Emergency Operation Facility, and the NRC.
- e. Demonstrate the ability of the Control Room staff to recognize operational symptoms and parameters indicative of degrading plant conditions.
- f. Demonstrate the ability of the Shift Superintendent and/or the Shift Supervisor to make timely and effective decisions to mitigate the consequences of the event and clearly demonstrate control of the response effort.
- g. Demonstrate the ability of the Control Room staff to adequately turn over control of the event upon activation of the Technical Support Center (TSC).

2. Operations Support Center (OSC)

- a. Demonstrate the capability of the appropriate staff to activate the OSC at the Alert emergency classification and be fully operational within approximately 1 hour after activation.
- b. Demonstrate the capability of the OSC coordinator to make timely and effective decisions and demonstrate clearly, effective command and control of the OSC and response teams.
- c. Demonstrate the capability of the OSC coordinator and OSC team leaders to organize, brief, and dispatch repair and corrective action teams in a timely manner.
- d. Demonstrate the capability of the health physics organization to maintain appropriate radiological controls throughout the course of the event.
- e. Demonstrate the ability of the OSC staff to communicate technical information with the Control Room, TSC, EOF and in-plant and on-site field teams.

3. Technical Support Center (TSC)

- a. Demonstrate the capability of the appropriate staff to activate the TSC at the Alert emergency classification and be fully operational within approximately 1 hour after activation.
- b. Demonstrate the capability of the Emergency Director to make timely and effective decisions and demonstrate clearly, effective command and control of the TSC response effort.
- c. Demonstrate the ability of the TSC staff to communicate technical information with the Control Room, OSC, EOF and NRC.
- d. Demonstrate that the TSC has adequate telecopying capability to transmit necessary information to the EOF throughout the course of the event.
- e. Demonstrate the ability of the TSC staff to notify the Federal, State and Local agencies in accordance with established protocols (OHL, ENS)

4. Emergency Operations Facility (EOF)

- a. Demonstrate the capability of the appropriate staff to activate the EOF at the Site Area Emergency classification or sooner and be fully operational within 1 hour after activation.
- b. Demonstrate the ability of the Offsite Emergency Coordinator to assume

control of the event from the TSC staff, make timely decisions, and demonstrate clearly, effective command and control of the emergency response effort.

- c. Demonstrate the ability of the EOF staff to notify the Federal, State and Local levels of government in accordance with established protocols (OHL, ENS)
- d. Demonstrate the ability of the EOF staff to communicate technical information with the Control Room, OSC, TSC, ENMC, NRC and off-site agencies.
- e. Demonstrate the ability of the EOF staff to relocate to the Backup EOF.
- f. Demonstrate the ability of the EOF staff to evaluate the source term and make dose projections based on plant parameters, on-site/off-site field survey information, meteorological data, or other simulated information made available by the exercise controllers.
- g. Demonstrate the ability of the EOF staff to make appropriate protective action recommendations to protect station personnel and the general public based on plant parameters, in-plant and on-site field surveys and/or off-site monitoring information.

5. Off-site Monitoring Teams (OMT)

- a. Demonstrate the ability to mobilize Off-site Monitoring Teams within the required time limits of the GGNS Emergency Plan, Table 5-1.
- b. Demonstrate the ability of the Off-site Monitoring Teams to obtain radiation data, collect potentially radioactive contaminated air samples and determine Iodine concentration.
- c. Demonstrate the ability of the Off-site Monitoring Teams to communicate location and radiological field data to the EOF.

6. Security

- a. Demonstrate the ability of the security force to control site access and the protected area evacuation as directed by the emergency director.

7. Emergency News Media Center (ENMC)

- a. Demonstrate the capability of the appropriate staff to activate the ENMC at the Site Area Emergency classification or sooner.
- b. Demonstrate the ability of the ENMC staff to communicate with the EOF.

1992 EMERGENCY PREPAREDNESS EVALUATED EXERCISE

- c. Demonstrate the ability of the ENMC to coordinate and assemble timely and accurate information at the ENMC.
 - d. Demonstrate the capability of the ENMC to disseminate emergency information to the media and/or public (briefings, written statements) in a timely manner.
 - e. Demonstrate the ability of the ENMC to respond to technical inquiries during media briefings.
8. Emergency Information Center (EIC) / Media Monitor (MM)
- a. Demonstrate the capability of the EIC to respond directly to questions from the media and/or public concerning real or rumored events at GGNS.
9. Activities not Demonstrated
- a. Actual PASS samples will not be drawn.¹
 - b. Corrective action teams will not manipulate any plant systems or components.
 - c. Actual decontamination of vehicles and personnel will not be demonstrated.
 - d. Medical team response and transportation will not be demonstrated.¹
 - e. SCBA's will be worn but will not be utilized.
 - f. Shift turnover will not be demonstrated.

¹ Requirement demonstrated through separate drills.

SECTION 7.0

NARRATIVE SUMMARY AND SEQUENCE OF EVENTS

7.0 EXERCISE SCENARIONARRATIVE SUMMARY

Repair teams on 3
Rad Teams on 4

The plant is operating at 100% power near the end of its current operating cycle. The weather is sunny with partly cloudy skies and moderate winds of 5 to 10 mph from a northwesterly direction.

Reactor coolant activity has been increasing and there is indication that several leakers exist in the core. Off-gas levels have been increasing but are still within Technical Specification limits. A recent technical bulletin from the fuel vendor indicated that a potential problem had been discovered with the shipment of fuel provided to Grand Gulf for RFO4. A discrepancy in their QA program allowed an uncertified part to be used during the manufacturing of that fuel. Efforts are underway to locate the areas of the core that contain the leakers. Indications so far tend to indicate the leakers are located in areas where the RFO4 fuel was loaded.

The exercise begins at approximately 0800. Simultaneous

The control room will experience a loss of the running CRD pump. The control room crew will start the other CRD pump and restore the system to normal operating mode.

At 0810 the control room will experience a loss of ESF-11 transformer. This will de-energize the associated ESF bus momentarily. The control room crew will ensure the emergency diesel generator starts and energizes the bus. Recovery will require transferring the bus to one of the remaining ESF transformers and securing the diesel generator. In addition numerous other systems will require restoration.

At 0820 the control room will receive word that a small airplane has crashed inside the protected area. It hit the north side of the warehouse roof and ended up in the warehouse loading dock area inside the fence. An Alert is expected to be declared based on "an aircraft crash into plant non-vital structures." TSC and OSC activation will start.

The control room will receive word that the pilot is alive but has a broken leg. The site ambulance will be requested to come to the crash scene. A milky fluid will be reported to be leaking from the plane.

DONOT BRING AMBULANCE ON SITE

At 0840 leaking fuel ignites and the fire is reported to the control room. The fire brigade is dispatched to the crash scene. The fire will be extinguished by 0900.

At 0910 the control room will experience an inadvertent HPCS initiation with a trip of the HPCS pump breaker. The control room will inop the HPCS system and enter the appropriate Tech Spec. The OSC will be requested to investigate the spurious initiation and trip of the breaker.

By approximately 0920 the TSC and OSC must be manned and control of the emergency transferred to the TSC. The TSC and OSC should develop an action plan to control the crash scene.

At 0940 a report is received that both doors of the 119" containment airlock are open and cannot be closed. A repair team will be dispatched from the OSC to close one of the airlock doors. The control room will enter Tech. Spec. 3.6.1.1, "Primary Containment." action statement allows 1 hour to get one of the doors closed or be in hot shutdown in the next 12 hours. The repair crew will not be able to completely close either door.

At 1000 a loss of EHC due to (EHC problem) causes a trip of the main turbine. The reactor fails to scram (ATWS). The control room enters the Emergency Operating Procedures (EOPs) to combat the ATWS. Loss of EHC removes the main condenser as a heat sink and all energy is released into the containment. The EOPs will require a reduction in reactor vessel water level to the top of active fuel (TAF), to limit the power released into the containment.

A Site Area Emergency should be declared based on "transient requiring operation of shutdown systems with failure to scram." EOF, ENMC, and EIC activation will start.

The OSC will be requested to perform several attachments required by the EOPs to allow the control rods to be inserted so the reactor can be shutdown. An emergency depressurization is expected due to excessive heating of the suppression pool. SRV operation due to the ATWS will increase the urgency to get one of the containment airlock doors closed.

At 1020 (containment ARM) high radiation alarms are received. Core damage is occurring in the RFO4 fuel due to stressed caused by the ATWS. Fission products are being released to the containment by SRV operations. The containment airlock repair team is expected to be called back to the OSC due to changing radiological conditions. An evacuation of the Auxiliary Building is expected.

A General Emergency should be declared based on "conditions exist that make release of large amounts of radioactivity in a short period of time possible." A site evacuation may be ordered by the TSC.

At 1030 indications of a release will appear on the SGBT effluent radiation monitors.

The containment fission product inventory will continue to increase until the reactor is brought to a cold shutdown condition. Release to the environs will continue until containment pressure is reduced to 0 psig or the containment airlock door is closed.

By 1110 the EOF must be manned with overall control of the emergency and offsite dose assessment transferred to the EOF.

At 1115 the EOF will experience a loss of electrical power (normal and backup). The EOF will have to transfer control of the emergency back to the TSC and move to the BEOF.

At 1145 the running RHR pump will trip causing a loss of shutdown cooling. The control room will respond by establishing shutdown cooling with the other RHR pump. The OSC will be requested to investigate the tripping of the RHR pump.

By 1215 the BEOF is expected to be manned with control of the emergency transferred from the TSC to the BEOF.

The BEOF will be required to make one notification to the state and local agencies and approve one news release before the exercise is terminated.

At 1230, if unable to reduce containment pressure to 0 psig, the airlock repair team will be able to close one airlock door.

At approximately 1300 the exercise is terminated.

GRAND GULF NUCLEAR STATION
1982 EMERGENCY PREPAREDNESS EVALUATED EXERCISE

Actual Time	Scenario Time	Summary
<u>SEQUENCE OF EVENTS</u>		
0800	00:00	Loss of running CRD pump
0810	00:10	Loss of ESF-11
0820	00:20	Control room is notified that a small plane has crashed into the warehouse. Crash site is on the north side of the warehouse next to the loading dock. The pilot is alive but appears to have a broken leg. He was crop dusting a field just south of the plant and hooked a power line with his landing gear and lost control. The ambulance is requested to be brought to the scene.
ALERT		An ALERT is declared based on "Notification of an aircraft crash into plant non-vital structures"
0825	00:25	Control room is notified that a milky fluid is leaking from a tank in the plane.
0840	00:40	Control room is notified that the plane has caught on fire. Apparently there was a fuel leak and the fuel ignited. Control room should announce the fire and dispatch the fire brigade.
0910	1:10	Inadvertent HPCS initiation and trip.
0920 (1 hr after Alert)	1:20	TSC & OSC must be manned and command turned over from the control room by this time.
0940	1:40	Control room is notified that both doors are open on the 119" containment airlock. All attempts to close the doors have failed.
1000	2:00	A loss of EHC occurs. The reactor fails to scram. No rod motion is observed for any rod. Control room crew responds per EOPs.

Actual Time	Scenario Time	Summary
Site Area Emergency		A Site Area Emergency is declared based on "transient requiring operation of shutdown systems with failure to scram."
		Control room will request that teams from the OSC to respond and install EOP attachments to allow control rods to be inserted.
1020	2:20	Fuel loaded during RFO4 starts to fail. Containment ARM annunciators received.
General Emergency		A General Emergency is declared based on "conditions exist that make release of large amounts of radioactivity in a short period of time possible."
1030	2:30	Indication of release through SBGT. Containment ARM reading increasing.
1100 (1 hr after SAE)	3:00	EOF must be manned with control of the emergency transferred from the TSC by this time
1115	3:15	The EOF will experience a loss of electrical power. Control will be shifted back to the TSC and EOF personnel will move to the BEOF.
1145	3:45	The running RHR pump trips resulting in a loss of shutdown cooling. The control room will shift to the other RHR pump and re-establish shutdown cooling. The OSC will be requested to investigate the trip of the RHR pump.
1215	4:15	BEOF is expected to be manned by this time.
1230	4:30	If unable to reduce containment pressure to 0 psig, the airlock repair team will be able to close one of the airlock doors

GRAND GULF NUCLEAR STATION
1992 EMERGENCY PREPAREDNESS EVALUATED EXERCISE

Actual Time	Scenario Time	Summary
1300	5:00	Exercise is terminated.