ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION REGION IV

Inspection Report: 50-498/96-13 50-499/96-13

NPF-76 Licenses: NPF-80

Houston Lighting & Power Company Licensee: P.O. Box 1700 Houston, Texas

Facility Name: South Texas Project Electric Generating Station, Units 1 and 2

Inspection At: Matagorda County, Texas

Inspection Conducted: February 5-8, 1996

Gail M. Good, Senior Emergency Preparedness Analyst Inspectors: Plant Support Branch, Division of Reactor Safety

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nonna W Approved. Blaine Murray. Chief. Plant Support Branch Division of Reactor Safety

2/23/96

Inspection Summary

Areas Inspected (Units 1 and 2): Routine, announced inspection of the operational status of the emergency preparedness program, including changes to the emergency plan and implementing procedures: emergency facilities. equipment, instrumentation, and supplies; organization and management control; training; independent and internal reviews and audits; effectiveness of licensee controls: notifications and communications: offsite communication capabilities: onsite followup of events; and applicable Updated Final Safety Analysis Report commitments.

Results (Units 1 and 2):

Plant Support

The emergency plan and implementing procedures were properly reviewed. approved, and submitted to NRC. Changes did not decrease the

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effectiveness of the emergency plan. Procedures were current and detailed. Agreement letter reviews were well documented and conducted in a thorough manner (Section 1.1).

- Emergency facilities were well maintained and in an operational state. A quarterly process for monitoring facility equipment inventories and evaluating operational conditions was in-place, implemented, and well documented. Facilities were effectively arranged. Detailed procedures existed for use of the alternate emergency operations facility (Section 1.2).
- The emergency response organization was effectively maintained. The quarterly review of the emergency response organization roster was considered a strength. Emergency response division management and staffing were also considered strengths. Excellent management tools existed to track. control. and document required division tasks. Upper management support was evident (Section 1.3).
- The required initial and requalification training program was effectively implemented. Required drills/exercises had been conducted: reports were detailed, thorough, and well formatted (Section 1.4.1).
- Overall, performance during the simulator walkthroughs was excellent. Command, control, communications, and protection of plant personnel were excellent. The use of emergency response personnel to act as telephone role players was identified as a strength. One exercise weakness was identified for failure of one crew to follow procedures for issuing offsite protective action recommendations. Event classifications were prompt and correct, except for one over-classified event. Areas for improvement were identified involving offsite agency notifications and record-keeping. Post-walkthrough critiques were excellent (Section 1.4.2).
- The annual independent audit of the emergency preparedness program was performed by individuals with appropriate expertise and was of proper scope and depth. The audit noted significant improvement over the last year. Interface with offsite agencies improved. The audit was detailed, thorough, and effective (Section 1.5).
- Self-assessments of the emergency preparedness program were very effective and considered an asset (Section 1.6).
- Capabilities for notifying and communicating with licensee personnel. offsite agencies, and the public existed and were properly maintained. Significant improvements in tone alert radio oversight and distribution were noted (Section 2).
- Offsite communication capabilities were diverse and redundant. A survivable method to communicate with offsite agencies would likely exist during and following a severe natural event (Section 3).

- One emergency event had been declared since the last routine inspection. The licensee determined that the event was incorrectly classified in the conservative direction. Offsite agency notifications were made within regulatory time limits. Corrective actions to address event issues appeared thorough and complete (Section 4).
- No discrepancies were identified during a review of the Updated Final Safety Analysis Report commitments (Section 5).

Summary of Inspection Findings:

Exercise Weakness 498/9613-01: 499/9613-01 was opened (Section 1.4.2)

Attachments:

- Attachment 1 Persons Contacted and Exit Meeting
- Attachment 2 Emergency Preparedness Inspection Scenario Narrative Summary
- Attachment 3 Licensee Offsite Communication Capabilities

1 OPERATIONAL STATUS OF THE EMERGENCY PREPAREDNESS PROGRAM (82701)

This area was evaluated to determine whether the licensee's emergency preparedness program was being maintained in a state of operational readiness. and whether changes to the program continued to meet applicable NRC requirements and did not affect the overall state of emergency preparedness.

1.1 Emergency Plan and Implementing Procedures (82701-02.01)

The inspectors reviewed the licensee's emergency plan and selected emergency plan implementing procedures to verify that changes had not decreased the effectiveness of emergency planning, had been incorporated into the plans and procedures, and had been properly reviewed and submitted to NRC.

Interim Change Notice 16-1 and Revision 17 to the emergency plan had been submitted since the last routine inspection (the interim change notice was actually submitted prior to the last inspection but was not reviewed until after). The changes incorporated by the interim change notice did not decrease the effectiveness of the emergency plan. Revision 17 had not been reviewed by the NRC as of the date of this inspection. Both changes had been properly approved, annotated, and submitted to NRC in accordance with Procedure OPGP05-ZV-0010, "Emergency Plan Revision."

During a review of the emergency plan, the inspectors observed that the description of the annual audit of the emergency preparedness program in Section 0.4 was not totally consistent with the requirements in 10 CFR 50.54(t). Specifically, the description of the audit scope did not include reference to an evaluation of the offsite interface. The inspectors verified that this area was included in the applicable audits (see Section 1.5 below). This matter was discussed with the Manager, Emergency Response, and the assigned quality assurance specialist. The licensee indicated that the emergency plan would be corrected in a future revision.

The inspectors verified that the emergency plan implementing procedures were being reviewed annually as required by Procedure OPGP05-ZV-0002. "Emergency Response Activities Schedule." and that the procedures had been submitted to NRC in accordance with Appendix E.V to 10 CFR 50. Revision 3 to Procedure OERP01-ZV-IN01. "Emergency Classification." had been submitted to NRC on October 23. 1995. and a review completed on January 18. 1996. The changes to the classification procedure were considered acceptable and did not decrease the effectiveness of the licensee's emergency planning. Other procedures reviewed during this inspection were found to be current. detailed. and consistent with the emergency plan.

To further determine whether the emergency plan was being maintained, the inspectors verified that letters of agreement were being reviewed annually and updated as necessary pursuant to Section 0.3 of the emergency plan and Procedure OPGP05-ZV-0002. The inspectors concluded that the reviews were well documented and conducted in a thorough manner via written correspondence with the agreement organization.

1.2 <u>Emergency Facilities, Equipment, Instrumentation, and Supplies</u> (82701-02.02)

The inspectors toured onsite emergency response facilities and reviewed the licensee's process for conducting emergency facility inventories and inspections to verify that facilities and equipment were being maintained in a state of operational readiness. The inspectors toured the Unit 1 control room, technical support center, and operations support center, and the common emergency operations facility. The facilities were well maintained and in an operational state. Equipment, instrumentation, and supplies appeared complete and consistent with the items specified in the emergency plan and Procedure OPGP05-ZV-0009. "Emergency Facility Inventories and Inspections." The inspectors verified that quarterly inventories and inspections were being conducted in accordance with the aforementioned procedure. Emergency response organization position binders were available in each facility. The inspectors determined that the facilities were effectively arranged to support emergency response activities. A detailed procedure existed for use of the alternate emergency operations facility: OERP01-ZV-0F01, "Alternate Emergency Operations Facility Activation. Operation, and Deactivation."

1.3 Organization and Management Control (82701-02.03)

The inspectors reviewed the emergency response organization staffing levels to determine whether sufficient personnel resources were available for emergency response. The emergency response management and staff were reviewed to ensure that an effective programmatic system existed.

No significant changes had been made to the emergency response organization since the last inspection. The licensee continued to use an organization composed of three separate teams. The inspectors verified that the emergency response organization roster was being reviewed quarterly, pursuant to Procedure OPGP05-ZV-002. "Emergency Response Activities Schedule." The quarterly review, which was considered a program strength, included a review of the roster, call-out list, and unusual event notification list. The review also covered depth and training qualifications. Most positions were maintained at three-deep. A system was in place to control additions and deletions to the emergency response organization. Management and staffing in the emergency response division were considered very strong. A number of management tools existed to track and control emergency response activities. These tools included an integrated schedule, an activities schedule, and a 6-year plan. The activities schedule, as described in Procedure OPGP05-ZV-002, included individual forms to document completion of activities such as communications tests, annual letters of agreement review, annual emergency response procedures review, annual offsite training review, annual emergency information calendar mailing verification, quarterly visible postings and public emergency information brochure verification, quarterly review of tone alert radio distribution, quarterly telephone number verification, and quarterly emergency response organization roster review. The procedure included a total of 15 different activity forms. The inspectors concluded that the activities schedule was an extremely effective method to track, control, and document required emergency response division tasks.

1.4 Training

The inspectors reviewed the emergency response training program to determine whether emergency response personnel had received the training required by Sections M and N of the emergency plan, 10 CFR 50.47(b)(15), and 10 CFR Part 50. Appendix E.IV.F.

1.4.1 Training Program

The licensee's training program was implemented by Procedures OPGP03-ZT-0139, "Emergency Preparedness Training Program," and OPGP05-ZV-001, "Emergency Response Exercises and Drills." To determine whether the program was being implemented as described, the inspectors reviewed the emergency response organization training rosters for the three teams (red, white, and blue) and reviewed drill/exercise reports. The inspectors found that the training program was being implemented as required; all emergency response organization members appeared to have current qualifications. Reports and records generated in 1995 for the combined functional drill, dress rehearsal, annual exercise (not evaluated by NRC), and communications drills were reviewed to determine if the required drill/exercise program was being implemented.

Communications drills were documented using forms from the emergency response activities schedule. Required semi-annual health physics drills, annual post-accident sampling system drill, and annual radiological monitoring drill were incorporated into the combined functional drill, dress rehearsal, and annual exercise. The inspectors concluded that the required program was being implemented. The drill/exercise reports were detailed, thorough, and well formatted. Only minor problems were identified.

1.4.2 Simulator Walkthroughs

The inspectors conducted an emergency response walkthrough with a shift and staff operating crew to evaluate the adequacy and retention of skills obtained from the emergency response training program. One scenario was developed by the facility. reviewed and approved by the NRC, and administered to the two crews to determine, through demonstrated performance, whether operations and

chemistry/health physics personnel were proficient in their duties and responsibilities as emergency responders during a simulated accident scenario. Attachment 2 to this inspection report contains a narrative summary of the walkthrough scenario provided by the licensee.

The inspectors observed the two crews using the control room simulator in the dynamic mode. The scenario consisted of a sequence of events requiring an escalation of emergency classifications, culminating in a general emergency. The scenario was developed to run approximately 90 minutes. The inspectors observed the interaction of the response crews to verify that authorities and responsibilities were clearly defined and understood. The walkthrough also allowed the evaluation of the crews' abilities to assess and classify accident conditions, utilize abnormal and emergency operating procedures, perform dose assessments, develop protective action recommendations, and make corresponding notifications to offsite authorities.

Command, control, communications, and protection of plant personnel were assessed as excellent. Information flow between the operating crew and the emergency response personnel was very good. The use of emergency response division personnel to act as telephone role players for offsite agencies and the NRC enhanced the realism and effectiveness of the walkthroughs.

One exercise weakness was identified involving the failure of one control room crew to follow procedures for issuing offsite protective action recommendations. Two examples were observed. First, the crew failed to consider protective action recommendations at the site area emergency as required by Section 3.2 of Procedure OERP01-ZV-IN07, "Offsite Protective Action Recommendations. ' A recommendation to evacuate a 5-mile radius was subsequently determined to be appropriate. Second, the same crew failed to notify offsite agencies within 15 minutes as required by Section 3.5 of the protective action recommendation procedure. Although the notification was made at 17 minutes versus 15 minutes, the failure demonstrated a lack of control of the process. The notification form was completed and ready for transmission when the communicator began copying the information onto another form. Before the second form could be completed, the event escalated to a general emergency, and the emergency director/shift supervisor expanded the protective action recommendations. The form was then modified to capture the new event classification and protective action recommendations (i.e., the 15-minute clock was incorrectly reset). The failure to follow procedures for issuing protective action recommendations was identified as an exercise weakness (498/9613-01: 499/9613-01). The licensee agreed with the above facts and stated that appropriate corrective actions would be taken.

Performance in many other areas was considered strong, although there were some areas for improvement identified. For example, with one exception, emergency classifications were correct and promptly determined. The most significant area for improvement involved one crew's over-classification of the site area emergency. The over-classification appeared to involve a misuse of the fission product barrier degradation matrix in Procedure OERP01-ZV-IN01. "Emergency Classification." It appeared that potential loss and loss criteria in the fuel clad portion of the matrix were incorrectly added to get to the site area emergency. By the procedure, the event would have been classified as an alert (already in effect).

With the exception of the above mentioned exercise weakness involving protective action recommendations, notifications to offsite agencies and the NRC were timely and included appropriate information. Two areas for improvement were observed. First, Notification Form 2 for one crew incorrectly indicated that a release was in progress and that it had started at 11:00 a.m. There was no simulated release at that time. Second, one crew checked the containment breach box (in the event description block) at the general emergency, and the other crew did not. Both forms correctly stated that a release was in progress (via a stuck open power operated relief valve). The apparent inconsistency involving the definition of containment breach, as used by the licensee on the notification form, could be confusing to the offsite agencies.

Overall, record-keeping was good; however, there were two areas for improvement: (1) one crew used different clocks to obtain times for logs. notification forms, etc. (there was a 2-minute difference between the clocks); and (2) dose assessment printouts using the operations dose assessment program did not include a listing of assumptions used in the scenario calculations. One crew began writing the scenario conditions on the forms for reference. During a real emergency, both of these situations could hamper event reconstruction.

For each crew, separate post-walkthrough critiques were conducted for emergency response and operations. The inspectors observed one operations critique and both emergency response critiques. The critiques were considered excellent: they were thorough and identified strengths and problem areas. including many of the issues discussed above.

1.5 Independent and Internal Reviews and Audits (82701-02.05)

The inspectors reviewed independent and internal audits of the emergency preparedness program performed since the last inspection to determine compliance with the requirements of 10 CFR 50.54(t). The inspectors reviewed Quality Audit 95-06, dated July 13, 1995, and the audit scope and checklist. The audit was conducted during the period July 24 through August 10, 1995, by personnel with appropriate expertise (including emergency preparedness). The scope of the audit was consistent with the regulations and included an evaluation of the interface with offsite agencies. The inspectors verified that the offsite agencies were provided with a copy of the report.

The audit concluded that the emergency preparedness program was adequately implemented to protect the health and safety of the public and station personnel. Significant improvement in program implementation over the last year was noted. The audit report identified 3 program strengths, 1 deficiency, and 12 recommendations. Strengths included station management

support and the emergency response division management monitoring program. The deficiency was assessed against nuclear information systems (Condition Report 95-9922) for not performing maintenance activities on the prompt notification siren system and the plant paging system using prescribed practices. The corrective action program report indicated that the deficiency had been closed. The audit concluded that interface with offsite agencies had improved. The inspectors concluded that the audit was thorough, complete, and effective.

1.6 Effectiveness of Licensee Controls

The inspectors reviewed the adequacy of the licensee's control system pertaining to safety issues, events, or problems. The review included discussions with emergency response management and staff concerning self assessments, problem identification and tracking, and corrective action determination. Several self-assessment documents were also reviewed. The following two key self-assessment vehicles were identified as very effective and considered an asset to the program.

First, the licensee conducted a quarterly assessment of emergency response nuclear safety and organizational performance. The self-assessment was tied to the station's business plan. Nuclear safety included emergency response organization staffing adequacy, staff augmentation, drill/exercise effectiveness, prompt alert notification system, site accountability, effectiveness of response to actual events, and public information program. Organizational performance included annual quality assurance audit, Federal Emergency Management Agency evaluation results, NRC strengths and unresolved issues, emergency response facility readiness, emergency response organization training qualification, and emergency preparedness program budget performance. Performance elements were rated as either green (strength), white (satisfactory), yellow (improvement needed), or red (weakness). The most recent self-assessment (fourth quarter 1995) indicated there were eight green elements, five white elements, and one yellow element. The yellow element was in the area of emergency response organization training qualification and was attributed to training participation.

Second, a special assessment of the program had been performed by two emergency preparedness managers from other sites and the senior quality assurance specialist who normally performed the annual 50.54(t) audit. The special self-assessment was conducted January 8-11, 1996, and the report was dated January 29, 1996. NRC Inspection Procedure 82701 was used as a model. The assessment concluded that the program was well maintained and effectively implemented. No significant issues were identified; however, several recommendations were made.

2 NOTIFICATIONS AND COMMUNICATIONS (82203)

This area was evaluated to determine whether the licensee was maintaining a capability for notifying and communicating with licensee personnel, offsite agencies, and the public.

Regarding notification of licensee personnel, the inspectors verified that an effective mechanism existed for notifying off-duty personnel of an emergency. The system consisted of an auto-dialer and pagers. The operability of these systems was verified during periodic off-hours unannounced emergency response drills (call-in only, no response). As a result of the November 1995 drill, administration of the auto-dialer had been transferred to the plant protection department. The inspectors verified that corresponding training was being conducted.

In addition to the above, the inspectors verified that visual alarms (amber flashing lights) had been installed in high noise areas and that plant personnel were being trained on the appropriate response to the alarms in accordance with 10 CFR 19.12. A supplemental handout to the general employee training manual, dated December 13, 1995, included a section on the alarms and the correct responses. Moreover, the beacons were discussed during the February 5, 1996, morning meeting, and managers were requested to remind employees of their purpose. An article was also included in the latest station newsletter (February 5, 1996).

The capability for notifying offsite agencies is discussed in Section 3 below.

The inspectors reviewed the licensee's process for notifying the population within the emergency planning zone. The system consisted of 14 sirens and tone alert radios in outlying areas. The inspectors verified that the systems were properly tested and maintained. During the 1994 annual emergency preparedness audit, a deficiency was identified involving distribution and control of the tone alert radios. As a result, additional controls were established to monitor the tone alert radios. First, tone alert radio distribution was being reviewed quarterly as prescribed by the activities schedule. Second, a telephone survey of residents with tone alert radios was being conducted annually and tracked on the emergency response integrated schedule. Third, a full polling of the residents was scheduled biennially, beginning in 1996. This activity was captured on the emergency response division's 6-year plan.

3 REVIEW OF TEMPORARY INSTRUCTION 2515/131, LICENSEE OFFSITE COMMUNICATION CAPABILITIES (2515/131)

This temporary instruction was implemented to: (1) gather information on the licensee's capabilities to communicate with state and local government authorities during and after a severe natural event. and (2) gather information on licensee communication contingency procedures. Consistent with the requirements contained in the temporary instruction, the inspection

findings are documented in an attachment to this report (see Attachment 3). The results of this review indicated that a survivable method for communicating with the offsite agencies would likely exist during and following a severe natural event.

4 ONSITE FOLLOWUP OF EVENTS AT OPERATING POWER REACTORS (93702)

One emergency event had been declared at the site since the last routine emergency preparedness inspection. On January 19, 1996, the licensee notified the NRC headquarters operations officer that an unusual event had been declared based on having two feedwater isolation valves inoperable at the same time (Event 29860). The condition had existed from the previous day. The oncoming shift declared the unusual event at 9:35 a.m. The event was terminated at 10:31 a.m.

The licensee determined that the event was incorrectly classified as an unusual event. Although the event was reportable to the NRC. the conditions did not meet the criteria in Emergency Action Level SU2 of Procedure OERPO1-ZV-INO1. "Emergency Classification." which was cited as the basis for the declaration. The licensee initiated Condition Report 96-590 to address the issue. The condition report indicated that the shift supervisor misinterpreted the emergency action level guidance and received conflicting guidance from varying levels of management. A conservative Gacision was made to declare the unusual event. Notifications to state/local authorities and the NRC were made within regulatory time limits. Corrective actions captured in the condition report appeared thorough and complete.

5 REVIEW OF UPDATED FINAL SAFETY ANALYSIS REPORT COMMITMENTS

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

ATTACHMENT 1

1 PERSONS CONTACTED

1.1 Licensee Personnel

*W. Cottle, Group Vice President, Nuclear *C. Armstrong, Senior Staff Consultant L. Barton, Manager, Offsite Program, Emergency Response *D. Bilski, Security Force Supervisor *T. Broadwater, Administrative Clerk *R. Brown, Shift Supervisor *H. Butterworth, Manager, Operations, Unit 2 *C. Campbell. Health Physics Technician *T. Cloninger, Vice President, Nuclear Engineering *K. Coates, Manager, Maintenance, Unit 2 *J. Drymiller, Supervisor, Security Operations *J. Enoch, Offsite Emergency Planner *R. Galiley, Reactor Operator *R. Gangluff, Manager, Chemistry *J. Groth, Vice President, Nuclear Generation *M. Hardt, Director, Nuclear Division, City of San Antonio *S. Head, Supervisor, Compliance *R. Hutchinson, Staff Specialist *J. Inman, ALARA Specialist *T. Jordan, Manager, Systems Engineering Department *K. Keyes, Staff Specialist *K. Kleinhans, Health Physics Technician *K. Kruger. Staff Specialist *B. Kruse, Senior Specialist, Quality Assurance *M. Lance, Junior Coordinator *P. Lara, Reactor Operator *G. Lamberth, Senior Health Physics Technician *R. Logan, Manager, Radiation Protection *P. Losoya, Radiation Protection Technician *R. Lovell. Manager. Operations. Unit 1 *F. Mangan. General Manager. Plant Services *L. Martin. General Manager, Nuclear Assurance & Licensing *R. Masse, Plant Manager, Unit 2 *T. Mayberry, Staff Specialist *L. Meier, Manager, Training Program, Emergency Response *L. Myers, Plant Manager, Unit 1 *E. Pomeroy, Security Coordinator *G. Powell. General Supervisor *F. Puleo, Supervisor, Onsite Emergency Response *R. Rehkugler, Director, Quality *M. Rejcek, Consulting Engineer *E. Rivera, Administrator, Resource Planning *A. Rodriguez, Security Coordinator *S. Rosen, Director, Industry Relations *J. Sands, Supervisor, Security Training *D. Schulker, Compliance Engineer *P. Serra, Manager, Emergency Response

- *J. Sheppard, Assistant to Group Vice President, Nuclear
- *J. Sherwood, Supervisor, Radiation Lab
- *S. Sieben, Unit Supervisor
- *W. Smith, Senior Radiation Protection Technician
- *K. Taplett. Licensing Engineer R. Taylor. Supervisor. Communications. Nuclear Information Systems *F. Timmons. Manager. Nuclear Plant Protection Department
- *T. Underwood, Administrator, Participant Services
- *W. Waddell, Manager, Maintenance, Unit 1 *F. Wagar, Manager, Human Resources
- *V. Wagnon, Emergency Response Junior Specialist
- *L. Weldon. Manager. Staff Training
- *M. Woodard-Hall, Supervisor, Support

1.2 NRC Personnel

- *L. Callan, Administrator, Region IV
- *D. Loveless. Senior Resident Inspector

In addition to the personnel listed above, the inspectors contacted other personnel during this inspection period.

*Denotes those present at the exit meeting.

2 EXIT MEETING

An exit meeting was conducted on February 8, 1996. During this meeting, the inspectors reviewed the scope and findings of the inspection. The licensee did not express a position on the inspection findings documented in this report. The licensee did not identify as proprietary, any information provided to, or reviewed by the inspectors.

ATTACHMENT 2

EMERGENCY PREPAREDNESS INSPECTION SCENARIO NARRATIVE

Simulation Facility: South Texas Project

Initial Conditions:

Unit 1 is at 100 percent power for the last 210 days. Unit 2 is at 100 percent power for the last 90 days. Thermal power is 3800 MW. Meteorological conditions include: winds out of the East from 92 degrees at 6 to 8 mph. current temperature 68 degrees. delta T is -0.98 degrees. The following equipment is out of service in Unit 1: Train C ECW; train C CCW; SDG 13; startup feedwater pump; and AFW pump 13.

A sheared shaft occurs on "B" RCP which results in an Subsequent Events: automatic scram signal. The Reactor fails to automatically trip, and the Primary Reactor Operator must manually initiate a Reactor Scram. When the manual Reactor Scram occurs, three rods are not completely inserted in the core. This should result in a declaration of an ALERT based upon SA2 "Failure of RPS Instrumentation to complete or initiate an Automatic Reactor Trip...and Manual Reactor Trip was successful." Steam Generator Auxiliary Feedwater Turbine Driven pump #14 starts but overspeeds due to a slug of water entering the throttle valve and causing damage to the turbine linkage. AFW pumps #11 and #12 start and supply feedwater to the A and B Steam Generators.

> Due to the ATWS, Radiation Monitor RT-8039, Failed Fuel Monitor, starts to slowly increase indicating potential clad damage caused by the low flow in RCS Loop B.

A report of smoke in the Turbine Building on the 29 foot elevation is received in the Control Room. Plant fire alarms and operators identify a fire in the turbine generator seal oil skid area. The fire brigade is dispatched and discover an injured worker. The B train AFW pump #12 develops a crack in a weld and due to the high pressure discharge of the pump a weld failure occurs in the pipe upstream of valve MOV-0065, resulting in no flow reaching the B steam generator. This results in the water level in the B steam Generator decreasing below the top of the tubes.

RT-8039 failed fuel monitor is reading 870 uCi/ml. Chemistry results Luckup the reading and confirm clad damage. The B steam Generator uncovered upper tubes undergo a tube rupture indicated by increased pressure and level inside the B steam generator and increases in Main Steam line and Condenser Air Removal System radiation monitors. This results in a declaration of a SITE AREA EMERGENCY based on FS1. "Loss of BOTH fuel clad and RCS as indicated by RCS activity >870 uCi/ml and SG tube rupture greater than the capacity of one charging pump. If requested, Steam Generator chemistry samples confirm the tube rupture.

Fire Brigade reports that the fire is out and reflash watch has been set.

The B Steam Generator tube rupture repressurizes the Steam Generator and the PORV cycles to relieve pressure. The PORV fails to close resulting in an offsite release of a radioactive steam cloud. Plant operations personnel dispatched to close the PORV isolation valve find the valve operating gears have rusted so that when excessive force is applied to the handwheel it shears the valve operator shaft and maintenance must be called to close the valve.

Dose projections are performed from the control room and results indicate greater than 1 Rem at the site boundary. This results in a declaration of a GENERAL EMERGENCY based upon RG 1 Site Boundary Dose Resulting from an Actual or Imminent Release of Gaseous Radioactivity that Exceeds 1000 mRem TEDE or 5000 mRem Thyroid CDE for an Actual or Projected Duration of the Release Using Actual Meteorology.

Maintenance personnel arrive in the Isolation Valve Cubicle to close the PORV isolation valve.

PORV isolation valve is shut by mechanical maintenance ending the offsite radiological release. Steam Generators are refilled and plant cooldown is continued.

The drill is terminated.

ATTACHMENT 3

LICENSEE OFFSITE COMMUNICATION CAPABILITIES

Information gathered concerning the licensee's communication capabilities focused on two key areas: (1) the licensee's capabilities to communicate with state and local government authorities during and after a severe natural event, and (2) applicable communication contingency procedures. The inspectors interviewed the Supervisor, Communications, Nuclear Information Systems, and a knowledgeable member of the emergency response division staff to obtain the information. The interview emphasized hurricanes and tornados, since these were the two external hazards to which the plant was most susceptible.

The licensee maintained seven different methods for communicating with state and local authorities: (1) state/county ringdown telephone. (2) commercial telephone lines. (3) control room direct telephone line to Bay City, Texas, (4) microwave line to the electric tower, (5) security radio communications with the county. (6) ringdown line to the emergency control and data center, and (7) 800 megahertz (mhz) radio. The state/county ringdown telephone was the primary method, and the commercial telephone was the first backup. Commercial telephone lines were used for the first backup; the other telephone lines used dedicated cable runs. Two methods used radio systems, and two methods used microwave transmission towers: the microwave line to the electric tower, and the ringdown line to the emergency control and data center. No satellite uplinks/downlinks were used.

Transmission and reception capabilities in the onsite and offsite emergency response facilities were discussed for each of the above systems. The control room had transmission and reception capabilities for all but the security radio. The technical support center had transmission and reception capabilities for all but the security radio and the Bay City line. The emergency operations facility had transmission and reception capabilities for all but the security radio. Bay City line. and 800 mhz radio. The state emergency operations facility had transmission and reception capabilities via state/county ringdown, the 800 mhz radio, and a direct line with the Texas Department of Public Safety. The Matagorda County emergency operations center had transmission and reception capabilities via the state/county ringdown, the 800 mhz radio, and the sheriff's radio. All of the above facilities also had access to commercial telephones. Notifications would have to be relayed if the security radio and emergency control and data center links were used.

Regarding system vulnerabilities, the primary and first backup share the same fiber. The fiber for these two systems were located underground. Aboveground transmission lines were used for the Bay City line and the emergency control and data center ringdown line. The wind load rating for the two microwaves (microwave to electric tower and ringdown line to the emergency control and data center) was 125 miles per hour (equivalent to a Category 3 hurricane). Power supplies for the different systems were discussed. The state/county ringdown, site telephones, control room direct line to Bay City, ringdown line to emergency control and data center, and 800 mhz radio were diesel-backed. The site telephones, Bay City line, and emergency control and data center line also had backup batteries. The communication circuit was the only load served by the battery. None of the circuits would be disabled by a loss of all offsite power or by a station blackout. The useful lifetime of the circuits under blackout-loading conditions was 8 hours. During an external event, notifications via the outside telephone lines would probably be hampered due to line traffic.

Several contingency measures were in place. First, the licensee maintained a disaster recovery plan agreement with Southwestern Bell and Pacific Bell. Second. spare parts (cables, jacks. and cards for switches) were maintained at the site. Third, there were provisions in Procedures OPGP03-ZV-0001, "Severe Weather Plan," to call-in two storm crews in advance of a hurricane. Communication technicians were among those called-out.