

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-458/85-03

Construction Permit: CPPR-145

Docket: 50-458

Category: A-2

Licensee: Gulf States Utilities
River Bend Nuclear Group (RBNG)
P.O. Box 2951
Beaumont, Texas 77704

Facility Name: River Bend Station (RBS)

Inspection At: RBS, St. Francisville, Louisiana

Inspection Conducted: January 15-17, 1985

Inspector: J. B. Baird 3/14/85
J. B. Baird, NRC Team Leader Date

Other Inspectors: C. E. Wisner, RIV NRC
D. J. Perrotti, OIE NRC
R. T. Hogan, OIE NRC
E. E. Hickey, Pacific Northwest Laboratories
J. A. MacLellan, Pacific Northwest Laboratories
A. K. Loposer, Comex Corporation
F. L. McManus, Comex Corporation

Approved: R. E. Hall 3/14/85
R. E. Hall, Chief, Emergency Preparedness and
Radiological Protection Branch Date

J. P. Jardon 3/18/85
J. P. Jardon, Chief, Project Section A,
Reactor Project Branch 1 Date

Inspection Summary

Inspection Conducted January 15-17, 1985 (Report 50-458/85-03)

Areas Inspected: Routine, announced inspection of the licensee's emergency response capabilities during an exercise of the emergency plan and procedures. The inspection involved 180 inspector-hours onsite by eight NRC and contractor inspectors.

Results: Within the emergency response areas inspected, no violations or deviations were identified.

DETAILS

1. Persons Contacted

Gulf States Utilities (GSU)

- *W. J. Cahill, Senior Vice President RBNG
- *J. C. Deddens, Vice President RBNG
- *J. G. Weigand, Vice President Safety and Environment
- *J. E. Booker, Manager, Engineering, Nuclear Fuels and Licensing
- *W. H. Odell, Manager, Administration
 - C. L. Fantacci, Radiation Protection Supervisor
- *J. G. Cadwallader, Supervisor-Emergency Planning
- *M. F. Cassada, Radiation Protection/Chemistry Supervisor
- *W. L. Benedetto, Administrator of Louisiana Communications
- *R. King, Nuclear Licensing Engineer
- *D. C. Bloemendaal, Senior Emergency Planner
- *L. Draper, Executive Vice President, External Affairs and Production
- *T. F. Plunkett, Plant Manager
- *R. H. Barrow, Consultant
- *T. W. Dexter, Coordinator-Security Training
- *D. L. Davenport, Plant Security Supervisor
- *K. E. Suhrke, Quality Assurance Manager
- *P. E. Freehill, Assistant Plant Manager
 - J. E. Venable, Mechanical Maintenance Supervisor
 - A. D. Wells, Radiation Protection Foreman
 - M. O. Bishop, Shift Supervisor
 - D. O. Hartz, Shift Supervisor

Contractor Personnel

- *D. L. Andrews, NUTECH Engineers
- *W. B. Keller, NUTECH Engineers
- *T. A. Kevern, NUTECH Engineers
 - S. Danielson, NUTECH Engineers
- W. Richardson, Radiation Management Corporation

NRC Personnel

- *D. D. Chamberlain, Senior Resident Inspector
- R. E. Farrell, Senior Resident Inspector

Other GSU, state, contractor, and FEMA observation team personnel were also contacted during the inspection.

*Denotes those present at the exit interview.

2. Exercise Scenario

The GSU exercise scenario was reviewed prior to the exercise date to determine that provisions had been made for the required level of participation by state and local agencies, and that all the major elements of emergency response would be exercised in accordance with the requirements of 10 CFR 50.47(b), 10 CFR 50, Appendix E, paragraph IV.F, and the guidance criteria in NUREG-0654, Section II.N.

Comments from this review were forwarded to GSU prior to the inspection date and resolution of the comments was obtained in a meeting with exercise controllers on January 15, 1985.

Based on the scenario review, resolution of comments and observations during the exercise, the exercise scenario was considered to have been adequate to fully exercise GSU's emergency response capabilities and to enable adequate participation of state and local government.

No violations or deviations were identified.

3. Control Room

Initial plant conditions were provided to the control room staff at 9:45 a.m., by the exercise controller and the exercise was initiated at 10:00 a.m., with an unidentified reactor coolant leak rate of sufficient magnitude to result in declaration of a Notification of Unusual Event at 10:10 a.m. The accident scenario events progressed through increased reactor coolant leak rate, a simulated worker injury and contamination, a steamline break outside of containment, fuel cladding damage and release of radioactivity offsite. The emergency classifications escalated as a result of these events to the declaration of General Emergency at 1:36 p.m.

The NRC inspector in the control room observed the appropriate use of Emergency Implementing Procedures (EIP) for classifying the event and noted that the initial notifications to state and local agencies were made promptly (completed at 10:21 a.m.) and efficiently by the control room communicator. However, notification to NRC Headquarters was not made until 11:01 a.m., contrary to the requirements of 10 CFR 50.72 which specifies that the NRC shall be notified immediately after notification of appropriate state and local agencies, and not later than 1 hour after the declaration of an emergency class. Additional training on the EIP provisions for NRC notification should be given to RBS staff responsible for emergency notifications.

The NRC inspector noted that the shift supervisor (SS) and/or control room operator foreman (COF) conducted frequent updates to keep the control room staff apprised of the event status. However, the SS failed to announce

the escalation to Alert to the control room staff. The communicator and shift clerk were informed and external notifications and inplant announcements were made. At times, face-to-face communication and telephone conversations were difficult because of the radio volume level. Consideration should be given to keeping the radio at the lowest level commensurate with the ability to hear all transmissions or providing an operator with headphones.

In regard to radiological protection, an announcement was made for all personnel to clear containment due to increasing radiation levels at 10:37 a.m., and the control room acted promptly in placing the ventilation on closed recirculation through filters and distributed high range pencil dosimeters and initiated periodic reading of the dosimeters.

The following additional observations were made by the NRC inspector:

- There were no step-off pads set up at control room access points.
- When the decision was made to dispatch a team to jumper the contact to allow isolation of the RCIC turbine steam leak, it seemed to take an inordinately long time to get the team to the location. Subsequent queries revealed a shortage of available personnel in the Operations Support Center (OSC) because of other task assignments.
- There were no status boards in use in the control room to display parameters and other information provided on the data sheets, or to provide a ready reference for ascertaining trends. For example, the 3:00 p.m., main plant exhaust duct digital radiation monitor reading, which had been on a steady decrease over the previous six readings, showed a noticeable increase, followed by a resumption of the steady decrease. This perturbation was neither noted by control room personnel, nor was it called to their attention even though the Emergency Operations Facility (EOF) staff did detect and correctly assess the cause.
- In the middle of the initial notification to NRC Headquarters (about 11:03 a.m.) the communicator heard the SS's unattended telephone ringing. The communicator asked NRC to hold while the SS office telephone was answered, shortly returning to complete the notification to NRC Headquarters. With the existing communications layout, potential for a repeat of this problem existed.

Based on observations by the NRC inspector in the control room, the following items are considered to be emergency preparedness deficiencies:

Notification of the NRC was not performed immediately after notification of state and local agencies. (485/8503-01)

Status board(s) were not provided to display significant parameters and trends in the control room. (485/8503-02)

Based on observations in the control room, the following improvement should be considered:

(Open) Open Item (458/8503-03): Review the control room communications staffing, layout and procedures, and revise as necessary so that the communicator will be dedicated to notification responsibilities.

No violations or deviations were identified.

4. Technical Support Center

The Technical Support Center (TSC) was promptly activated after the declaration of Alert and declared operational at 10:54 a.m. The plant manager assumed the position of emergency director, announced the transfer of responsibility from the control room to the TSC and maintained positive control of the TSC throughout the exercise. The transition of control of the incident from the control room to the TSC was well coordinated with good information exchange. Each of the TSC teams appeared to perform their assigned tasks with a good degree of efficiency. The NRC inspector noted that the TSC was a well planned facility with adequate space for all assigned personnel to perform their required functions.

The following additional observations were made by the NRC inspector in the TSC:

- The dose assessment team incorrectly assessed the protective actions at 12:45 p.m. The TSC team prematurely recommended shelter 2 miles around the plant and 5 miles down wind when no action was required. This recommendation was not released because the EOF assumed the dose assessment functions at that time.
- The NRC inspector observed TSC personnel referring to an informal aid to emergency classifications, thus possibly indicating a lack of personnel confidence in the approved procedures.
- The TSC dose assessment team ceased to perform any offsite dose assessments after the LOF was activated. The licensee should consider using the TSC dose assessment team as a backup to the EOF team to minimize the potential for errors.
- The NRC inspector noted that Attachment 2 to the protective action flowchart in Procedure EIP-2-002 was very difficult to read and should be reprinted.

- No predictions of meteorological data were noted. Weather changes could influence protective action recommendations. It is advisable that some mechanism be established to note and use predicted meteorological data.
- The site survey map and 10 mile EPZ map were oriented 45° apart. This made it difficult to compare locations on each map. A change of configuration should be made to orient these maps in the same direction.

Based on observations by the NRC inspector in the TSC, the following items are considered to be emergency preparedness deficiencies:

The TSC support staff incorrectly assessed protective actions indicating that additional training is necessary on use of protective action determination procedures. (458/8503-04)

An unapproved procedure (informal aid to emergency classification) was available and in use in the TSC. (458/8503-05)

Based on observations in the TSC, the following improvements should be considered:

(Open) Open Item (458/8503-06): Provide for obtaining and using predictive meteorological data in the TSC.

(Open) Open Item (458/8503-07): Reorient site survey and 10-mile EPZ maps in TSC to be consistent in direction.

No violations or deviations were identified.

5. Operations Support Center

The OSC was activated by the OSC Coordinator and announced operational at 10:54 a.m. The OSC Coordinator briefed the OSC staff on plant status and directed OSC personnel to review procedures for search and rescue, fire brigade, and toxic gas. OSC personnel were kept informed of plant and emergency status throughout the exercise.

The NRC inspector noted that teams dispatched from the OSC were provided adequate protective equipment and instrumentation, were given briefings on expected hazards, and had cumulative radiation exposure monitored. Communications between the OSC and the teams were observed to be adequately maintained by radio backed up by plant telephones.

Contamination control measures were established in the OSC, contamination surveys were conducted, and initial and followup habitability monitoring was performed.

No violations or deviations were identified.

6. Rescue and First Aid/Medical Care

The search, rescue, and medical portion of the exercise began with a simulated injury and contamination of a technician when the RCIC turbine steam supply piping ruptured. Rescue team members were dispatched to the site of the injury and performed their functions in accordance with the emergency plans and EIPs.

The NRC inspector observed that the contaminated accident victim was treated promptly with proper emphasis placed on medical over radiological concerns. However, it was noted that the accident victim was not surveyed for contamination in a timely manner and was not wrapped in a blanket to control contamination as required by EIP-2-009. In addition, when the nurse from the ambulance arrived, no protective clothing was worn when initially checking the victim's vital signs, which could have resulted in unnecessary spread of contamination. Contamination surveys were subsequently conducted prior to departure from the site and at the hospital.

The NRC inspection observed the transport of the victim to the West Feliciana Parish Hospital and subsequent medical treatment by the hospital staff. The hospital team responsible for decontamination and medical care appeared to perform their tasks adequately and no significant weaknesses were observed.

Based on observations of rescue and medical care, the following improvement should be considered:

(Open) Open Item (458/8503-08): Reemphasize contamination control procedures during training sessions for rescue and medical teams personnel.

No violations or deviations were observed.

7. Emergency Operations Facility

The EOF was located near site in the training center for RBS. The facility was laid out per Figure 1 of Procedure EIP-2-020, "Emergency Operations Facility - Activation." The EOF was activated well within 1 hour after the declaration of the Site Area Emergency with a smooth transfer of command and control from the TSC. Plant status briefings to the EOF staff by the recovery manager were timely, thorough, and accurate. Overall direction and control of the emergency response activities from the EOF were handled well.

The General Emergency classification was timely; however, subsequent to the exercise, during a review of followup notification message forms (Attachment 2 to Procedure EIP-2-006), it was noted that GSU

mischaracterized the reason for reclassification to a General Emergency. Item 6 on Message No. 9 was given as "Reactor level decreasing," as the reason for reclassification to a General Emergency. However, EIP-2-001, "Classification of Emergencies," specified the proper emergency initiating condition as loss of 2 out of 3 fission product barriers with a potential loss of the third barrier. This condition would be indicated by a loss of RCS pressure boundary and containment integrity with a reactor water level at 160 inches and decreasing. GSU's protective action recommendation was well thought out and was developed by using EIP-2-007, Attachment 1, "Protective Action Recommendation Flow Chart." However, notification of escalation to a General Emergency and protective action recommendations to offsite authorities were not accomplished within 15 minutes. From the declaration of the General Emergency to the start of transmittal of the notification message, 21 minutes elapsed, and actual transmission of information by the EOF communicator took approximately 10 minutes. It was noted by the NRC inspector that the protective action recommendation is one of the last pieces of information on a 3 page notification form to be communicated to offsite authorities. GSU representatives stated that the notification procedures would be reviewed and revised, as necessary, to streamline the notification process.

Log keeping in the EOF was generally complete; however, it was not apparent that a complete log was being maintained for recording of field monitoring data. Offsite monitoring data were placed on a 10 mile EPZ map using small stickers upon which the time and radiation level reading were placed. Current offsite monitoring data were difficult to determine after a period of time because all of the stickers (new as well as old) remained on the map. This area will be reviewed during the next exercise.

Status boards were effectively used and were kept current throughout the exercise. Although there were some specific plant radiation levels entered on one status board, there was no status board in the EOF showing general plant radiation levels. In addition, protective actions implemented by the state and local authorities were poorly displayed in the EOF. The status boards/maps were confusing in describing what protective actions were recommended versus those that had actually been implemented.

Access control to the EOF was excellent and included checking of personnel and items coming into the EOF for potential contamination. One member of the NRC Region IV site response team noted that there was some delay in the team's entry into the EOF due to time required for monitoring with the "frisker." Procedures and/or equipment should be reviewed and revised, as necessary, to permit access to the EOF by key persons without delay. Health physics personnel provided adequate habitability checks of the EOF during the exercise. Personnel were observed checking their self-reading dosimeters and properly wearing their TLDs.

Space for the NRC site team in the main operating room of the EOF was not adequate. This matter was pointed out during the exit interview and GSU representatives responded that the overall requirement for the NRC site response team is a matter that will be reviewed and coordinated between the GSU Supervisor-Emergency Planning and the NRC Region IV Emergency Response Coordinator. In addition, there was a delay in the briefing of the NRC site team upon its arrival at the EOF. Because of this involvement in preparing the notification message for the General Emergency, the EOF Manager had not fully briefed the NRC site team until approximately 30-40 minutes after the team arrived. It was noted by the NRC inspector that the EOF Manager could have assigned an assistant or coordinator to interface with the NRC site team.

The coordination and integration of plant operations information into the emergency classification process was adequate. During the exercise the recovery manager maintained contact with the TSC, was aware of changing plant conditions and status board data, and made frequent announcements to the EOF staff.

The Joint Information Center (JIC) was collocated with the EOF in the training center. A closed-circuit TV system was used effectively between the JIC and EOF allowing the recovery manager to see news media releases as they occurred at the JIC without having to leave the EOF.

The recovery manager discussed recovery actions with the EOF staff and, for de-escalation of the general emergency status, contacted state and parish officials for their concurrence prior to termination of the exercise.

Based on observations in the EOF, the following items are identified as emergency preparedness deficiencies:

Provisions for NRC site team space and interface requirements were not adequate. (458/8503-09)

The procedure for notification of emergency classification and protective action recommendations to offsite authorities was not implemented so that notification and recommendation were accomplished within 15 minutes. (458/8503-10)

Based on observations in the EOF, the following improvements should be considered:

(Open) Open Item (458/8503-11): Improve display of offsite monitoring data on 10 mile EPZ map in EOF.

(Open) Open Item (458/8503-12): Improve EOF status boards display of plant radiation levels and protective actions implemented by state and local authorities.

(Open) Open Item (458/8503-13): Review and revise contamination check provisions to permit rapid access of key people to EOF.

(Open) Open Item (458/8503-14): The emergency initiating condition specified in EIP-2-001 should be included on the followup notification message forms.

No violations or deviation were identified.

8. Offsite Monitoring Teams

The GSU offsite monitoring teams observed by the NRC inspector appeared to perform their duties in a timely and professional manner. It was noted that a good briefing was given to the teams before they departed from the EOF. In addition, plant status reports were given to the monitoring teams throughout the exercise. The flow of information to and from the teams appeared to be good; however, the EOF did not repeat the data back to the monitoring teams to verify the accuracy of information transfer.

The NRC inspector observed that the teams were aware of radiation protection procedures, including periodic reading of pocket dosimeters and contamination control measures, throughout the field monitoring operations.

No violations or deviations were identified.

9. Joint Information Center

News media conferences were periodically held with news media representatives present in the JIC adjacent to the EOF in the Training Center. The news media representatives were able to formulate questions of sufficient scope and difficulty to test the utility, state, and local spokespersons' abilities to effectively communicate with media personnel.

The NRC inspector identified two concerns during the exercise. First, approximately 1½ hours elapsed between the declaration of Alert and notification to the news media. The procedure for formulating and releasing significant information to the news media should be reviewed and appropriate corrective actions taken. Second, the designated news media work area was considered to be adequate to accommodate the number of media representatives covering the exercise; but did not appear to provide enough space for media response to an actual emergency.

Based on the JIC observations, the following items are considered to be emergency preparedness deficiencies:

Procedures for formulating and releasing significant information to news media were not adequate to assure the prompt release of this information. (458/8503-15)

Work space in the JIC was not adequate to accommodate a significant increase in media representatives. (458/8503-16)

No violations or deviations were identified.

10. Exercise Critique

The NRC inspectors attended the GSU critiques conducted immediately following the exercise and on the day after the exercise to evaluate GSU's identification of deficiencies and weaknesses as required by 10 CFR 50.47(b)(14) and Appendix E to Part 50, paragraph IV.F.5. It was noted that most of the deficiencies observed by the NRC inspectors during the exercise were also independently observed and reported by GSU personnel. Followup of corrective actions taken by GSU on these deficiencies and weaknesses will be examined during a future NRC inspection.

No violations or deviations were identified.

11. Exit Interview

The exit interview was conducted with Mr. W. J. Cahill, Senior Vice President, RBNG, and other GSU staff on January 17, 1985. Mr. D. Chamberlain, NRC Senior resident inspector was also present. A list of attendees is shown in paragraph 1 of this report. The NRC inspection team leader summarized the team's comments and observations in the subject areas of scenario development, rescue and medical care, control room, TSC, OSC, EOF, JIC, and offsite monitoring. The deficiencies observed were described for subsequent GSU attention in followup corrective actions. No violations or deviations were reported.