

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report No. 50-458/92-25

Operating License No. NPF-47

Licensee: Gulf States Utilities (GSU)
P.O. Box 220
St. Francisville, Louisiana 70775

Facility Name: River Bend Station (RBS)

Inspection At: St. Francisville, Louisiana

Inspection Conducted: June 29 through July 1 and July 16, 1992

Inspectors: Ronald E. Baer, Senior Health Physicist
Facilities Inspection Programs Section

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River Bend Station

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Programs Section

7/29/92
Date

Inspection Summary

Inspection Conducted June 29 through July 1 and July 16, 1992
(Report 50-458/92-25)

Areas Inspected: Special, announced inspection of the licensee's program for the control of high radiation areas.

Results: Within the areas inspected, one apparent violation was identified regarding two workers that were found in a posted very high radiation area (paragraph 3). No deviations were identified.

An incident was identified involving two unauthorized mechanical maintenance workers that were found inside a posted very high radiation area. The very high radiation area was properly identified and posted. The licensee had implemented corrective actions which included disciplinary measures.

DETAILS

1. PERSONS CONTACTED

GSU

- *P. D. Graham, Plant Manager
- R. Z. Albin, Nuclear Repairman (Union Steward)
- *E. M. Cargill, Director, Radiological Programs
- *J. W. Cook, Technical Assistant, Nuclear Licensing
- *L. A. England, Director, Nuclear Licensing
- *D. N. Lorring, Supervisor, Nuclear Licensing

Others

- *J. P. Jaudon, Deputy Director, Division of Radiation Safety and Safeguards
- *D. P. Loveless, Resident Inspector, NRC
- *B. Murray, Chief, Facilities Inspection Programs Section

*Denotes those persons that attended the exit interview conducted by telephone on July 16, 1992. In addition to the above personnel, the inspectors interviewed other licensee and contract personnel during the inspection period.

2. BACKGROUND

On June 24, 1992, the licensee found two mechanical maintenance workers inside a posted, very high radiation area without continuous radiation protection coverage and without being controlled by a stay time record. A third individual was found outside the very high radiation area at the gate where the rope barrier was unlatched and the interscaffold gate had been blocked opened. Since the licensee had experienced several problems in the past concerning controls associated with high and very high radiation areas, a special inspection was performed to review the incident.

The licensee had experienced several violations of high radiation areas which involved personnel who entered these areas without being on the required radiation work permit, and who did not have the proper instrumentation or radiation protection coverage. These violations were documented in NRC Inspection Report 50-458/91-13 and resulted in a civil penalty being imposed. The licensee had taken extensive corrective action which included the development of a barrier rope policy and the implementation of a special training program in which all personnel were required to attend a special training session, take a comprehensive written examination, and pass the examination with a score of at least 80 percent before they were allowed access into the radiologically controlled area of the plant.

NRC Inspection Report 50-458/92-13 also documented a violation of very high radiation area requirements by a contractor chemical cleaning individual. The inspection report was issued on June 9, 1992. The licensee had not responded to this Notice of Violation when the June 24, 1992, event occurred.

3. VERY HIGH RADIATION AREAS (83750)

Technical Specification 6.12.2 states, in part, that high radiation areas, where a major portion of the body could receive in 1 hour a dose greater than 1000 millirem, in accessible areas that are located within large areas, such as the containment, shall be roped off and conspicuously posted, shall have a flashing light activated as a warning device, and shall have either a stay time specification or be under continuous surveillance by radiation protection personnel.

The facility was in a maintenance and refueling outage when the June 24, 1992, event occurred. The containment drywell was a posted high radiation area with a radiation protection drywell coordinator located in a building adjacent to the drywell entrance. Every individual who entered the drywell was issued an alarming dosimeter and received a briefing on radiological conditions relating to their work area during the initial entry for the day. If radiological conditions changed significantly, the radiation work permit was revised and workers received a new briefing prior to reentry.

Local areas within the drywell were posted depending on conditions, such as, very high radiation area, airborne radioactivity area, and hot particle zone.

The licensee's designation "very high radiation area" denotes an area described in Technical Specification 6.12.2 as a high radiation area where the major portion of the body could receive in 1 hour a dose greater than 1000 millirem. The designation is contained in paragraph 3.3 of River Bend Station Operating Procedure RPP-0005, "Posting of Radiologically Controlled Areas," Revision 9, May 6, 1991. To ensure that radiological postings meet a consistent quality Radiation Protection Department Standing Instructions 92-0001, "Posting Standards for the Radiation Protection Department," Revision 4, January 10, 1992, and 92-0009, "Control of High Radiation Area and Very High Radiation Area Ropes," Revision 0, March 26, 1992, were implemented.

On June 23, 1992, a crew of six mechanical maintenance workers entered the drywell on Radiation Work Permit W-3017, Revision 0, dated February 15, 1992, to perform work on Main Steam Isolation Valve "B." The radiation work permit listed the job description as work on the 136-foot elevation main steam isolation valve platform, to disassemble, repair, and reassemble inboard main steam isolation valves as necessary to include staging and removal of equipment. The maintenance crew had reset the bonnet on Main Steam Isolation Valve "B" and were torquing the bolts. The workers took a break for lunch from about 12 midnight to 12:30 a.m. and reentered the drywell at 12:55 a.m.

Another job scheduled for work during June 24, 1992, on the 141-foot elevation was maintenance on Valve E21-AOV-F006 which was within a posted very high radiation area. To facilitate working on the valve (which needed to be disassembled), the very high radiation area was expanded. To provide an adequate working area, the very high radiation area barrier isolated a section of the 141-foot elevation. The work on expanding the barrier area started on June 23 and was completed about 1 a.m. on June 24, 1992.

Three of the mechanical maintenance crew began to setup for work on Main Steam Isolation Valve "C." In preparation to work on the Main Steam Isolation Valve "C," it was necessary to remove the 5-ton capacity chain-fall from the overhead monorail above Main Steam Isolation Valve "B" and move it to the opposite side of the main steam isolation valve area and place it back on the monorail over Main Steam Isolation Valve "C." The crew used a 10-foot step ladder and working on the 141-foot elevation removed the chain-fall. Rather than lower the chain-fall to the 136-foot elevation and carry it across the main steam isolation valve area and back up to the 141-foot elevation, they decided to take a longer route, but one they considered safer by staying on the same (i.e., 141-foot) elevation. When the mechanics approached the posted very high radiation area, they removed the rope barrier and proceeded to traverse the area. A radiation protection technician found two individuals inside the posted very high radiation area and one individual outside, at the gate, at approximately 1:35 a.m.

The mechanical maintenance crew (individuals found at very high radiation area) stated that, if they had been told by radiation protection personnel when they came back from lunch that the area was a very high radiation area, they would not have entered the area. They also stated that during lunch they had overheard other individuals discuss the 141-foot elevation and knew that a tent had to be built around Valve E21-AOV-F006 before the valve was opened.

The inspectors interviewed one of the radiation protection technicians who was involved with establishing radiological controls for the very high radiation area prior to the incident. The technician stated that one of the mechanical maintenance workers, who was later discovered in the very high radiation area, had asked the technician if the maintenance crew could go through the very high radiation area. The technician stated that the maintenance worker was told the crew could not go through the area, because it had been posted a very high radiation area.

The mechanical maintenance workers found within the posted very high radiation area stated that the area was posted as a high radiation area but did not have a flashing light nor was the rope barrier tie-wrapped closed. The inspectors determined that the light had been setup at the rope barrier earlier in the day but was not flashing. The nonflashing warning light was also noted by the radiation protection department and the batteries were replaced less than 3 hours prior to the incident. Several individuals stated that the light was in place and operating correctly immediately prior to and after the incident.

The three mechanical maintenance workers involved in the incident had received training on high radiation area and very high radiation area controls and regulatory requirements as part of the initial training conducted in early 1991 in response to corrective actions for earlier violations. The individuals found within the very high radiation area had received retraining on high radiation and very high radiation area requirements on February 25, 1992, and passed with scores of 84 and 88 percent respectively. An examination on high radiation area and very high radiation area requirements was administered on June 24, 1992, and the individuals scored 80 and

90 percent respectively. The individual outside the area had received retraining on January 22, 1992, and scored 100 percent and on June 29, 1992, scored 90 percent.

All very high radiation areas were checked at approximately 4-hour intervals. The extended barrier was checked at 8:30 p.m. on June 23, 1992, and found not complete as the barrier erection was still in progress. At 12:40 a.m., the barrier was in place and the rope boundary check found the area was properly posted and identified as did the 4:30 a.m. check on June 24, 1992.

The inspectors reviewed Quality Assurance Surveillance Reports OS-92-06-14, "Radiation Protection Activities," dated June 23, 1992. The surveillance involved 531 observations and consisted of a review of selected radiation protection documentation and a tour of selected areas in the radiologically controlled area to verify that the Radiation Protection Department was functioning in accordance with Procedures RPP-0005, "Posting of Radiological Controlled Areas," Revision 9; ADM-0025, "Conduct of Radiation Protection Services," Revision 5; RSP-0200, "Radiation Work Permits," Revision 5; and Standing Instruction 92-001, "Posting Standards for the Radiation Protection Department," Revision 4. The observations made during the surveillance indicated, "that the Radiation Protection Department was in line with both the plant manager and Radiation Protection Department Standards and Expectations."

Surveillance OS-92-04-28, "Radiation Protection Activities," dated April 23, 1992, indicated that high radiation area and very high radiation area controls were found satisfactory.

The inspectors also made a tour of the containment building drywell areas and observed the 141-foot elevation and the area where the incident occurred.

The inspectors determined that the entry by two mechanical maintenance workers into a very high radiation area without continuous radiation protection surveillance or stay time specifications appears to be a violation of Technical Specification 6.12.2. However, additional reviews of this matter are required. This matter is considered an apparent violation pending further review (VIO 458/9225-01).

The inspectors determined from interviews with licensee personnel that worker awareness to radiological controls were still in need of improvement. During discussions of hypothetical situations, some workers indicated that they would not have followed acceptable radiological work practices. The inspectors also noted that licensee personnel continue to show a lack of respect for barrier ropes. Materials were still passed over rope boundaries, usually from the clean side to within a posted area. The inspectors found examples of animosity between work groups and contractor personnel.

4. EXIT MEETING

A telephonic exit meeting was conducted with licensee representatives identified in paragraph 1 on July 16, 1992. During this conversation, the inspectors summarized the scope and findings of the inspection as presented in

this report. The licensee did not identify as proprietary any of the materials provided to, or reviewed by, the inspectors during this inspection.