SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE REPORT
RIVER BEND STATION
50-458/97-99

I. BACKGROUND

The SALP Board convened on February 5, 1997, to assess the nuclear safety performance of the River Bend Station for the period July 30, 1995, through February 1, 1997. The Board was conducted in accordance with Management Directive 8.6, "Systematic Assessment of Licensee Performance." The Board members included: K. E. Brockman, Acting Director, Division of Reactor Safety (Chairperson); A. T. Howell, Acting Director, Division of Reactor Projects; and W. D. Beckner, Director, Project Directorate IV-1, Office of Nuclear Reactor Regulation. This assessment was reviewed and approved by the Acting Regional Administrator.

Functional Areas and Ratings

	Current	Previous
Operations	2	2
Maintenance	2	2
Engineering	2	2
Plant Support	2	1

II. OPERATIONS

Safety performance in this functional area continued to be good, with the licensee improving both equipment operating performance and plant procedures. Operators responded well to non-routine plant challenges and events. Despite generally strong performance in this area, there were numerous operator errors that were particularly evident in the area of configuration control. While the operator training programs continued to be effective, operator performance in the simulator was not as good as it was in the control room. Self-assessment and corrective action activities were effective in improving performance in the areas of hardware, programs, and procedures.

Throughout the assessment period, operations management emphasized the elimination of material condition deficiencies which had previously challenged the plant operators. The number of operator workarounds, which included items such as inoperable automatic functions, was significantly reduced and maintained at a manageable level. As a result of the procedure upgrade program, there were few problems involving procedural weaknesses.

Operators responded conservatively to equipment problems, as demonstrated during the plant shutdown in response to electrical noise spikes on the intermediate range monitors not being completely understood. However, while there were no operator errors which resulted in plant scrams or transients, licensee actions to correct numerous operator errors

caused by inattention to detail, a problem area discussed in the last SALP report, were not fully effective. Examples of these errors, which occurred during both routine power and refueling operations, included an emergency chiller which was not properly aligned for standby operation and a mispositioned fuel assembly.

Overall training effectiveness was considered to be good. Appropriate and effective performance by licensed operator candidates and the operating crews was noted during the examinations and requalification inspection conducted early in the assessment period. However, a number of individual and crew performance problems, specifically in the areas of command and control and the use of emergency operating procedures, were identified in the simulator during subsequent requalification training and the biennial emergency response exercise. These problems reflected individual operator performance weaknesses which, in the past, may have been masked by overall crew performance. Notwithstanding these problems, the licensee was effective in identifying and initiating corrective actions to address these weaknesses.

By emphasizing safety, problem identification improved. Through the implementation of the corrective action program, the implementation of improvement initiative action plans, and the utilization of special teams to review significant events, the licensee corrected or significantly improved a number of problem areas involving plant hardware, processes, and procedures. However, the corrective actions to reduce the number of operator errors have not yet been fully effective.

The performance rating in the Plant Operations functional area was determined to be Category 2.

III. MAINTENANCE

Performance in this functional area was determined to be good. Improvements were noted in plant material condition and several maintenance programs. While the skill and expertise of the craft personnel continued to be an overall strength, individual performance shortcomings were identified in the conduct of surveillance and inservice testing. There were also occasions where both maintenance and surveillance procedures did not provide an adequate level of detail. The planning and scheduling of maintenance activities was determined to be effective; however, there were instances where the integration of risk considerations into emergent work was lacking. Corrective actions developed in response to maintenance-related events and self-assessments were of mixed quality.

The licensee continued to improve overall maintenance effectiveness, and the excellent material condition of the plant was evidence of these efforts. Emphasis was placed on clearly communicating performance expectations and establishing personal accountability for the material condition of the plant. The skill of the individual craft personnel remained a program strength; however, there were instances where inattention to detail, lack of detail in work procedures, and procedural non-compliance resulted in losses of configuration control and the improper conduct of work.

Two exceptions were identified to, what were otherwise, quality maintenance programs -- surveillance and inservice testing. Surveillance testing repeatedly challenged the licensee; and, while improvements were noted in the quality of the individual surveillance procedures, the conduct of surveillance activities did not meet management expectations or, in several instances, regulatory requirements. This was due, in part, to the difficulties associated with the implementation of the improved standard technical specifications. One forced shutdown was attributed to a missed battery surveillance during the assessment period. Significant performance concerns were also identified in the conduct of the inservice testing program, resulting in numerous technical specification required tests not being conducted.

The planning and scheduling of maintenance activities improved from the previous assessment period, and effectively integrated risk assessment into the work package development process. However, there were instances where the planning and scheduling of emergent work activities did not receive proper risk consideration. Examples include the plant being shutdown with multiple trains of the residual heat removal system being inoperable, and the high and low pressure core spray systems being concurrently inoperable.

The programs for self-assessment and corrective actions provided mixed results. The quality assurance organization conducted intrusive and, generally, effective audits of specific work activities, and programmatic self-assessments were used to address the major performance issues. External subject matter experts were often used to help provide broader and more objective reviews. However, there were several examples, such as the failure to ensure that pressure transmitters were environmentally qualified, where the corrective actions for identified performance problems did not preclude their recurrence.

The performance rating in the Maintenance functional area was determined to be Category 2.

IV. ENGINEERING

Performance in this functional area continued to improve during the assessment period and was determined to be good. Management expectations were clearly communicated to the engineering staff. Engineering workloads were effectively controlled and maintained at manageable levels. Communications between departments and control of work efforts were very good. Difficulties encountered early in the assessment period with the corrective action program were corrected. Engineering training was good and system engineers were required to be certified on systems prior to assignment.

The quality of design engineering was considered to be good. Effective practices concerning permanent and temporary plant modifications, engineering calculations, and integrating probabilistic risk analysis insights into planned plant activities were observed. There were also examples of design control problems and instances where changes to the

facility were not properly translated into procedures and calculations. As an example, the licensee had classified the spent fuel pool gates as safety related, but had failed to establish measures to ensure that they would be maintained as safety related. The licensee's efforts to reduce the number of temporary modifications in the plant was considered a strength.

Engineering programs and procedures were good, with notable exceptions in the engineering support provided to the inservice and surveillance testing programs. The weaknesses in the inservice testing program had been identified previously as part of the Long-Term Performance Improvement Plan, but were not effectively corrected. Support for the surveillance testing program was lacking in the areas of procedural detail, test data review, and assurance of adequate program implementation. A proposed request for enforcement discretion relative to a missed station battery surveillance did not provide the necessary technical justification, and an otherwise strong motor-operated valve program missed opportunities to identify and correct design deficiencies previously identified and resolved at other Entergy sites.

The system engineering function was determined to be a strength. System engineers were highly qualified, knowledgeable of their systems, and communicated well with other plant disciplines. Instances of good attention to detail and a questioning attitude were noted, indicating that the engineering staff was, overall, providing consistent and effective support for plant operations. However, there were isolated instances of poor plant engineering support for operability evaluations and inadequate corrective actions. One example included an operability evaluation of the fuel building filtration charcoal following exposure to volatile organic compounds which reached a non-conservative determination.

Effective follow-up to industry events and operating experience was observed. Self-assessments were effective in identifying weaknesses and, in most cases, resulted in effective corrective actions.

The performance rating in the Engineering functional area was determined to be Category 2.

V. PLANT SUPPORT

Performance in this functional area declined over the assessment period, but remained good overall. Strong performance in the areas of radioactive waste effluent management, environmental monitoring, solid radioactive waste management and transportation, and security were overshadowed by radiological protection implementation weaknesses, particularly during the refueling outage, and poor performance during the biennial emergency response exercise. Corrective actions were implemented by the licensee in response to these problems, but have not yet been verified for their overall effectiveness. Plant housekeeping continued to be excellent and the fire protection program was effective.

Generally, performance in the radiological controls area was good but declined from the previous assessment period. The decline was attributed to the personnel performance problems identified with the implementation of the radiological protection program. These problems included instances of trained workers entering the radiologically controlled area without wearing proper dosimetry, and radiation protection personnel failing to properly post radiation, high radiation, and airborne activity areas. In addition, there were numerous personnel contamination events that occurred during the refueling outage. The licensee has initiated corrective actions for these problems. In addition, the licensee's effective implementation of the as-low-as-reasonably-achievable (ALARA) program included a number of technical initiatives to reduce worker exposure.

The licensee effectively implemented the liquid and gaseous radioactive waste effluent program, and the initiation of a waste volume reduction program resulted in a significant reduction of liquid radioactive waste. The reduction of solid radioactive waste resulted, in part, from excellent housekeeping practices. Implementation of the radiological environmental monitoring program was also at a high level.

Performance in the emergency preparedness area declined during the assessment period. During the annual program evaluation, performance problems with event classification, notifications, and dose assessment were identified. During the biennial exercise, additional performance problems were noted in the control room simulator and, especially, in the emergency operations facility. In response, the licensee developed a comprehensive short-term action plan and long-term program enhancements. Performance improved during a licensee-initiated redemonstration exercise, particularly in the emergency operations facility. Emergency response facilities were maintained in a state of operational readiness; however, the licensee had not fully considered the implications associated with their plans to relocate emergency response personnel to the control room in the event that the operational and technical support centers became uninhabitable.

The implementation of the security program continued to be strong. The installed vehicle barrier system conformed to NRC requirements and was capable of protecting vital plant equipment. The licensee properly tested and maintained security equipment. Repairs were conducted in a timely manner. The licensee submitted security plan changes in accordance with NRC requirements, and security procedures conformed to the security plan. The security organization effectively implemented compensatory measures when required. Isolated instances involving security officer inattentiveness and improper logging of security events were identified.

Plant housekeeping continued to be strong during the assessment period. Because of excellent housekeeping practices during the refueling outage, the post-outage recovery of plant cleanliness was particularly effective. The fire protection program was implemented in an effective manner.

Quality assurance audits in the radiological protection and security areas were performance based and thorough. In contrast, self-assessment activities in the emergency preparedness area were not effective in identifying significant performance problems before and during the biennial exercise.

The performance rating in the Plant Support functional area was determined to be Category 2.