RIVER BEND STATION
SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE (SALP)
Report 50-458/95-99

I. BACKGROUND

The SALP Board convened on August 2, 1995, to assess the nuclear safety performance of River Bend Station for the period January 30, 1994, through July 29, 1995. The Board was conducted in accordance with Management Directive 8.6, "Systematic Assessment of Licensee Performance." The Board members included: J. E. Dyer (Board Chairperson), Director, Division of Reactor Projects; K. E. Brockman, Deputy Director, Division of Reactor Safety; D. D. Chamberlain, Deputy Director, Division of Radiation Safety and Safeguards; and W. D. Beckner, Director, Project Directorate IV-1, Office of Nuclear Reactor Regulation. This assessment was reviewed and approved by the Regional Administrator.

Functional Areas and Ratings

	Current	Previous
Plant Operations	2	2
Maintenance	2	3
Engineering	2	3
Plant Support	1	2

II. PLANT OPERATIONS

Overall safety performance in operations continued to be good. Significant changes were made to the organization, programs, and plant material condition to improve performance. Improved operator performance and material condition resulted in a continuous run during the last 7 months of the SALP period. Despite these improvements, procedure quality and operator errors still created challenges to plant operations. Operators generally responded well to these challenges, and training programs provided excellent support. Self-assessment and corrective actions contributed to improving performance.

Early in the assessment period, the licensee made several management changes to strengthen the organization and implemented performance improvement plans to address several long-standing operational problems. Management has communicated performance expectations to the staff and held personnel accountable for their actions. Additionally, outages were extended to correct long-standing hardware problems, and a work management center was established to reduce operator challenges and distractions. The overall quality of procedures improved during the evaluation period, but operators often continued to work around, rather than correct, inadequate procedures. For example, operators recently used an alternative means to control system configuration to fill the low pressure core spray system because the system operating procedure was inadequate for the circumstances. Recent management attention was focused to redirect procedure upgrade efforts to achieve more timely results.

Control room operators were alert and usually responded well to plant challenges, but operator lapses during the conduct of the more routine activities caused problems. Early in the evaluation period, material problems frequently challenged the operators during both operating and shutdown conditions and the response was generally prompt and effective. More recently, plant material conditions have improved, and operator errors have caused most plant challenges. For example, poor operator communications and self checking during a surveillance test contributed to the last reactor scram, and an operator lapse damaged the Division III emergency diesel generator. In addition, poor operator communications contributed to the inadvertent transfer of operational controls to the remote shutdown panel during a non-routine preventive maintenance task. System configuration and clearance tagging errors occurred early in the evaluation period and corrective actions were implemented to improve performance.

Operator training was generally effective and contributed to safe operations. The licensed operator initial examination results were excellent and the requalification inspection results indicated a strong ongoing training program. However, training deficiencies appeared to contribute to a weak operator response to a complicated reactor scram caused by a false high reactor vessel level

Licensee self-assessment and corrective action programs improved the overall plant operations. In addition to the performance improvement plans, internal self-assessments and peer reviews provided meaningful feedback on performance. Corrective action program reviews were thorough but did not always provide a timely review of operational concerns. Operator recognition and identification of deficient plant conditions improved during the SALP period.

The performance rating is a Category 2 in the Plant Operations area.

III. MAINTENANCE

Overall, safety performance in the maintenance area improved during this evaluation period and was considered good. Management improvement plans initiated at the end of the previous SALP period began to show anticipated improvements. Long-standing equipment problems were resolved. The skills and dedication of the various crafts personnel continued to be a strength and helped decrease the corrective maintenance backlog. Work scheduling and accomplishment were significantly improved, but problems were still identified with the technical content of some work packages, surveillance procedures, and drawings.

Management focus to improve the maintenance area was evident. Material condition and programmatic improvements could be directly attributed to the initiatives implemented throughout this period. Management support and expectations were clearly communicated and individual performance and accountability were required from all levels of the organization.

Activities in both the corrective and preventive maintenance areas showed improved performance. Extended maintenance outages were undertaken to permanently fix the recirculation pump seals, upgrade the reactor water cleanup seals, add new instrument air compressors, and repair the leakage in the control rod drive piping. This reduced emergent maintenance on problem components facilitated improved scheduling of activities and allowed resources to focus on other maintenance backlogs. The reduction in the maintenance backlogs improved the material condition of the plant and resulted in fewer instances of equipment-required work arounds. Adverse impacts from maintenance activities on plant operations were fewer and less significant.

The quality of testing and maintenance procedures still requires additional attention. The procedure and drawing upgrade efforts have not yet produced the desired results to support maintenance. Initial efforts to validate the technical adequacy of the procedures were completed, but the schedule for efforts to improve the usability of the procedures has been delayed. Management recognized this problem and has initiated actions to redirect program activities and improve performance. Problems with the technical adequacy of maintenance work packages also resulted in several operational challenges. Examples included the inadequate postmaintenance testing of an emergency diesel generator, inadvertent isolation of reactor core isolation cooling, and inappropriate transfer of operational controls to the remote shutdown panel.

During the performance period, the various components of the maintenance staff demonstrated a developing sense of ownership and self-accountability. A questioning attitude by maintenance personnel identified deficient conditions and precluded several potential problem situations. A preventive maintenance self-assessment effectively identified areas for improvement and additional self-assessments were planned of the maintenance area.

The performance rating is Category 2 in the Maintenance area.

IV. ENGINEERING

Overall, safety performance in engineering improved during this SALP period and was considered good. The licensee exhibited excellent management oversight in the establishment of many new initiatives and programs directed toward correcting identified weaknesses. Engineering efforts were focused on resolving long-standing problems and improving the reliability and material condition of the plant. The system engineering organization has undergone considerable change and now provides strong support for operation of the plant. The management expectations of system and design engineers have been made clear and personnel are held accountable for performance.

The engineering organization generally provided good resolution of technical issues. The staff focused on improving equipment performance, reliability, and availability, expending considerable effort to decrease the evaluations and modifications backlog. The condition report process was well implemented and engineering was focused on a usable and effective corrective action

program. Engineering effectively reduced recurrent problems and personnel errors. Substantial progress was made during the SALP period to upgrade the plant Technical Specifications to the Improved Standard Technical Specifications.

Design modification products were generally sound, of good technical quality, and showed good safety focus. However, design engineering performance was mixed when conducting engineering evaluations. Examples include incomplete and untimely operability assessments in support of a scram discharge volume vent and drain valve operating sequence problem, loss of the charcoal filter heater in the fuel building vent system, diesel generator air start low pressure logic, and a nonconforming secondary containment boundary door. Historic and current design problems continue to be identified, and the design engineers continue to be challenged by the lack of retrievable design basis information.

Generally, the system engineers provided good support to operations and maintenance that demonstrated improved ownership and knowledge of their systems. System engineers were knowledgeable and cognizant of systems and performance, exhibited positive safety awareness and good problem recognition, and usually performed good operability support and evaluations.

The engineering organization self-assessment activities were good as demonstrated by identifying the need for and implementing changes to the systems engineer program, changes to the process for conducting safety reviews under 10 CFR 50.59, evaluation of the inservice testing program, and efforts to update the plant drawings.

The performance rating is Category 2 in the Engineering area.

V. PLANT SUPPORT

Performance in the Plant Support area improved substantially over the assessment period, with a generally high level of performance achieved in most areas during the last several months of the period. Management demonstrated a particularly strong commitment to improved performance in the radiological controls area which consisted of activities related to radiation protection, chemistry, radioactive waste management, radiological environmental monitoring, and transportation of radioactive materials.

Housekeeping and plant material condition improvements and worker support for the ALARA (as low as reasonably achievable) program were strong contributors to the overall improvements in radiological controls. The ALARA program was strengthened by changes implemented during the assessment period that provided specific guidance in work packages, assigned work priorities for radiation protection planners, and implemented the early involvement of ALARA planners during work package development. Person-rem exposure reflected a decreasing trend with overall exposure for 1995 on track to be below a challenging goal established for the year. An effective radioactive waste minimization program was being implemented with excellent results achieved. However, challenges

remain to continue the improving trend and demonstrate a high level of performance during the next refueling outage, particularly in the radiological controls area.

Performance in the emergency preparedness area continued to be generally strong with management support evident. An effective relationship with offsite emergency response organizations was maintained. Performance during emergency response exercises was generally strong, with comprehensive exercise scenarios that allowed for an effective evaluation of emergency response capabilities.

Significant improvement was noted in management oversight of security operations with a steady improvement in performance noted. Compensatory posting for identified problems was minimized because of excellent maintenance support. Improvements were noted in implementing procedures and the maintenance of card readers and vital area doors. Security events were properly recorded and reported to the NRC. Some weaknesses were noted in the Access Authorization Program with limited documentation of background screening files, independent verification of background investigation screening records, and the verification of activities during periods of unemployment.

Implementation of the fire protection program improved during the assessment period, with effective management involvement and good design engineering support. Significant progress was made in resolving long-standing issues in the fire protection area with regard to safe shutdown and fire hazard analyses. Problems noted with transient combustible material storage and the adequacy of preventive maintenance of emergency lighting were effectively addressed. A significant challenge still exists with a final resolution of Thermo-Lag fire barrier issues. Steady improvement in housekeeping occurred during the assessment period with housekeeping practices considered to be excellent at the end of the period.

Self-assessment was considered a strength in the plant support area, with comprehensive audits, surveillances, and assessments being performed. Problems were generally being self-identified and corrective actions were being effectively implemented.

The performance rating is Category 1 in the Plant Support area.