In Reply To:
Docket: 50-285/90-24

JUL 12 1990

Omaha Public Power District
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Gentlemen:

This forwards the initial Systematic Assessment of Licensee Performance (SALP) Report (50-285/90-24) for the Fort Calhoun Station (FCS). The SALP Board met on June 13, 1990, to evaluate FCS's performance for the period May 1, 1989, through April 30, 1990. The performance analyses and resulting evaluations are documented in the enclosed initial SALP Board Report.

In accordance with NRC policy, I have reviewed the SALP Board's assessment and concur with their ratings, as discussed below:

1. The performance in the functional area of operations was rated Category 2 with an improving performance trend evident during this assessment period. The improved performance in this functional area was attributed to the performance of the operations staff toward safe operation of the plant.

2. The functional area of radiological controls was rated Category 1. This represents an improvement from the previous Category 2 rating. Strong management oversight and the implementation of a comprehensive radiological protection program were evident in this functional area.

3. The functional area of maintenance/surveillance was rated Category 2 with an improving performance trend. Performance improvement was the result of the initiation of programs that, when fully implemented, should enhance the overall performance in this functional area.

4. The functional area of emergency preparedness was rated Category 2. Weaknesses were identified during evaluation of the annual emergency exercise that had been previously identified which is an indication that more effective corrective actions need to be implemented.

5. The functional area of security was rated Category 2 with an improving performance trend. Programs had been established to address the ongoing problems identified in this functional area. Effective implementation of the programs should provide the necessary elements for an increased performance level.

*RIV:SRI	*C:DRP/C	*PM/NRR	*NRR	*D:DRSS	*D:DRS
PHHarrell/nc	GLConstable	ABournia	RDudley	ABBeach	LJCallan
6/21/90	6/28/90	6/28/90	6/28/90	6/29/90	6/28/90

D:DRP	DRA JMM	RA RDM
SJCollins	JMMontgomery	RDMartin
7/90	7/12/90	7/12/90

*previously concurred

IE 40
1/1

9

6. Performance in the functional area of engineering/technical support was rated Category 2. The systems engineering organization was noted as making a positive contribution to the overall safe operation of the plant. Weaknesses were identified with the technical content of system, maintenance, abnormal, and emergency operating procedures.

7. The functional area of safety assessment/quality verification was rated Category 1, which is an improvement from the previous Category 2 rating. The improved performance in this functional area was attributed to the development of programs that establish a sound basis for the overall improvement in the areas that affect safe plant operation and to the increased level of attention and oversight displayed by senior management.

Overall, licensee performance reflects the initiation of efforts in all functional areas to increase the facility performance level and enhance plant safety. Based on the SALP Board's assessment, the length of the SALP period has been increased from a 12- to a 15-month cycle; therefore, the next SALP period will be from May 1, 1990, to July 31, 1991.

A management meeting has been scheduled with you and your staff at 1 p.m. on July 26, 1990, at your emergency operations facility in Omaha, Nebraska, to review the results of the SALP Board. Within 30 days of this management meeting, you may provide written comments on and amplification of, as appropriate, the initial SALP report. Your comments, a summary of our meeting, and my disposition of your comments will be issued as an appendix to the enclosed initial SALP report and will constitute the final SALP report.

A copy of any written comments will be included in the distribution of the final SALP report.

Sincerely,

Robert D. Martin
Regional Administrator

Enclosure:
Initial SALP Board Report 50-285/90-24

cc w/enclosure: (see next page)

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INITIAL SALP REPORT

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

50-285/90-24

Omaha Public Power District

Fort Calhoun Station

May 1, 1989, through April 30, 1990

I. INTRODUCTION

The Systematic Assessment of Licensee Performance (SALP) program is an integrated NRC staff effort to collect available observations and data on a periodic basis and to evaluate licensee performance based upon this information. The program is supplemental to normal regulatory processes used to ensure compliance with NRC rules and regulations. It is intended to be sufficiently diagnostic to provide a rational basis for allocating NRC resources and to provide meaningful feedback to licensee's management regarding the NRC's assessment of their facility's performance in each functional area.

An NRC SALP Board, composed of the staff members listed below, met on June 13, 1990, to review the observations and data on performance and to assess licensee performance in accordance with NRC Manual Chapter 0516, "Systematic Assessment of Licensee Performance." The guidance and evaluation criteria are summarized in Section III of this report. The Board's findings and recommendations were forwarded to the NRC Regional Administrator for approval and issuance.

This report is the NRC's assessment of the licensee's safety performance at the Fort Calhoun Station for the period May 1, 1989, through April 30, 1990.

The SALP Board for the Fort Calhoun Station was composed of:

Chairman

S. J. Collins, Director, Division of Reactor Projects (DRP), Region IV

Members

J. P. Jaudon, Deputy Director, Division of Reactor Safety (DRS), Region IV
A. B. Beach, Director, Division of Radiation Safety and Safeguards (DRSS), Region IV
D. L. Wigginton, Acting Director, Project Directorate IV-1, Office of Nuclear Reactor Regulation (NRR)
G. L. Constable, Chief, Project Section C, DRP, Region IV
A. Bournia, Project Manager, Fort Calhoun Station, Project Directorate IV-1, NRR
P. H. Harrell, Senior Resident Inspector, Fort Calhoun Station

The following personnel also participated in the SALP Board meeting:

L. J. Callan, Director, DRS, Region IV
L. A. Yandell, Deputy Director, DRSS, Region IV
B. Murray, Chief, Facilities Radiation Protection Section, DRSS, Region IV
D. A. Powers, Chief, Security and Emergency Preparedness Section (SEPS), DRSS, Region IV

I. Barnes, Chief, Materials and Quality Programs Section, DRS, Region IV
W. C. Seidle, Chief, Test Programs Section, DRS, Region IV
T. Reis, Resident Inspector, Fort Calhoun Station
R. V. Azua, Project Engineer, DRP/C
R. P. Mullikin, Project Engineer, DRP/A
R. A. Caldwell, Security Specialist, SEPS, DRSS, Region IV
P. C. Wagner, Inspector, Plant Systems Section, DRS, Region IV
P. J. Prescott, Performance and Quality Evaluation Branch, NRR

II. SUMMARY OF RESULTS

Overview

The licensee's performance during this assessment period indicated increased management involvement in and attention to the safe operation of the facility. The evaluation of the safety assessment/quality verification functional area indicated that senior management oversight and involvement was readily evident, and emphasized, through the continuation of the safety enhancement program. Actions taken thus far have generally increased the level of personnel performance in all areas related to safe plant operation. Effective implementation of the programs should continue to increase the performance in each functional area.

Improved performance was specifically noted in the functional areas of plant operations, maintenance/surveillance, and security. In the functional area of radiological controls, strong management oversight was evident, as indicated by the implementation of comprehensive programs that address the elements necessary to ensure a high level of performance. Continued management attention is required in these areas to ensure that the enhancement programs are fully and effectively completed.

The licensee's performance ratings are summarized in the table below, along with the ratings from the previous SALP assessment period.

	Functional Area	Rating Last Period (05/01/88 to 04/30/89)	Rating This Period (05/01/89 to 04/30/90)	Trend
1.	Plant Operations	2	2	I*
2.	Radiological Controls	2	1	NA
3.	Maintenance/Surveillance	2	2	I*
4.	Emergency Preparedness	2	2	NA
5.	Security	2	2	I*
6.	Engineering/Technical Support	2	2	NA
7.	Safety Assessment/ Quality Verification	2	1	NA

*(I) Improving Trend - licensee performance was determined to be improving during the assessment period.

III. CRITERIA

Licensee's performance was assessed in seven selected functional areas. Functional areas normally represent areas significant to nuclear safety and the environment.

The following evaluation criteria were used, as applicable, to assess each functional area:

A. Assurance of quality, including management involvement and control;

B. Approach to the resolution of technical issues from a safety standpoint;

C. Enforcement history;

D. Operational events (including response to, analyses of, reporting of, and corrective actions for);

E. Staffing (including management); and

F. Effectiveness of the training and qualification programs.

However, NRC is not limited to these criteria and others may have been used where appropriate.

On the basis of the NRC assessment, each functional area evaluated is rated according to three performance categories. The definitions of these performance categories are:

Category 1 - Licensee's management attention and involvement are readily evident and place emphasis on superior performance of nuclear safety or safeguards activities, with the resulting performance substantially exceeding regulatory requirements. Licensee's resources are ample and effectively used so that a high level of plant and personnel performance is being achieved. Reduced NRC attention may be appropriate.

Category 2 - Licensee's management attention to and involvement in the performance of nuclear safety or safeguards activities is good. The licensee has attained a level of performance above that needed to meet regulatory requirements. Licensee's resources are adequate and reasonably allocated so that good plant and personnel performance is being achieved. NRC attention may be maintained at normal levels.

Category 3 - Licensee's management attention to and involvement in the performance of nuclear safety or safeguards activities are not sufficient. The licensee's performance does not significantly exceed that needed to meet minimal regulatory requirements. Licensee resources appear to be strained or not effectively used. NRC attention should be increased above normal levels.

IV. PERFORMANCE ANALYSIS

A. Plant Operations

1. Analysis

This functional area consists of activities such as plant startup, power operation, plant shutdown, and system lineups. Thus, it includes activities such as monitoring and logging plant conditions, normal operations, response to transient and off-normal conditions, manipulating the reactor and auxiliary controls, plant-wide housekeeping, and control room professionalism. Activities that support operations (e.g., training and requalification, evaluation of emergency and abnormal operating procedures, and other similar areas) are assessed in the other functional areas discussed in this report.

During this assessment period, the licensee minimized challenges to safety systems as only one manual and no automatic reactor trips were experienced. The manual trip was appropriately initiated by an operator because of an indicated high bearing temperature on a reactor coolant pump. This noteworthy performance continued a long trend, in that the licensee has experienced only one automatic and two manual trips since July 1984.

The licensee continued to maintain a very experienced and knowledgeable group of licensed senior reactor operators (SROs) and reactor operators (ROs), as has been evident during past performance assessments. The operations staffing level was stable during this assessment period with a very small turnover rate of licensed operators (2 SROs and 1 RO). On-shift staffing was maintained at a level that permitted the licensee to maintain a six-shift rotation, except for vacation schedules during the summer months. The excessive use of overtime in the operations department has not been identified as a concern.

The licensee maintained a comparably small licensed staff that currently includes 27 individuals (14 on-shift and 13 staff personnel) that hold an SRO license and 8 on-shift individuals that hold an RO license. This staffing level represents a net decrease of 2 ROs when compared to the staffing 1 year ago. The small size of the licensed staff has been discussed by NRC during the two previous assessment periods. Licensee's management has stated that they intend to increase the number of licensed personnel, especially in operations, by providing three candidates for the RO examination in May 1990 and five additional candidates in October 1990. The licensee maintains a practice of producing very small operator license classes in spite of a high success rate for recent license examinations (100 percent initial examination pass rate for the last 6 site visits). Licensed operators have been transferred to other departments within the licensee's nuclear organization, such as outage planning, maintenance planning, training, simulator services, and quality assurance. The operations expertise of these individuals has shown to have a positive impact on these organizations with respect to providing support to the operations department.

The shift technical advisor (STA) program has provided a positive contribution to plant operations. The STAs function as an integral part of the operations crew and are very involved in the day-to-day operation of the plant by providing technical assistance to the shift supervisor. In addition to the STAs, the systems engineers provided technical recommendations to the shift supervisor when component or system anomalies occur that potentially affect the operability of safety-related equipment.

The interface between the operations staff and the departments that provide support to operations (e.g., health, physics, maintenance, chemistry, and training) has been effective during this assessment period. To minimize the impact on the operating crews during the refueling outage, the licensee assigned an outage coordinator to act as an interface between operations and other departments. This approach was effective in minimizing the impact on operations during this high activity period.

Licensed, on-shift operators exhibited a dedicated commitment toward the performance of their duties and safe plant operation. Control room professionalism and decorum was evident during this assessment period. Plant operators (licensed and nonlicensed) maintained an awareness of plant conditions and work activities being performed under their control. On a number of occasions, during this assessment period, operations personnel responded to plant perturbations and prevented more significant problems that may have caused challenges to safety-related systems. Examples include a loss of shutdown cooling due to the loss of offsite power and a partial loss of component cooling water flow at full power.

Preplanning of activities affecting plant operations was apparent as evidenced during the removal of the 161-kV offsite power supply, one of the two offsite power grids, for preventive maintenance. Actions were taken to ensure that the onsite and offsite electrical distribution systems were not disturbed by maintenance or other activities. However, the same conservative approach was not exhibited toward shutdown cooling operations with the reactor coolant system in a reduced inventory. Licensee's management allowed removal of all power supplies, except for one offsite source and one emergency diesel generator, for supplying power to the shutdown cooling pumps. In this configuration, the electrical system was potentially vulnerable to a single failure.

On two occasions, operations personnel actions resulted in the failure to comply with the limiting conditions for operation (LCO) specified by the Technical Specifications (TS); neither occurrence resulted in a degradation of safe plant operation. The events involved the failure to reduce plant power when two reactor protection system channels were declared inoperable, and the failure to return the isolation valves properly for a component cooling water heat exchanger to service following maintenance activities. The first event resulted from inadequate directions from plant management, and the second event resulted from an oversight by a nonlicensed individual. A review indicated that these events were isolated cases.

A number of issues were identified during activities related to the licensee's reconstitution of the plant design basis, self-initiated reviews, and inspections performed by NRC personnel. It appeared that management generally took a conservative approach when addressing problems of equipment and component operability. Some isolated cases were identified, early in the assessment period, where management exhibited a reluctance toward timely determination of equipment operability. In the latter part of the period, operability determinations appeared to be conservative.

On several occasions during the early part of the assessment period, the licensee experienced difficulty in making reportability decisions. In the latter part of this assessment period, management's performance improved with respect to reportability issues.

Difficulties encountered with operability and reportability issues appeared to be the result of inexperience, in that, new plant and assistant plant managers were appointed early in this assessment period.

The last SALP report (NRC Inspection Report 50-285/89-19) identified concerns in the areas of operations personnel using and following procedures, plant personnel entering the control board area in the control room for no obvious reason, and infrequent tours of the operating spaces by senior plant management. The licensee addressed the first two concerns; however, management (except for radiological protection personnel) infrequently toured the plant operating spaces other than the control room. The licensee took actions to increase the frequency of plant tours prior to the end of this assessment period. Shift supervisors, throughout this assessment period, routinely toured the plant operating spaces to verify that equipment was operating satisfactorily.

The licensee has made significant progress with upgrading plant housekeeping, labeling, and appearance. The licensee's program for installing new valve and component labels has improved the operator's capability for equipment identification. Color coding and labeling of system piping and painting of the plant operating spaces (approximately 75 percent complete) has significantly contributed to enhanced operations and the overall plant appearance.

Overall, it appeared that the operations' staff conservatively operated the plant to ensure that the health and safety of the public were properly protected. The operations' staff demonstrated their abilities to handle plant perturbations and events. Weaknesses with plant management's oversight of the operations area and a number of problems and concerns were identified to which the licensee provided timely resolution and took actions to prevent recurrence.

2. Performance Rating

The licensee is considered to be in performance Category 2 in this functional area. Licensee's performance was determined to be improving during this assessment period.

3. Recommendations

a. NRC Actions

Inspection effort in this functional area should be consistent with the fundamental inspection program.

b. Licensee Actions

Licensee's management should continue efforts for increasing operator staffing. Management should continue to ensure that activities related to equipment operability and event reportability are performed in a timely and conservative manner.

B. Radiological Controls

1. Analysis

The assessment of this functional area consists of activities related to occupational radiation protection, radioactive waste management, radiological effluent control and monitoring, radiological environmental monitoring, water chemistry controls, radiochemistry and water chemistry confirmatory measurements, and transportation of radioactive materials.

The radiation protection program inspections indicated that the licensee had implemented a high-quality radiation protection program. Some minor weaknesses were identified. One NRC-identified violation occurred in September 1989 and involved the failure to survey visitors leaving the site. A licensee-identified violation was noted in December 1989 and involved the failure to provide continuous health physics coverage for a worker in a very high radiation area, and another in March 1990 that involved the failure of a security guard to follow established radiation protection procedures during entry into a high radiation area. The licensee took prompt and effective corrective actions and the violations were not an indication of programmatic breakdowns.

The licensee made significant improvements in the radiation protection area during the last part of the previous assessment period and continued to make additional improvements during this assessment period. These improvements included items such as staffing, procedures, equipment and instrumentation, coordination with other departments, training, and self-identification of problem areas.

The staffing level in the radiation protection department increased from 22 to 54 personnel during the previous assessment period, and this level was maintained during this assessment

period. The licensee only used contract radiation protection personnel during outages and relied on the permanent staff during routine operations. Within the current staffing level, three new supervisor positions were authorized and filled. Each individual selected for the supervisor positions holds a Masters degree in health physics or nuclear engineering, along with several years of applied health physics experience. The licensee experienced a low turnover rate in the radiation protection department, as only two individuals have left the department since 1988.

The licensee implemented a comprehensive training program for the radiation protection staff at both the technical level and for professionals and supervisors. An effective program was in place for the evaluation, screening, and training of contract radiation-protection technicians that were brought on site during outage activities. The licensee demonstrated initiative to increase the technical expertise in the radiation protection department in that about 50 percent of the licensee's radiation protection technicians have been certified by the National Registry of Radiation Protection Technologists.

A high level of cooperation was achieved between the radiation protection department and other departments such as operations and maintenance. However, one area, self-identified by the licensee, was noted where the plant staff (nonradiation protection department personnel), on two occasions, did not follow established radiation control procedures. To reduce the numbers of radiological occurrences, it appeared that department supervisors needed to increase the emphasis for the plant personnel compliance with radiation protection procedures.

The licensee completed construction of new facilities for access control into the radiation controlled area, office and work areas for the health physics and chemistry staff, and clothing change areas for radiation workers. These new facilities were completed just before the 1990 refueling outage and some final arrangements remained to be completed such as personnel flow paths and work stations at the access control point.

Improvements were made in the as-low-as-reasonably-achievable (ALARA) area since the previous assessment. Strong support for the ALARA program was demonstrated by the formation of an ALARA executive committee that is chaired by the senior vice president, and includes representatives from various corporate divisions, the plant manager, and the supervisor, radiation protection. Improvements were also noted in ALARA activities such as the technical evaluation of ALARA work, processing of ALARA packages, purchase of video equipment, and better coordination between the ALARA group and other departments.

The person-rem for 1989 was approximately 93; however, this period did not involve a refueling outage. The annual average person-rem for 1986 through 1989 was 208, as compared to a national average of approximately 300 person-rem. This low person-rem was an indication of an effective program for the control of external exposure. The licensee established a conservative, 250 person-rem goal for the 1990 refueling outage. As of April 30, 1990, 214 person-rem had been expended and it appeared that the outage would be completed under the established goal. The licensee set a conservative personnel skin contamination goal of 23 for 1990, but 36 events had occurred as of late March 1990.

Management oversight was evident by the performance of comprehensive audits and surveillances, and progress in the area of self-assessment. The 1990 audit of the radiation protection program included an auditor in the quality assurance (QA) organization with several years of experience as a senior radiation protection technician, along with a consultant that also had several years of radiation protection experience. The audit report included verification that work was performed in accordance with established procedures and also included suggestions concerning program improvement items. The responses to the audit findings by the radiation protection department were made in a timely manner and indicated a good understanding of the technical issues. Except for some ongoing revision of procedures, the licensee completed work on approximately 375 improvement items identified as part of the radiation protection enhancement program.

The radioactive waste management and radioactive effluent control and monitoring programs were inspected and no violations were identified. An effective liquid and gaseous release permit program was established. No problems were identified concerning staffing, training, or qualifications of the personnel responsible for operating the radwaste systems. The licensee implemented a radwaste management program that demonstrated compliance with the Radiological Effluent Technical Specifications and the Offsite Dose Calculation Manual.

The radiological environmental monitoring program was inspected and no significant problems were identified. Regulatory requirements were met regarding sample collection, analyses, and resulting dose calculations. Well-qualified personnel, with at least 10 years of experience, were assigned to implement the environmental monitoring program. However, a formal training program had not been established for personnel assigned to this group.

The radiochemistry and water chemistry programs were inspected, no problem areas were identified, and continued improvements

were noted in this area. The staffing level in the radiochemistry and water chemistry remained at 19 positions, the same number as during the previous assessment period. Four new supervisor positions were authorized within the existing staff organization. Management oversight included comprehensive QA audits.

New chemistry laboratory and radiochemistry counting facilities were constructed and scheduled to be in use by the end of 1990. Vendor recommendations and EPRI guidelines for primary and secondary water chemistry parameters were incorporated into the station chemistry procedures and were being followed. Water chemistry and radiochemistry confirmatory comparison measurements were performed. The radiochemistry confirmatory results showed 98 percent agreement, which was consistent with the 97 percent agreement obtained during the previous assessment. Water chemistry confirmatory measurements indicated 97 percent agreement, which was an improvement over the 88 percent agreement noted during the previous assessment. The confirmatory measurement results indicated that the licensee's performance was above the industry average in this area. The licensee made improvements in the quality control (QC) area, including the use of QC charts to trend daily analyses of chemical parameters and reactor coolant and secondary water quality results.

The transportation of radioactive materials and solid radwaste programs were inspected and no violations were identified. The licensee completed construction of a new solid radwaste processing and transportation facility, which is scheduled to be fully operational in 1990. The licensee established implementing procedures that addressed waste classification and characterization, procurement and selection of packages, preparation of packages for shipment, and delivery of the completed packages to the carrier. The staffing level assigned to handle solid radwaste and transportation activities was satisfactory. It was noted that the most recent QA audit of the solid radwaste and transportation area, conducted in November 1988, did not include transportation activities.

Overall, the licensee made progress during the previous assessment period to improve performance in the radiological controls area and this effort carried over into this assessment period. Improvements made in the radiation protection and chemistry/radiochemistry areas were particularly noteworthy. Strong management oversight of the activities in this functional area was evident.

2. Performance Rating

The licensee is considered to be in Performance Category 1 in this functional area.

3. Recommendations

a. NRC Actions

Inspection effort in this functional area should be consistent with the fundamental inspection program.

b. Licensee Actions

Licensee's management should continue efforts to implement a strong self-assessment program, ensure that radwaste personnel complete specified training, and consider transportation activities in the QA audit program. Emphasis on compliance with radiological protection procedures should be stressed by management.

C. Maintenance/Surveillance

1. Analysis

This functional area includes all activities associated with either diagnostic, predictive, preventive, or corrective maintenance of plant structures, systems, and components; procurement, control, and storage of components, including qualification controls; installation of plant modifications; and maintenance of the plant physical condition. It also includes conduct of all surveillance testing activities and inservice inspection and testing activities.

This area was inspected on a routine basis by the resident inspectors and periodically by regional inspectors. A special inspection was performed in the area of systems entry retest (SERT) by personnel from Region IV.

The licensee has maintained a stable and well-qualified maintenance work force with little turnover. The staffing level in the instrumentation and control (I&C) area was a concern identified in the previous SALP report. The licensee's current full-time I&C staffing level has been increased to 29 employees (24 licensee and 5 contractor personnel) and appears to be satisfactory.

The quality of maintenance procedures was previously identified as a concern with respect to the level of detail and the technical content. To address this concern, the licensee established a procedures upgrade project as part of the Safety

Enhancement Program. This project is currently scheduled to be completed by the end of 1990. Maintenance personnel have performed their activities satisfactorily and in accordance with the existing procedures, as the knowledge level and experience of the crafts has compensated for marginally acceptable procedures.

The licensee has implemented a good maintenance program as evidenced, in part, by all equipment functioning properly during engineered safeguards actuations, and no plant shutdowns have resulted from equipment maintenance problems. The operations department identifies equipment needing maintenance attention to the maintenance department each morning at the plan-of-the-day meeting. This interface has resulted in prompt attention to the repair of safety-related equipment.

The SERT was conducted in the areas of design changes, temporary alterations, and maintenance activities. The SERT inspection determined that planned retesting of structures, systems, and components, that have been modified or subjected to maintenance, properly verified equipment operability and ensured that the design basis was met. The licensee has a strong program for determining required retests and for the identification of the appropriate retest method. The licensee's program for development of procedures and performance of these procedures for retest of structures, components, and systems, following plant modification and maintenance activities, was found to be satisfactory. A weakness was identified in the assignment of review responsibilities to ensure that correct retests were included in postmaintenance and temporary modification work packages. The licensee strengthened this area by administrative procedure revisions.

Systems engineering developed and performed, during this assessment period, comprehensive raw water (RW) system testing that demonstrated that pump and heat exchanger performance had degraded from the original design basis assumptions. With the implementation of administrative controls, the RW system remained operational and met the design basis. A reactive inspection was conducted to review the test results and operability status of the RW system. The inspection indicated that the four RW pumps had become degraded as a result of deficient preventive maintenance, system testing, and erosion of the pump bell housing because of pumping silt laden Missouri river water. System engineering's performance in developing integrated testing procedures to demonstrate proper system performance was noteworthy.

An inspection of the installation of plant modifications determined that the licensee's modification program contained very good controls and procedures, and is considered to be a strength.

Inspections were performed in the area of inservice inspection (ISI) and inservice testing (IST) and included the surveillance, visual inspection, repair, and testing of snubbers. Implementation of the IST program upgrade appeared to be consistent with the licensee's committed schedule. Surveillance testing of pumps and valves was consistent with the requirements of Section XI to the ASME Code and the criteria outlined in NRC Generic Letter 89-04. The ISI and snubber programs contained sufficiently detailed procedures to govern the work, provided easily retrievable records, and had sufficient qualified personnel. Management involvement in these areas was evident. An exception to this performance was noted during followup of the turbine-driven auxiliary feedwater pump event, as discussed in the engineering/technical support functional area.

The systems engineering organization provided field oversight activities for equipment and component maintenance. The presence of the engineers provided for the timely resolution of technical issues that were identified during maintenance activities to minimize equipment down time.

In the last SALP report, concerns were identified with administrative controls of maintenance work orders, predictive and preventive maintenance programs not being fully implemented, independent review of core physics testing data, and procedural compliance by maintenance personnel. The licensee has taken actions to address these concerns, except for predictive and preventive maintenance programs. Actions have been implemented by the Safety Enhancement Program to address the predictive and preventive maintenance programs and are currently scheduled to be completed by the end of 1990.

In the area of surveillance, tests were being scheduled and performed as required by the TS. During an inspection, it was noted that the systems engineers had unilateral authority to waive procedural requirements, and justification for waiving procedural steps and acceptance criteria may not always be given. Although no examples were identified where testing requirements were inappropriately waived, the inspector was concerned that the existence of this authority could result in unauthorized changes to procedures. The licensee addressed this concern by providing guidance in a revised administrative procedure.

Inspections indicated that the licensee's surveillance test control program had significantly improved, only one test was not performed within the prescribed interval. This was previously an area where licensee's performance was a concern.

Overall, it appeared that the licensee has initiated programs to strengthen the maintenance area by upgrading the IST program, addressing the technical adequacy of procedures, and initiation of preventive and predictive maintenance activities. The staffing, especially in the I&C area, has been increased to a satisfactory level. A surveillance program has been implemented that ensures testing is performed in a timely manner.

2. Performance Rating

The licensee is considered to be in Performance Category 2 in this functional area. Licensee's performance was determined to be improving during this assessment period.

3. Recommendations

a. NRC Actions

The NRC inspection effort should be consistent with the fundamental inspection program. In addition, regional inspection initiatives should be performed for core physics testing, observation of plant startup activities from the refueling outage, maintenance team inspection followup, and evaluation of the procedure upgrade program.

b. Licensee Actions

The licensee should continue emphasis on improving maintenance activities through the upgrade programs that have been established. Management attention should ensure that the activities contained in the Safety Enhancement Program are completed on schedule, and the IST program upgrades are completed in accordance with commitments.

D. Emergency Preparedness

1. Analysis

This functional area includes activities related to the establishment and implementation of the emergency plan and implementing procedures, licensee performance during exercises and actual events that test the emergency plan, and interactions with onsite and offsite emergency response organizations during exercises and actual events.

During this assessment period, region-based and NRC contract inspectors conducted two emergency preparedness inspections. The first inspection consisted of the observation and evaluation of the annual emergency response exercise. The second

inspection involved a review of the operational status of the emergency preparedness program. No actual events occurred during this assessment period.

During the July 1989 emergency response exercise, the licensee's overall response was determined to be acceptable. The control room and technical support center staffs properly detected, classified, and declared emergencies, and made prompt notifications to offsite agencies. Although the licensee's overall performance during the course of the exercise demonstrated an acceptable licensee proficiency to protect the health and safety of the public, concerns were raised by NRC regarding specific issues. One of the concerns involved the licensee's over staffing of emergency facilities with extraneous personnel. Also, NRC expressed concern that the licensee's staff had not been able to ascertain the hypothetical source of the containment radiation leak and that licensee's management failed to devote an acceptable level of attention to the offsite radiological consequences associated with the plume.

An exercise weakness was identified with poor coordination, direction, and technical support provided to the control room staff by the technical support center staff. A similar weakness involved the lack of coordination with the operational support center response. Three of the other exercise weaknesses involved, to some extent, repeated aspects from the two prior exercises. A significant, repeated weakness involved the licensee's inability to demonstrate personnel accountability within 30 minutes. Scenario problems were found to be an exercise weakness due to the inadvertent prompting of a player by a controller, which was a repeat finding. Also, simulation detracted from the extent of free play and, hence, diminished the realism of the scenario.

Following the exercise, the licensee conducted a self-critique and was able to appropriately identify and characterize a number of exercise weaknesses, improvement items, and examples of good performance. Several of these findings coincided with those of the NRC observers.

An inspection of the operational status of the emergency preparedness program identified weaknesses with the training of emergency response personnel responsible for performing early dose assessments from the control room. As a result of this finding, the licensee made a prompt commitment to simplify the dose assessment procedure and to retrain responsible users to ensure that accurate and timely dose assessments could be made from the control room. The licensee completed these corrective actions prior to the end of this assessment period.

It was noted that some aspects of the emergency preparedness program met all requirements and were considered strengths. Emergency facilities, equipment, and instrumentation was maintained in a good state of readiness. Aside from control room dose assessment, the knowledge and performance of the duties of emergency response personnel interviewed were good. The licensee implemented an aggressive drill schedule and conducted the drills in an effective manner. Corporate management involvement was apparent in various aspects of the implementation of the emergency preparedness program.

The licensee initiated changes to the emergency preparedness program to implement significant improvements in the future. Organizational changes were made to upgrade the position of supervisor, emergency planning such that this individual reports directly to the division manager, nuclear services. Additional technical staff positions were added to the emergency planning and training staffs. In addition, duties of certain emergency response positions have been proportioned to enhance response capabilities.

A major effort to upgrade the effectiveness of the emergency plan implementing procedures was initiated, primarily through contract resources, to improve their useability. The licensee has also initiated an effort to redirect the training in emergency preparedness toward a performance-oriented approach that will better prepare emergency response personnel to perform assigned functions during an emergency.

An effective QA program was implemented in the area of emergency preparedness. Independent audits met requirements, were well coordinated and planned, and utilized satisfactory resources and personnel. Audit findings were properly characterized and corrected. The licensee increased the number and frequency of emergency preparedness surveillances and made use of functional area experts in performing QA audits and surveillances.

Overall, the licensee has initiated efforts to upgrade the emergency preparedness program; including the emergency plan, the emergency plan implementing procedures, and the staffing and organizational reporting of the emergency planning staff. While NRC recognizes this effort as a significant move toward strengthening the licensee's emergency preparedness program, there has not been sufficient time for NRC to fully assess the impact of these changes.

2. Performance Rating

The licensee is considered to be in Performance Category 2 in this area.

3. Recommendations

a. NRC Actions

NRC effort should be consistent with the fundamental inspection program with regional initiative inspections in the areas of training, protective action decisionmaking, and dose calculations and assessment.

b. Licensee Actions

Management should continue to emphasize efforts to eliminate the underlying root causes of licensee- and NRC-identified weaknesses. Management's efforts should also be directed toward maximizing realism in future scenario development.

E. Security

1. Analysis

The assessment of this functional area includes activities that ensure the security of the plant, including all aspects of access control, security checks, safeguards, and fitness-for-duty activities and controls.

During this assessment period, this area was routinely reviewed by the resident inspectors and periodically by region-based physical security specialists.

Throughout the majority of this assessment period, the licensee was involved in implementing a major upgrade of the entire physical security program. The upgrade program, completed on March 31, 1990, was a well-designed effort that was instituted as a result of NRC- and licensee-identified findings of programmatic deficiencies during previous assessment periods. The licensee now has a redesigned, closed-circuit television (CCTV) perimeter surveillance system, protected and vital area intrusion detection systems (IDS), and a computer support system for the CCTV and IDS systems. The licensee currently plans some minor additions in the areas of protected area access control of packages and vital area access control of personnel.

In September 1989 the licensee decided to establish a unified proprietary security officer force instead of utilizing a mixed force of contract and proprietary security officers. Because of the transition and the uncertainties as to which contract security officers would be retained, the licensee experienced some marginal personnel performance. Personnel errors resulting from excessive use of overtime for required compensatory

measures contributed to this problem. In addition, management has not been accessible to the security force members to alleviate the officers' concerns about the restructuring of the security force. Consequently, security officer morale has been low, some officers have exhibited a poor attitude, and, in some instances, job performance has been adversely affected.

The licensee has made adjustments to improve security officer morale and performance. Positive adjustments include the recognition of the need to complete the transition from contract to proprietary security officer force as soon as possible, providing new uniforms for security officers, and increasing security officer training. The nuclear security officer training program has been restructured and an acceptable number of personnel has been assigned to supervise the program.

Two issues confronting the licensee during this assessment period, because of the upgrade program, involved proficiency training for central/secondary alarm station (CSS) operators and performance-based contingency training. For CSS operators to achieve proficiency; formal, on-the-job training with crucial task testing was necessary. Unfortunately, this effort was impeded by delays in the installation of other equipment. Consequently, alarm station operators were uncomfortable with their experience level on the CSS. As a result of the extensive use of compensatory measures associated with the upgrade program, the licensee has not yet been able to implement the performance-based contingency training that is a part of their upgrade program initiatives.

During this assessment period, the following violations occurred, some of which were self-identified by the licensee (including the two significant violations): failure to log/report certain security events; some access searches were inadequate and consequently allowed a handgun and ammunition to enter the warehouse within the protected area (Severity Level III violation), and allowed a food stuffs van to enter the protected area without a proper search; on occasions, the protection of safeguards information was inadequate (Severity Level III violation); an on-post, sleeping security officer was found and a problem was identified with the inability to post out; a problem was found with assessment aids due to CCTV and perimeter IDS electronic misadjustments; and inadequate control of a vital area keys was identified. The licensee self-identified violations were cited because the individual violations were considered significant events, because of the need to improve individual performance, or because the violations were repetitive. In general, the licensee's final corrective actions were prompt and effective.

The licensee implemented an initiative to establish a general plant employee awareness program of security requirements by placing security awareness issues in the company newspaper.

In regard to the licensee's annual audit of the security program, an outside organization and a person with security expertise were employed. The audit was performed within the specified time period, the findings were appropriately documented, and security management was responsive to the findings.

The licensee has an ample number of supervisors, qualified security officers, and support personnel assigned to the security department. In June 1989 the position of supervisor, nuclear security operations was filled.

Overall, the licensee continued to make improvements in the physical security program. In spite of the difficulties described above, the licensee developed a technically sound and acceptable upgrade of the facility and the program. Licensee resources are appropriate for effective nuclear security performance in the future. It appeared that the licensee has established the basis and necessary ground work for a security program that is capable of operating at improved performance levels.

2. Performance Rating

The licensee is considered to be in Performance Category 2 in this functional area. Licensee performance was determined to be improving during the assessment period.

3. Recommendations

a. NRC Actions

NRC effort should be consistent with the fundamental inspection program as augmented with regional initiatives in the areas of records and reports, training, testing and maintenance, compensatory measures, access control-personnel, access control-packages, and audit activities.

b. Licensee Actions

Licensee's management should continue to provide support to the physical security program to ensure that improved performance in this functional area continues. Attention to the involvement with and oversight of security officers' duties should be emphasized by management.

F. Engineering/Technical Support

1. Analysis

The purpose of this functional area is to address the adequacy of technical and engineering support for all plant activities. It includes all licensee activities associated with the design of plant modifications; engineering and technical support for operations, outages, maintenance, testing, surveillance, and procurement activities; and training.

This functional area was inspected on an ongoing basis by the resident inspectors, periodically by region-based personnel, and by the probability risk assessment (PRA) team from Region IV.

The engineering organization has experienced a significant transition, from one relying extensively on contractors, to an organization with a substantial in-house engineering capability. This has resulted in an increase in the staffing levels in the onsite and corporate engineering organizations.

Early in this assessment period, it was discovered that the licensee had not included, in the group of safety-related procedures to be upgraded, the alarm response, station electrical system (including safety-related electrical distribution systems), main steam system, and main feedwater system operating procedures. The licensee corrected the scope of their effort to include those procedures in the above groupings that had a potential safety impact on the operation of the plant.

The abnormal operating procedures were in the process of being upgraded under a Safety Enhancement Program effort. However, the abnormal operating procedure upgrade was not included in the writer's guide issued for other safety-related procedures, and the scope of the abnormal operating procedures had not included the loss or degradation of most of the safety-related ac- and dc-electrical distribution systems.

As discussed above, and in other functional areas, the licensee encountered problems with the technical content of safety-related procedures. To address this concern, the licensee is in the process of revising the technical content of procedures through implementation of the procedures upgrade program contained in the Safety Enhancement Program. In the interim, the licensee is self-identifying procedure implementation issues. This program is currently on schedule and is expected to be completed by the end of 1990.

An inspection in the control of special processes noted that the licensee, through its procedures, welding manual, and quality

control manual, provided, for the most part, comprehensive instructions for the control of special processes. However, two examples were identified for the failure to provide adequate instructions for controlling heat input within the proper range, and failure to qualify the full range of material thickness specified in the welding procedure specification. Also, as a welding program enhancement, the licensee committed to correlate the settings on the welding machines to actual welding amperage before making safety-related welds.

A special, announced team inspection in the area of PRA was performed. This inspection covered the critical components of the plant and the operational activities relating to dominant accident sequences developed by a generic-based assessment. The generic PRA study identified the important systems, components, and activities that could contribute significantly to core melt accident sequences or mitigate the consequences of such events. The PRA inspection team concluded that the emergency operating procedures, when used by experienced and trained operators, provided an acceptable level of direction to mitigate the consequences of an accident. The team also concluded that the risk-important systems and components were generally tested and maintained commensurate with their importance to risk.

The PRA team identified violations that involved inadequate emergency and abnormal operating procedures, and a licensee-identified failure to have an adequate design control program for electrical circuit fuses. An NRC-identified deviation involved the failure to conduct an emergency operating procedure validation as committed to in a licensee submittal to NRC. Other items of concern from this inspection included the lack of a fuse/breaker coordination study, the lack of a fuse control program, and the lack of a stroke test for the power-operated relief valves. These items of concern were indicative of weaknesses in the licensee's design control program.

The licensee continued to show improvement in other areas of the design change control program. Several inspections were conducted that involved the review of the preparation of design changes. The reviews confirmed that modification packages continue to be complete, concise, and contained the appropriate elements.

Concerns were previously identified by NRC with the licensee's capability to adequately resolve technical issues that are identified during operation of the facility. To address these concerns, the licensee established the systems engineering organization. This engineering group has proven to be a valuable asset in the resolution of problems. The systems engineers are involved in the day-to-day activities related to the performance of the surveillance and maintenance functions,

and the trending of the results of these functions. This aspect of the systems engineering effort has provided technical expertise in the field for early identification of component and equipment problems. The contribution of the systems engineering organization toward overall plant safety was viewed as a strength.

At the end of this assessment period, the plant was in a refueling outage. Activities performed during the outage were completed satisfactorily. Operations personnel removed and replaced all fuel assemblies in the reactor vessel without incident. The performance of the integrated leak rate test was completed in accordance with the appropriate requirements. Performance of eddy-current testing indicated that no steam generator tubes required plugging. This was the third consecutive outage where no tubes were plugged and the results were attributed to the strict secondary water chemistry program maintained by the licensee.

The licensee has completed the issuance of the design basis documents for plant systems. Through this effort, the licensee identified instances where components and systems did not comply with the design basis requirements stated in the Updated Safety Analysis Report. The licensee's engineering organizations provided timely resolution of the identified problems. This effort was identified as a strength.

During several NRC inspections, design-related problems were identified. A review of the leak-rate testing of containment isolation valves identified two penetration labeling errors and incorrect valve position labeling on piping and instrumentation drawings. An inspection of the implementation of commitments made relative to Regulatory Guide 1.97, "Instrumentation For Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident," identified problems with design documents. The inspectors experienced significant difficulty in extracting required information from design documentation. Licensee personnel acknowledged these problems and indicated that in-house efforts had been initiated to improve the drawing quality and usefulness, and the computer data base content and accuracy.

Inspections performed of the instrumentation calibration program identified violations that involved inadequate calibration of instruments utilized for postaccident monitoring and inadequate environmental qualification of an instrument channel.

During a test of the turbine-driven auxiliary feedwater pump, the pump failed to respond to manually injected air signals to the pnuematic-hydralic speed governor. The licensee determined that the pump may not have been operable prior to the test

because of the failed speed-governor components. The licensee's response to this problem was deemed appropriate; however, subsequent followup by an inspector determined that the pump had been inoperable over an extended period because of deficient testing, maintenance, and control system calibration. The licensee's actions were aggressive in resolving the programmatic and technical deficiencies in this instance.

Prior to the establishment of a formal procurement program for commercial grade items in 1988, the licensee experienced deficiencies in traceability, establishment of critical characteristics, insufficient inspection and testing, and vendor qualification. Subsequent to the establishment of a formal program, a significant reduction in these problems were noted. The results of an inspection indicated that, while improvement had occurred, more awareness for the need of an indepth review during the evaluation and dedication process was required.

Licensee management oversight of the training of licensed operators and applicants for license improved. Management has become more aggressive in identifying and correcting problems. However, a recent self-identified failure to properly track medical conditions for a licensed operator was a repeat of a prior program failure. The licensee has implemented comprehensive training programs for the technical, professional, and maintenance staffs.

During this assessment period, the licensee installed a control room simulator to provide enhanced training for licensed operators. Training on the simulator commenced just prior to the end of this assessment period. This training enhancement was viewed as a positive contribution toward safe plant operation.

Historically, the licensee has experienced difficulty with the implementation of TS-required firewatch patrols. During this assessment period, problems were identified in this area. To address this continuing problem, the licensee has established a group that is dedicated to the performance of fire patrols. The security organization previously performed this function. Since implementation of the dedicated group, no problems have been identified.

On February 26, 1990, a loss of offsite power (LOOP) occurred which resulted in a 2 minute loss of shutdown cooling. The LOOP was caused due to the under-voltage trip relays not automatically shedding the operating low-pressure safety injection (LPSI) pump. A special inspection was conducted following the event. It was determined that during manual operation of the LPSI pumps, the automatic load shed and automatic diesel generator output breaker closure features would

be inhibited when an undervoltage event on vital electrical buses occurred. The licensee analyzed the event and determined that design of the electrical system complied with the plant design basis and did not affect safe plant operation. As a system enhancement, the licensee has decided to modify the design in order for the emergency diesel generator to automatically load in the event of the design basis accident and a LOOP when a manually-loaded LPSI pump is operating. This modification will be completed by the end of the 1991 refueling outage.

In summary, several strengths, positive actions, and weaknesses were identified during this assessment period. The licensee has undertaken an extensive program for upgrading safety-related and abnormal operating procedures, including technical content, through the efforts of the Safety Enhancement Program. The licensee continued to show improvement in the design change control program as evidenced by the results from several inspections conducted during this assessment period. Concerns regarding the licensee's capability to adequately resolve technical issues identified during plant operation were being effectively addressed by the recently established systems engineering group. During the recent refueling outage, the eddy-current testing conducted on steam generator tubes indicated that no tubes required plugging. This was the third consecutive outage during which no tubes were plugged. The results were attributed to a strict secondary water chemistry program. The licensee's engineering organizations have provided timely resolution to problems identified by the issuance of the design basis documents for plant systems. Difficulties experienced with the implementation of firewatch patrols appears to be resolved by the establishment of a group dedicated to the performance of fire patrols. Several items of concern identified during a PRA inspection were indicative of weaknesses in the design control program.

2. Performance Rating

The licensee is considered to be in Performance Category 2 in this functional area.

3. Recommendations

a. NRC Actions

NRC inspection effort should be consistent with the fundamental inspection program. Regional initiative should include an inspection to evaluate the licensee's engineering capabilities.

b. Licensee Actions

Licensee management should focus their efforts on the completion of the safety-related procedures upgrade project. Management should take the appropriate actions to ensure that the weaknesses identified with emergency and abnormal operating procedures are resolved in a timely manner.

G. Safety Assessment/Quality Verification

1. Analysis

The assessment of this functional area includes all licensee review activities associated with the implementation of licensee safety policies; licensee activities related to amendment, exemption, and relief requests; response to NRC Generic Letters, Bulletins, and Information Notices; and resolution of TMI items and other regulatory initiatives. It also includes licensee's activities related to resolution of safety issues, 10 CFR Part 50.59 reviews, 10 CFR Part 21 assessments, safety committee and self-assessment activities, root cause analyses of plant events, use of feedback from plant QA/QC reviews, and participation in self-improvement programs. It includes the effectiveness of the licensee's quality verification function in identifying and correcting substandard or anomalous performance, in identifying precursors of potential problems, and in monitoring the overall performance of the plant.

Inspection of licensee self-assessment activities identified an overall effective performance by the Safety Audit and Review Committee (SARC) and the Plant Review Committee (PRC). The licensee had identified and corrected the failure of a SARC subcommittee to review recent plant modifications and their associated safety evaluations. Additionally, the licensee observed that neither group had performed any self-assessment activity in regard to the safety-related procedure upgrade effort. It was noted that PRC activities were not well documented and it appeared that handling of action items could be improved. It was also noted that one PRC standing subcommittee was not submitting the results of its reviews to the PRC for approval. The licensee instituted immediate actions to correct the observed PRC deficiencies.

To address a broad spectrum of concerns and weaknesses previously identified by NRC, and an independent appraisal by a licensee contractor of the FCS nuclear organizations, the licensee developed and implemented the Safety Enhancement Program. This program provides a comprehensive listing of licensee actions related to safe plant operation and the activities that support operations. Implementation of the

actions contained in the program has received a high level of corporate and plant management attention and support. The licensee has demonstrated positive steps toward improving their overall performance by implementation of the items contained in the Safety Enhancement Program. This overall improvement indicates that the licensee is improving their capability to provide management leadership and oversight of the diverse elements related to the conservative operation of the FCS. Although all items have not been completed, the effort to complete the remaining open items is on schedule.

Satisfactory programs were found to be in place with respect to implementation of the 10 CFR Part 21 review program and the control of measuring and test equipment (M&TE). Positive actions were observed to have been taken by the licensee to correct a prior weakness in regard to control of M&TE used by the I&C maintenance group.

The licensee implemented a training program for those individuals involved in the preparation, review, and approval of 10 CFR Part 50.59 evaluations. Personnel completing the training are the only individuals authorized to process Part 50.59 evaluations. This approach has been a positive contribution towards the licensee's satisfactory completion of Part 50.59 evaluations.

A comprehensive corrective action program was established that appropriately provides for identification, tracking, correction, and trending of safety-related problems. The licensee was also observed to have implemented surveillance programs to provide additional oversight of inservice inspection contractors and in-process welding.

The licensee has established and implemented a Nuclear Safety Review Group (NSRG), an independent organization that reviews plant events and occurrences to determine the root cause(s) and recommend corrective actions. The establishment of the NSRG was a licensee self-initiated action that parallels the independent safety review group required by the TS for newly licensed facilities. The NSRG has been fully staffed by experienced individuals with diverse backgrounds, and is managed by an individual that previously served as supervisor, operations. The NSRG completed, during this assessment period, ten root cause analysis reviews on plant events such as inadvertent overflow of the spent fuel pool, failure of the turbine-driven auxiliary feedwater pump speed controller, and the loss of offsite power during the refueling outage. The reviews performed by the NSRG have been comprehensive and have provided the appropriate recommendations for corrective actions to prevent recurrence. The establishment and performance of the NSRG was viewed as a strength.

The licensee has upgraded the staffing of the QA organization by the addition of experienced QC inspectors and technical auditors with working experience in the areas of operations, health physics, security, and chemistry. The staffing level in the QA organization was satisfactory. In the previous SALP report, a concern was identified with the performance of audits by QA. The audits were noted to be compliance-based rather than performance-based. The licensee has taken actions to address this issue. A review of the licensee's audit program indicates that performance-based audits are now being performed. As noted in the discussions of the other functional areas, the licensee's audit program has been comprehensive, thoroughly performed, and corrective actions taken in response to audit findings were appropriate and timely.

The licensee has established and issues, on a monthly basis, a comprehensive set of performance indicators. These indicators provide management with a tool that can be used for early identification of adverse trends so that corrective measures can be taken to reverse the trend. In addition, the QA organization publishes a detailed quarterly trend report that summarizes the results of their audits.

During this assessment period, eight license amendments were issued. These amendments included incorporation of surveillance and operability requirements for the alternate shutdown panel, generic specifications incorporated into the TS, surveillances and limiting conditions for operation for a control room modification to alleviate air in-leakage, and some administrative changes. In addition, safety evaluations were issued that addressed TMI actions, Salem ATWS items, and actions requesting reliefs from the ISI and IST programs.

The licensee's submittals, in general, indicated an acceptable level of understanding of the technical issues from a safety standpoint and acceptable approaches were used. However, in the latter part of this assessment period, weaknesses were identified in both the schedular aspects of the licensee's submittals and fully addressing the requirements of the proposed TS changes. Six submittals were required prior to the approval of a license amendment request for the boric acid heat tracing system. This can be attributed to factors related to the refueling outage, many ongoing actions being performed simultaneously, recent new employees joining the organization (almost doubling the work force), and pressure to meet the schedule. The licensee has incorporated changes that should rectify some of these problems.

The licensee's responsiveness to NRC Bulletins and Generic Letters was timely and technically complete. Responses during this assessment period included NRC Bulletins 88-03, "General

Electric HFA Relays"; 88-10, "Nonconforming Molded Case Circuit Breakers"; and 89-03, "Potential Loss of Required Shutdown Margin During Refueling." The licensee's response to NRC Bulletin 88-10 had to be revised because four breakers, which were to be replaced during the 1990 refueling outage, could not be obtained from the vendor. The licensee indicated that these breakers would be replaced during the 1991 outage and that a justification for continued operation would be in place which the NRC subsequently found acceptable. The responses to Generic Letters included 89-06, "Safety Parameter Display System"; 89-07, "Power Reactor Safeguards for Surface Vehicle Bombs"; 89-08, "Erosion/Corrosion"; and 90-01, "NRC Regulatory Impact Survey."

A review of the licensee event reports submitted to NRC indicated that the reports described the major aspects of each event, including the causes of system failures that contributed to the event and the significant corrective actions taken or planned to prevent recurrence.

Overall, the licensee's programs that provide for the assessment and verification of activities related to the various aspects of safe plant operation have received a high level of senior management attention and involvement and have placed emphasis on superior personnel performance. These programs provide a solid basis for increased overall performance and the attendant philosophy contained in the programs should be implemented through all levels of the nuclear organization. These programs include self-identification of problems through the implementation of QA audits, effective performance of the SARC, and the root cause analyses performed by the NSRG. The actions implemented through the Safety Enhancement Program provided an increased level of management oversight with respect to plant operations.

2. Performance Rating

The licensee is considered to be in Performance Category 1 in this functional area.

3. Recommendations

a. NRC Actions

NRC inspection effort should be consistent with the fundamental inspection program. An assessment of the licensee's implementation of the items contained in the Safety Enhancement Program should be performed.

b. Licensee Actions

Licensee's management should take actions to ensure that all submittals made to NRC are timely and address all technical aspects of the subject. Management should provide the appropriate oversight to ensure that the items in the Safety Enhancement Program are completed on schedule and in accordance with the licensee commitments.

V. SUPPORTING DATA AND SUMMARIES

A. Licensee Activities

1. Major Outages

The licensee commenced the thirteenth refueling outage on February 17, 1990. At the end of this assessment period, the outage was still in progress.

2. License Amendments

During this assessment period, eight license amendments were issued. Some of the more significant amendments were:

- o Extension of the interval for performance of surveillance tests by 25 percent - Amendment 122
- o Operability and surveillance testing requirements for the alternate shutdown panel - Amendment 125

3. Significant Modifications

- o Installation of a third auxiliary feedwater pump to improve reliability of the auxiliary feedwater system.
- o Major upgrade of the security system.
- o Construction of a new radiological waste building, a radiological protection/chemistry office, and locker room complex.

B. Direct Inspection and Review Activities

NRC inspection activity during this SALP cycle included 52 inspections performed with approximately 4855 direct inspection hours expended.

C. Enforcement Activity

The SALP Board reviewed the enforcement history for the period May 1, 1989, through April 30, 1990. The enforcement history is tabulated

in the enclosed table. One civil penalty was issued in the area of security. No orders were issued.

TABLE
ENFORCEMENT ACTIVITY

FUNCTIONAL AREA	NUMBER OF VIOLATIONS IN SEVERITY LEVEL				
	Weaknesses	Dev*	NCVs**	IV	III
A. Plant Operations			2	3	
B. Radiological Controls			2	1	
C. Maintenance/Surveillance			2	1	
D. Emergency Preparedness	6		3		
E. Security		1		8	2 ***
F. Engineering/Technical Support		4	3	7	1 ****
G. Safety Assessment/ Quality Verification			4	2	
TOTAL	6	5	13	25	3

* Deviations
** Noncited violations
*** Combined Civil Penalty of $25K
**** No Civil Penalty Issued