

SALP BOARD REPORT

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U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

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SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

EO-313/85-18  
EO-368/85-19

Arkansas Power & Light Company

Arkansas Nuclear One  
Units 1 and 2

July 1, 1984 - June 30, 1985

## 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. SALP is supplemental to normal regulatory processes used to ensure compliance to NRC rules and regulations. SALP is intended to be sufficiently diagnostic to provide a rational basis for allocating NRC resources and to provide meaningful guidance to the licensee's management to promote quality and safety of plant operation.

An NRC SALP Board, composed of the staff members listed below, met on August 7, 1985, to review the collection of performance observations and data to assess the licensee performance in accordance with the guidance in NRC Manual Chapter 0516, "Systematic Assessment of Licensee Performance." A summary of the guidance and evaluation criteria is provided in Section II of this report.

This report is the SALP Board's assessment of the licensee's safety performance at Arkansas Nuclear One (ANO) for the period July 1, 1984, through June 30, 1985.

SALP Board for Arkansas Nuclear One:

R. P. Denise, Director, Division of Reactor Safety and Projects  
(Chairman)  
R. L. Bangart, Director, Division of Radiation Safety and Safeguards  
L. E. Martin, Chief, Project Section B, Reactor Project Branch  
W. D. Johnson, Senior Resident Inspector  
P. H. Harrell, Resident Inspector  
G. S. Vissing, Project Manager, Unit 1  
R. Lee, Project Manager, Unit 2  
R. Bosnak, Ass't Director/Components & Structures Engineering/NRR

Attendees at all or part of the SALP Board meeting were:

J. Baird	M. Murphy
J. Dyer	B. Murray
A. Gibson	W. Seidle
R. Hall	L. Wheeler
J. Kelly	

## II. CRITERIA

Licensee performance was assessed in 11 selected functional areas. Each functional area normally represents areas significant to nuclear safety and the environment, and are normal programmatic areas.

One or more of the following evaluation criteria were used to assess each functional area.

1. Management involvement and control in assuring quality
2. Approach to resolution of technical issues from a safety standpoint
3. Responsiveness to NRC initiatives
4. Enforcement history
5. Reporting and analysis of reportable events
6. Staffing (including management)
7. Training effectiveness and qualification

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

Based upon the SALP Board assessment, each functional area evaluated is classified into one of three performance categories. The definition of these performance categories is:

Category 1. Reduced NRC attention may be appropriate. Licensee management attention and involvement are aggressive and oriented toward nuclear safety; licensee resources are ample and effectively used so that a high level of performance with respect to operational safety is being achieved.

Category 2. NRC attention should be maintained at normal levels. Licensee management attention and involvement are evident and are concerned with nuclear safety; licensee resources are adequate and are reasonably effective so that satisfactory performance with respect to operational safety is being achieved.

Category 3. Both NRC and licensee attention should be increased. Licensee management attention or involvement is acceptable and considers nuclear safety, but weaknesses are evident; licensee resources appear to be strained or not effectively used so that minimally satisfactory performance with respect to operational safety is being achieved.

The SALP Board has also categorized the performance trend over the course of the SALP assessment period. The trend is meant to describe the general or prevailing tendency (the performance gradient) during the SALP period. This categorization is not a comparison between the current and previous SALP ratings; rather, the categorization process involves a review of performance during the current SALP period and categorization of the trend

of performance during that period only. The performance trends are defined as follows:

Improved: Licensee performance has generally improved over the course of the SALP assessment period.

Same: Licensee performance has remained essentially constant over the course of the SALP assessment period.

Declined: Licensee performance has generally declined over the course of the SALP assessment period.

### III. SUMMARY OF RESULTS

Significant improvement has been achieved in the areas of maintenance, surveillance, and radiation protection. Areas needing improvement include design change control, control of written commitments to the NRC, management of the security program, and completeness of Licensee Event Reports.

The licensee's performance and trend are summarized in the table below, along with the performance categories from the previous SALP evaluation period:

<u>Functional Area</u>	<u>Previous Performance Category (7/1/83 to 6/30/84)</u>	<u>Present Performance Category (7/1/84 to 6/30/85)</u>	<u>Trend During Latest SALP Period</u>
A. Plant Operations	2	2	Improved
B. Radiological Controls		1	Improved
1. Radiation Protection	2	*	
2. Chemistry/Radiochemistry and Confirmatory Measurements	2	*	
3. Radwaste Management, Effluent Releases, and Effluent Monitoring	Not Assessed	*	
4. Transportation/Solid Radwaste	1	*	
5. Environmental Monitoring	2	*	



<u>Functional Area</u>	<u>Previous Performance Category</u> <u>(7/1/83 to 6/30/84)</u>	<u>Present Performance Category</u> <u>(7/1/84 to 6/30/85)</u>	<u>Trend During Latest SALP Period</u>
C. Maintenance	3	2	Improved
D. Surveillance	3	2	Improved
E. Fire Protection	2	2	Improved
F. Emergency Preparedness	2	2	Improved
G. Security and Safeguards	1	2	Declined
H. Refueling	1	1	Same
I. Quality Programs and Administrative Controls Affecting Quality**	3/2	2	Same
J. Licensing Activities	1	1	Improved
K. Training	2	2	Improved

\*These categories are combined in one assessment.

\*\*This category was divided into quality assurance and management controls categories in the previous SALP report.

The total NRC inspection effort during this SALP evaluation period consisted of 35 inspections, including resident inspector inspections and emergency exercises, for a total of 3310 direct inspection hours.

#### IV. PERFORMANCE ANALYSIS

##### A. Plant Operations

##### 1. Analysis

This area has been inspected on a continuing basis by the NRC resident inspectors. One violation involving failure to log the abnormal position of a locked valve was identified during this assessment period. (Unit 2, Severity Level V, 8517)

The eight Licensee Event Reports (LERs) associated with plant operations are listed below:

- A reactor trip resulted from inadvertent isolation of a main feedwater flow instrument. (Unit 1, 85-002)
- A sodium hydroxide pump discharge valve was improperly aligned. (Unit 2, 84-018)

- A manual reactor trip was initiated following inadvertent transfer of an instrument inverter to its alternate source. (Unit 2, 84-019)
- The reactor tripped on high steam generator level in Mode 4 due to swell when the main steam isolation valves were opened. (Unit 2, 84-020)
- The reactor tripped on high steam generator level in Mode 2 due to difficulties in manual feedwater control. (Unit 2, 84-021)
- Shutdown cooling was lost due to improper water level in the reactor coolant system. (Unit 2, 84-023)
- The reactor tripped from 45 percent power following loss of a main feedwater pump due to the reactor protection system not being reset when the second main feedwater pump was started. (Unit 1, 85-005)
- The reactor tripped during a plant startup due to axial shape index being out of range. (Unit 2, 85-005)

Six of these events were caused by operator errors and/or inadequate operating procedures, and one resulted from an improperly labeled valve.

During this assessment period, system walkdowns performed by the NRC resident inspectors revealed a number of minor discrepancies between the piping and instrumentation drawings, the system lineups given in the system operating procedures, and the as-built plant. These were corrected by licensee personnel following identification. To more fully address this problem, the licensee is in the process of performing a walkdown of all plant systems as a part of the data base establishment effort for the maintenance management system. Discrepancies identified in these walkdowns are scheduled to be evaluated and corrected by January 1986. In addition, the licensee is continuing implementation of a plant labeling program. This program includes walkdowns of plant systems and verification of existing labels or attachment of new labels to equipment such as valves, pumps, pump drivers, breakers, piping, controls and instruments. Completion of this program should enhance the efficiency of personnel in both operations and maintenance and eliminate operational errors caused by incorrect labels such as the one reported in Unit 1 LER 85-002.

The licensee has generally been very responsive to resolution of concerns raised by NRC inspectors. However, in two areas, the

response has been quite slow. The Unit 1 reactor building purge procedure, including the establishment of meaningful high radiation alarm setpoints, has needed improvement for several years. As last discussed in NRC Inspection Report 50-313/8507, the licensee's operations and radiochemistry groups are working to improve this procedure. The licensee has also been slow to provide clear guidance to the operators in the proper operation of the bypass dampers on the control room emergency ventilation units. Progress in resolution of this concern was made during this assessment period.

The licensee has established a six-shift rotation for operators on both units and has implemented symptom-based emergency operating procedures for both units. Observations of operator conduct and performance in the control rooms and in other areas of the plant have indicated that the operators perform their duties in a highly professional manner. No distractions such as extraneous reading material or music have been observed in unauthorized areas as required by the licensee's management policies.

The size of the operations technical support staff has been increased and a further increase is planned. This staff of experienced senior operators and engineers has provided valuable assistance in areas such as design change review from an operations perspective, preparation of design change training packages for operators, and development and improvement of operating and emergency procedures.

The licensee has made progress in reducing the number of nuisance alarms in the control rooms, but several problems remain to be corrected. The Unit 1 simulator has enabled improvements in the operator and shift technical advisor training effectiveness, although the simulator has not yet been accepted as fully operational. The Unit 2 simulator is scheduled for site delivery before the end of 1985.

The licensee has initiated an aggressive program to reduce the number of plant trips, especially for Unit 2 which has suffered more plant trips per year than has Unit 1. This program is showing evidence of success in that two trips have occurred on Unit 2 in the first 6 months of 1985, while Unit 2 tripped 15 times in 1984.

The licensee performed timely preliminary evaluation and operator training following the Davis Besse transient of June 1985.

2. Conclusions

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

3. Board Recommendations

a. Recommended NRC Actions

The NRC inspection effort in this functional area should remain at its current level, consistent with the basic inspection program. NRC regional management should pursue resolution of identified problem areas with licensee management.

b. Recommended Licensee Actions

Licensee management is encouraged to continue improvements in this important functional area, including:

- Reduction of nuisance alarms
- Continue upgrading the quality of operating procedures
- Completion of system walkdowns and correction of discrepancies between drawings, procedures, and the plant
- Completion of plant specific simulators
- Reduction of plant trips
- Completion of the plant labeling program
- Giving appropriate attention to the long-term concerns discussed above
- Continuation of evaluation and operator training related to the Davis Besse transient of June 1985.

B. Radiological Controls

1. Analysis

Nine inspections were conducted during the assessment period by region-based radiation specialist inspectors. These nine inspections included seven routine inspections and two special inspections to review alleged poor radiation protection



practices. The seven routine inspections covered the following areas: radiation protection - normal operations; radiation protection - refueling outage; radwaste management, effluent releases, and effluent monitoring; chemistry/radiochemistry and confirmatory measurements; transportation/solid radwaste; and radiological environmental monitoring. One violation and one deviation were identified by the region-based inspectors. One violation was identified by the resident inspectors:

- Failure to collect and analyze a Post Accident Sampling System (PASS) sample. (Units 1 and 2, Severity Level IV, 8519/8520)
- Failure to use specified beta protection equipment. (Unit 2, Severity Level V, 8507)
- Failure to provide continuous air monitoring. (Units 1 and 2, Deviation, 8509)

a. Radiation Protection

This area was inspected once during normal plant operations and twice during refueling outages. In addition, two special inspections were conducted to review alleged poor radiation protection practices. One violation and one deviation were identified in this area.

The average person-Rem for both units for calendar year 1984 was 387 compared to the 1984 PWR national average of about 556 person-Rem. As of May 31, 1985, the 1985 average expended person-Rem for both units was 114 with a 1985 projected annual goal of 273.

The licensee has maintained an adequate radiation protection staff to support plant operations. The number of staff members and technical expertise has increased during the assessment period. The personnel turnover rate with the radiation protection department was less than 10 percent and vacant positions are filled in a timely manner. Management oversight of radiation protection activities was evident by the performance of comprehensive program reviews and audits by corporate personnel. The licensee has been responsive to NRC identified concerns and has taken timely action to evaluate and resolve problem areas. The licensee continues to expend the necessary manpower and budget to maintain a progressive, state-of-the-art radiation protection program. Improvements were noted in general employee, radiation worker, and radiation protection staff training programs. No significant problems were noted in



the areas of ALARA, exposure controls, surveys, contamination control, and radiation work permit program.

b. Chemistry/Radiochemistry and Confirmatory Measurements

This area was inspected once during the assessment period. The licensee has not been able to establish a reliable postaccident sampling system (NUREG-0737, Item II.B.3). A review of the maintenance records concerning the postaccident sampling system revealed a history of frequent system failures, and the lack of appropriate action by management to resolve the identified problems.

Problems continue to exist regarding: (1) the high turnover rate among the chemistry/radiochemistry personnel; and (2) failure to fill responsible chemistry/radiochemistry positions with experienced personnel.

The results of the radiochemistry confirmatory measurements showed an improvement in the percent agreement between the NRC and licensee measurements during this assessment period. The agreement was about 91 percent as compared to 75 percent in the previous assessment period.

c. Radwaste Management, Effluent Releases, and Effluent Monitoring

This area was inspected once during the assessment period. No violations or deviations were identified. Effluent sampling and analysis activities are well defined in plant procedures to determine compliance with Technical Specification requirements. Gaseous and liquid release permit programs have been implemented to ensure planned releases receive the necessary review and approval prior to being released. No problems were identified in the areas of effluent releases, effluent monitoring instrumentation, air cleaning systems, or reactor coolant water quality. Management oversight of this area is provided in the form of reviews and audits by onsite and corporate personnel.

As discussed in paragraph B.1.b. above, a concern continues to exist regarding the high turnover rate and lack of plant experience of new radiochemistry personnel involved in the analysis of effluent releases.

d. Transportation/Solid Radwaste

This area was inspected once during the assessment period. No violations or deviations were identified. The licensee continued to maintain a comprehensive, well managed program. Management oversight was evident by the performance of program reviews and audits. Procedures had been established that reference the applicable portions of Department of Transportation, 10 CFR Parts 61.55 and 61.56, and 10 CFR Part 20.311 regulations. No problems were identified in the areas of staffing qualifications, resolution of technical issues, and responsiveness to NRC initiatives and enforcement matters.

The transportation/solid radwaste supervisor position was vacant twice during the assessment period. Even though the individuals selected as the new supervisor were less experienced, there was no observed decrease in the overall program performance level.

e. Environmental Monitoring

The radiological environmental monitoring program was inspected once during the assessment period. No violations or deviations were identified. The inspection identified three concerns: (1) the audit team responsible for auditing the radiological environmental monitoring program did not include an audit team member with expertise in environmental monitoring; (2) program procedures were not reviewed and updated in a timely manner; and (3) calibration frequencies had not been established for radiological analytical instruments.

At the request of the licensee, the NRC amended the ANO Radiological Technical Specifications in January 1985, to be in agreement with the format of NUREG-0472. However, the amendment did not include deletion of the original Appendix B Technical Specifications since the licensee failed to request the deletion. As a result, two different sets of environmental Technical Specifications have existed since January 1985.

The environmental monitoring program is considered adequate in the areas of staffing, training, resolution of technical issues, responsiveness to NRC concerns, enforcement history and submission of environmental reports.

2. Conclusions

Improvements were noted in the areas of radiation protection, transportation/solid radwaste, and radiochemistry confirmatory measurements. Some minor problems were identified in the radiological environmental monitoring program.

Management had not devoted adequate attention to the PASS to assure that the system was maintained in a proper operational status.

A high turnover rate was noted among the chemistry/radiochemistry personnel. It was also noted that all responsible chemistry/radiochemistry positions were not filled with personnel that met the experience recommendations of ANSI 18.1-1971. These same concerns were also identified in the previous assessment.

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

3. Board Recommendations

a. Recommended NRC Actions

The NRC inspection effort in the areas of radiation protection; transportation/solid radwaste; radwaste management; effluent releases; and effluent monitoring may be conducted at a reduced level. The NRC inspection effort in chemistry/radiochemistry and environmental monitoring areas should be consistent with the basic inspection program. The NRC should conduct periodic reviews of the PASS to assure the system is properly maintained.

b. Recommended Licensee Actions

Management attention is needed to ensure that the operation of the postaccident sampling system meets regulatory requirements. Management should initiate actions to ensure that the high turnover rate among the chemistry/radiochemistry personnel does not degrade performance in this area. Procedures should be implemented to ensure that responsible chemistry/radiochemistry positions are filled with properly experienced personnel.

C. Maintenance

1. Analysis

This area was inspected by region-based NRC inspectors and on a continuing basis by the NRC resident inspectors.

One violation was identified in this functional area during the assessment period. This involved the failure of a maintenance technician to follow the procedure provided for reactor trip breaker preventive maintenance. (Unit 2, Severity Level IV, 8426)

One LER involved activities in the functional area of maintenance. A reactor trip resulted from high reactor coolant system pressure following a turbine generator trip. The generator trip was caused by an excessively worn pilot exciter brush. Brush inspection frequency was increased and brush replacement criteria were established following this event. (Unit 2, 85-004)

At times during this assessment period, backlogs of job orders have been noted in the areas of security systems, postaccident sampling systems, fire protection systems, and radiological process and area monitoring systems. One large improvement project currently being developed by the licensee is the establishment of the Station Information Management System (SIMS). This is a computer system with an equipment database containing detailed information on each piece of plant equipment. Implementation of SIMS is expected to be completed during the next assessment period. It is expected to enhance job order production, job order tracking, identification of quality requirements, maintenance history, and Nuclear Plant Reliability Data System reporting.

During this assessment period, NRC region-based and resident inspectors inspected the licensee's newly established welding program. This program was established to reduce the dependence on contractors for welding at the ANO site. NRC inspections in this area found that the program met applicable requirements.

Improvements were noted in the ANO maintenance program and its implementation during this assessment period. This improvement is considered to be due in part to the following factors:

- Reduced maintenance department turnover contributed to improved maintenance personnel qualifications and enhanced training.
- The work control center was established and staffed. This has resulted in improved job planning, more emphasis on



scheduling and coordination of activities, and a reduction of the administrative load of the first-line supervisors.

- Many maintenance procedures have been revised, improving their human factors attributes, clarity, and technical content.
- A program for reviewing maintenance job orders for fastener torque and lubrication requirements has been implemented.
- In response to previous violations, improvements were made in the administrative control of system turnover from the maintenance department to the operations department.

The NRC inspectors noted that improvements are still needed in the maintenance history file system, job order tracking system, long-term administration and identification of torque values, implementation of applicable vendor technical information in maintenance procedures, and in procurement and inventory control of replacement parts for environmentally qualified safety-related equipment. At the end of this assessment period, the licensee had improvement projects underway to address these areas.

## 2. Conclusions

Significant improvements have been accomplished in the area of maintenance. While several areas, listed in the paragraph above, are still in need of improvement, the licensee is addressing these areas with aggressive programs.

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

## 3. Board Recommendations

### a. Recommended NRC Actions

The NRC inspection effort in this area should be consistent with the basic inspection program, while monitoring the progress of the licensee's improvement programs.

### b. Recommended Licensee Actions

Licensee management should continue its emphasis on upgrading performance in the maintenance area.



D. Surveillance

1. Analysis

This area has been inspected by region-based NRC inspectors and on a continuing basis by the NRC resident inspectors. No violations or deviations were identified in this functional area during the assessment period.

Two LERs involved activities in the functional area of surveillance:

- A licensee review found that the Technical Specification required test of containment air lock mechanical interlocks had not been performed at 6-month intervals.  
(Unit 2, 85-003)
- The new monthly surveillance test requirement for the reactor building high range radiation monitors was effective on January 31, 1985. Due to an oversight, the testing was not performed until June 1985.  
(Unit 1, 85-006)

The NRC inspectors' review of the ANO surveillance program indicated that the components and systems reviewed had been tested in accordance with controlled procedures and that the testing had been completed on schedule. The inspection, testing, and maintenance of mechanical snubbers performed by a contractor during the Unit 2 refueling outage was observed to be well coordinated and controlled by the licensee. The inservice inspection (ISI) performed by contractors was not well controlled and coordinated as evidenced by the lack of an up-to-date status of the ISI program being maintained by the ISI coordinator. To improve performance in this area, licensee management has proposed to add a second ISI coordinator position. In addition, Middle South Services personnel conducted a review of the ISI program and provided recommendations for its improvement.

In response to weaknesses identified during the previous SALP evaluation period, the licensee has performed a technical review of Technical Specification surveillance procedures, comparing them to the Technical Specifications and to the vendor technical manuals. Discrepancies identified during this review have been evaluated, and implementation of the necessary revisions was nearly complete at the end of this evaluation period.

The involvement of the Quality Assurance group in the surveillance program was increased during this evaluation period. They performed detailed reviews of completed surveillance test procedures and implemented a program for periodically observing the performance of surveillance tests.

2. Conclusions

The licensee's improvement efforts in the functional area of surveillance have resulted in improved overall performance in this area.

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

3. Board Recommendations

a. Recommended NRC Actions

The NRC inspection effort in this area should be consistent with the basic inspection program. The NRC will review the ISI program and contractor activities in this and other areas.

b. Recommended Licensee Actions

Licensee management should continue improvements in this area, especially in the area of control and coordination of the ISI program, and the contractors performing ISI activities. Continued Quality Assurance group involvement in the surveillance area is encouraged. The licensee should establish a program to ensure that new Technical Specification surveillance requirements are promptly implemented.

E. Fire Protection

1. Analysis

This area has been inspected by a region-based NRC inspector and on a continuing basis by the NRC resident inspectors. The two violations listed below involved activities in the functional area of fire protection.

- An excessive amount of combustibles was located in the Unit 2 elevation 317 general access area. (Unit 2, Severity Level V, 8431)

- Two fire doors were found ajar by the NRC inspector on two occasions each. (Unit 2, Severity Level IV, 8513)

The seven LERs listed below involved activities in the functional area of fire protection.

- Various fire barriers were found to be degraded. (Unit 2, 84-015, 84-016, 84-017, 85-008)
- A fire door self-closing mechanism was found out of adjustment. (Unit 2, 84-029)
- A fire door was found open. (Unit 2, 85-006)
- A fire door was found to be not functional as a fire barrier. (Unit 2, 85-007)

The licensee has continued efforts to upgrade performance in the area of fire protection and has completed several initiatives planned for this assessment period. These include assignment of a full-time fire protection engineer at ANO, completion of the program to permanently identify fire barriers and penetrations by labeling, implementation of training for plant personnel on fire barrier requirements, and publication of the fire protection program manual as a single, consolidated source of design-related fire protection information and requirements.

Disposition of exemption requests and completion of planned modifications are presently in progress and are planned to be sufficiently complete during the next assessment period to allow scheduling of the NRC Appendix R compliance inspection.

The licensee has completed a program to verify that all fire barriers in the plant are functional (i.e., all penetrations are sealed, fire dampers are properly installed, fire doors are closed or operable, etc.). During this assessment period, the licensee has had difficulties in maintaining the barriers functional during maintenance and modification activities. The licensee should establish whatever programs are necessary to ensure fire barriers are maintained functional.

The licensee has experienced problems in controlling combustibles being left unattended in different areas of the plant. To correct these problems, the frequency of plant tours by the fire prevention and safety coordinators has been increased. The licensee has also hired a consultant to review the procedural limits for unattended combustibles for each plant area to verify the present limits are acceptable or to establish

new limits, if appropriate. The licensee should continue these efforts to ensure fire hazards do not exist in the plant.

2. Conclusions

The licensee has continued to provide sufficient management attention and involvement to sustain the progress achieved in the fire protection program.

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

3. Board Recommendations

a. Recommended NRC Actions

The level of NRC inspection in this functional area should be consistent with the basic inspection program. The NRC should complete action on the pending Appendix R exemption requests submitted by the licensee in a timely fashion and perform an Appendix R inspection at ANO as soon as possible.

b. Recommended Licensee Actions

Licensee management is encouraged to continue its attention in the fire protection program. Management attention should be provided for a program to maintain fire barriers functional and to reduce the amount of transient combustibles in the plant.

F. Emergency Preparedness

1. Analysis

During the assessment period, five emergency preparedness inspections were conducted. Two of the inspections were routine reviews of the implementation status of various elements of the emergency preparedness program. One additional inspection included observation of the licensee's annual full-scale emergency exercise conducted April 24-25, 1985. Another inspection in the period was an emergency response facility review of the licensee's implementation of commitments made to the NRC pursuant to Supplement 1 to NUREG-0737, and the last inspection in the period was a special inspection to determine the status of the licensee's agreements for emergency support with offsite agencies.



Inspections in this functional area were conducted by a region-based NRC inspector with inspection team support from NRC headquarters and contractor personnel. One violation and two deviations, summarized below, were identified in this area during the assessment period.

- Use of unapproved procedure to perform 12 month emergency program review. (Units 1 and 2, Severity Level V, 8502)
- Checklist implementing audit procedure did not include all key elements of procedure. (Units 1 and 2, Deviation, 8502)
- Letters of agreement with offsite support agencies were not updated every 2 years in accordance with emergency plan. (Units 1 and 2, Deviation, 8502)

NRC concerns were identified in regard to the demonstration of knowledge and use of the emergency plan implementing procedures by one operating crew during the first inspection in the period. These concerns were addressed by additional operations support, training and demonstration of effectiveness. In addition, three emergency preparedness deficiencies were identified during the emergency exercise regarding demonstration of downgrading and reclassification of the accident, EOF communication procedures, and demonstration of radiological control procedures by offsite monitoring teams.

In regard to AP&L management action in response to NRC initiatives, the general lack of timely action to resolve open items was continued from the previous assessments up until the last part of the period when significant progress was made toward resolving a number of outstanding items. For example, a significant number of open items, some dating back to 1981, were closed during an inspection in April 1985, and the AP&L plan for staffing the emergency operations facility, which had been at issue for over 2 years, was satisfactorily addressed in June 1985.

During the assessment period, personnel changes were effected in the corporate emergency response and preparedness staff. Additionally, there were several other management changes in the emergency response organization at the general manager and supervisor levels. The changes did not reduce the adequacy of the emergency response and preparedness programs.

There were no reportable emergency events during the assessment period.



2. Conclusions

During the assessment period, the licensee demonstrated the capability to protect the health and safety of the public in the event of an accident. In general, the licensee's actions regarding management controls, training, and resolution of NRC concerns have not been timely and resulted in additional NRC effort toward obtaining acceptable resolution. There appeared to be some progress made to improve management responsiveness during the last of the period.

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

3. Board Recommendations

a. Recommended NRC Action

The level of NRC inspection effort in the emergency preparedness area should be consistent with the basic inspection program.

b. Recommended Licensee Action

The level of management attention to implementation of the emergency preparedness program should continue at the increased level demonstrated at the end of the period. Management attention should be directed toward timely and effective action to meet commitments and resolution of NRC concerns.

G. Security and Safeguards

1. Analysis

Five inspections of security activities were conducted during this assessment period. One of the inspections was performed in response to an allegation requiring a special review of the personnel card reader system. Four of the inspections did not result in enforcement action.

Three violations were identified during the fifth inspection in the period. Each of the violations, summarized below, consisted of examples of failures to meet requirements in the three program areas.

- Inadequate management controls impacting security. (Units 1 and 2, Severity Level IV, 8512)

- Security plan changes not submitted to the NRC.
- Inadequate fire/security door intrusion protection.
- Missed contractor audits.
- Failure to correct security design flaws.
- Inadequate security system maintenance. (Units 1 and 2, Severity Level IV, 8512)
  - Faulty intrusion detection sensors.
  - Inadequate alarm assessment camera performance
  - Uncorrected fence line erosion.
  - Uncorrected lighting failures.
- Inadequate access control of personnel. (Units 1 and 2, Severity Level IV, 8512)
  - Personnel traffic through other than a designated checkpoint.
  - Breakdown in vehicle and package search procedures.
  - Abuse of pat down search procedure at truck gate.

Performance by the security officers remained strong but was taxed during the assessment period. The security force was able to compensate for program weaknesses sufficiently to maintain the security program marginally adequate. Weaknesses in the support systems and in the timeliness of research or planning for development, and corrective actions were present. Examples of those matters that have been long identified but which remain incomplete were: replacement of defective alarm sensors; alarm assessment revision in keeping with persistent failing zones; completion of the computer software update and computer installation; and correction of the unalarmed doors associated with the vital island adaptation. It appeared that most of these actions remained incomplete due to management decisions to give lower priority to the objectives of the security program during the assessment period.

Special preplanning for security operations during outages to meet regulatory commitments, while not impeding the work of contractors, appeared to be lacking. The resulting level of

strain on the security system resulted in failure to meet some of the security plan commitments.

2. Conclusions

The effectiveness of the physical security program regressed during this assessment period, compared with the previous period and the downward trend was most apparent during the latter part of the period. The regression appeared to be a result of the demands of the extended outage activities on the security force and system which needs to be upgraded. Management decisions were made which lowered the priorities for security operations. The methods employed for control of personnel and materials access to the site adversely affected the security program's effectiveness in meeting security plan commitments.

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

3. Board Recommendations

a. Recommended NRC Actions

The level of NRC inspection effort concerning the physical security program should be increased.

b. Recommended Licensee Action

Both corporate and site management should review their commitment to the security program and take the steps necessary to return performance to previously noted levels.

H. Refueling

1. Analysis

This area was inspected on a continuing basis by the NRC resident inspectors during the two refueling outages which were conducted during this assessment period. These refueling

outages were designated 1R6 and 2R4 for Units 1 and 2, respectively. Routine inspections conducted by the NRC resident inspectors during these outages included preparation for refueling, refueling activities, spent fuel pool activities, plant startup following refueling, and physics testing following refueling.

One violation was identified in the functional area of refueling. This item involved a failure to meet the requirements of the refueling shuffle procedure regarding loose items on the fuel handling bridge. (Unit 1, Severity Level V, 8429). No LERs associated with refueling were submitted.

The NRC inspections conducted during the refueling outages revealed consistent evidence of a well organized outage management system. Maintenance and design change activities were planned in advance, prioritized, and coordinated. The minor violation identified during the Unit 1 outage was not repeated during the subsequent Unit 2 outage. Training was conducted prior to and during the outages, contributing to a high level of personnel understanding of work requirements and a high level of adherence to approved procedures. Licensee resources during the outages were ample and were effectively used so that a high level of performance with respect to operational safety was achieved.

2. Conclusions

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

3. Board Recommendations

a. Recommended NRC Actions

During the next refueling outages, the NRC inspection effort should focus more on the quality assurance effort associated with the ongoing maintenance, surveillance, and design change activities.

b. Recommended Licensee Actions

Licensee management should continue its involvement in planning refueling outages, coordination of various outage activities, conducting appropriate training in preparation for outage activities, and ensuring adherence to approved procedures.



I. Quality Programs and Administrative Controls Affecting Quality

1. Analysis

This functional area includes all verification and oversight activities which affect or ensure the quality of plant activities, structures, systems, and components. This area may be viewed as the comprehensive management system for controlling the quality of work performed and for controlling the quality of verification activities that are intended to confirm that the work was performed correctly. Appraisal in this area is based on the results of management actions to ensure that the necessary people, procedures, facilities, and materials are provided and used during the operation of the plant. Emphasis in the appraisal of this area is placed on the effectiveness and involvement of management in establishing and ensuring the implementation of the quality assurance program. Also considered in this area is the licensee's performance in the areas of committee activities, design and procurement control, control of design change processes, inspections, audits, corrective action systems, and records.

Activities under this functional area were inspected by region-based NRC inspectors and by the NRC resident inspectors. Ten violations and two deviations were identified in this area during the assessment period:

- Failure to adequately maintain the refueling shuffle procedure. (Unit 1, Severity Level IV, 8429)
- Failure to provide instructions for controlling interferences associated with design changes. (Unit 1, Severity Level IV, 8501)
- Failure to properly update drawings affected by a design change. (Unit 1, Severity Level IV, 8501)
- Failure to follow procedure for design change completion and system turnover. (Unit 1, Severity Level V, 8501)
- Failure to maintain a written safety evaluation required by 10 CFR Part 50.59. (Unit 2, Severity Level IV, 8426)
- Failure to follow a procedural requirement for design change control (installation of the wrong type of latch on a fire door). (Unit 2, Severity Level IV, 8507)



- Failure to maintain cable tray installations as required by design drawings. (Units 1 and 2, Severity Level IV, 8429)
- Failure to follow the requirements of an administrative procedure involving the qualified vendors list. (Units 1 and 2, Severity Level V, 8506)
- Failure to properly maintain the qualified vendors list. (Units 1 and 2, Severity Level IV, 8506)
- Failure to meet a commitment relative to distribution of controlled documents in Little Rock. (Units 1 and 2, Deviation, 8506)
- Failure to meet a commitment relative to design change control activities. (Units 1 and 2, Deviation, 8506)
- Failure to revise an annunciator response procedure to reflect the isolation of a portion of the fire protection deluge system. (Unit 2, Severity Level V, 8516)

In addition, the violation and two deviations discussed in Section IV.F of this report are considered to be applicable to this area.

The six LERs listed below involved activities in this functional area:

- The steam-driven emergency feedwater pump was inoperable as a result of an improperly completed design change. (Unit 1, 85-001)
- Both containment atmospheric monitoring systems were inoperable due to inadequate corrective action following previous failures. (Unit 2, 84-022)
- A reactor trip occurred at 7 percent power due to axial shape index being out of range. The operating procedure did not include adequate guidance for axial shape index control during startups late in the cycle. (Unit 2, 84-027)
- Inadvertent engineered safeguards actuations occurred during a design change activity due to an inadequate procedure. (Unit 2, 85-009)

- A remote shutdown monitoring instrument range was not in accordance with the Technical Specifications due to an inadequate design change. (Unit 2, 85-010)
- Due to data input error, the power operating limit calculated by the core operating limit supervisory system for departure from nucleate boiling ratio was not conservative. (Unit 2, 85-012)

The NRC inspectors noted some improvements in the area of quality assurance (QA) compared to the previous evaluation period. With one exception, discussed in Section IV.F of this report, QA audits were found to have been conducted in accordance with approved checklists. The QA audit schedule was found to be incomplete, but audits were performed within the required intervals, and the audit schedule was revised promptly after the problem was identified. QA audits were well documented, and the audit findings were addressed by the audited organization and tracked by the QA group. QA auditor qualification records were reviewed and found to meet applicable requirements. The two violations listed above involving maintenance and approval of the qualified vendors list received prompt corrective action by the licensee. The QA staffing level was increased during this assessment period enabling:

- Implementation of a Technical Specification surveillance testing audit and test observation program
- An increase in the number of QA audits and surveys of vendors
- An increase in the number of QA surveillances of hold points conducted at vendor sites
- More effective audits in the areas of health physics, chemistry, and operations

Improvements were also noted in the efficiency and effectiveness of quality control (QC) activities during this assessment period. These improvements included:

- Increased staffing, including a QC engineering supervisor, two QC engineers, and two QC inspectors for welding
- Assignment of a QC engineer to the work control center
- Assignment of a QC inspector to the receipt inspection function

- Utilization of QC engineers for review of job orders and design change packages (DCPs) and designation of QC hold points
- Utilization of additional contract QC inspectors during outage periods
- Establishment of the construction management QC group
- More frequent use of QC hold points in job orders and procedures

Continued problems were identified during this assessment period in the area of design change control. One violation identified inadequate controls over the removal and reinstallation of equipment causing interference with installation of a DCP. Another violation pointed out a weakness in the administrative controls over design change completion and subsequent turnover of the affected system to operations. In the area of configuration control, it was found that cable tray covers had not been maintained in accordance with design specifications. One instance of incomplete updating of drawings affected by a DCP was identified as a violation. One violation and three LERs identified cases of inadequate design or installation of DCPs. In addition, the NRC inspectors pointed out a need to incorporate appropriate indicating instrument labels into the design change process.

The NRC inspectors also observed that numerous field change notices required extensive redesign and rework to complete the DCP installations.

To reduce these types of problems, the licensee has performed a major task force evaluation of the design change system. The recommendations of this task force are being implemented. Some procedural changes had been made by the end of this assessment period. These changes have implemented better controls on interferences and system turnover. To improve control of the installation phase of the design change process, the work control center has improved the definition of the scope of work covered by the job orders issued to implement DCPs. A project management department has been established, including a field construction organization with about 24 positions. Licensee management has proposed a modification to this department to add a project engineering group. This group would be heavily involved in the review, installation, and testing of design changes and would allow the plant engineering group to devote more effort to supporting plant operations and maintenance. The



proposed change could contribute to the reduction or elimination of the observed weaknesses in the licensee's design change process.

The two deviations listed above and two other deviations discussed in Section IV.F of this report indicate that the licensee's compliance with written commitments to the NRC has deteriorated. This area had been a problem in the past and the licensee had corrected deficiencies. The licensee should reassert past corrective actions to reestablish a program that will ensure that written commitments to the NRC are fulfilled.

Review of the plant safety committee's activities indicate that this committee is generally meeting its requirements. One exception was noted in which the licensee failed to document its safety evaluation of a change to a procedure described in the Final Safety Analysis Report as required by 10 CFR Part 50.59. The degree of the safety review committee's cognizance over the audits required by the Technical Specification was reviewed and found to be acceptable.

To resolve continuing problems encountered in the operation of the Unit 1 hydrogen purge system (discussed in the previous SALP report), the licensee has purchased two hydrogen recombiners. They plan to install these in the reactor building during the next refueling outage.

The licensee has taken steps to increase the operational expertise of personnel outside the operations department. One manager and one engineer are participating in an operator licensing class and several licensed personnel have been reassigned from the operations department to other departments.

The licensee's nuclear services organization in Little Rock has been reorganized. The general manager of this group has extensive plant operating experience and reports to the Vice President, Nuclear Operations. The nuclear services group includes the licensing section, the nuclear fuel section, and nuclear programs such as emergency planning, fire protection, and health physics.

The NRC Office for Analysis and Evaluation of Operational Data performed reviews of the Licensee Event Reports submitted by the licensee during this assessment period. These reviews found that most of these Licensee Event Reports did not include sufficient descriptions of the events and did not include adequate assessments of the safety consequences and implications



of the events. Details on these reviews are included as Attachment 2 and 3 to this report.

2. Conclusions

The licensee's performance in the areas of QA and QC has improved. Improvements are needed in the areas of design change control, compliance with written commitments made to the NRC, and completeness of Licensee Event Reports.

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

3. Board Recommendations

a. Recommended NRC Actions

The NRC inspection effort in this functional area should be consistent with the basic inspection program, but continued emphasis should be given to inspections of the design change process.

b. Recommended Licensee Actions

Licensee management should promptly correct the apparent deterioration in their ability to comply with written commitments made to the NRC, provide close attention to improvements in the design change process, and upgrade the quality and completeness of their Licensee Event Reports.

J. Licensing Activities

1. Analysis

The NRC Office of Nuclear Reactor Regulation has performed an assessment of licensee performance in the functional area of licensing activities. Refer to Attachment 1 for details of this assessment.

2. Conclusions

As discussed in Attachment 1, the licensee is considered to be in Performance Category 1 in this area.

3. Board Recommendations

a. Recommended NRC Actions

Continue to perform licensing activities as required. The NRC should complete action on the pending Appendix R exemption requests submitted by the licensee in a timely fashion and perform an Appendix R inspection at ANO as soon as possible.

b. Recommended Licensee Actions

The licensee should continue its high level of management involvement in this area.

K. Training

1. Analysis

This functional area was inspected by NRC region-based and resident inspectors. The NRC resident inspectors reviewed the training program implementation in connection with other inspections performed during the evaluation period. The NRC resident inspectors also performed an evaluation of the licensed operator requalification training. No LERs were submitted for this functional area. One violation involving inadequate emergency and abnormal procedure reviews by licensed operators was identified in this functional area during this assessment period. (Unit 2, Severity Level IV, 8513)

During this assessment period, a review of the Unit 2 operators' ability for emergency detection and classification, protective action decision making, and emergency notifications and communications was performed. Based on the results of this review, the NRC inspector identified areas of weakness with respect to the Unit 2 operators' use of the emergency plan and implementing procedures. The licensee provided additional training in the area of the emergency plan and procedures for operators on both units. Subsequent walk-throughs and examinations given by the NRC operator licensing section indicated that the action taken by the licensee to correct the weak area appeared adequate. There was no indication of a general lack of understanding of emergency preparedness requirements by the operators tested.

Results of examination sets given by the NRC operator licensing section are indicated below:

	SRO Candidates			RO Candidates		
	Total	Pass	Fail	Total	Pass	Fail
<u>Unit 1</u>						
July 84	1	1	0	-	-	-
December 84	-	-	-	16	12	4
May 85	8	8	0	3	3	0
<u>Unit 2</u>						
July 84	1	1	0	1	1	0
December 84	7	7	0	3	3	0

The requalification program for renewal of reactor operator and senior operator licenses was found to be satisfactory. In addition, performance in all classes of examinations has been satisfactory. Improvement in the area of operator licensing has been evident during this assessment period, and no reason can be foreseen as to why improvement will not continue.

During this assessment period, the NRC resident inspectors noted, on two separate occasions, that remedial training for nonshift licensed personnel was not being completed. In both instances, the problems were licensee-identified and corrective actions were in progress at the time of discovery by the NRC inspectors. At the close of this assessment period, the latest corrective action program was still ongoing. The licensee should ensure that this program will provide an effective and permanent solution for this problem so nonshift licensed personnel will receive an appropriate level of training.

The NRC inspectors also noted that the position of the Unit 2 operations training supervisor was vacant. The duties and responsibilities for the position are currently being performed by the training superintendent, in addition to his normally assigned duties and responsibilities. Due to this vacancy, the Unit 2 training staff was not receiving a sufficient level of management attention and direction. The licensee has recognized the deficiency and has hired an individual to fill this vacancy.

The licensee is proposing to increase the knowledge and experience level of its training staff by the addition of specialized individuals. The individuals currently planned to be added to the training staff in the near future include trainers in maintenance, chemistry, radiochemistry, health physics, quality control, and additional licensed operators.

The licensee is currently in the process of installing simulators for both units in the training center. The Unit 1 simulator has been installed and is currently undergoing the final phases of software checkout and modifications. The Unit 2 simulator is scheduled for site delivery later this year. The availability of simulators in close proximity to the site will be an improvement in operations-related training.

2. Conclusions

The licensee is providing a training program that satisfies its commitments and NRC regulations, except for a few minor problems noted during inspections for this assessment period. Licensee management continues its past commitment of staff and facilities to the training effort and the investment is beginning to show positive results.

The licensee is considered to be in Performance Category 2 in the functional area of training.

3. Board Recommendations

a. Recommended NRC Actions

The NRC inspection effort in the functional area of training should remain consistent with the basic inspection program.

b. Recommended Licensee Actions

The licensee should continue to place emphasis on training programs and implementation to achieve better overall regulatory performance through more effective training.

The licensee should establish an effective program that will ensure that nonshift licensed operators complete their remedial training during the requalification training year.

V. SUPPORTING DATA AND SUMMARIES

A. Licensee Activities

1. Major Outages

Unit 1

- On October 12, 1984, the unit was shut down for a refueling outage (1R6). Commenced heatup and reached hot shutdown on January 6, 1985.



- On January 9, the unit was cooled down to replace the 'A' and 'C' reactor coolant pump (RCP) seals. Commenced heatup and reached hot shutdown on January 16. The reactor was taken critical on January 17.
- On January 18, the unit was cooled down to replace the 'C' RCP seal. Heatup was commenced and hot shutdown attained on January 22. The reactor was taken critical on January 23, and the turbine tied on the line on January 25.
- A reactor trip occurred on January 29 from 30 percent power. The unit was cooled down for replacement of the 'C' RCP seal and a burned out control rod drive stator. Plant heatup was started on February 9, but was terminated on February 10 due to the failure of the 'A' RCP seal. The unit was heated up on February 17, and criticality achieved on February 18. The unit reached 100 percent power on February 24.
- The unit was shutdown on April 11 to repair a leak in the reactor coolant system. The plant reached 100 percent power on April 19.

#### Unit 2

- On August 28, 1984, the unit was shut down and cooled down to repair leaks on an RCP seal and on a steam generator manway. The unit was started up and reached 100 percent power on September 7.
- On March 16, 1985, the unit was shut down to commence a refueling outage (2R4). The unit was brought critical after the outage on May 24.

#### 2. Power Limitations

Unit 1 was limited in power to 92 percent at the beginning of this evaluation period due to a high operating level in the 'A' once-through system generator (OTSG). The high level was attributed to fouling caused by scale buildup on the tubes and tube support plates in the OTSG. The power limitation became more severe until the unit was shut down on October 12, 1984, in preparation for a refueling outage. At the time of the shutdown, the power limitation was 84 percent.

During the refueling outage, a water slap process was used to reduce fouling in the A' OTSG. After the refueling outage, the unit was able to achieve 100 percent power.

3. Significant Modifications

During this assessment period, the following significant modifications were initiated or completed:

- During the Unit 1 refueling outage (1R6), the emergency feedwater (EFW) system was modified in response to requirements of NUREG-0737, "Clarification of TMI Action Plan Requirements." The EFW system piping was modified so either EFW pump could supply feedwater to either OTSG. This modification provides a redundant EFW supply to both OTSGs. In addition, a new EFW initiation and control (EFIC) system was installed. EFIC provides automatic safety grade initiation and control of feedwater to the OTSGs during emergency or abnormal events. The EFW and EFIC systems have been completed, tested, and accepted for use by operations.
- The licensee has continued to upgrade and/or modify fire protection and safety systems on both units to comply with the requirements of 10 CFR Part 50, Appendix R. Efforts currently underway should be completed sometime in this calendar year.
- During this assessment period, the licensee completed equipment qualification (EQ) activities for Unit 1 and 2 hardware. The hardware qualification was completed during the last refueling outage on each unit. The licensee is in the process of upgrading maintenance procedures to include EQ information and increase EQ awareness for the person using the procedures. The licensee is also in the process of developing a training program for personnel at the site and in the Little Rock general offices. Procedures upgrade and training are presently projected to be completed in September 1985.
- The licensee has started construction of an onsite low level radioactive waste (LLRW) storage facility. Construction commenced in March 1985, and is scheduled to be completed in November 1985.

B. Inspection Activities

1. Violations

See Table 1.

2. Major Inspections

The following major inspections were performed:

- An emergency response facilities appraisal was conducted in accordance with NUREG-0737, Supplement 1. The appraisal was performed by NRC Region IV, headquarters, and contractor personnel. The results of the appraisal are provided in NRC Inspection Report 50-313/85-11; 50-368/85-11.
- A safeguards regulatory effectiveness review was performed to evaluate the overall effectiveness of the licensee's safeguards program. The review was conducted by the NRC Office of Nuclear Material Safety and Safeguards (NMSS), Region IV personnel, and representatives from the U.S. Army Special Forces. The results of the review will be provided in a report issued by NMSS.

C. Investigations and Allegations Review

The following allegations were reviewed during this assessment period.

- Improper frisking by personnel exiting a radiologically controlled area.
- Hiring health physics (HP) contractor personnel that were not qualified.
- Improper skin contamination control by HP personnel.
- Card reader system inoperative and being bypassed by an individual.

Review of three of these allegations by NRC Region IV HP specialists failed to substantiate the first two allegations. For the third allegation, no violations or deviations were identified, but procedure and training revisions were made by the licensee to improve their skin contamination control program.

Review of the fourth allegation by NRC Region IV Security specialist proved this allegation to be unfounded.

D. Escalated Enforcement Actions

1. Civil Penalties

No notices of violation with proposed imposition of civil penalties were issued to the licensee during this assessment period.

2. Enforcement Orders

None.

E. Management Conferences Held During Assessment Period

1. Conferences

On March 21, 1985, a management conference was held at the licensee's request to review the plan for staffing the emergency response facilities. Specifically, the discussion focused on staffing of the emergency operations facility (EOF). The requirements stated in the licensee's emergency plan differ from the NRC emergency planning guidance provided in NUREG-0737, Supplement 1. This meeting was held based on the results of a site inspection performed by the NRC emergency preparedness section. Based on this conference, the licensee has proposed an alternate plan for EOF staffing. The proposal has been reviewed and accepted by the NRC.

2. Confirmation of Action Letters (CALs)

One CAL was issued to AP&L during this appraisal period:

- R. D. Martin's letter of January 4, 1985, to J. M. Griffin to confirm the agreements and action related to inservice inspections performed by an AP&L contractor.

F. Review of Licensee Event Reports and 10 CFR Part 21 Reports Submitted by the Licensee

1. Licensee Event Reports (LERs)

The NRC Office for Analysis and Evaluation of Operational Data performed a review of licensee LERs, focusing on the accuracy and completeness of the reports. Refer to Attachments 2 and 3 for details of this review. As discussed in Section IV.I of



this report, improvement is needed in the quality and completeness of the licensee's LERs.

2. Part 21 Reports

None.

TABLE 1  
INSPECTION ACTIVITY AND ENFORCEMENT

FUNCTIONAL AREA	NO. OF VIOLATIONS IN EACH SEVERITY LEVEL*						
	V			IV			DEVIATIONS
	Unit 1	Unit 2	Both	Unit 1	Unit 2	Both	Both
A. Plant Operations	0	1	0	0	0	0	0
B. Radiological Controls	0	1	0	0	0	1	1
C. Maintenance	0	0	0	0	1	0	0
D. Surveillance	0	0	0	0	0	0	0
E. Fire Protection	0	1	0	0	1	0	0
F. Emergency Preparedness	0	0	1	0	0	0	2
G. Security and Safeguards	0	0	0	0	0	3	0
H. Refueling	1	0	0	0	0	0	0
I. Quality Programs and Administrative Controls Affecting Quality	1	0	1	3	3	2	2
J. Licensing Activities	0	0	0	0	0	0	0
K. Training	0	0	0	0	1	0	0
Total	2	3	2	3	6	6	5

\*No violations were identified in Severity Levels 1, 2, or 3

Docket Nos. 50-313  
50-368

FACILITY: Arkansas Nuclear One, Units 1 & 2  
LICENSEE: Arkansas Power and Light Company  
EVALUATION PERIOD: July 1, 1984 to June 30, 1985  
PROJECT MANAGERS: Guy S. Vissing, ANO-1  
Robert S. Lee, ANO-2

## I. INTRODUCTION

This report presents the results of an evaluation of the licensee, Arkansas Power and Light Company (AP&L), in the functional area of licensing activities. It provides NRR's input to the SALP review process as described in NRC Manual Chapter 0516. The review covers the period July 1, 1984, to June 30, 1985.

The approach used for this evaluation was in accordance with Office Letter No. 44, which requires that each organization responsible for developing a Safety Evaluation also provide a SALP input upon completion of the evaluation. Additional inputs were solicited for selected review areas of particular significance. The project managers also provided inputs on selected licensing actions. In most cases, the staff applied the SALP evaluation criteria for the performance attributes based on first hand experience with the licensee or with the licensee's submittals.

The individual SALP evaluations for each rated licensee issue were assembled into a matrix which was then used, with appropriate weighting for the importance to safety of the licensing issue, to develop the overall evaluation of the licensee's performance.

This approach is consistent with NRC Manual Chapter 0516 which specifies that each functional area evaluated will be assigned a performance category based on a composite of a number of attributes. The single final rating is to be tempered with judgement as to the significance of the individual elements.

## II. SUMMARY OF RESULTS

Based on the approach described in the Introduction, the performance of AP&L in the functional area of licensing activities is rated Category 1.

## III. CRITERIA

Evaluation criteria, as given in NRC Manual Chapter 0516 Table 1, were used in this evaluation. The evaluation conclusions were even stronger when considering those issues most important to safety.

#### IV. PERFORMANCE ANALYSIS

The licensee's performance was evaluated for three of the seven attributes specified in Manual Chapter 0516. These are:

- Management involvement and control in assuring quality
- Approach to resolution of technical issues from a safety standpoint
- Responsiveness to NRC initiatives

An evaluation of the licensee's staffing was provided for one issue. There was no basis for evaluation of the licensee performance for the remaining attributes: enforcement history, reportable events and training.

This performance assessment is based on our evaluation of the licensee's performance in support of licensing actions which were completed during this evaluation period. These actions included the licensee request for license amendments, responses to generic letters, and various submittals of information for multi-plant and NUREG-0737 actions. A total of 60 licensing actions were completed. These actions are listed below.

##### FOR ANO-1

- o Twenty completed plant-specific actions which were used to provide input for this evaluation are:
  - Waste Gas Hydrogen/Oxygen Technical Specifications
  - Appendix R Schedule Exemption Request
  - Technical Specifications for Key Lock Switch for Purge Valves
  - Leak Testing of Sealed Sources
  - Review of EFW Open Issues, GL-9, GL-2
  - Administrative Change, Correct Errors
  - P/T Heatup and Cooldown Limits Technical Specifications
  - TSs for Low Temperature Overpressure Protection
  - 10 year Tendon Surveillance Report
  - OTSG Tube Surveillance TS
  - OTSG Tube Sleeving Program
  - TSs for EFW System Upgrade
  - TS Change Related to Hydrotest of Secondary System
  - Cycle 7 Reload
  - TS Change for Pressurizer Level Instrumentation
  - Upper Core Barrel Bolt Replacement Issue
  - ISI Relief for RCP Inspection
  - ISI Relief for RCP Inspection Until Next Refueling
  - TSs for APSR Position Limits
  - Method of Estimating Core Damage
- o Six completed multi-plant actions which were used to provide input for this evaluation are:



- Control of Heavy Loads
  - Appendix I - RETS
  - Hydraulic Snubber TSs
  - Mechanical Snubber TSs
  - Environmental Qualification of Electrical Equipment
  - Seismic Qualification of EFW
- o Four completed NUREG-0737 issues which were used to provide input for this evaluation are:
- NUREG-0737, II.B.3.2, Post-Accident Sampling System
  - NUREG-0737 TSs, GL- 82-16
  - RCS Vents TS, NUREG-0737, II.B.1
  - TSs for NUREG-0737, GL 83-36 & GL 83-37

FOR ANO-2

- o Sixteen plant-specific actions which were used to provide input for this evaluation are:
- Diesel Generator Surveillance Requirements
  - Inservice Testing Program
  - Waste Gas Hydrogen/Oxygen Limits
  - Leak Testing of Sealed Radioactive Sources
  - Verification of CECOR
  - IAEA Safeguards Implementation
  - Reactor Coolant Pump Seal Integrity
  - Key Lock Switches for Purge Valves
  - Fire Protection Technical Specifications
  - Remote Shutdown Panel Instrumentation
  - Reactor Building Tendon Surveillance
  - Core Protection Calculator Methodology for Cycle 5
  - Steam Generator Low Water Level Trip Setpoint
  - Core Protection Calculator Update
  - Revised Rod Bow Penalties
  - Methodology for Estimating Core Damage
- o Eight multi-plant actions which were used to provide input for this evaluation are:
- Environmental Qualification of Electrical Equipment
  - Control of Heavy Loads, Phase I
  - Appendix I Technical Specifications Implementation Review
  - Technical Specifications for Hydraulic Snubbers
  - Technical Specifications for Mechanical Snubbers
  - Technical Specifications in response to GL 83-36 & 83-37
  - Technical Specifications in response to GL 82-16
  - Reactor Coolant Pump Trip

o Six NUREG-0737 actions which were used to provide input for this evaluation are:

- Post-accident Sampling System
- Inadequate Core Cooling Instrumentation
- Safety Parameter Display System
- Emergency Response Facilities
- Emergency Operating Procedures
- Small Break LOCA Guidelines

A. Management Involvement and Control in Assuring Quality

Overall rating for this attribute is Category 1. In general, the licensee's management has demonstrated a high level of involvement and control in assuring quality. Prior planning and assignment of priorities were consistently evident.

Regarding multi-plant actions, the licensee's management actively participated in an effort to work closely with the NRC staff in resolving issues such as Environmental Qualification of Electrical Equipment, Hydraulic and Mechanical Snubbers Technical Specifications, and the Radioactive Effluent Technical Specifications (RETS). There is currently no multi-plant action for which we believe a higher level of management involvement and control is necessary.

In regard to management involvement and control insofar as plant specific actions are concerned, the licensee's management took appropriate steps in resolving most of the issues. This was specially evident during the NRC staff review of the ANO-2 Technical Specifications related to the ANO-2 core protection calculators (CPC), the ANO-1 Cycle 7 reload, the ANO-1 Technical Specifications for the EFW upgrade, the ANO-1 EFW open issues, and the ANO-1 OTSG Tube Sleaving program effort. One area where the management attention could be increased is the screening of the amendment requests to ensure that they provide sufficient discussion of no significant hazards considerations. It should be noted that improvement has been observed in this area since the previous evaluation period; however, further improvement is desirable. Another area where improvement could be made is related to the timely submittal of reload related Technical Specification change requests. We recommend that the licensee submit these requests as early as possible rather than waiting until the standard 90 days prior to startup following shutdown for refueling. We believe that the licensee took a risk of not having a timely NRC acceptance for the ANO-2 Cycle 5 operation due to complex technical issues involved in the review of the Technical Specification changes related to the ANO-2 CPC and the lack of adequate NRC staff resources in the subject area (i.e., CPC). In addition, a more timely submittal on the ANO-1 Tube Sleaving issue by the licensee would have relieved the staff of a tight schedule to meet the licensee's schedule.

In regard to management and control as far as the TMI actions are concerned, the licensee's management has taken many steps in getting the systems installed and operational. Examples include the RCS vents, the PASS, the SPDS, the Emergency Response Facilities, the implementation of the symptom based Emergency Operating Procedures for ANO-2, and the Emergency Feedwater Upgrade for ANO-1. Many of the NUREG-0737 Technical Specification changes have been requested by the licensee and have been accepted by the NRC staff. In addition, the licensee has met all of the scheduler requirements in the Confirmatory Orders related to the Emergency Response Capabilities to date.

B. Approach to Resolution of Technical Issues From a Safety Standpoint

Overall rating for this attribute is Category 1. The licensee's understanding of the issues has been generally apparent and the proposed resolutions have been generally conservative and sound.

Regarding multi-plant actions, many difficult licensing issues were resolved during this reporting period. Examples include Environmental Qualification of Electrical Equipment, Control of Heavy Loads - Phase I, Technical Specifications for Hydraulic and Mechanical Snubbers, and the Radioactive Effluent Technical Specifications.

In regard to resolution of technical issues insofar as plant specific items are concerned, many major licensing issues were resolved during this evaluation period. These include the ANO-1 Cycle 7 operation Technical Specifications, the ANO-1 EFW open issues, the ANO-1 Technical Specifications for the EFW upgrade, the ANO-1 EFW upgrade, the ANO-1 OTSG tube sleeving program and tube surveillance Technical Specification changes, the relief requests for the ISI of the ANO-1 reactor coolant pumps, the Technical Specification changes for the ANO-1 pressure/temperature cooldown limits, the ANO-2 IST Program, the ANO-1 10-year and ANO-2 5-year Tendon Surveillance Reports, and the Technical Specifications for explosive gas mixtures in the waste gas systems of ANO-1 and ANO-2.

One area of weakness included the ANO-1 OTSG tube sleeving issue. In this regard, information from other sleeving programs was utilized by the staff to arrive at conclusions reached during the review.

One area where the licensee needs to improve is in the frequency of spurious ANO-2 reactor trips. We understand that the licensee has a goal of less than three reactor trips per year and the licensee believes that the goal could be achievable for Unit 2 when planned corrective actions are completed in early 1986. The corrective actions include reducing the steam generator low level trip set point, installation of low range feedwater flow indicators, and desensitizing the Control Element Assembly Calculator (CEAC) to reduce spurious signals. The first two actions have

been implemented during the recent outage and the third action is expected to be implemented in early 1986 after NRC staff acceptance. The NRC staff has been periodically informed of the licensee's undertaking in this subject area since November 1984 and expects to receive a formal submittal in November of this year. This undertaking clearly reflects the management's attitude to positively and vigorously resolve these technical issues.

In regard to resolution of technical issues related to TMI actions, the licensee has resolved all the issues discussed to date and, as stated previously, many of the Technical Specifications are in place. The bulk of the outstanding TMI related work should be completed in the next evaluation period.

Overall, the licensee has made significant improvement in this area since the previous evaluation period. During previous evaluation periods, the licensee, in most instances but not all, would do the minimum required and did not generally have the spirit of "going the extra mile." We have observed changes in this attitude. For example, during the recent Unit 2 refueling outage, the licensee had a problem in lifting the reactor vessel head due to a minor electrical fault in the control unit associated with the polar crane. The licensee repaired the electrical fault and load tested the crane before lifting the reactor vessel head even though the applicable code does not require a load test. We believe this illustrates the spirit of "going the extra mile" to ensure safe plant operation.

C. Responsiveness to NRC Initiatives

Overall rating for this attribute is Category 1. The licensee has an apparently effective system for tracking and responding to NRC requests and generally alerts the staff where an extension to a particular submittal date is needed. Through meetings with the staff, the licensee has made efforts to determine areas where their responsiveness needs to be improved. The licensee is always very cooperative in agreeing to meet with the NRC staff whenever the circumstances call for a meeting. In addition, the licensee has been very responsive to staff surveys and investigations such as the staff plant visits concerning the Technical Specification Improvement Program and the generic A-45 issue, Decay Heat Removal. Perhaps the most significant demonstration of the licensee's responsiveness to NRC initiatives is that there are no backlogs in the multi-plant or TMI actions over which the licensee has control at this time.

D. Enforcement History

No basis.



E. Reportable Events

No Basis.

F. Staffing (Including Management)

Although staffing is only discussed in a few NRR evaluations, we believe that some overall comments are in order since, in this case, the licensee has shown significant initiatives in the licensing staffing area during this evaluation period. However, no rating for this attribute is assigned at this time since we believe that more time is needed to adequately assess these recent initiatives in this area. We will provide our evaluation of the licensee's effectiveness in this area in the next evaluation period.

The licensee has recently implemented a reorganization of the corporate office to improve the degree of integration of the licensee's management and staff functions in the corporate offices particularly as they affect the licensing function. A new Nuclear Services General Manager position was authorized and recently filled with a person with significant ANO plant experience. The Licensing Manager, the Nuclear Fuel Supervisor, and the Nuclear Project Manager who, in the past, reported to the Vice President, Nuclear Operations will now report to the new Nuclear Services General Manager. He, in turn, will report to the Vice President, Nuclear Operations. We believe that this change will improve the integration of the licensee's management and staff functions in the corporate offices with those at the plant site to a greater degree due to the plant experience of the new Nuclear Services General Manager. In addition, the licensee implemented a new staffing initiative by placing two licensing engineers at the plant site. We have not observed the effects of these recent changes; however, we believe that the licensee has taken a significant step to improve the communication between the corporate offices staff and the plant staff which was perceived to be needed by the NRC staff during previous evaluation periods.

G. Training

No basis.

H. Housekeeping and Control Room Behavior

Overall rating for this attribute is Category 1. Housekeeping and Control Room Behavior is a functional area that is discussed elsewhere in the NRC evaluation. However, NRR has continuing interest in this area since good housekeeping practices and formal behavior within the control rooms indicate that the licensees and their employees take pride in their facilities and their jobs. We have been paying particular attention to this area during our site visits. Our observations and discussions with the NRC resident inspectors indicate that the licensee has maintained an

orderly and clean working environment, indicating good housekeeping practices, and their operations personnel have exhibited professional behavior within the control rooms. We believe that the AP&L corporate management's frequent site visits and pervasive attitude of "trying to do better" by the operations personnel are primarily responsible for the satisfactory performance in this area.

V. CONCLUSION

Based on our evaluation of licensing activities, an overall performance rating of Category 1 is assessed for AP&L licensing performance for the period July 1, 1984, through June 30, 1985.

VI. RECOMMENDATIONS

The licensee should maintain a high level of management involvement to assure continued improvement in this functional area.

SALP EVALUATION

FOR

ARKANSAS POWER AND LIGHT COMPANY

FOR

ARKANSAS NUCLEAR ONE, UNIT NO. 1

SUPPORTING DATA AND SUMMARY

## Appendix A

### 1. NRR/LICENSEE MEETINGS

July 12, 1984	Inadequate Core Cooling Instrumentation
September 24, 1984	SALP Meeting
November 27, 1984	Technical Specifications For Cycle 7 Operation
February 7, 1985	Briefing for Direr Division of Licensing,
March 13, 1985	Senior Management Meeting with Director
March 13, 1985	Reactor Coolant Pump Seal Integrity Issue
April 9, 1985	Licensing Activities and Performance Review
March 21, 1985	Staffing of Emergency Response Facilities

### 2. NRR SITE VISITS

September 24, 1984	SALP Meeting With Licensee
November 11 - 16, 1984	A-45, Decay Heat Removal Survey
February 11 - 13, 1985	Participated in Inspection Activities With Resident Inspectors and Discussed Licensing Activities With Resident Inspectors
May 21 - 24, 1985	Emergency Response Facilities Audit, Discussion of Licensing Activities With Resident Inspectors and Participate In Inspection Activities With Resident Inspector
June 25 - 26, 1985	Regulatory Effectiveness Review

### 3. COMMISSION BRIEFINGS

None

### 4. SCHEDULAR EXTENSIONS GRANTED

None

### 5. RELIEFS GRANTED

April 14, 1985	Relief from selected requirements of 10 year Inservice Inspection of Reactor Coolant Pump
May 28, 1985	Relief from 10-year Inservice Inspection of Reactor Coolant Pump Inspection until the next refueling outage



6. EXEMPTIONS GRANTED

None

7. LICENSE AMENDMENTS ISSUED

License Amendment No. 83	Pressure/Temperature Heatup and Cooldown Technical Specifications July 31, 1984
License Amendment No. 84	Technical Specifications for Hydraulic and Mechanical Snubbers, October 15, 1984
License Amendment No. 85	Technical Specifications for NUREG-0737, GL 82-16 Issues, October 29, 1984
License Amendment No. 86	OTSG Tube Surveillance and Tube Sleeving Technical Specifications, November 8, 1984
License Amendment No. 87	Leak Testing of Sealed Sources Technical Specification Change, November 8, 1984
License Amendment No. 88	Radiological Effluent Technical Specifications (RETS), December 14, 1984
License Amendment No. 89	Pressurizer Level Instrumentation Technical Specification Change, December 20, 1984
License Amendment No. 90	Technical Specifications related to Hydrotest of Secondary System, December 20, 1984

License Amendment No. 91	Technical Specifications for EFW Upgrade, December 20, 1984
License Amendment No. 92	Technical Specifications for Cycle 7 Operation, December 20, 1984
License Amendment No. 93	Waste Gas Hydrogen/Oxygen Technical Specifications, January 14, 1985
License Amendment No. 94	NUREG-0737 Technical Specifications, GL 83-36 & 83-37, January 31, 1985
License Amendment No. 95	Technical Specifications for Low Pressure Overpressure Protection, January 30, 1985
License Amendment No. 96	Technical Specification change related to Key Lock Switches for Purge Valves, March 18, 1985

8. EMERGENCY TECHNICAL SPECIFICATIONS ISSUED

None

9. ORDERS ISSUED

None

10. NRR/LICENSEE MANAGEMENT CONFERENCES

February 7, 1985	Briefing for Director, Division of Licensing, NRR
April 9, 1985	Licensing Activities and Performance Review
March 21, 1985	Staffing of Emergency Response Facilities

Appendix B

SALP EVALUATION

FOR

ARKANSAS POWER AND LIGHT COMPANY

FOR

ARKANSAS NUCLEAR ONE, UNIT NO. 2

SUPPORTING DATA AND SUMMARY

Appendix B

1. NRR/LICENSEE MEETINGS

July 12, 1984	Inadequate Core Cooling Instrumentation
September 24, 1984	SALP Meeting
November 8, 1984	Core Protection Calculator (CPC) Improvement
February 7, 1985	Briefing for Director, Division of Licensing
February 27, 1985	Emergency Operating Procedures
March 8, 1985	CPC Improvement
March 13, 1985	Senior Management Meeting with Director, Division of Licensing
March 13, 1985	Reactor Coolant Pump Seal Integrity Issue
March 21, 1985	Staffing of Emergency Response Facilities
March 29, 1985	CPC Improvement

2. NRR SITE VISITS

September 24, 1984	SALP Meeting With Licensee
April 24 - 25, 1985	Observed the annual emergency preparedness exercise and discussed licensing actions with the plant management
May 20 - 24, 1985	Emergency Response Facilities Audit and Technical Specification Improvement Group visit
June 25 - 26, 1985	Regulatory Effectiveness Review

3. COMMISSION BRIEFINGS

None

4. SCHEDULAR EXTENSIONS GRANTED

None required

5. RELIEFS GRANTED

June 20, 1985	IST 1st 10-year program
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6. EXEMPTIONS GRANTED

None required



7. LICENSE AMENDMENTS ISSUED

License Amendment No. 56	Diesel Generator Surveillance Requirements, September 7, 1984
License Amendment No. 57	Administrative Controls for Overtime, October 29, 1984
License Amendment No. 58	Leak Testing of Sealed Sources Technical Specification Change, November 8, 1984
License Amendment No. 59	Fire Detection Instrumentation, November 9, 1984
License Amendment No. 60	Radiological Effluent Technical Specifications (RETS), December 14, 1984
License Amendment No. 61	Waste Gas, Hydrogen/Oxygen Limits, Technical Specification Change, January 14, 1985
License Amendment No. 62	Technical Specifications for Hydraulic and Mechanical Snubbers, January 29, 1985
License Amendment No. 63	NUREG-0737 Technical Specifications in response to GLs 83-36 & 83-37, January 31, 1985
License Amendment No. 64	Technical Specifications for Key Lock Switches for Purge Valves, March 18, 1985
License Amendment No. 65	Technical Specifications for Steam Generator Low Water Level Trip Setpoint, April 30, 1985

License Amendment No. 66

Core Protection Calculators and  
Rod Bow Penalty Factor Technical  
Specifications, May 7, 1985

8. EMERGENCY TECHNICAL SPECIFICATIONS ISSUED

None

9. ORDERS ISSUED

None

10. NRR/LICENSEE MANAGEMENT CONFERENCES

February 7, 1985

Briefing for Director, Division of Licensing,  
NRR

March 21, 1985

Staffing of Emergency Response Facilities