

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

Systematic Assessment of Licensee Performance

NRC Inspection Report: 50-313/84-24
50-368/84-24

Dockets: 50-313 and 50-368

Licensee: Arkansas Power and Light Company
P. O. Box 551
Little Rock, Arkansas 72203

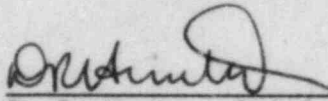
Facility Name: Arkansas Nuclear One, Units 1 and 2

Appraisal Period: July 1, 1983 through June 30, 1984

Licensee Meeting: September 25, 1984

SALP Board Members:

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9/7/84
Date

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I. INTRODUCTION

The NRC has established a Systematic Assessment of Licensee Performance (SALP) program as an integrated NRC staff effort to collect available observations and data on a predetermined schedule and to evaluate licensee performance based on these observations and data. Emphasis is placed upon NRC understanding the licensee's performance in the 12 functional areas listed in the body of the report and discussing and sharing this understanding with the licensee. SALP is an integrated part of the regulatory process used to assure licensee's adherence to the NRC rules and regulations. SALP is oriented toward furthering NRC's understanding of the manner in which: (1) the licensee management directs, guides, and provides resources for assuring plant safety; and (2) such resources are used and applied. The integrated SALP assessment is intended to be sufficiently diagnostic to provide meaningful guidance to licensee management related to quality and safety of plant operations, modifications, and new construction.

The integrated review was conducted by a SALP Board composed of NRC personnel who are knowledgeable of the licensee's activities. The SALP Board met on August 7, 1984, to review data and observations and to assess the licensee's performance in 12 areas. This SALP Report is the SALP Board's assessment of the licensee's safety performance at Arkansas Power and Light Company, Arkansas Nuclear One, Units 1 and 2, during the period of July 1, 1983, through June 30, 1984.

The results of the SALP Board assessment in the selected functional areas will be discussed with the licensee at a meeting on September 25, 1984.

II. CRITERIA

Licensee performance was assessed in 12 selected functional areas. Each of these functional areas represents an area significant to nuclear safety. Evaluation criteria as listed below were used, as appropriate, in each of the functional area assessments:

1. Management involvement 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

In addition, SALP Board members considered other criteria, as appropriate.

Based upon the SALP Board assessment, each functional area evaluated is classified in one of the three performance categories. The definition of each 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 such that a high level of performance with respect to operational safety or construction 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 such that satisfactory performance with respect to operational safety or construction 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 such that minimally satisfactory performance with respect to operational safety or construction is being achieved.

III. SUMMARY OF RESULTS

In summary, the licensee's performance, as determined during the SALP Board meeting is shown in the table below, along with the performance category from the previous SALP evaluation period:

SUMMARY OF RESULTS

| <u>Functional Area</u> | <u>Performance Category This Evaluation Period (July 1, 1983 - June 30, 1984)</u> | <u>Performance Category Previous Evaluation Period (July 1, 1982- June 30, 1983)</u> |
|---|---|--|
| A. Plant Operations | 2 | 2 |
| B. Radiological Controls | | |
| 1. Radiation Protection | 2 | 2 |
| 2. Radwaste Systems, Radioactive Releases and Effluent Monitoring | Not Assessed | 1 |
| 3. Transportation Activities/ Solid Radwaste | 1 | 1 |
| 4. Confirmatory Measurements, Chemistry/Radiochemistry | 2 | Not Assessed |
| 5. Environmental Surveillance | 2 | Not Assessed |

| | | | |
|----|------------------------|---|---|
| C. | Maintenance | 3 | 3 |
| D. | Surveillance | 3 | 2 |
| E. | Fire Protection | 2 | 3 |
| F. | Emergency Preparedness | 2 | 2 |
| G. | Physical Security | 1 | 1 |
| H. | Refueling | 1 | 2 |
| I. | Licensing Activities | 1 | 2 |
| J. | Training | 2 | 2 |
| K. | Quality Assurance | 3 | 2 |
| L. | Management Controls | 2 | 2 |

The total NRC inspection effort during this SALP evaluation period consisted of 40 inspections involving a total of 3383 hours onsite by NRC inspectors.

IV. PERFORMANCE ANALYSIS

A. Plant Operations

1. Analysis

This area has been inspected on a continuing basis by the NRC resident inspectors. One violation was identified in this functional area during the appraisal period. This involved a failure to document equipment operability in the station log. (Unit 2, Severity V, 8325)

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

- The pressurizer cooldown rate limit was exceeded. (Unit 1, 83-016)
- A reactor trip occurred during low power physics testing. (Unit 2, 84-001)
- The main steam isolation system was actuated during low power operation. (Unit 2, 84-003)
- Two reactor trips were caused by low steam generator level. (Unit 2, 84-004 and 84-008)
- A reactor trip was caused by high steam generator level. (Unit 2, 84-011)

The licensee has established a six-shift rotation for Unit 2 operations personnel, and plans a transition from a five-shift

to a six-shift rotation for Unit 1 operations personnel later this year. Each shift includes two individuals with senior operator licenses and at least two individuals with operator licenses. A plant labeling program has been initiated, with the objective of making plant systems and components more easily identifiable to enhance training and maintenance. Continued progress has been made in reducing the number of nuisance alarms in the control room, but some work in this area remains to be completed. A program to place controlled copies of plant drawings in convenient locations throughout the plant has been initiated to provide a ready reference to operators. The safety parameter display systems for both units have been made operable. These systems should assist the operators during routine and abnormal operations.

It is apparent that the licensee has placed emphasis upon improving the performance level in this functional area. The events listed above imply that further emphasis is needed in the areas of operator training and upgrading of operating procedures. In addition, the events involving trips of Unit 2 on improper steam generator levels indicate a need for consideration of system design changes to enhance steam generator water level control at low power levels.

2. Conclusions

The regulatory performance of Unit 1 is considered to be better than that of Unit 2 in this area. Overall 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 basis inspection program.

b. Recommended Licensee Actions

Licensee management is encouraged to continue improvements in this area, including reduction of nuisance alarms, improving the quality of operating procedures, and enhancing the human factors aspects of procedures and plant design changes. The licensee should consider performing an evaluation to determine why Unit 1 appears to be operating with fewer events than Unit 2.

B. Radiological Controls

Seven inspections were conducted during the assessment period regarding radiological controls by region-based radiation specialist inspectors. These seven inspections covered the following areas: radiation protection, chemistry/radiochemistry and confirmatory measurements, transportation activities/solid radwaste, and environmental surveillance. The following specific areas are included within the general functional area of radiological controls:

1. Radiation Protection

a. Analysis

This area was inspected twice by region-based inspectors during the assessment period and on a continuing basis by the resident inspectors. Two violations were identified:

- o failure to provide a properly calibrated survey meter at an access control point. (Units 1 and 2, Severity Level IV, 8334.)
- o TLD calibration and performance certification were not completed in a timely manner. (Units 1 and 2, Severity Level IV, 8334.)

One new open item was identified and eight previously identified open items were closed during the assessment period.

The average man-Rem for both units for calendar year 1983 was 610. This is higher than the 1983 PWR national average of 550 man-Rem. However, this increase is attributed to an extended Unit 1 refueling outage which involved extensive steam generator tube plugging and several special maintenance tasks, and is not considered an indication of poor radiation protection practices. The projected man-Rem for 1984 is expected to decrease to be near or less than the national average.

No significant problems were identified in the areas of exposure controls, facilities and equipment, or surveys. The licensee has taken aggressive action to reduce the number of skin contamination incidents noted during the previous assessment period. The licensee's program is considered adequate in the areas of management involvement, resolution of technical issues, responsiveness to NRC

initiatives, enforcement history, reports, staffing, and training.

Minor weaknesses were observed in the external dosimetry program and in retraining of personnel regarding the information contained in Regulatory Guide 8.13.

b. Conclusions

The licensee's overall performance is considered improved when compared to the previous 1982-83 assessment period.

The licensee is considered to be in performance category 2 in this area.

c. Board Recommendations

(1) Recommended NRC Actions

The inspection effort in this area should continue at a normal level.

(2) Recommended Licensee Actions

Increased management oversight is needed to assure that:
(1) a proper external dosimetry program is maintained, and
(2) the retraining program includes periodic reviews of the information contained in Regulatory Guide 8.13.

2. Radwaste Systems, Radioactive Releases, and Effluent Monitoring

a. Analysis

This area was not inspected during the assessment period. The licensee received a performance category 1 rating for this area in the 1982-83 SALP Report and a reduced NRC inspection effort was recommended. No significant events were identified during the present assessment period.

b. Conclusions

The licensee's past performance in this area has been consistently high. Since this area was not inspected nor any significant events identified during the assessment period, no new performance category rating is assigned.

c. Board Recommendations

(1) Recommended NRC Actions

The board recommends that this area be scheduled for inspection during the third or fourth quarter of 1984.

(2) Recommended Licensee Actions

Continued management oversight is encouraged to assure that a high-quality program is maintained.

3. Transportation Activities/Solid Radwaste

a. Analysis

This area was inspected twice during the assessment period to verify implementation of an adequate program to satisfy new regulations contained in 10 CFR Parts 20.311, 61, and 71. No violations, deviations, or open items were identified.

The licensee has continued to upgrade this program particularly in the areas of training, management controls, and QA/QC activities. The licensee has also implemented a good program for the segregation and reduction of solid radioactive waste. No significant problems were identified regarding management involvement, resolution of technical issues, responsiveness to NRC initiatives, enforcement history, reports, staffing, or training.

b. Conclusions

The licensee has expended considerable effort to establish a high quality program.

The licensee is considered to be in performance category 1 in this area.

c. Board Recommendations

(1) Recommended NRC Actions

Reduced NRC attention may be appropriate in this area.

(2) Recommended Licensee Actions

Continued management oversight is encouraged to assure that a high quality program is maintained.

4. Confirmatory Measurements, Chemistry/Radiochemistry

a. Analysis

This area was inspected twice during the assessment period. Confirmatory measurements were not completed during the first inspection due to problems with the NRC mobile laboratory analytical instrumentation. The required measurements were completed during the second inspection. One deviation was noted:

- ° Failure to fill vacant responsible radiochemistry technician positions with personnel that satisfied the experience recommendations of ANSI 18.1-1971. (Units 1 and 2, 8326.)

Two Licensee Event Reports (Unit 2, 83-028 and 83-046) involving the failure to analyze reactor coolant samples were submitted during this assessment period.

No new open items were identified during this assessment period; three previously identified open items were closed.

The results of confirmatory measurement values indicated 75 percent agreement between the NRC's and licensee's measurements for 44 individual radionuclides. This percent agreement is below a normally expected agreement of about 90 percent. Most of the disagreements were associated with the analysis of the reactor coolant gas sample.

Weaknesses were observed in management oversight regarding the selection of properly qualified personnel.

The licensee's program is considered adequate in the areas of resolution of technical issues, enforcement history, reports, and staffing.

b. Conclusions

The percent agreement for analytical analyses obtained during this assessment period is considered below the performance level normally expected. The licensee had not established procedures to assure that responsible radiochemistry positions are filled with properly experienced personnel.

The licensee is considered to be in performance category 2 in this area.

c. Board Recommendations

(1) Recommended NRC Actions

The NRC inspection effort should continue at normal levels consistent with established guidelines.

(2) Recommended Licensee Actions

Vacant radiochemistry technician positions should be filled with properly experienced personnel. Management attention is also needed to review the licensee's analytical procedures in order to reduce the high number of disagreements associated with confirmatory measurement results.

5. Environmental Surveillance

a. Analysis

One inspection in this area was conducted during the assessment period. One violation was identified:

Failure to satisfy the Technical Specification sensitivity requirements regarding the analysis of radioiodine concentrations in milk. (Units 1 and 2, Severity Level IV, 8320.)

Three open items were identified during the assessment period. These three open items involved: (1) identification of sampling stations, (2) updating the environmental monitoring procedure manual, and (3) distribution of environmental sampling procedures. Three previously identified environmental surveillance open items were closed during the assessment period.

The licensee's program is considered adequate in the areas of management involvement, resolution of technical issues, responsiveness to NRC initiatives, enforcement history, reports, staffing, and training.

b. Conclusions

No significant problems have been identified in this area during the assessment period. The licensee continued to maintain an adequate environmental surveillance program.

The licensee is considered to be in performance category 2 in this area.

c. Board Recommendations

(1) Recommended NRC Actions

The NRC inspection effort should continue at normal levels consistent with established guidelines.

(2) Recommended Licensee Actions

Continued management attention is necessary to assure that the above open items are resolved in a timely manner.

C. Maintenance

1. Analysis

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

- Maintenance was performed on safety-related equipment without a procedure. (Unit 2, Severity IV, 8321)
- Job order forms were not completed as required by procedure. (Unit 1, Severity V, 8327)
- Job order forms were not completed as required by procedure. (Unit 2, Severity IV, 8401)
- Maintenance on the main steam isolation valves was not accomplished in accordance with requirements. (Unit 1, Severity IV, 8411)
- An inadequate procedure was used for maintenance on safety-related valves. (Unit 1, Severity V, 8411)

The three LERs listed below involved activities in the functional area of maintenance:

- A reactor trip was caused by an error while troubleshooting. (Unit 1, 84-004)
- The pressurizer spray valve would not shut completely due to an improper torque switch setting. (Unit 2, 83-034)
- The wind direction instrument on the meteorological tower was mounted backwards. (Unit 2, 83-036)

Weaknesses in the licensee's maintenance procedures continue to be identified and improvements are needed in the administrative controls over maintenance. In an effort to upgrade performance in the maintenance area, the licensee has initiated several actions, some of which are listed below:

- Assignment of three engineers to support the maintenance department.
- Assignment of a maintenance consultant to the ANO general manager.

- Indexing and verifying current status of vendor technical manuals and comparing technical manual requirements to procedural requirements.
- Improvement of the preventive maintenance program.
- Establishment of a work control center at the department level with increased staffing to improve job planning, scheduling, prioritization, reduce the administrative load of the first-line supervisors; implementation of new computer aids; and development of an equipment data base.

2. Conclusions

The licensee's improvement actions when completed have the potential to upgrade performance in the functional area of maintenance in the future. However, for this appraisal period, little overall improvement in this area has been noted as exemplified by the number of violations identified. The licensee is considered to be in performance category 3 in this area.

3. Board Recommendations

a. Recommended NRC Actions

The NRC inspection effort in this area should remain at the increased level recommended in the 1982-83 SALP Report.

b. Recommended Licensee Actions

The licensee should continue the increased management attention being given to the maintenance area and follow through with the improvement actions initiated to enhance performance in the maintenance area.

D. Surveillance

1. Analysis

This area has been inspected on a continuing basis by the NRC resident inspectors. The three violations listed below involved activities in the functional area of surveillance.

- The requirements of the Technical Specification limiting condition for operation were not met for an inoperable battery bank. (Unit 2, Severity III, 8327) This item was identified by the licensee and resulted in the imposition of a civil penalty of \$40,000.
- Test equipment without current calibration was used to perform reactor protective system response time testing. (Unit 2, Severity V, 8334)
- Procedural requirements for recording the test equipment identification number were not followed when conducting reactor protective system response time testing. (Unit 2, Severity V, 8334)

The nine LERs listed below involved activities in the functional area of surveillance:

- Diesel fuel oil samples were out of specification. (Unit 1, 83-026) This occurred several times and was identified during the reviews conducted as a result of the Severity Level III violation mentioned above.
- Surveillance testing was not conducted as required on a control room emergency ventilation unit. (Unit 1, 83-027)
- Reactor coolant system transmitters were found to be out of tolerance. (Unit 1, 84-003) This is similar to several casually linked LERs listed in the 1982-83 SALP Report.
- A gross activity analysis of the reactor coolant was not performed as required. (Unit 2, 83-028 and 83-046)
- A station battery bank was inoperable. (Unit 2, 83-044) This was the event which resulted in the civil penalty mentioned above.
- A channel check was not performed on the source range neutron detectors as required. (Unit 2, 83-047)

- Containment penetration overcurrent protection device testing was not performed and/or evaluated as required. (Unit 2, 83-049) Several instances of discrepancies associated with testing these devices were identified during the reviews conducted as a result of the Severity Level III violation mentioned above.
- A core protection calculator channel was placed in bypass for testing prior to completing the addressable constant update on another channel. (Unit 2, 84-006)

Several cases of missed surveillance tests were identified during this appraisal period. Most of these involved situation-dependent testing requirements, and a combination of deficient procedures and deficient personnel training resulted in failure to perform the testing when required. The inoperable battery event and the other two cases which were identified during subsequent licensee reviews could also be attributed to a combination of inadequate procedures and personnel training. Corrective actions by the licensee included training in Technical Specifications for various groups of plant employees, procedural revisions, establishment of a task force to review and revise, as necessary, the administrative system governing procedural development and control, a review of management information systems, and a detailed technical review of all Technical Specification surveillance procedures. The longer term actions were still under way at the end of this appraisal period.

2. Conclusions

It is expected that the corrective actions initiated by the licensee in this area will yield positive results in the future. Due principally to the inoperable battery bank event and the other discrepancies identified, in the licensee's review of this event, the licensee's performance has dropped from a category 2 in last year's evaluation to a category 3 for this assessment period.

3. Board Recommendations

a. Recommended NRC Actions

The level of NRC inspection activity in the area of surveillance should be increased, with emphasis on procedural adequacy and personnel training.

b. Recommended Licensee Actions

The licensee management should diligently pursue the corrective actions initiated in response to the identified weaknesses in the surveillance area.

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 three violations listed below involved activities in the functional area of fire protection.

- The air gap existing below certain fire doors was excessive. (Unit 2, Severity IV, 8325)
- A fire watch did not have the required fire extinguishing equipment readily available. (Unit 2, Severity IV, 8325)
- Excessive combustible material was found in the steam pipe area. (Unit 2, Severity V, 8412)

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

- The reactor building fire sprinkler system was found to be inoperable. (Unit 1, 83-021)
- Numerous fire barrier deficiencies were identified during a special systematic fire barrier walkdown inspection conducted by the licensee. (Unit 1, 83-023 and Unit 2, 83-045)
- Various fire barriers were found to be degraded. (Unit 2, 83-032, 83-033, 83-037, and 83-042)
- A potential for flooding vital equipment was found to exist if the fire suppression system in corridor 2104 actuated. (Unit 2, 83-035)
- An individual serving as a fire watch was found to be asleep. (Unit 2, 83-043)

The licensee has expended considerable effort in attempting to upgrade performance in the area of fire protection during this assessment period and still has several activities scheduled for completion in the future. These activities (completed or in progress) include the following:

- Temporary assignment of a fire protection coordinator in Little Rock.

- Approval of a position for a full-time fire protection specialist at the site.
- Completion of a walkdown inspection of about 830 fire barriers and 9500 fire barrier penetrations.
- Identification of deficiencies during the walkdown inspections and reporting these to the NRC through LERs.
- Correction of the identified deficiencies.
- Initiation of a program to permanently identify fire barriers and penetrations by labeling.
- Improved training for plant personnel on fire barrier requirements.
- Preparation of the Fire Protection Program Manual as a single, consolidated source of fire protection design-related information and requirements.
- Development of an integrated administrative control procedure to help maintain the integrity of fire barriers during and after maintenance and modifications.

2. Conclusions

Although many fire barrier deficiencies were identified during this appraisal period, most were identified as a result of special walkdown inspections. These inspections and the resultant corrective actions have resulted in a significant improvement in fire barrier integrity during this appraisal period. Most of the weaknesses in the fire protection area which were mentioned in the 1982-83 SALP Report have been corrected.

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 activity in this functional area should be consistent with the basic inspection program.

b. Recommended Licensee Actions

Licensee management is encouraged to continue its involvement in upgrading the fire protection program at ANO and to assure the completion of fire protection program improvement activities which are still in progress. The licensee should increase efforts to obtain an onsite fire protection specialist.

F. Emergency Preparedness

1. Analysis

During the reporting period, four emergency preparedness inspections were conducted. Three were conducted at the site. The first was a routine, unannounced inspection conducted during the period of July 18-22, 1983. Four NRC inspectors expended 207 inspector-hours reviewing the emergency preparedness program, emergency event detection and notification, and emergency communications. Two Severity Level V violations were identified involving failure to meet meteorological record keeping requirements and failure to conduct a 12-month emergency preparedness program review. In addition, the inspectors noted a number of inadequate responses by shift supervisors and duty emergency coordinators during emergency action decision-making and offsite notification walk-throughs. The inadequate responses noted were not considered to represent a breakdown in the licensee's capability to respond to an accident, but indicated that some areas of training should be improved. The licensee did not address this concern in an effective way during the period.

During the period October 31-November 4, 1983, a routine, announced inspection was conducted to determine the status of actions taken in response to emergency preparedness appraisal and routine inspection findings. There were 67 previously identified open items closed based on adequate responses and actions during the inspection.

The licensee's annual full scale emergency exercise was conducted March 21, 1984. Five NRC inspectors observed the implementation of the ANO emergency plan and procedures. The inspectors noted a weakness in timely activation of the technical support center and the emergency control center. Both of these items were still considered open at the end of this reporting period. The inspectors did close 13 inspection findings which had been identified during previous emergency preparedness exercise inspections.

A special inspection was conducted on January 25, 1984, in regard to establishment of a new emergency evacuation care center and identification of the care center location in the public information brochure and telephone directory map. The inspector verified that appropriate action had been taken by the licensee in distributing this information to the public.

During the period, there were personnel changes in the corporate emergency response and preparedness staff. The primary incident response director was replaced and the emergency response organization was changed to increase the depth in top management positions. Several positions were combined and additional personnel were trained to augment key emergency response positions. Staffing of the emergency response and preparedness programs was considered to be adequate.

There were no reportable emergency events during the reporting period.

2. Conclusions

The licensee has 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, resolution of NRC concerns, enforcement history, staffing and training have been timely and effective during the period. However, responses to some of the NRC concerns identified above required additional NRC effort in order to obtain acceptable resolution. 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 should continue at normal levels.

b. Recommended Licensee Action

The current level of management attention to implementation of the emergency response and preparedness program should continue. Additional management attention should be given to the prompt resolution of NRC identified initiatives.

G. Physical Security

1. Analysis

Seven inspections were conducted of security-related activities during this assessment period. This usually large number of inspections was due to both development efforts underway for the security program and situations requiring compensatory measures. One violation was identified regarding the failure to have

certain procedures available in the Central Alarm Station. (Unit 1, Severity Level IV, 8323).

Efforts to fully implement the new software programs for the security system have been delayed because of changing priorities within the licensee's schedule. The partial enhancement of the system has had visible results.

The physical security plan has been reconstructed and rewritten in its entirety and this was a major improvement in the implementation of the program. Most of this plan has been implemented but a few times remain for consideration by NMSS and NRR.

A strike by the guard force and an unfounded allegation by a citizen against a guard were the subjects of two reactive inspections. In both cases, the action taken by the licensee was appropriate and effective.

2. Conclusions

The progression of the physical security program during the assessment period has been positive. While a few items need to be resolved, they are noncontroversial and procedural in nature.

The involvement of management continues to be good with an excellent contribution being made on the part of corporate departments. The working dialogue between the security elements of NRC and ANO continue to be effective in accomplishing the regulatory objectives.

The licensee is considered to be in performance category 1 in this area.

3. Board Recommendations

a. Recommended NRC Action

The level of NRC inspection effort concerning the physical security program should be reduced as is practical.

b. Recommended Licensee Action

The quality assurance element should review the implementation of the new security plan to assure that there have been no regulatory oversights in this major changeover.

H. Refueling

1. Analysis

Unit 2 was refueled for the third time during this assessment period. Routine inspections conducted by the NRC resident inspectors included preparation for refueling, refueling activities, plant startup following refueling, and physics testing following refueling. No violations were identified in the functional area of refueling and no LERs associated with refueling were submitted. The NRC inspections associated with this refueling found consistent evidence of prior planning, adequate training, and assignment of priorities. Activities were consistently well controlled and conducted in accordance with approved procedures.

2. Conclusion

The licensee's performance in this area has improved compared to past evaluations. The licensee is considered to be in performance category 1 in this area.

3. Board Recommendations

a. Recommended NRC Actions

During the next assessment period, both units have refueling outages scheduled. The NRC inspection effort during these outages should focus less on the routine refueling inspection program and more on the maintenance, surveillance, and design change activities which will be occurring in conjunction with the outages.

b. Recommended Licensee Actions

The licensee should continue to assure that personnel are properly trained for the complex and infrequently performed activities which will occur during the next refueling outages.

I. 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. Conclusion

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

The Board has no specific recommendations in this area.

b. Recommended Licensee Actions

The licensee is encouraged to continue the high level of management involvement which is evident in this area.

J. Training

1. Analysis

Two inspections in this area were performed by region-based NRC inspectors, and the NRC resident inspectors reviewed the training program implementation in connection with other inspections performed during the evaluation period. The four violations listed below involved activities in the functional area of training:

- Required requalification records were not maintained. (Unit 2, Severity V, 8316)
- General employee training was not given to all onsite personnel. (Units 1 and 2, Severity IV, 8316)
- Requalification program procedural requirements were not followed. (Units 1 and 2, Severity IV, 8316)
- Licensed operators were not trained on a facility design change. (Unit 2, Severity IV, 8321)

Additionally, during the assessment period two sets of licensed operator replacement examinations were administered. The overall results revealed weak areas common to both reactor operators and senior reactor operators regarding plant procedures. Also, one set of requalification examinations were administered at each unit with satisfactory results.

During this assessment period, the licensee's training program for licensed operators was accredited by the Institute for Nuclear Power Operations. A well-established program has been developed in this area, but weaknesses have been identified in fully implementing the program and in complying with some of the administrative control aspects of the program. License initiatives underway to upgrade performance in the functional area of training include:

- Increasing the training staff for both licensed and nonlicensed personnel training.
- Implementation of a requalification training program for nonlicensed operators.
- Installation of plant-specific simulators for both units.

- Use of valve actuator labs to train operations and maintenance personnel.

2. Conclusions

The licensee's commitment of staff and facilities to training is impressive. There is potential for AP&L to become an industry leader in training. During this assessment period, the need for further improvements was pointed out by the violations listed above, by the weak areas revealed by the licensed operator examinations, and by the judgment that inadequate training was a significant factor leading to the violation involving battery inoperability as discussed in paragraph IV. D.

The licensee is considered to be in performance category 2 in the functional area of training.

3. Board Recommendations

a. Recommended NRC Actions

The level of NRC inspection effort in the functional area of training should remain consistent with the basic inspection program. The NRC should review the results of the licensee corrective actions regarding licensed operator training during the next scheduled examination.

b. Recommended Licensee Actions

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

K. Quality Assurance

1. Analysis

The scope of this functional area consists of activities performed by the quality assurance (QA) organization and the quality control (QC) organization.

An onsite QA program review was performed by the resident inspectors. This review focused mainly on the performance of audits.

One inspection was performed by the NRC Vendor Program Branch (VPB). VPB personnel inspected implementation of the receipt

inspection and procurement control programs. The NRC resident inspectors performed an inspection in the area of materials storage.

In addition to the above, the NRC resident and region-based inspectors also reviewed QA and QC activities associated with the performance of other inspection efforts. These other inspection efforts verified that the QA and QC organizations were performing their identified responsibilities in the specific inspection areas being reviewed.

The four violations listed below involved the functional area of quality assurance:

- Safety-related cables were not installed in conduit, wireways, or cable trays. (Unit 2, Severity V, 8321)
- Non-Q material was stored in an area designated for Q material. (Units 1 and 2, Severity V, 9325)
- Safety-related fasteners not conforming to procurement requirements were accepted by QC receipt inspection personnel and installed in the plant. (Units 1 and 2, Severity III, 8335)
- QA audits were delayed more than one month beyond the scheduled date without approval of the QA manager. (Units 1 and 2, Severity V, 8407)

The VPB inspection identified significant weaknesses in the procurement control, receipt inspection, and source evaluation programs. Due to the lack of appropriate controls, nonconforming fasteners supplied by Cardinal Industrial Products (CIP) were accepted and subsequently installed in the plant without proper material certifications. The licensee has taken corrective actions to certify that the CIP-supplied fasteners meet the ASME Code requirements specified in the licensee's procurement documentation and to assure that fasteners supplied by other vendors meet procurement certification requirements. The licensee has also instituted an ASME Code training program for appropriate personnel and has increased the level of activity in evaluation and surveillance of suppliers and vendors.

2. Conclusion

The onsite QA organization is effectively implementing the commitments contained in the AP&L QA topical report. Except for

receipt inspection, the QC organization effectively implemented its programmatic requirements.

Significant weaknesses were identified in the licensee's implementation of its QA program for procurement control in the areas of supplier evaluation, supplier inspection and audit, and receipt inspection.

Due to the substantial weaknesses the licensee is considered to be in performance category 3 in this functional area.

3. Board Recommendations

a. Recommended NRC Actions

The level of NRC inspection effort of the onsite QA organization should be consistent with the routine inspection program. Increased inspection of the QA organization at the AP&L general offices should be provided. The level of inspection of activities performed by the QC organization should be increased.

b. Recommended Licensee Actions

The licensee should consider performance of a large number of audits of the QC organization. These audits should not only include the identified weak areas, but also include other areas of QC activity. The increased audit activity should help to identify weak areas in the QC organization and result in a strengthened QC program. The licensee should also consider implementation of the recommendation made in the 1982-83 SALP Report with respect to expanding the scope of QC inspection activities to include independent safety verifications in the area of plant operations.

L. Management Controls

1. Analysis

During this assessment period, no inspections directed specifically at management controls were conducted, but management involvement and controls are considered during most inspection activities. Management's utilization of the plant safety committee and the safety review committee is included within the functional area of management controls. The five violations listed below involved activities in the functional area of management controls.

- Design change procedures were not followed. (Units 1 and 2, Severity IV, 8317)
- The procedure used for determining containment atmosphere conditions were inadequate. (Unit 2, Severity V, 8321)
- Procedures were not followed for a calculation and a design change. (Unit 2, Severity IV, 8321)
- The vibration and loose parts monitor was not operated or maintained in accordance with procedures. (Unit 2, Severity IV, 8325)
- Adequate design control measures were not provided. (Units 1 and 2, Severity IV, 8415)

The three LERs listed below involved activities in the functional area of management controls:

- The lead hydrogen purge system failed its surveillance test due to debris in a valve. The debris was apparently caused by moisture in the system. (Unit 1, 83-020)
- The carbon filters in the penetration room ventilation system were found to be wet. The water came from the hydrogen purge system, which discharges into a vent also used by the penetration room ventilation system. (Unit 1, 83-029)
- A reactor coolant pump seal pressure sensing line weld cracked causing a leak inside containment. (Unit 2, 83-039)

The Unit 1 hydrogen purge systems have a long history of problems and failures, many of which were attributed to the

presence of water in the system. During this assessment period, the operability of the penetration room ventilation system was adversely affected by water which apparently came from the hydrogen purge system. Various repairs, modifications, operating procedure changes, and preventive maintenance program changes have been made by AP&L to improve the reliability of the hydrogen purge systems. These efforts have not been successful thus far, and increased management attention will apparently be required to solve the problem.

The Unit 2 reactor coolant pump seal pressure sensing lines have suffered a series of failures apparently caused by a faulty design which permits excessive vibration of the lines and their supports. The repairs and modifications performed thus far have not corrected the basic problem. A more concerted effort, along with appropriate management involvement, will apparently be needed to upgrade the operation of the system.

Other areas which require increased management attention include:

- Identification and resolution of generic or casually linked failures of plant equipment.
- Tracking of commitments, including notification of affected parties when schedular commitments must be changed.
- Upgrading the plant-specific technical knowledge level of plant management personnel.
- Upgrading performance in the maintenance area as discussed in paragraph IV. C.
- Upgrading performance in the surveillance area as discussed in paragraph IV. D.
- Upgrading the procurement quality assurance program.
- Upgrading the design control program.

The licensee has taken a number of actions intended to improve performance in the area of management controls during this assessment period. These include:

- Establishment of a Middle South Utilities nuclear oversight committee.

- Establishment of a nuclear committee on the AP&L board of directors.
- Initiation of a training program for plant safety committee members.
- Assignment of licensed personnel to support activities.
- Formation of a task force to improve the design change process.
- Proposed upgrading of the shift technical adviser program.
- Initiation of a major revision to the administrative procedures for development and review of procedures.
- Formation of a plant licensing group.

2. Conclusions

Licensee management attention and involvement are evident and are concerned with nuclear safety. Licensee resources are adequate and are reasonably effective and appropriately directed such that satisfactory performance with respect to operational safety is being achieved.

The licensee is considered to be in performance category 2 in the functional area of management controls.

3. Board Recommendations

a. Recommended NRC Actions

NRC attention should be maintained at normal levels.

b. Recommended Licensee Actions

Licensee management is encouraged to increase its involvement in the areas discussed above.

V. SUPPORTING DATA AND SUMMARIES

A. Violations and Deviations

1. Unit 1 - See Attachment 2.
2. Unit 2 - See Attachment 3.

B. Licensee Report Data

1. Licensee Event Reports (LERs)

The SALP Board reviewed the LERs submitted by the Arkansas Power and Light Company for the period of July 1, 1983, through June 30, 1984. This review included the following LERs:

Unit 1 - 83-016 through 83-029
84-001 through 84-004

Unit 2 - 83-028 through 83-050
84-001 through 84-014

The SALP Board reviewed the licensee's cause classification for the LERs submitted in 1983. The SALP Board did not identify any significant differences between the classifications made by the licensee and those made independently by the SALP Board.

The NRC Office for Analysis and Evaluation of Operational Data performed reviews of licensee LERs, concentrating on the completeness, clarity, and adequacy of the event reports. Refer to Attachments 4 and 5 for details of these reviews.

2. Part 21 Reports

None

C. Licensee Activities

1. Unit 1

- July 8, 1983 - 2-week outage to repair tube leaks in the 'A' steam generator.
- September 7, 1983 - 3-day outage to repair a leak on the 'A' reactor coolant pump seal sensing line.
- March 16, 1984 - Plant placed in cold shutdown for a midcycle steam generator inspection. During the shutdown, 43 tubes were plugged in the 'A' steam generator and 38 tubes were plugged in the 'B' steam generator. Other activities included replacement of all cells in both station batteries and preventive maintenance on both emergency diesel generators.
- April 10, 1984 - Plant startup after midcycle outage.

2. Unit 2

- August 24, 1983 - 1-week outage to repair the pressurizer spray valve, repair a leak on the 'A' reactor coolant pump seal pressure sensing line, and replace the 'A' reactor coolant pump seal.
- September 26, 1983 - Plant shutdown because battery cells failed to meet Technical Specification limits.
- October 5, 1983 - Commenced the 2R3 refueling/maintenance outage.
- January 25, 1984 - Commenced physics testing following refueling outage.
- March 10, 1984 - 4-day outage for maintenance on reactor coolant system resistance temperature detectors.

D. Major Inspection Activities

No major inspection activities, outside the routine inspection program, were performed by the NRC during this assessment period.

E. Escalated Enforcement Activities

1. Civil Penalties

Two notices of violation with proposed imposition of civil penalties were issued by the NRC to the licensee for violations occurring during this assessment period. The first was a Severity Level III violation involving a failure of the licensee to meet the requirements of Unit 2 Technical Specification limiting conditions for operation for an inoperable station battery bank. This item was identified and reported by the licensee. A civil penalty of \$40,000 was paid on December 9, 1983. The second violation for which a civil penalty was proposed was identified in December 1983, and involved a failure of the licensee to apply controls for the procurement and installation of safety-related fasteners as required by Appendix B to 10 CFR Part 50. For this violation, the NRC proposed the imposition of a civil penalty of \$40,000 after the end of this assessment period.

2. Orders

None

F. Investigations and Allegations

Three allegations received NRC followup inspection during this assessment period. These are listed below:

- Alleged compromise of safeguards information - NRC Inspection Report 84-04. No violations or deviations were identified.
- Alleged nonuniform application of fitness for duty procedures for guards - NRC Inspection Report 84-14. No violations or deviations were identified.
- Alleged discrepancy between the public information brochure and the January 1984 telephone directory for the 10-mile emergency planning zone - NRC Inspection Report 84-03. No violations or deviations were identified.

G. Enforcement Conferences

Enforcement conferences were conducted in the NRC Region IV office with licensee management on October 3, 1983, and March 9, 1984. These enforcement conferences were related to the escalated enforcement activities discussed in paragraph V.E above.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

July 24, 1984

TO: Darwin Hunter, Chief
Reactor Projects Branch 2
Region IV

FROM: Guy S. Vissing, Project Manager
Operating Reactors Branch #4
Division of Licensing, NRR

Robert Lee, Project Manager
Operating Reactors Branch #3
Division of Licensing, NRR

SUBJECT: ANO-1 & 2 SALP REVIEW INPUT

Enclosed is the NRR input for the Arkansas Power and Light Company SALP report for Arkansas Nuclear One, Units Nos. 1 and 2 for the period from July 1, 1983 through June 30, 1984.

Guy S. Vissing
Guy S. Vissing, Project Manager
Operating Reactors Branch #4
Division of Licensing

Robert Lee
Robert Lee, Project Manager
Operating Reactors Branch #3
Division of Licensing

Enclosure:
As Stated

cc:
GVissing
RLee
JStolz
JMiller
DEisenhut

~~8501230449~~ + 8pp



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

Facility Name: Arkansas Nuclear One, Units 1 and 2 (ANO-1&2)
Licensee: Arkansas Power & Light Company (AP&L)
NRR Project Managers: Guy S. Vissing (ANO-1)
Robert Lee (ANO-2)

I. Introduction

This report presents the results of the evaluation of the licensee, AP&L, in the functional area of licensing activities for ANO-1 and ANO-2. It is intended to provide NRR's input to the SALP review process as described in NRC Manual Chapter 0516. The review covers the period from July 1, 1983 to June 30, 1984.

The basic approach used for this evaluation was to first select a number of licensing issues which involved a significant amount of staff manpower. Comments were then solicited from the staff. In most cases the staff applied the evaluation criteria for the performance attributes based on their experience with the licensee or his products. Finally, this information was assembled in a matrix which allowed an overall evaluation of the licensee's performance. This evaluation is based on staff input from eleven branches in four NRR divisions and one branch in Region IV. See Attachment 1.

II. Summary of Results

NRC Manual Chapter 0516 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 items.

Based on this approach, the performance of AP&L in the functional area - Licensing Activities - is rated Category 1. The licensee has made substantial improvements in this functional area.

III. Criteria

Evaluation criteria, as given in NRC Manual Chapter 0516, Table 1, were used for this evaluation.

IV. Performance Analysis

The licensee's performance evaluation is based on a consideration of seven attributes as given in the NRC Manual Chapter. For most of the licensing actions considered in this evaluation, only three or four of the attributes were of significance. Therefore, the composite rating is heavily based on the following attributes:

- Management involvement
- Approach to resolution of technical issues
- Responsiveness

Of the remaining attributes of:

- Enforcement history
- Reportable events
- Staffing
- Training

only reportable events and staffing were judged to apply to the licensing activities evaluated.

The evaluation was based on our evaluation of the following licensing activities:

for ANO-1&2

- Emergency Response Capability (NUREG 0737, Supplement 1)
- Appendix I Technical Specifications
- Exemption Request for Full Scale Emergency Exercise
- Response to NUREG 0737 Items
- Technical Specifications for Leak Testing of Sealed Sources

for ANO-1

- Technical Specifications for RVSP Capsule Schedule
- Station Electrical Distribution Voltage Verification Testing
- Shunt Trip Design Review
- Seismic Qualification of EFW

for ANO-2

- Verification of CESEC Code
- IAEA Safeguard Inspection Program

A. Management Involvement in Assuring Quality

Overall rating for this attribute is Category 2 for ANO-1 and Category 1 for ANO-2. In general, the level of management involvement has been appropriate for the significance of the issue. Prior planning, prioritization of the activities and corporate management involvement in site activities are consistently evident. Typical areas where management involvement are particularly evident and aggressive are in the licensing activities related to the CESEC Code Verification, the IAEA Safeguard Inspection Program, the Emergency Response Capability, the Exemption Request for Full Scale Emergency Exercise, and in the Appendix I Technical (RETS) after the licensee management committed to the staff's requests.

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

Overall rating for this attribute is Category 2 for ANO-1 and Category 1 for ANO-2. The licensee's understanding of the issues has been generally apparent and the proposed resolutions have been generally conservative and sound.

Areas of greatest strength were with the Emergency Response Capability and the Exemption Request for a Full Scale Exercise.

C. Responsiveness to NRC Initiatives

Overall rating for this attribute is Category 1 for ANO-1 & 2. The licensee's responses were technically sound and resulted in timely resolution of the safety issues involved. Areas of greatest strength were in the licensing actions related to the CESEC Code Verification and the Emergency Response Capability.

D. Enforcement History

Not applicable.

E. Reporting and Analysis of Reportable Events

This attribute was only evaluated for one activity, thus there is insufficient basis for a meaningful overall rating of this attribute. This attribute was rated Category 1 for the Shunt Trip Design Review. The reporting related to the design modifications for automatic shunt trip for scram breakers was complete and timely.

F. Staffing (Including Management)

Staffing was only evaluated for one activity, thus there is insufficient basis for a meaningful overall rating of this attribute. Staffing was rated Category 2 for Appendix I Technical Specification issue. After management became aware of the staff's priority of this issue, adequate manpower was assigned to resolve the issue expeditiously.

G. Training

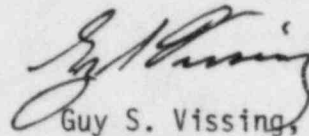
Training was not evaluated for any of the activities evaluated. Thus, there is no basis for an evaluation.

V. Conclusions

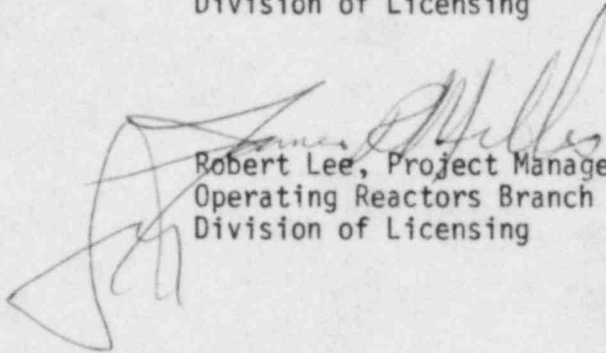
Based on an NRR evaluation of eleven licensing activities during the period July 1, 1983 through June 30, 1984, the overall performance rating for AP&L licensing activities is Category 1 for ANO-1 and ANO-2. The licensee has made substantial improvements in this functional area including our telephone access to the licensee's licensing personnel as a result of a newly implemented telephone system. No major deficiencies affecting licensing activities became apparent during the evaluation period. Significant issues have been resolved during this period, particularly the Appendix I Technical Specifications issue. The licensee generally devotes an adequate level of management involvement to licensing activities; the licensee's approach to the resolution of technical issues is sound and conservative; and the licensee is generally responsive to NRC initiatives.

VI. Recommendations

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



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Division of Licensing



Robert Lee, Project Manager
Operating Reactors Branch #3
Division of Licensing

AP&L (ANO-1&2) EVALUATION MATRIX

| Licensing Action | Management Involvement | Approach to Resolution of Technical Issues | Responsiveness to NRC Initiatives | Enforcement History | Reportable Events | Staffing | Training |
|--|------------------------|--|-----------------------------------|---------------------|-------------------|----------|----------|
| Emergency Response Capability (NUREG 0737 Supplement 1) | 1 | 1 | 1 | N/A | N/A | No basis | N/A |
| Appendix I Technical Specifications | 2 | 2 | 2 | N/A | N/A | 2 | N/A |
| Exemption Request for Full Scale Emergency Exercise | 1 | 1 | 1 | N/A | N/A | No basis | N/A |
| Response to NUREG 0737 Items | 2 | 2 | 2 | N/A | N/A | No basis | N/A |
| Technical Specifications for Leak Testing of Sealed Sources | 2 | 2 | 1 | N/A | N/A | No basis | N/A |
| Technical Specifications for RVSP Capsule Schedule for ANO-1 | 1 | 1 | 1 | N/A | N/A | No basis | N/A |
| Station Electrical Distribution Voltage Verification for ANO-1 | 2 | 2 | 3 | N/A | N/A | No basis | N/A |
| Shunt Trip Design Review for ANO-1 | 1 | 1 | 1 | N/A | 1 | No basis | N/A |
| Seismic Qualification of EFW for ANO-1 | 2 | 2 | 2 | N/A | N/A | No basis | N/A |
| Verification of CESEC Code for ANO-2 | 1 | 1 | 1 | N/A | N/A | No basis | N/A |
| IAEA Safeguard Inspection Program for ANO-2 | 1 | 1 | 1 | N/A | N/A | No basis | N/A |

ATTACHMENT 2

A. Violations and Deviations - Unit 1
(NRC Inspection Reports 83-15 through 83-36 and 84-01 through 84-21)

| <u>Functional Areas</u> | <u>Violations Severity Levels</u> | | | <u>Deviations</u> |
|---|-------------------------------------|-----------|----------|-------------------|
| | <u>III</u> | <u>IV</u> | <u>V</u> | |
| <u>Operating Reactors</u> | | | | |
| <u>(1) Plant Operations</u> | | | | |
| <u>(2) Radiological Controls</u> | | (3) | | (1) |
| <u>(3) Maintenance</u> | | 1 | 2 | |
| <u>(4) Surveillance - includes inservice and preoperational testing</u> | | | | |
| <u>(5) Fire Protection</u> | | | | |
| <u>(6) Emergency Preparedness</u> | | | | (1) |
| <u>(7) Security and Safeguards</u> | | (1) | | |
| <u>(8) Refueling - includes initial fuel loading</u> | | | | |
| <u>(9) Licensing Activities</u> | | | | |
| <u>(10) Training</u> | | (2) | | |
| <u>(11) Quality Assurance</u> | (1) | | | (2) |
| <u>(12) Management Controls</u> | | (2) | | |
| SUBTOTALS | (1) | 1+(8) | 2+(3) | (1) |
| TOTALS | 3+(12) Violations and (1) Deviation | | | |

Note: Numbers in parenthesis indicate violations or deviations common for both ANC Units.

ATTACHMENT 3

A. Violations and Deviations - Unit 2
(NRC Inspection Reports 83-15 through 83-36 and 84-01 through 84-21)

| Functional Areas | Violations Severity Levels | | | Deviations |
|---|--------------------------------------|-------|-------|------------|
| | III | IV | V | |
| <u>Operating Reactors</u> | | | | |
| (1) Plant Operations | | | | 1 |
| (2) Radiological Controls | | (3) | | (1) |
| (3) Maintenance | | 1 | 1 | |
| (4) Surveillance - includes in-service and preoperational testing | 1 | | | 2 |
| (5) Fire Protection | | 2 | 1 | |
| (6) Emergency Preparedness | | | 1+(1) | |
| (7) Security and Safeguards | | (1) | | |
| (8) Refueling - includes initial fuel loading | | | | |
| (9) Licensing Activities | | | | |
| (10) Training | | 1+(2) | 1 | |
| (11) Quality Assurance | (1) | | 1+(2) | |
| (12) Management Controls | | 2+(2) | 1 | |
| SUBTOTALS | 1+(1) | 6+(8) | 9+(3) | (1) |
| TOTALS | 16+(12) Violations and (1) Deviation | | | |

Note: Numbers in parenthesis indicate violations or deviations common for both ANO Units.