SALP 3

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

American Electric Power Service Corporation

Indiana & Michigan Electric Company

Donald C. Cook Nuclear Plant

Docket Nos. 50-315; 50-316

Report(s) No. 50-315/83-10; 50-316/83-11

Assessment Period

April 1, 1982 through March 31, 1983

ERRATA SHEET

Facility: D. C. Cook

SALP Report No.: 50-315/83-10; 50-316/83-11

Page	Line	Now Reads	Should Read
19	Bottom	Add	(8) Severity Level IV - (a) Periodic tests failed to assure that a system would perform satisfactorily in service; (b) a preoperational test failed to incorporate the design requirements contained in the FSAR (Inspection Report No. 316/83-04).
19	Bottom	Add	(9) Severity Level IV - A condition adverse to quality was not corrected by the licensee's corrective action (Inspection Report No. 316/83-04).
19	Bottom	Add	(10) Severity Level IV - (a) A QC holdpoint inspection was performed by the supervisor responsible for the work; (b) QC holdpoint inspections failed to detect a loose valve part inside the body of check valve SI-152S (Inspection Report No. 316/83-04).
19	Bottom	Add	(11) Severity Level V - (a) Procedures or work instructions for cleanliness inspections were not developed; (b) an administrative procedure was not followed (Inspection Report No. 316/83-04).
24	3	83-03	83-06
	4	No. 83-05 through 83-06	Delete
24	19	(2) 1(3)	3(2) 2(3)
24	20	2(6) 2(8)	5(6) 3(8)

CONTENTS

I. INTRODUCTION

The NRC has established a program for the Systematic Assessment of Licensee Performance (SALP). The SALP is an integrated NRC Staff effort to collect available observations and data on a periodic basis and evaluate licensee performance based upon these observations. SALP is supplemental to normal regulatory processes used to insure compliance to the rules and regulations. SALP is intended primarily from a historical point to be sufficiently diagnostic to provide a rational basis for allocating future NRC resources and to provide meaningful guidance to licensee's management to promote quality and safety of plant construction and operation.

A NRC SALP Board, composed of the staff members listed below, met on May 25, 1983 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 III of this report.

This report is the SALP Board's assessment of the licensee safety performance at Donald C. Cook Nuclear Plant, Units 1 & 2, from April 1, 1982, through March 31, 1983.

The results of the SALP Board assessments in the selected functional areas were presented to the licensee at a meeting held June 22, 1983.

SALP Board for Donald C. Cook Nuclear Plant, Units 1 & 2:

J. A. Hind, Chairman, SALP Board
C. E. Norelius, Director, Division of Project and Resident Programs
R. L. Spessard, Director, Division of Engineering
W. L. Shafer, Chief, Projects Branch 2
D. C. Boyd, Chief, Projects Section 2A
D. L. Wigginton, Project Manager, Operating Reactors Branch 1, NRR
J. S. Berggren, Program Support Engineer, Program Support Section, DPRP
E. R. Swanson, Senior Resident Inspector, D. C. Cook
N. E. DuBry, Resident Inspector, D. C. Cook
M. M. Holzmer, Project Inspector, Projects Section 2A

II. CRITERIA

The licensee performance is assessed in selected functional areas depending whether the facility is in a construction, pre-operational or operating phase. Each functional area normally represents areas significant to nuclear safety and the environment, and are normal programmatic areas. Some functional areas may not be assessed because of little or no licensee activities or lack of meaningful observations. Special areas may be added to highlight significant observation.

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

1. Management involvement in assuring quality

2. Approach to resolution of technical issues from 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 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

Functional Area Assessment	Category 1	Category 2	Category 3
1. Plant Operations		X	
2. Radiological Controls		X	
3. Maintenance			X
4. Surveillance and Inservice Testing		X	
5. Fire Protection and Housekeeping			X
6. Emergency Preparedness		X	
7. Security and Safeguards		X	
8. Refueling Activities		X	
9. Licensing Activities		X	
10. Quality Assurance			X

IV. PERFORMANCE ANALYSES

1. Plant Operations

a. Analysis

Evaluation of this functional area is based on the results of routine inspections conducted by the resident inspectors which covered direct observation of activities, review of logs and records, verification of selected equipment lineup and operability, and followup on significant operating events to evaluate conformance with the Technical Specifications and administrative controls. Five items of noncompliance were identified as follows:

(1) Severity Level V - Failure to properly control a centrifugal charging pump when removed from service (Inspection Report No. 50-316/82-10).

(2) Severity Level IV - Violation of low temperature over pressure protection requirements (Inspection Report No. 50-315/82-15).

(3) Severity Level IV - Failure to place a reactor protection system bistable in the tripped position per Technical Specification requirements (Inspection Report No. 50-315/82-19).

(4) Severity Level IV - Failure to adequately control a containment spray cooling water valve and return it to service following maintenance (Inspection Report No. 50-315/82-19).

(5) Severity Level V - Failure to make a timely notification to the NRC within one hour of an accidental unplanned radioactive release (Inspection Report Nos. 315/82-10; 316/82-10).

Items 1, 2, and 5 were a result of incomplete understanding of the intent of administrative controls, Technical Specifications and 10 CFR. Another example was the failure to follow procedures when sampling (Section IV.2, noncompliance (1)). Item 3 is similar to a previously cited event (50-315/81-24 (DPRP)) where accurate communication of the plant condition and timely corrective action were not achieved. Items 1 and 4 relate to weaknesses in the licensees equipment control program. The licensee is pursuing a major overhaul of the equipment control program under the Regulatory Performance Improvement Program (RPIP). No implementation date has been set. None of the events represented serious safety concerns, but they do indicate a lack of attention to detail at various levels of the site organization.

Two reactor trips occurred on Unit 1 and three on Unit 2. Two of these trips were due to personnel error and three were due to equipment problems. This represents a reduction of spurrious reactor trips of more than 50% over previous periods. No significant safety concern was associated with these trips. Each was reviewed by NRC to verify proper safety system operation and operator actions.

One inspection of the licensee's licensed operator requalification training and non-licensed employee training programs was performed by a region based inspector. The inspection included a review of the training programs, implementing procedures and training records. The licensee has revised their licensed operator requalification training program to comply with the post TMI requirements of NUREG 0737. No items of noncompliance were identified, although some minor weaknesses were found in programmatic controls.

Eight Senior Reactor Operator and twelve Reactor Operator license exams were administered during this period. Seven passed the SRO exam and ten passed the RO exam. These results are comparable with the national average success rate.

Positive observations by the resident inspector of actions taken by the licensee in the area of operations include:

- Instituting a program of review, evaluation and implementing design changes to reduce the number of lighted and nuisance alarms during routine operation.

- Operator knowledge and response to unusual occurrences and plant transients has improved.

- Additional licensed operators and their periodic rotation in the operating organization have raised the overall quality of operations, awareness of equipment status, and administrative controls.

- Plant management has demonstrated a responsive, conservative attitude toward equipment repairs affecting safety of operations.

Two event reports during the assessment period indicated inadequacies of the Preoperational Test Program. For one event (LER 315/82-75) the licensee independently reperformed the ECCS flow balance. The reported results cast considerable doubt on the accuracy of the original test. For a second event (LER 316/83-04) it was discovered after failure of a 5 year surveillance that preoperational testing of the Containment Spray Additive eductor did not demonstrate operability. Subsequent analysis by the licensee concluded that the system was operable and that the 5 year surveillance test was inaccurate.

The preoperational test of the system did not demonstrate operability of the eductor during both the initial and recirculation phases of system operation. Furthermore, the adequacy of the 5 year surveillance was not demonstrated during the preoperational test.

Delays have occurred in implementing some portions of the licensee's Regulatory Performance Improvement Program. These include the labeling of auxiliary building breakers and of other components, and finalization of the licensee's independent verification program.

b. Conclusion

The licensee is rated Category 2 in this area. While this is the same rating as SALP 2, improvement was evident, especially in the overall management and conduct of operations.

c. Board Recommendations

The Board recommends additional emphasis on plant-wide training in regulatory requirements and quality aspects of each task. The licensee should also continue to pursue the actions outlined in the RPIP and the NRC should continue its verification efforts.

2. Radiological Controls

a. Analysis

Four inspections were performed during the assessment period by region based inspectors. These inspections included operational and refueling radiation protection, radioactive waste management, transportation, confirmatory measurements, environmental monitoring, TMI Action Plan Items, and a special inspection of an unplanned gaseous release. The resident inspectors also reviewed this area during routine inspections. Two items of noncompliance were identified as follows:

(1) Severity Level IV - Failure to follow approved procedures when conducting radiochemical sampling (Inspection Report Nos. 50-315/83-03; 50-316/83-03).

(2) Severity Level V - Failure to provide individuals and the Commission timely employee termination exposure reports (Inspection Report Nos. 315/82-22; 316/82-22).

Noncompliance (1) above and noncompliance IV.10.(7) were both associated with an unplanned gaseous release during sampling activities.

Weaknesses were also identified concerning the need for repairs to the Nuclear Sampling Systems, a recurring problem of airborne activity in the auxiliary building while collecting samples, gaseous effluent monitor calibrations, personal contamination monitoring upon exiting areas with known or potential high levels of contamination, and radioactive housekeeping (condition of rope barriers, warning signs, and protective clothing control). Improvements in radioactive housekeeping were observed during a subsequent inspection in the assessment period.

Improvement during this assessment period was noted in instrumentation utilized for detection of low level personal contamination. Several portal monitors were replaced with new state-of-the-art monitors, which utilize plastic scintillators and have greatly improved sensitivity. Two new high sensitivity hand and foot monitors were also put in service. The licensee also completed corrective actions to improve HP staffing and HP technician training which resulted from the Health Physics Appraisal.

Personal exposures remained below average for pressurized water reactors, both in total man-rem and when normalized for power (man-rem/MWe), during this assessment period. Both liquid and gaseous radioactive releases were well within Technical Specification limits, except for the unplanned gaseous release during which the release rate reached approximately 90% of the technical specification release rate limit for a few minutes.

No problems were identified with the radwaste transportation program during this assessment period which is an improvement over the last assessment period. The licensee continued to reduce the volume of solid rad-waste. There had been a trend of increasing levels of solid radwaste until 1980. About a one-third reduction was accomplished in 1981 and another one-third reduction was accomplished in 1982. Leakage reduction and drywaste segregation programs were largely responsible for this improvement.

In the area of Confirmatory Measurements the licensee had twenty-three agreements out of thirty-two comparisons. For nearly all the disagreements the licensee's results were conservative. Seven of the nine disagreements were on off-gas samples. Three weeks prior to the inspection, the licensee had put a new gamma spectroscopy system into service and this new system was used for nearly all the comparisons. Lack of familiarity with the new system may have contributed to the number of disagreements. In addition, a solid standard had been used to calibrate the gas geometry without appropriate self-absorption corrections. The licensee recalibrated the new system in January 1983.

The licensee has implemented a new training program for chemistry technicians. This program addresses radiation protection, radiation chemistry, instrumentation, and systems topics.

No problems were identified with the Radiological Environmental Monitoring program. Samples were collected and analyzed in accordance with Technical Specifications. Selected air sampling equipment was observed to be operable and TLDs were observed to be in place.

The licensee management's resolution of technical issues, and responsiveness to NRC issues in the radiological controls areas have been satisfactory during this assessment period.

b. Conclusion

The licensee is rated Category 2 in this area.

c. Board Recommendations

None.

3. Maintenance and Modifications

a. Analysis

Portions of routine resident inspections were conducted in this area to verify whether selected maintenance activities conformed to Technical Specification and administrative controls. The QA team inspection and the Performance Appraisal Inspection also covered plant maintenance and design changes. Three items of noncompliance were identified as follows:

(1) Severity Level V - Failure to follow established procedures when making a chemical addition to the boron injection system (Inspection Report Nos. 315/82-10; 316/82-10).

(2) Severity Level IV - Failure to plan and evaluate trouble shooting and maintenance efforts on the boron injection system recirculation path (Inspection Report No. 316/82-10).

(3) Severity Level IV - Operability testing was not performed following a modification to the control room emergency ventilation system (Inspection Report No. 315/82-15).

In addition to the above events, several other concerns were identified by the licensee in LERs as follows: a motor control center supplying the Turbine Driven Auxiliary Feed Pump was wired backwards causing equipment damage; limit switches were disconnected while energized causing unexpected valve actuation; modifications which affected safety related ventilation for the control room were

not controlled in a manner which assured retesting to demonstrate operability; filters were replaced without authorization and without a retest being conducted to ensure operability of the Control Room Emergency Ventilation System. Events such as these resulted in the QA/QC team inspection in January 1983, and formed the basis for requesting additional management attention under the Regulatory Improvement Program. Control of work activities under the existing "Job Order" system was considered a major weakness in the licensee's ability to maintain and modify equipment and systems in a safe, controlled manner.

Repetitive events of relay and instrument setpoint drift, repeated repairs of a leaking check valve (FW-118) and repeated failure of fire door hardware are examples of untimely resolution of recurring problems. The need for improvement in the trending of equipment problems and evaluation of maintenance data is indicated.

Another significant deficiency in the licensee's programmatic controls was the lack of independent inspection of maintenance activities. This was evidenced by the discovery of an additional loose disc in check valve SI-152S. The maintenance activity which caused the problem took place during the previous assessment period, but the underlying program weakness continued until interim corrective measures were taken after the loose valve disc was found in December 1982.

The Performance Appraisal Inspection (PAI) had several findings in the area of maintenance. The most significant strengths in the maintenance area include comprehensive maintenance procedures, an effective machinery history file, and the practice of performing job briefings prior to major maintenance activities. A major weakness was the umtimeliness of incorporating temporary procedure changes into permanent procedure revisions. Other significant weaknesses included the redundancy of job order procedures; operations personnel's apparent unawareness of ongoing maintenance activities; the lack of management awareness of the job order backlog; the lack of independent inspection of maintenance activities; and the lack of an adequate program for the safety review of lifted leads and jumpers.

Several signficant weaknesses were also noted by the Performance Appraisal Team in the area of design changes and modifications. Design verification of emergency design changes was inadequately documented; corporate engineering division instructions had not correctly implemented ANSI commitments; NSDRC had not performed the safety review of some emergency design changes dating back to 1978; and the control of modifications was inadequate.

Delays have occurred in implementing reviews of maintenance and technical department procedures under the RPIP. In a letter dated January 25, 1982, the licensee stated that reviews of these procedures would begin following completion of reviews of operations

department procedures. The operations department procedures review was completed by June 1, 1982; however, the reviews of maintenance and technical department procedures have not begun.

The licensee has established a training program for Maintenance Department Personnel, but the program has not been conducted on a continuous basis due to outages and shortages of personnel in key departments. Discussions with licensee management indicate that the training program problems have been resolved and the training will be re-initated.

Positive improvements in the area of maintenance and modifications include:

(1) Improved planning for outages and routine activities.

(2) Increased attention to hold points in procedures through implementation of a revised inspection program in the Maintenance Department.

(3) Development of the procedures and capabilities to rebuild the multi-stage ECCS pumps onsite.

Two inspections of the licensee's action on IE Bulletin 79-14 were conducted during this assessment period by a regional specialist. One violation was identified as follows:

> Severity Level V - Inadequate licensee control of contracted engineering companies who were performing IE Bulletin 79-14 evaluations (Inspection Report Nos. 50-315/82-07; 50-316/82-07).

Corrective actions taken were adequate to resolve the issue. The effectiveness and attitude of licensee personnel in improving their program was considered marginally acceptable.

The relocation of AEPSC to Columbus, Ohio is expected to have an initial deleterious effect on the quality of design work and coordination. Numerous key personnel are being replaced and management needs to be alert in making needed adjustments.

b. Conclusion

The licensee is rated Category 3 in this area. This rating is based on weaknesses in the work controls and QC inspection programs, untimely resolution of recurring problems, and the weaknesses noted in the PAI.

c. Board Recommendations

The Board recommends the active pursuit of resolution to the Performance Appraisal findings and concerns addressed by the Regulatory Improvement Program.

4. Surveillance and Inservice Testing

a. Analysis

Routine inspections of surveillance, calibration and inservice testing activities were performed by resident and region based inspectors. One item of noncompliance was identified as follows:

> Severity Level IV - Failure to perform Technical Specification fire detector surveillance at required frequency (Inspection Report No. 50-316/83-05).

Other programmatic deficiencies, as described in LERs 315/82-47, 315/82-61, 315/82-75, and 316/82-51, were caused by weak controls for preparing and reviewing test procedures, and in familiarizing personnel with the new procedures. Action was underway to revise administrative controls in the procedures area.

Surveillance tests were generally performed when required and in accordance with the approved procedures. A marked improvement was evidenced by the reduced number of missed surveillance tests. Scheduling failures appear to have been, for the most part, prevented through increased vigillance and the partial implementation of a computerized master surveillance schedule as outlined in the licensee's RPIP.

Numerous repetitive events were reported concerning relay and timer relay setpoint drift. Although the licensee is taking action by way of design change to correct these particular problems, a mechanism for trending surveillance data and factoring it into preventive maintenance or design changes has not been formalized.

b. Conclusion

The licensee is rated Category 2 in this area. This is an improvement over the Category 3 rating in the previous assessment period and is attributed to the conscientious administration of the surveillance program.

c. Board Recommendations

The Board recommends continued NRC attention to this area in monitoring implementation of the Regulatory Improvement Program commitments in this area.

5. Fire Protection and Housekeeping

a. Analysis

Routine inspections were performed by the resident inspectors in this area covering potential fire hazards and plant housekeeping/cleanliness during routine tours. Three items of noncompliance were identified as follows:

(1) Severity Level IV - Failure to establish a fire watch when a fire barrier door was made inoperable (Inspection Report Nos. 50-315/82-11; 50-316/82-11).

(2) Severity Level V - Failure to follow procedures for replacing a UL labelled fire door (Inspection Report No. 50-315/83-02).

(3) Severity Level IV - Failure to establish a fire watch in the time required by Technical Specifications (Inspection Report No. 50-316/83-05).

One special fire protection inspection (Inspection Report Nos. 50-315/82-08; 50-316/82-08) was performed during this SALP rating period. The inspection was performed by an inspection team including NRC personnel from the Office of Nuclear Reactor Regulation and the Office of Inspection and Enforcement and was led by a Region III based inspector. The inspection consisted of an examination of the licensee's compliance with 10 CFR 50, Appendix R. During this inspection, thirteen findings were identified as follows:

(1) Inadequate fire protection of safe shutdown capability
(2) Inaccurate statements concerning fire protection of safe shutdown
(3) Late submittal responding to 10 CFR 50.48
(4) Lack of safety evaluation of an unreviewed safety question
(5) Inadequate procedure for alternate safe shutdown
(6) Inadequate emergency lighting design and installation
(7) Inadequate emergency lighting preventative maintenance
(8) Inaccurate statements concerning emergency lighting
(9) Inadequate reactor coolant pump oil collection system capacity
(10) Incomplete reactor coolant pump oil collection system seismic qualification
(11) Inaccurate statements concerning the reactor coolant pump oil collection system
(12) Incomplete implementation of combustible materials controls
(13) Inaccurate statements concerning fire barrier HVAC penetration dampers in the diesel generator rooms.

Following the inspection, a Confirmatory Action letter was issued on April 16, 1982, regarding upgrading the alternate safe shutdown procedures. Also, a meeting was held in Washington, D. C., between the licensee and NRC to discuss continued safe operation of the facility. That meeting resulted in NRC concluding that the facility could continue to be safely operated provided NRC specified actions would be completed to upgrade the facility fire protection program and the ability to safely shutdown the units in the event of a fire. The licensee is proceeding with the actions specified by NRC as documented in letters dated May 4, May 10, June 11, July 19, August 20, and December 30, 1982, and February 15, and March 31, 1983. These and other actions taken to improve compliance with 10 CFR 50, Appendix R include increasing the amount of training given to plant and contract personnel, revision of Alternate

Emergency Shutdown Procedures, and emergency lighting and reactor coolant pump oil collection improvements. These improvements and the obtaining of a satisfactory schedule for the safe-shutdown analysis and for modifying the plant to meet 10 CFR 50, Appendix R, came about only after considerable NRC involvement and occasional licensee delays. In the case of the schedule, the NRC requested in a meeting on April 30, 1982, that the licensee submit the schedule by May 10, 1982. Following submittals on May 10 and June 11, 1982, an acceptable schedule was submitted on July 19, 1982.

Enforcement actions regarding those inspection findings have not been issued pending completion of an investigation by the Office of Investigations into the circumstances surrounding the submittal of inaccurate information to the NRC.

There were 83 fire protection related LERs during the assessment period. The number of reportable events (LERs) related to fire protection increased sharply in 1982 (from two during the first quarter to 23 the second quarter) following the special inspection. This was due to the large number of problems which were in this area and to the increased sensitivity of the licensee to fire protection issues which resulted from the special inspection. In addition, the licensee was informed that fire door inoperability was to be reported as inoperability of a fire penetration barriers; inoperable fire doors accounted for nearly half of the LERs. 37 LERs (44%) were attributed to personnel error. The rate of fire protection LER's, as well as the fraction of these due to personnel error, decreased gradually until the last quarter of the assessment period during which both values again increased sharply indicating that the licensee's corrective actions to reduce the number of personnel errors and reportable events have not been totally effective.

b. Conclusion

The licensee continues to be rated Category 3 in this area due to the failure to meet 10 CFR 50, Appendix R, the inordinate amount of NRC effort required to bring the licensee into compliance with Appendix R, and the nubmer of reportable events attributable to fire protection (83), which indicates problems with fire protection program implementation and ineffective corrective actions.

c. Board Recommendations

The Board recommends that the licensee place more emphasis to ensure that submittals are accurate and programs are implemented. NRC inspection activities should be increased until program implementation has improved.

6. Emergency Preparedness

a. Analysis

Emergency Preparedness activities were observed during the D. C. Cook emergency preparedness exercises. The licensee's overall performance in this area was satisfactory; however, several weaknesses were identified involving procedures, status boards, training, and functional layout of the emergency response facilities. The licensee's response to these weaknesses was timely and appeared to be adequate.

A management meeting was held in the Region III office on July 7, 1982, during which licensee representatives presented a description of the permanent Emergency Operations Facility (EOF). This facility is operational and was tested during the aforementioned exercise. This corrected the lack of an effective EOF discussed in our SALP 2 report.

There were weaknesses noted in the licensee's offsite team monitoring capabilities. There were equipment limitations due to instrument portability and equipment utilization, specifically air sampling and beta/gamma versus gamma measurements. Plume mapping techniques were not employed to find the location of the highest activity of a gaseous release. This is particularly important in the hilly terrain near the site. Finally, instructions and directions communicated by radio to the offsite monitoring team were incomplete and often lost once in the field.

In a second significant matter, the Federal Emergency Management Agency (FEMA) stated that the proposed notification system for Warren Dunes State Park will be adequate to warn essentially all of the people within the park area. This resolves an issue raised by the Warren Dunes State Park.

During the second exercise, licensee performance at the EOF was satisfactory. EOF security and habitability monitoring were adequate. Transfer of dose assessment, offsite communications, and protective measures decision making responsibilities from the TSC to the EOF proceeded smoothly. Good command and control were observed in the EOF during the exercise, with the exception of an unrealistic turnover of certain key positions to predeployed American Electric Power personnel. Several procedural weaknesses were identified regarding protective actions recommendations. The licensee has committed to revise procedures to ensure that the EOF Recovery Manager will formally approve protective measures recommendations. Further, evacuation time estimates will be used in protective measures decision making. The licensee has corrected previously identified EOF weaknesses in a timely manner.

b. Conclusion

The licensee is rated Category 2 in this area. This is an improvement over the Category 3 rating in SALP 2 and is based on increased licensee responsiveness to NRC concerns.

c. Board Recommendations

None.

7. Security and Safeguards

a. Analysis

One safeguards inspection was conducted by region based physical security inspectors during this assessment period. The resident inspectors made periodic inspections of accessible protected and vital areas. Three items of noncompliance were identified as follows:

(1) Severity Level IV - Failure of alarms to have a capability as required by the Security Plan (Inspection Report Nos. 50-315/82-20; 50-316/82-20).

(2) Severity Level IV - One of the alarm stations had a capability prohibited by the licensee's Security Plan (Inspection Report Nos. 50-315/82-20; 50-316/82-20).

(3) Severity Level V - Failure to maintain isolation zone as required by the licensee's Security Plan (Inspection Report Nos. 50-315/82-20; 50-316/82-20).

The above listed items were corrected in a timely and effective manner and were considered isolated in nature.

A weakness was identified regarding inconsistencies in the security plan, implementing procedures, and post orders. The licensee continued to work towards correcting this area, but it has not been fully resolved.

The previous SALP addressed the excessive number of personnel granted unescorted access to the control room. Improvement in reducing the number of persons allowed unescorted access was also noted during this assessment period. Also addressed was a weakness in the key control program. The licensee has been responsive in resolving this issue after considerable effort by the NRC. These two weaknesses were closed in a report issued subsequent to the assessment period. (April 11-15, 1983)

The licensee audits are generally complete and thorough. Required records are complete, well maintained, and available.

The major Safeguards task facing the licensee is the implementation of the Security Force Training and Qualification Plan.

Indiana and Michigan Electric Company management has been actively involved in the continuing development and implementation of the physical security program. Management's interest and concern in resolving security issues were evident on many occasions. The licensee has provided well planned approaches to technical safeguards issues and has exhibited a good capability to modify approaches to meet changing demands. The licensee generally provides technically sound and timely responses to NRC initiated actions. The members of the security organization at both site and corporate levels have demonstrated that they are knowledgeable and professional in the execution of their assigned responsibilities.

b. Conclusion

This licensee is rated a Category 2 in this area.

c. Board Recommendations

None.

8. Refueling

a. Analysis

Refueling activities of both units were examined as part of six inspections by resident and regional inspectors including new fuel receipt, direct observation of refueling equipment operability and surveillance testing, verification of containment integrity, and followup of significant events. Two items of noncompliance were identified as follows:

(1) Severity Level IV - Failure to adhere to refueling procedures resulting in damage to a fuel assembly (Inspection Report No. 50-315/82-15).

(2) Severity Level V - Failure to have an audible, meaningful source count rate in containment during fuel loading (Inspection Report No. 50-315/82-15).

Item (1) was a potentially serious event which resulted in damage to the fuel assembly but did not result in the rupture of any fuel rods. A similar event was identified in the previous assessment period when another fuel assembly was damaged during fuel handling. Corrective actions by the licensee have included designation of and specialized training for Refueling Senior Reactor Operators. During subsequent refuelings, licensee personnel demonstrated increased attentiveness and conscientiousness.

In response to the noncompliance item discussed in the previous assessment period, the licensee issued new administrative procedures and implemented a program which has effectively controlled tools and other loose articles on the refueling floor.

b. Conclusion

The licensee is rated Category 2 in this area.

c. Board Recommendations

None.

9. Licensing Activities

a. Analysis

This evaluation was based, in part, on review of the following licensing activities:

- ECCS (Safety Injection Pumps) Inoperable: Technical Specifications
- Exxon Fuel in Spent Fuel Pool: Technical Specifications
- Cycle 4 Reload W/Exxon Fuel: Technical Specifications and License Condition
- Revised LOCA Analysis and Power Distribution Control: Technical Specifications
- Radiological Environmental Technical Specifications
- Scouring and Errosion Studies: Technical Specifications
- Roving Fire Watch Patrol: Technical Specifications
- Guard Training: License Condition
- SRO and RO Training Upgrade/Training for Mitigating Core Damage - TMI Action

During this SALP review period, there were 16 and 12 license amendments issued for Unit Nos. 1 and 2, respectively. Of these, four were issued within one day as requested by the licensee in order to maintain plant operation. All of the four were related to the repair of the safety injection pumps on Unit 1. These four were equally justified and could have been just one licensing action if the licensee could have foreseen the difficulties in repair. Even so, these actions did not represent an uneven balance of emergency requests; the licensee was timely in submitting requests for Technical Specification changes.

The principal licensing activity in this SALP period was the Unit 2 Cycle 4 reload using Exxon fuel. Exxon had been granted piecemeal approval in other plant licensing actions for the reload methods and analysis yet the Cook application represented a significant culmination of these past approvals and an extension of the analysis methods to the extent that the Cook application could not be readily approved. The eventual resolution was a conditional approval of Cycle 4 on the understanding that Exxon would actively pursue generic approvals of their topical reports and on the basis that Cook would provide additional mid cycle information. The licensee had not submitted an appropriate application and the licensing efforts were excessive. In addition, licensee submittals and the defense of these submittals must be made soley by the licensee; support from organizations such as Exxon is acceptable, but not as a substitute for licensee ultimate responsiblity.

For the most part, the licensee's responses throughout the SALP period have been timely. The notable exception has been toward the end of the period and appears to coincide with the loss of manpower from the American Electric Power office in New York. As the office is transferred to Columbus, Ohio, additional manpower losses and schedule slippages can be expected. Greater management attention will be required to minimize the trend evident in the last portion of the assessment period.

Management involvement in the licensing activities has been primarily to assure the submittals are accurate and complete. On more than one occasion during the SALP period, however, there were subsequent disagreements between the submitted proposals and the requirements at the plants. These differences of opinions, misunderstandings or misapplications between the AEP and the plant management have been brought to the attention of the licensee as an indication of the need for much improved communication with the plant before submittals are made to the NRC. Some improvement in this area has been noted and the licensee management has indicated that they are striving for closer ties and understandings between the AEP, plant staff, and NRC.

With respect to fire protection issues, after it was revealed to the NRC staff that the licensee did not meet 10 CFR 50, Appendix R, and after obtaining an acceptable schedule from the licensee for a safe-shutdown assessment, licensee management applied sufficient resources to produce a thorough assessment according to the schedule. The assessment was made with the assistance of a consultant and is under review by NRR.

b. Conclusion

The licensee is rated Category 2 in licensing activities.

c. Board Recommendations

The Board notes that the planned relocation of personnel to Columbus, Ohio, has resulted in the loss of some personnel which may account for schedule slippages late in the SALP period. Management attention is necessary to assure priority safety related reviews are accomplished expeditiously and that all schedule slippages are reported to the NRC as soon as practicable. Management attention is also required to assure plant and AEP concurrence on all proposed licensing actions.

10. Quality Assurance

a. Analysis

Routine inspections were conducted by resident inspectors during the assessment period. Six inspections were also performed by regional specialists which addressed QA areas, and a Performance Appraisal Inspection was performed during July and August 1982. Areas inspected included procedures, calibration, procurement, committee activities, corrective actions, non-routine reporting, review and audit, control of contractors, organization and administration, work controls and design changes. Seven items of noncompliance were identified as follows:

(1) Severity Level V - Design change work and Quality reviews were not performed in accordance with licensee approved procedures (Inspection Report Nos. 315/82-07; 316/82-07).

(2) Severity Level IV - Failure to take effective corrective actions for a previous item of noncompliance (Inspection Report Nos. 315/82-11; 316/82-11).

(3) Severity Level V - Failure to follow approved design change procedures (Inspection Report No. 316/82-12).

(4) Severity Level IV - Failure to conduct testing following a design change installation (Inspection Report No. 315/82-22).

(5) Severity Level V - Failure to conduct unreviewed safety question determinations on any violations of Technical Specifications (Inspection Report Nos. 315/82-22; 316/82-22).

(6) Severity Level V - Failure to review and approve procedures used to demonstrate post design change system operability (Inspection Report Nos. 315/83-02; 316/83-02).

(7) Severity Level IV - Allowing unreviewed unapproved procedures to be utilized on the nuclear sampling system (Inspection Report Nos. 315/83-03; 316/83-03).

One team inspection (Inspection Report Nos. 315/83-01; 316/83-01) was conducted to assess the effectiveness of the licensee's QA/QC program in selected areas. The sixteen findings, which will be addressed in a supplement to the licensee's Regulatory Performance Improvement Program, are as follows:

- Site QA auditors were scheduled to audit the effectiveness of procedures which they helped to develop.

- Audit responsibilities assigned to various corporate organizations could be realigned to improve effectiveness.

- Improvements in the area of QC could be obtained by abandoning peer inspection for a site QC organization which would perform in-line review functions and inspections. Guidance contained in a Maintenance Department Head memorandum regarding peer inspections should be proceduralized.

- Some personnel authorized to conduct QC inspections did not appear to have inspection training.

- QC Implementation Coordinators (QCIC) seldom monitored work in progress as stated in the FSAR.

- Weaknesses in PMI-2290, Job Orders, including:

    - Weak guidance for inspection and testing for work performed under "skill of the craft."

    - Weak guidance for use of procedures.

- Weaknesses in procedural guidance for testing following significant procedure changes or system modifications.

- Temporary procedure changes were not reviewed by the same organizations which performed the original review.

- Incomplete matrix of QA program requirements vs. implementing procedures.

- Lack of a "Master Implementation Procedure" to implement design changes.

- A design input for a design change did not adequately provide for system testing.

- Design change procedures were not clear concerning operating procedure checkout. The applicability of PMI-8010, Preoperational and Initial Startup Test Program for Unit 2, was not clear since Unit 2 is in the operations phase.

- The requirements of ANSI N45.2.11-1974 were not fully incorporated into corporate and site design change procedures.

- Lack of clarity of authority, interface, and reporting responsibilities for the I&M Construction Department and contractors.

- QC manuals of contractors needed updating.

The Performance Appraisal Inspection used category ratings identical to those used in SALP. The results were as follows:

- Committee Activities; Category 3

- Quality Assurance Audits; Category 3

- Design Changes and Modifications; Category 3

- Maintenance; Category 2

- Corrective Action Systems; Category 1

- Procurement; Category 1

Fourteen potential enforcement findings were identified by the Performance Appraisal Team and provided to Region III for further action. One finding resulted in an item of noncompliance (No. (5) in this section) and the remaining 13 have not been resolved.

Weaknesses in the areas of design change control, duties of QCIC's, QA/QC organization, and procedural or administrative controls were identified in the QA functional area of SALP 2. The licensee was rated Category 3 in that assessment. Many of these or related problems still exist, indicating a lack of timeliness and effectiveness of the licensee's corrective actions. An example of the lack of timely and aggressive actions was the licensee's response to some of the recommendations on QA/QC by their management consultant. The consultant recommended in a report dated January 12, 1982, that improvements be made in the site QA in the areas of maintenance, design changes, reporting and duties of Quality Control Implementation Coordinators (QCIC) and the reporting of the site QA manager. The licensee's improvement program did not address any of these recommendations until October 1982, when the licensee's program referred to reviews of the design change process and of the plant and corporate QA organizations. This addition to the RPIP came after the Performance Appraisal Inspection of July and August 1982. Subsequent NRC inspection activities and several reportable events related to QA led to an agreement to devote an entire section of the RPIP to QA, and another to work control.

The licensee has initiated a tracking system for the Performance Appraisal Findings and to monitor the RPIP, and has initiated corrective actions in several areas. However, several actions have exceeded milestone dates or have taken excessively long to begin. The NRC involvement in seeking improvement in this area has been excessive.

b. Conclusion

The licensee continues to be rated Category 3 in this area. This rating is based inpart on the large number of noncompliances and repeated indications of program weaknesses and due to the lack of effective management support for quality assurance.

c. Board Recommendations

The licensee should continue its efforts to resolve the outstanding deficiencies and to implement the RPIP. The NRC should increase inspection activities in this area to monitor licensee progress.

V. SUPPORTING DATA AND SUMMARIES

A. Noncompliance Data

Facility Name: Donald C. Cook, Unit 1 Docket No. 50-315

Inspections: No. 82-07 through 82-25
No. 83-01 through 83-05

	Noncompliances and Deviations* Severity Levels					
Functional Area Assessment	I	II	III	IV	V	Dev.
1. Plant Operations				3	(1)	
2. Radiological Controls				(1)	(1)	
3. Maintenance				1	(2)	
4. Surveillance and Inservice Testing				1		
5. Fire Protection and Housekeeping				(1)	1	
6. Emergency Preparedness						
7. Security and Safeguards				(2)	(1)	
8. Refueling Operations				1	1	
9. Licensing Activities						
10. Quality Assurance				1(2)	(3)	
TOTAL				7(6)	2(8)	

*Numbers in parentheses indicate noncompliances common to both units.

Facility Name: Donald C. Cook, Unit 2 Docket No. 50-316

Inspections: No. 82-07 through 82-25
No. 83-01 through 83-03
No. 83-05 through 83-06

	Noncompliances and Deviations* Severity Levels					
Functional Area Assessment	I	II	III	IV	V	Dev.
1. Plant Operations					1(1)	
2. Radiological Controls				(1)	(1)	
3. Maintenance				1	(2)	
4. Surveillance and Inservice Testing						
5. Fire Protection and Housekeeping				1(1)		
6. Emergency Preparedness						
7. Security and Safeguards				(2)	(1)	
8. Refueling Operations						
9. Licensing Activities						
10. Quality Assurance				(2)	1(3)	
TOTAL				2(6)	2(8)	

*Numbers in parentheses indicate noncompliances common to both units.

B. Licensee Report Data

1. Licensee Event Reports (LER's)
Unit 1

LERs No. 82-019 through 82-111
No. 83-001 through 83-024
No. 83-026 through 83-028

Unit 2

LERs No. 82-20, 82-26, 82-28, 82-30,
No. 82-32 through 82-118
No. 83-001 through 83-035 and 83-037

Licensee Proximate Cause Code Assignments:

Unit 1 Cause Type	SALP 1*	SALP 2**	SALP 3*
Personnel Error(A)	5	21(15)[1]	28
Design Deficiency(B)	7	9(8)	4
Defective Procedures(D)	2	2(2)	11
Component Failure(E)	21	37(32)	51
Other(X)	6	17(15)	27
Total Number	41	86(72)	121

*SALP 1 and 3 (12 months)
**SALP 2 (18 months)
[1] (last 12 months of SALP 2)

Unit 2 Cause Type	SALP 1*	SALP 2**	SALP 3*
Personnel Error(A)	8	12(9)[1]	29
Design Deficiency(B)	6	8(9)	5
Defective Procedures(D)	2	4(3)	5
Component Failure(E)	30	58(51)	63
Other(X)	6	24(22)	24
Total Number	52	106(94)	126

Comparisons between SALP 3 and the last 12 months of SALP 2 indicate that there were significant increases in all cause categories of reportable events (LERs) except for design changes which decreased significantly. Increases in the number of LERs related to fire protection contributed significantly to the increases in the categories of personnel errors, procedural deficiencies, component failure and other. As expected component failures was the cause category having the

*SALP 1 and 3 (12 months)
**SALP 2 (18 months)
[1] (last 12 months of SALP 2)

largest number of LERs. Component failures were also distributed fairly evenly over the assessment period, and across plant systems, possibly indicating the need for improvements in preventative maintenance.

The second leading cause category of LERs was personnel errors which had 33 more LERs than during the last 12 months of SALP 2. There were also 33 more fire protection LERs due to personnel error during this assessment period.

While the overall increases in fire protection LERs over the previous assessment period may have been due to a hightened licensee awareness of fire protection requirements, there was still an unusually high number of reportable events (83) in this area.

In the area of defective procedures for Unit 1 it was found that in seven of the eleven identified events the procedures used were not thorough enough to prevent the event. Corrective actions to prevent similar occurrences usually were adequate.

2. Part 21 Reports

There were no Part 21 reports during the assessment period.

C. Licensee Activities

1. Unit 1 shutdown for refueling July 3, 1982, and returned to operation September 26, 1982 subject to restrictions imposed by licensee amendment concerning the inoperable North Safety Injection Pump.

2. Unit 2 shutdown on July 31, 1982 to repair indicated steam generator tube leakage of 0.17 gpm. Two tubes were mechanically plugged.

3. The Annual Emergency Preparedness Excercise was conducted on October 21, 1982.

4. Unit 2 shutdown for refueling on November 21, 1982, when increased steam generator tube leakage was noted. The Unit returned to operation January 26, 1983.

5. During the Unit 2 outage ECCS flow balancing resulted in the discovery of an additional loose disc in the check valve SI-152S.

6. As a result of concern over steam generator tube integrity the licnesee installed an upgraded loose parts monitoring system during the respective outages.

7. The licensee replaced the containment purge valves with ones having non-resilient seats and received changes to their license to allowing purging of containment in all modes.

D. Inspection Activities

Five major team inspections were accomplished in the assessment period: One in the area of Fire Safety and compliance with 10 CFR 50.48 and Appendix R to 10 CFR 50, two Emergency Preparadness Implementation Appraisals (EPIA), one Performance Appraisal Inspection, and one in the area of QA/QC.

The resident inspectors performed eight routine safety inspections and participated in EPIA's, and QA/QC inspections.

E. Investigations and Allegation Review

1. During the fire safety inspection potential material false statements were identified. This matter is under investigation by the Office of Investigation.

2. No allegations were received during this assessment period.

F. Escalated Enforcement Actions

1. Civil Penalty

None

2. Orders (Enforcement)

None

G. Administrative Actions

1. Confirmation of Action Letters

A Confirmation of Action Letter was issued on April 16, 1982, which documented the licensee's proposed actions to correct deficiencies with the licensee's Alternate Emergency Shutdown Procedures (1-OHP 4023.001.001 and 2-OHP 4023.001.001).

2. Other Actions

An NRC meeting summary dated May 21, 1982, from R. Cilimberg, documents actions which Mr. D. Eisenhut, Director, NRR, required the licensee to take in order to assure continued safe operation of the facility following the fire protection special inspection.

H. Management Meetings

Seven management meetings were held during the assessment period as follows:

1. On April 30, 1982, a management meeting was held to discuss the findings of the special inspection in the fire protection area (Appendix R) and justification for continued safe operation of the facility.

2. On July 7, 1982, a management meeting was held to discuss NRC concerns relating to a schedule for completion of a permanent EOF.

3. On August 4, 1982, a management meeting was held to discuss the progress of the licensee's regulatory improvement and to discuss the licensee's response to recent NRC findings related to the boron injection tank and containment purge valve issues.

4. On September 7, 1982, a management meeting was held to discuss the finding of the licensee's independent management consultant, the formulation of a Regulatory Performance Improvement Program (RPIP), and completed actions related to the boron injection tank and containment purge valve issues.

5. On November 2, 1982, a management meeting was held to provide NRC comments on the draft RPIP submitted by the licensee.

6. On December 29, 1982, a management meeting was held to discuss submittal of a final RPIP, and the addition of the areas of work controls, QA/QC organization and program and assignment of "system experts" to safety related systems.

7. On March 16, 1983, an enforcement conference was held to discuss the QA/QC controls related to the improper repair of a safety related valve and the failure of containment spray additive systems to pass a surveillance test. (The report documenting inspection activities related to this subject has not yet been issued.).

I. Regulatory Performance Improvement Program (RPIP)

During an enforcement conference held on August 4, 1981, the licensee agreed to develop a comprehensive plan for upgrading management controls in connection with the D. C. Cook facility. As a result, the licensee developed a 12 point plan with the help of their management consultant. Subsequent to the development of this plan, communications between the licensee and NRC concerning the adequacy of the plan resulted in an agreement by the licensee on September 7, 1982, to develop a Regulatory Performance Improvement Program.

SALP 2 comments pertaining to the RPIP indicated that continued management attention would be required to ensure timely and effective implementation of the licensee's program. While there has been evidence of the licensee's efforts to improve regulatory performance and to be responsive to NRC concerns, it was noted

that "the rate of improvement during the assessment period was slow."

The licensee has undertaken many actions during the assessment period within the scope of the RPIP. Some of these actions which appear to have produced observable improvement include:

- Early notice and review of NRC findings by plant and corporate management
- Investigations of personnel errors which result in LER's
- NSDRC subcommittee review of LER's which have an "X" cause code (Other)
- Initiation of Unit designation labelling scheme for electrical circuit breakers
- Review and update of position descriptions

Other actions were taken, the benefits of which are difficult to assess because they affect personnel knowledge and attitudes, implementation of policies, and the effectiveness of communications. Examples of these include:

- Issuance of policy statements by the Plant Manager and the managers of each AEPSC engineering division (these supplement and expand on policy statements issued by the AEP Chairman Of The Board and the Executive Vice President, Construction and New York Engineering, during SALP 2).
- Review of all Plant Manager's Instructions (PMIs) (the review identified the need for many revisions, but these have not been implemented in most cases).
- Continuing reviews by the licensee's management consultant
- Initiation of an ALARA program
- Review of training programs utilizing INPO guidelines
- "Speaker's Bureau" meetings in which engineering division managers from New York make presentations for plant personnel
- Management meetings between site and corporate personnel

In addition, several improvements have been made by the site management which are outside the scope of the RPIP. Examples of these include:

- Major improvement in outage coordination and planning
- Instituting daily Plan-of-the-Day meetings to improve communications, planning and conflict resolution
- Assigned responsibilities for resolution of issues
- Conservative, costly decisions made which demonstrated a safety emphasis
- Increased supervisory attention to plant activities with improved inter-departmental cooperation.

In a Management Meeting on March 16, 1982, licensee management stated that they felt that the NRC would see significant improvement in the next six months, however, consistent improvement has not been

evident even though over a year has transpired. Analysis of the Performance Appraisal Inspection results, of noncompliances, of other NRC inspection findings and of LER data indicates that the rate of improvement as measured by these indices continues to be slow.

Furthermore, the length of time between the NRC's request that the licensee develop an "cohesive plan" to improve management controls (August 4, 1981) and the final plan submitted by the licensee (February 7, 1983) is excessive. Two other Region III licensees have developed acceptable plans in about three months. During this period, the licensee has submitted five versions or drafts of their RPIP before an acceptable version was submitted. During this time, there were seven meetings between the licensee and regional management, as well as considerable efforts by NRC personnel devoted to reviewing licensee submittals and providing comments to the licensee. In addition, the licensee has not taken timely actions to resolve some problems identified by their management consultant (see Section IV.10), and failed twice to submit RPIP revisions on time.

VI. Enclosures

Letter to Licensee from SALP Board Chairman

Licensee Comments