

ENCLOSURE 2

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U. S. NUCLEAR REGULATORY COMMISSION  
REGION I

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SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE  
REPORT 50-322/86-99  
LONG ISLAND LIGHTING COMPANY  
SHOREHAM NUCLEAR POWER STATION  
ASSESSMENT PERIOD: MARCH 1, 1986 - JULY 31, 1987  
BOARD MEETING DATE: SEPTEMBER 18, 1987

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PDR ADOCK 05000322  
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TABLE OF CONTENTS

|   | <u>Page</u> |
|---|-------------|
| I. INTRODUCTION.....                                | 1           |
| A. Purpose and Review.....                          | 1           |
| B. SALP Board Members.....                          | 2           |
| C. Background.....                                  | 3           |
| II. CRITERIA.....                                   | 5           |
| III. SUMMARY OF RESULTS.....                        | 7           |
| A. Facility Performance.....                        | 7           |
| B. Overall Facility Evaluation.....                 | 8           |
| IV. PERFORMANCE ANALYSES.....                       | 9           |
| A. Plant Operations and Startup Testing.....        | 9           |
| B. Radiological Controls.....                       | 13          |
| C. Maintenance.....                                 | 17          |
| D. Surveillance.....                                | 19          |
| E. Engineering and Corporate Technical Support..... | 21          |
| F. Emergency Preparedness.....                      | 24          |
| G. Security and Safeguards.....                     | 26          |
| H. Training and Qualification Effectiveness.....    | 28          |
| I. Licensing Actions.....                           | 30          |
| J. Assurance of Quality.....                        | 33          |
| V. SUPPORTING DATA AND SUMMARIES.....               | 35          |
| A. Investigation and Allegation Review.....         | 35          |
| B. Escalated Enforcement Actions.....               | 35          |
| C. Management Conferences.....                      | 36          |
| D. Licensee Event Reports.....                      | 37          |
| E. Licensing Activities.....                        | 39          |

Tables and Figures

|  |      |
|--|------|
| Table 1 - Licensee Event Reports.....                  | T1-1 |
| Table 2 - Inspection Hours Summary.....                | T2-1 |
| Table 3 - Enforcement Summary.....                     | T3-1 |
| Table 4 - Inspection Report Activities.....            | T4-1 |
| Table 5 - Unplanned Automatic Trips and Shutdowns..... | T5-1 |

## I. INTRODUCTION

### A. Purpose and Overview

The Systematic Assessment of Licensee Performance (SALP) is an integrated NRC staff effort to collect the available observations and data on a periodic basis and to evaluate licensee performance based upon this information. SALP is supplemental to normal regulatory processes used to ensure compliance with NRC rules and regulations. SALP is intended to be sufficiently diagnostic to provide a rational basis for allocating NRC resources and to provide meaningful guidance to the licensee's management to promote quality and safety of plant construction and operation.

An NRC SALP Board, composed of the staff members listed below, met on September 18, 1987 to review the collection of performance observations and data to assess the licensee performance in accordance with the guidance in NRC Manual Chapter 0516, "Systematic Assessment of Licensee Performance." A summary of the guidance and evaluation criteria is provided in Section II of this report.

This report is the SALP Board's assessment of the licensee's safety performance at the Shoreham Nuclear Power Station for the period March 1, 1986 through July 31, 1987. The Summary findings and totals reflect a 17-month assessment period.

B. SALP BoardBoard Chairman

S. Collins, Deputy Director, Division of Reactor Projects (DRP)

Members

W. Johnston (see note), Acting Director, Division of Reactor Safety (DRS)

T. Martin, Director, Division of Radiation Safety and Safeguards (DRSS)

W. Butler, Director, Project Directorate I-2

L. Bettenhausen, Chief, Projects Branch 1, DRP

R. Gallo (see note), Chief, Operations Branch, DRS

C. Cowgill, Chief, Reactor Projects Section (RPS) 1D, DRP

C. Warren, Senior Resident Inspector, RPS 1D, DRP

R. Lo, Licensing Project Manager, NRR

NOTE - R. Gallo was alternate voting member in absence of W. Johnston

Other Attendees

F. Crescenzo, Resident Inspector, RPS 1D, DRP

P. Habighorst, Reactor Engineer, RPS 1D, DRP

A. Blough, Chief, RPS 1A, DRP

P. Eaper, Chief, Quality Assurance Section, Operations Branch, DRS

M. Shanbaky, Chief, Facilities Radiation Protection Section, DRSS

W. Kushner, Safeguards Scientist, Security, DRSS

E. Fox, Senior Emergency Preparedness Specialist, DRSS



## C. Background

### Licensee Activities

Operations at the Shoreham Station are authorized and governed by an operating nuclear plant license not to exceed five percent rated power (NPF-36). The unit began this evaluation period in cold shutdown since the requirements of the Low Power Test Program were essentially completed during the previous assessment period. However, modifications made to the High Pressure Coolant Injection and Reactor Core Isolation Cooling Systems required a return to low power operations for retesting of these systems.

Two periods of low power operations occurred during this assessment period; the first began on August 4, 1986 and the facility returned to a cold shutdown on September 1, 1986. During this first period of operation, retesting of HPCI and RCIC was completed and a major milestone was achieved when the Main Generator was synchronized to the Long Island Grid. The second period of low power operations began on May 22, 1987. This period of operation involved some retesting and system tuning along with another period of synchronization of the main generator with the grid and ended on June 8, 1987.

Outages between periods of operation have been used to effect plant modifications, complete major surveillance items and replace defective components. The facility successfully completed a Containment Integrated Leak Rate Test in January 1987, completed replacement of HPCI turbine exhaust check valves, replaced the neutron sources, and completed modifications to the Standby Liquid Control and Alternate Rod Insert Systems. Modifications to the Emergency Power System which would tie the Colt Emergency Diesel Generators into this system have continued throughout the assessment period.

One major operational event occurred during this period. On March 18, 1987 the facility suffered a Loss of Offsite Power when both the Normal and Reserve Station Service transformers tripped. The event was caused by personnel error during modification of the 103 Emergency Bus. This event was the subject of an NRC/Licensee Management Meeting held in King of Prussia, Pa. on April 4, 1987.

Organizational changes at the facility occurred throughout the assessment period. An Assistant Vice President Nuclear position was created and filled to further increase senior management presence on site. Organization changes within the Quality Assurance organization have been instituted to make the organization conform more closely with similar organizations at other facilities. Formation of a separate Office of Training also occurred during this period.

At the end of the assessment period, the facility was in cold shutdown, with Emergency Power Supply modifications in progress. Full power license issuance is contingent on resolution of Emergency Planning issues.

#### Inspection Activities

Two NRC resident inspectors were assigned to the site for twelve months of the period with at least one inspector assigned for the entire period. The total NRC inspection hours for the 17 month assessment period was 3562 hours. This was equivalent to 2514 inspection hours for a twelve month period. Distribution of these hours for each functional area is depicted in table 2 of this document.

During the assessment period three NRC team inspections were conducted covering the following functional areas:

1. Radiochemistry Section Corrective actions
2. Training and Qualification Effectiveness
3. Engineering and Corporate Support

This report also includes assessment of "Training and Qualification Effectiveness" and "Assurance of Quality" as separate functional areas. Although these topics are assessed in other functional areas through their use as evaluation criteria, these two areas are summarized separately to provide a synopsis. For example, quality assurance effectiveness was assessed on a day-to-day basis by the resident inspector and as a part of most specialist inspections. Quality Assurance is an integral responsibility of every employee; one of the management tools to measure effectiveness is reliance on quality assurance inspections and audits. Other major factors that influence quality, such as involvement of first-line supervision, safety committees, and worker attitudes, are discussed in each functional area as appropriate. Engineering support was evaluated as a separate functional area for the first time in this report.

Tabulations of associated enforcement actions, inspection activities and unplanned shutdowns are contained in Tables 3 and 4 and 5 respectively.

## II. CRITERIA

Licensee performance is assessed in selected functional areas, depending upon whether the facility is in a construction, preoperational, or operating phase. Functional areas normally represent areas significant to nuclear safety and the environment. 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 observations.

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

1. Management involvement and control in assuring quality
2. Approach to the resolution of technical issues from a safety standpoint
3. Responsiveness to NRC initiatives
4. Enforcement history
5. Operational and Construction events (including response to, analysis of, and corrective actions for)
6. Staffing (including management)
7. Training and Qualification Effectiveness

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 definitions of these performance categories are:

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

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

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

The SALP Board may determine to include an appraisal of the performance trend of a functional area. Normally, this performance trend is only used where both a definite trend of performance is discernible to the Board and the Board believes that continuation of the trend may result in a change of performance level. Improving (declining) trend is defined as: Licensee performance was determined to be improving (declining) near the close of the assessment period.

While the definitions of categories stated above are those which apply to all licensees, NRC as a matter of policy does not reduce inspection effort, regardless of Category 1 performance, for newly licensed plants or those in unique licensing status such as Shoreham. Inspections will not be reduced in any functional area and will remain at levels consistent with plant activities.

III. SUMMARY OF RESULTSA. Facility Performance

| <u>Functional Area</u>   | <u>Category Last Period*</u> | <u>Category This Period**</u> | <u>Trend If Assessed</u> |
|--|------------------------------|-------------------------------|--------------------------|
| A. Plant Operations & Startup Testing                                | 2                            | 1                             |                          |
| B. Radiological Controls   | 3                            | 1                             |                          |
| C. Maintenance   | 2#                           | 2                             | Improving                |
| D. Surveillance  | 2#                           | 2                             |                          |
| E. Engineering and Corporate Technical Support                       | ***                          | 2                             |                          |
| F. Emergency Preparedness  | 1                            | 1                             |                          |
| G. Security and Safeguards   | 1                            | 1                             |                          |
| H. Training and Qualification Effectiveness                          | 3                            | 2                             | Improving                |
| I. Licensing Activities  | 3                            | 1                             |                          |
| J. Assurance of Quality  | 2                            | 1                             |                          |
| K. Outage Management, Modifications and Technical Support Activities | 2                            | ***                           |                          |

\* March 1, 1985 through February 28, 1986

\*\* March 1, 1986 through July 31, 1987

\*\*\* Not evaluated as a separate functional area

# Maintenance and Surveillance were previously assessed as a combined functional area

## B. OVERALL FACILITY EVALUATION

In this seventeen month evaluation period, the Shoreham Nuclear Power Station staff and management has maintained the high performance levels for areas previously assessed as strengths and effected improvements in other areas.

Plant operations and the conduct of startup testing during two low-power test intervals was found to be well executed, with intensive management involvement, good procedural compliance and performance-oriented Quality Assurance audits and checks. A notable decrease in personnel errors, particularly in operations and surveillance activities, was observed. Several areas discussed in detail in this evaluation showed considerable improvement as a result of management attention and expenditure of resources; these areas include radiological controls, training and qualification effectiveness and licensing activities.

While improvements were achieved in maintenance, surveillance and technical support, some performance shortcomings were noted. In the maintenance area, it was determined that first line supervisors are limited in the amount of time spent at work sites; one resulting symptom is poor housekeeping following maintenance work. Corrective action to reduce the number of challenges to the Reactor Building Standby Ventilation and the Reactor Building Closed Loop Cooling Water systems has been slow. The loss of offsite power event resulted from a weakness in technical review of a modification involving safety-related electrical buses, for which corrective action has been taken.

The weaknesses noted in the previous Systematic Assessment of Licensee Performance regarding chemistry and radiochemistry staffing, training and performance have been addressed, but warrant continued management attention to ensure long-term effective performance. The licensee maintains the station and staff to support site operation. In the future, this readiness must be maintained to sustain the same levels of high performance and effect ongoing improvements.

#### IV. PERFORMANCE ANALYSES

##### A. Plant Operations and Startup Testing (1144 Hours, 32.2%)

###### Analysis

During the previous assessment period, the area of Plant Operations and Startup Testing was rated a category 2. The recommendation of the board was to focus greater attention on personnel adherence to procedures.

###### Startup Testing

In this assessment period startup testing activities were conducted during two periods of low power operations over a period of approximately seven weeks. Although the majority of the low power testing program was completed during the previous assessment period, extensive retests were conducted on the Reactor Core Isolation Cooling, High Pressure Coolant Injection and Reactor Vessel Level Instrumentation Systems to satisfy the requirements of the Startup Program.

Inspection coverage of the Startup Program by the QA/QC department was evident at all levels from direct inspection of testing to review of test results. QA/QC personnel covering startup activities were well trained in the activities under surveillance and were effective in identifying problem areas and following proposed resolutions. The planned QA/QC coverage for the remainder of the Startup Program is scheduled to include surveillance coverage and test result review.

###### Plant Operations

During this assessment period, the bulk of activities conducted by operations personnel involved the support of maintenance, modification, and outage activities. For approximately seven weeks the facility was operated at power levels not exceeding five percent power primarily for the conduct of low power testing.

Management involvement has been evident in all areas of plant operations during this inspection period. At all times during major evolutions including startups and major tests, at least one member of senior management has been present in the control room. Plant tours by operations management are made on a daily basis and the interface between management and staff is good. It is also significant to note that senior management presence on site extends beyond normal working hours. The licensee Vice President Nuclear, Assistant Vice President Nuclear, and the Plant Manager routinely made backshift tours of the facility. The licensee initiated this program of backshift monitoring following notification of NRC identified problems at other operating facilities. This program demonstrates a sensitivity to NRC concerns and has enhanced management oversight of plant operations during off-normal hours.



Operations personnel performance has been effective and professional. Personnel errors attributed to operations have been greatly reduced during this assessment period as evidenced by the reduction in LER's from twelve in the previous assessment period to four during this period. Of these four errors, all occurred while the facility was in a cold shutdown condition, and one was attributed directly to an error on the part of a licensed individual. This reduction in personnel errors can be directly attributed to increased diligence on the part of operations personnel and to increased emphasis placed by plant management on quality of operation and adherence to procedures. Operations personnel response to plant operating transients and equipment problems has been very good throughout this assessment period. During the loss of offsite power event on March 18, 1987, the onshift personnel quickly analyzed the problem, restored offsite power, returned plant systems to normal, and completed emergency plan actions in a timely manner.

Operator procedural compliance has been good throughout this period. Use of alarm response procedures when reacting to infrequently received alarms has also been good and operator feedback has been effectively used to improve procedure quality and usability. A major revision of the Residual Heat Removal system operating procedure and revisions to numerous surveillance and alarm response procedures resulted from operator feedback. Technical Specification interpretations by licensed personnel have been accurate throughout this assessment period.

Formality in the control room has been enhanced during this assessment period. Interactions between plant staff and startup personnel are currently on a more professional level than previously noted and effective use of two Day Watch Engineers in interfacing with support staff has reduced traffic in the control room. Improvements made to the Control Room decorum have been particularly effective in reducing traffic in the Controls Area and reducing distractions to the licensed operators. These initiatives included movement of plant drawings from the Controls Area to a backpanel area, restructuring the process by which work authorization paperwork is processed, and placement of a first line supervisor directly in the Controls Area.

Staffing levels of licensed and non-licensed operators increased during this rating period as the licensee continued to hire and train operators. Although there was some attrition in the non-licensed area, these losses were offset by individuals who had recently completed the required training programs. Additional licensed personnel became available through the completion of a license class in January when all ten candidates who underwent NRC license examination were successful and received their licenses. As noted elsewhere in this



assessment report, performance of these individuals during the NRC licensing process was found to be exceptional, with no outstanding generic weaknesses noted. The licensee plans to complete two replacement licensing classes during the next year. These actions demonstrate a commitment on the part of licensee management to maintain the current staffing level of five licensed personnel on each of six shifts in the foreseeable future. It is also significant to note that although Shoreham Technical Specifications do not require five licensed personnel on shift during shutdown conditions, the licensee has made a practice of maintaining a full complement of licensed personnel on shift regardless of the mode of operation. This factor coupled with the recent acquisition of a site specific simulator facility contribute greatly to the operational readiness of the licensed staff despite prolonged periods of cold shutdown.

While the plant was not operated at greater than 5 percent power, operations continued for approximately seven weeks total over two separate occasions. Plant activities at low power included all phases of operation up to rated reactor pressure and temperature conditions along with the completion of various system startup tests. Additionally, on two occasions during the assessment period, the main generator was placed on line supplying power to the Long Island Grid.

Reactor operations at low power for extended periods of time can be demanding, from an operational standpoint, providing substantial opportunity to assess operating performance and capabilities. This is due in part, to the fact that many of the automatic control features available at higher power levels are either unavailable or in undesirable ranges or conditions while at low power.

Plant operations during these periods were consistently conducted by the operations staff in a highly proficient manner resulting in no inadvertent trips or significant operational problems. Equipment problems with feedwater pumps, Automatic Depressurization System valves and the main turbine which required relatively prompt response were all handled in a prompt and prudent manner which resulted in continued plant operations uninterrupted by forced or automatic shutdowns.

The quality of LERs submitted during this assessment period has been evaluated by the NRC and the results indicate that overall LER quality has improved and is above the industry standard. The quality of text discussions concerning root cause, safety consequences, personnel error, and operator actions has improved over previous evaluations. While the quality of the text discussions improved substantially, the quality of the abstracts remained virtually unchanged. The primary weakness in the abstracts is that the causal analysis and corrective action information are not being adequately summarized.

Quality Assurance organization activities in the operations areas have included routine performance based audits of operator performance, monitoring of startup tests and reviews of the test results.

In conclusion, during this assessment period, which involved limited operational activities, management involvement has been extensive and effective in improving quality of Plant Operations and Startup Testing. Overall performance has improved. Management involvement in the startup program was evident throughout the period. Senior management presence in the Control Room during major evolutions has been a positive influence on Control Room formality and demonstrates a commitment on the part of the licensee to ensuring senior management involvement in plant operations and testing.

Rating: Category 1

While the operations area was rated as Category I, NRC as a matter of policy will not reduce inspection effort in this area because of the unique licensing status of Shoreham.

B. Radiological Controls (299 Hours, 8.4%)

Analysis

In the previous assessment period, the licensee conducted an effective radiation safety program with a fully qualified staff. Minor weaknesses were observed in regards to the control of beta radiation exposures, ensuring that the staff was aware of all significant procedure changes, and oversight of radwaste shipping activities. However, as a result of serious weakness in the licensee's chemistry and radiochemistry programs, particularly in the areas of staffing, qualification and laboratory QC, the licensee received an overall SALP category 3 rating in this area.

During the current assessment period, the licensee made substantial effort to understand and effectively address deficiencies in program performance. This assessment is based upon observations of ongoing plant activities and evaluations of programs. Since radiological conditions were limited, this assessment emphasized programmatic and operational readiness considerations, rather than demonstrated implementation of radiological controls. While not significantly challenged operationally, a meaningful evaluation is possible based upon observed activities such as source replacement and controls in place.

Occupational Radiation Safety

During the assessment period there were three detailed radiation protection specialist inspections. Areas reviewed included audits, internal and external dosimetry, staffing, ALARA, training, routine surveys and recordkeeping. The resident inspectors also routinely reviewed selected program areas. No violations were identified. There were five minor radiological Licensee Event Reports (LER) all attributable to errors by technicians: four instances involved failure to take acceptable samples and one instance involved failure to make periodic neutron source leak checks. These events were of minimal safety significance and to a large extent reflected the development of the staff in gaining experience with operating conditions and requirements.

The radiation protection program has not yet faced significant operational challenges, since plant operation has been minimal and limited to 5% power. However, management has continued in efforts to achieve excellence and prepare for full power operation. In addition to upgrading supervisory oversight of the radiation protection program, reviews conducted by the Quality Assurance organization have stressed performance assessment. In-depth and comprehensive audits by knowledgeable personnel were completed of the ALARA, training and radwaste

areas. The reports of these audits identified to licensee management other performance weaknesses and areas deserving improvement, initiating an additional round of corrective actions and performance enhancements. Weak areas were subsequently reaudited at 6 month intervals until management was satisfied with the performance of the radiation protection program.

The Quality Control department has also developed a series of checklists for review of routine radiation control activities. Teams consisting of knowledgeable and experienced QC and radiation protection personnel conduct weekly checks of routine activities using these checklists. Discrepancies are transmitted to management and formally tracked until findings are completely resolved.

Management response to these findings, as well as those identified by the NRC, has been excellent. The technically sound resolution of the issues indicates a good understanding and technical competence of the staff.

The radiation protection department remains fully staffed with highly experienced contractors used for certain supervisory positions. Required procedures are fully developed with extensive detail and instructions, providing valuable aids to minimally experienced staff. To buildup staff experience, technicians and supervisors are sent to other facilities to participate in outages at operating stations. The licensee's commitment to training is substantial as evidenced by the construction of a large modern training center. Of particular note, the inplant laboratories and radiation protection equipment are duplicated in the training center laboratories.

Minor weaknesses were observed by NRC during routine activities attributable to lack of technician field experience during the extended licensing delays. Workers did not always receive adequate briefing regarding the Radiation Work Permit (RWP). The Whole Body Counter (WBC) operator did not maintain charts to trend equipment performance. Pumps used for air sampling were inadequately calibrated at low flow rates. Maps used to record routine radiation survey data were confusing and inconsistent. Exposure records did not have provisions to record multiple special dosimetry. In each case, the licensee took prompt and effective action to resolve these issues during the assessment period. In addition, excellent radiation protection program performance was noted in regards to the maintenance of instruments and use of automated systems and computers for processing TLD Dosimetry.

Licensee initiatives in the ALARA area have corrected previously identified weaknesses. The ALARA program policies are particularly good with followup provided by a competent corporate staff of radiological engineers. Of note, various plant equipment changes were made to minimize buildup of future radiation exposures; including elimination of crud traps, reduction of stellited surfaces and enhanced equipment reliability and maintainability.

### Chemistry and Radiochemistry

There was one special team inspection of the licensee's radiological and nonradiological chemistry programs during the assessment period. The inspection examined organization and management, technician training and qualification, radioactive effluent control program, and nonradiological water chemistry. The findings indicated that the licensee has made significant organization and management changes to address identified problems. Aggressive recruitment resulted in almost complete staffing of the chemistry department management and professional positions by licensee personnel. This can be compared to the previous assessment period when approximately 40% of the chemistry staff were contractor employees. In addition, a Radiochemistry Improvement Task Force was formed which reports directly to the plant manager. The organizational changes as well as the recruitment actions demonstrate management involvement in correcting previously identified deficiencies in the chemistry program.

Training and qualification of chemistry technicians, a central area of inadequate performance during the previous assessment period, also improved during the assessment period. The licensee has initiated an aggressive and effective program, conducted by the Radiochemistry Improvement Task Force, to requalify all chemistry technicians.

The licensee has also improved their nonradiological water chemistry program. In the area of laboratory quality assurance, the licensee is now using two independent standard solutions (instead of one) for calibration and measurement control in order to cross-check and verify the integrity of the standard solutions. Draft procedures have been generated for quality control (QC) in the nonradiological and radiological laboratories which show significant improvement over past QC practices. They are also revising appropriate analytical procedures to include a statistical curve fitting method for calibration.

The licensee has implemented an effective radioactive effluent control program. All Technical Specification limits for sampling, analysis, use of radioactive waste treatment systems, and reporting are being met. The implementation of the laboratory QA/QC program, particularly as it relates to measuring radioactivity in effluents, has improved as a result of management attention to this area. All licensee analytical results of spiked NRC radioactivity standards, submitted to the licensee for analysis, were found to be in agreement with expected values. Because of the low source term present, it should be noted that this area has also not been fully challenged.

Conclusion

In conclusion, the licensee implemented an effective radiation protection program and substantially corrected all previous concerns for the past deficiencies in their chemistry program. This outcome has been the direct result of significant senior management involvement in oversight, problem discovery and corrective actions. It is clear that programmatic changes have been implemented to correct deficiencies in the training, qualification and staffing in the chemistry area. The positive contribution of aggressive and knowledgeable quality assurance and quality control staffs, to the enhancement of this program area, is clearly evident. Although the functional area was not significantly challenged by plant operations during the assessment period, levels of planning, preparation, staff and program development were those of a plant ready for operation. Performance observed and assessed during this period indicates that site radiological, effluent control and chemistry programs have the capability to support plant operations. Management efforts should continue to ensure programmatic improvements remain effective.

Rating: 1

While the radiological controls area was rated as a Category I in performance, NRC as a matter of policy will not reduce the inspection effort in this area due to the unique licensing status of Shoreham.



C. Maintenance (528 Hours, 14.8%)

Analysis

This area was rated category 2 during the previous assessment period. No major concerns were identified during that assessment period and the maintenance programs were judged to be performing well.

A number of initiatives were undertaken to address areas of concern identified in the previous assessment period. These initiatives have been successful with one exception, the amount of time spent in the field by first-line maintenance supervisors. Preparation of work packages is currently the responsibility of the appropriate first-line supervisor. Although job planning has been complete and accurate, placing this planning workload upon the first-line supervisors reduces the time spent in the field. A symptom of this lack of field supervision has been noted in the area of post-maintenance house-keeping. Instances have been noted when work areas have not been returned to their original condition upon completion of maintenance activities. Tools and loose debris have been left behind at job sites, and scaffolding has not always been removed when work was complete. This may be attributed to a lack of attention to detail on the part of first-line supervision and is an area of weakness that warrants additional management attention. It should be noted that although this problem has not been a deterrent to quality workmanship, increases in maintenance workloads will further decrease direct supervision and could result in more significant manifestations.

The large backlog of evaluations needed to address industry problem notifications was an area of concern in the previous SALP assessment. The licensee has instituted an aggressive program to reduce this backlog as evidenced by a steadily decreasing number of items awaiting resolution. Currently there are no items awaiting disposition which are greater than sixty days old.

Implementation of a Material Management Information System and other enhancements to the material control program has improved the availability and retrievability of spare parts. This previous area of concern appears to be functioning well and the licensee is continuing to make improvements in this area.

The well controlled maintenance program has produced quality work during this assessment period. Program challenges have been met by maintenance personnel as demonstrated by the absence of equipment deficiencies and no backlog of safety related maintenance. Maintenance supervision demonstrated effective work planning, responded capably to contingencies, and maintained a well trained and staffed organization.

Upper management scheduling has been a strength during this assessment period. Schedules have been well conceived and realistic in goals. In very few cases were schedules not met due to problems internal to the Maintenance Division.

Significant demands for maintenance were met during the neutron source replacement outage and during major equipment repairs such as: overhaul of "D" RHR pump, inspection and repair of the RHR heat exchangers, circulating water pump overhauls, and emergency diesel generator disassembly for inspection.

Craft training programs have been submitted to INPO for accreditation during this assessment period. Completion of the new Corporate Training Center has made available a valuable training tool. In addition to formal classroom and on the job training provided by the licensee, laboratories and mock-ups are available at the training center. Also, vendors are used to provide specialized training, when necessary, as part of the craft training program. The licensee ultimately intends to implement a full scope training program whereby individuals with little or no experience will start as apprentices and proceed through the journeyman level. This demonstrates a commitment on the part of the licensee to maintain a qualified work force. The current level of knowledge and abilities of craft personnel has been good. Evidence of this has been shown by a lack LER's resulting from craft personnel error and minimal rework items caused by inadequate craft skills or technician errors.

In conclusion, maintenance programs during this period were performed in a manner which provided excellent equipment availability for the limited plant operation. Safety related work was properly prioritized and planned and no instances of improper maintenance were identified which caused equipment or system inoperability. Quality Assurance Division was involved in all safety related activities and Engineering support of maintenance was good. Efficient use of craft personnel by management resulted in an adequately implemented maintenance program. Further management attention should be directed to ensuring adequate first-line field supervision; housekeeping and job followup problems have been noted and increases in maintenance workload can exacerbate these problems.

Rating: Category 2, Improving



D. Surveillance (509 Hours, 14.2%)

Analysis

This area was rated a category 2 during the previous assessment period. Personnel errors resulting in challenges to ESF systems were noted as a weakness. The board recommended increased management attention to correcting this deficiency.

Surveillance activities during this assessment period involved normal Technical Specification surveillances, weekly and monthly, and also included a large number of eighteen month surveillances that were necessary to support plant operating cycles.

Management oversight of surveillance programs has been evident throughout the period. Surveillances required prior to mode changes remained highly visible through scheduling meetings which were always attended by plant management. The Review of Operations Committee meetings reviewed all surveillance procedure changes prior to implementation and performed these reviews in a timely manner.

The major eighteen month surveillances were performed prior to August 1986 startup. Conduct of these surveillances generally was performed without difficulty; however, a number of procedural revisions were necessary during the performance of various tests. Procedural changes were developed, reviewed and approved in a timely manner and were not a major factor during the performance of these tests. Major testing conducted to return EDG 103 to service after the second phase of the Colt Diesel Generator Tie-In was successfully completed without incident.

Challenges to ESF equipment due to routine surveillance activities have decreased significantly since the last assessment period (down from 24 LERs in the last assessment period to 12 in this period). The reduction can be generally attributed to increased attention to detail on the part of the technicians performing the surveillances and increased emphasis placed on quality workmanship. Challenges to equipment during performance of surveillances on Reactor Building Standby Ventilation/Control Room Air Conditioning (RBSV/CRAC) and Reactor Building Closed Loop Cooling Water (RBCLCW) have occurred at a relatively high rate with nine LERs during this period. This high number of challenges can be attributed to a number of causes; procedural deficiencies, technician error, and design deficiencies. While licensee awareness of this problem is apparent, progress to implement effective solutions has been slow.

Overall surveillance program activities have been conducted in an effective manner. Quality Assurance activities in support of surveillance has been extensive, including program review, direct observation of work and results review. The containment integrated leak rate test was highly successful, passing in the as-found condition. Generally, the surveillance program is highly successful. However, the licensee failure to promptly correct identified problems in specific areas such as RBSV/CRAC and RBCLCW continues to be a weakness.

Rating: Category 2

E. Engineering and Corporate Technical Support (186 Hours, 5.2%)

Analysis

This area has not been rated in previous assessments. During this assessment period the inspectors reviewed the plant modification and design change process and assessed the quality of engineering support for plant operations, maintenance, QA and training.

Licensee management is dedicated to maintaining timely and effective engineering support. The Nuclear Engineering Department (NED) reporting directly to the Vice President, Nuclear Operation is responsible for providing technical and engineering support as requested for all aspects of the nuclear plant. NED responsibilities are clearly established in the department procedures. NED is located at the facility which enhances communications and coordination with plant staff.

The Nuclear Engineering Department staffing is almost at full complement with an average nuclear experience of 9.6 years. The licensee is actively recruiting qualified personnel to fill existing vacancies. The licensee maintains a pool of dedicated engineering personnel to assist Shoreham site at the Office of Engineering at Melville, New York and at its Architect-Engineer. Additionally, six NED engineers are on call to provide around-the-clock coverage at the plant. These on-call engineers provided good support coverage during the plant evolutions and transients. Thus, the licensee management has provided a complement of well qualified and trained engineers to provide timely and effective support to the plant.

To ensure continued high level of engineering support to the plant, the licensee committed in the USAR to implement an Interim Station Modification Program using the Services of the Architect-Engineer (A/E). This program has been implemented effectively and will continue through the first refueling outage. During the Interim Program, the A/E retains verification authority for safety related design, maintains the design bases for the facility and provides assistance for engineering support to the plant.

The licensee has developed a Technology Transfer Program to assure effective transfer of engineering and design responsibility from the A/E. This program is well on its way to completion. Towards the end of this SALP period about one third of the Work Packages and one fourth of the documents were transferred. Engineering personnel have been hired and trained and implementing procedures were being written. The licensee was independently performing about fifty percent of the facility design changes. This is another example of licensee management support to engineering activities at the site.

An effective use of probabilistic risk assessment (PRA) techniques was evident at the site. The licensee recognized the importance of PRA in the design process and initiated a study in 1981. The engineering insights gained from the use of PRA have already been applied to emergency procedure development, training, containment design and detailed system design. PRA techniques were used to support licensee's request to the NRC dated April 14, 1987 for authorization to increase power to 25% at the station, to independently verify the results of the Independent Plant Evaluation (IPE), and to analyze the performance of the licensee's supplemental containment design. PRA techniques were effectively used to justify (1) the use of 90% enriched Boron-10 in the Standby Liquid Control System, (2) raising the Reactor Core Isolation Cooling (RCIC) System trip set point, and (3) comparison of risks associated with various emergency diesels and others. A good understanding of PRA application in design was evident among engineering, maintenance and operating personnel. The recommendations resulting from PRA were implemented, with good management and staff support.

The licensee has established an effective Engineering Assurance Division (EA). EA monitors routinely the work performed under the Interim Station Modification Program, work performed to support such license related activities as plant Technical Specification related set point development, license proceedings, 10 CFR 50.59 safety evaluations, 10 CFR 21 evaluations, equipment qualifications, fire protection, security and emergency planning.

A satisfactory assessment by EA is required before any division assumes design responsibility from the A/E. EA's assessments appear effective in identifying problem areas and corrective actions. EA's assessment of the Instrument and Control Section's readiness to assume design responsibility identified a lack of clear interfaces with other organizations, absence of a permanent section head, and a lack of backup engineers. In another assessment of the Engineering Mechanics Section's readiness to assume design responsibility, EA identified that the concern of combustion in the off gas system was not discussed by the A/E. The satisfactory solution to these problems has demonstrated EA's effectiveness. The licensee has established a Reliability Group within the QA Department which is functioning effectively. For example, reliability analyses were developed for the Low Pressure Coolant Injection System, Reactor Water Cleanup System, Control Rod Drive System, and the Standby Liquid Control System. The reports were well received by the organizations requesting the study.

The licensee has established the Independent Safety Engineering Group (ISEG) required by Technical Specifications, as a dedicated full time organization within the QA organization. The ISEG is staffed with qualified personnel. This dedicated staff may be augmented, on an as needed basis, by borrowing personnel from other licensee organizations or contractors. The ISEG routinely examines plant operating characteristics and industry and NRC issues. ISEG evaluations of HPCI check valve failures, response time of scram instrument volume level detectors, Radiation Monitoring System, and improper installation of heat shrinkable tubing were well planned with clear statements of purpose and work scope. The final reports contained details of the methodology, a discussion of the concern and available solutions, good discussions of the findings, conclusions, and observations. Specific recommendations were also provided in the report when appropriate. Open items resulting from the ISEG reviews are tracked by the group to closure. The ISEG is functioning effectively in accordance with its charter and the Technical Specification requirements.

During this assessment period problems were identified in the follow up actions for NRC Information Notice 86-03 to address concerns regarding Limitorque Motor Operated Valves. These actions were slow and not geared to identify all deficiencies. As noted in section D of this assessment, procedural and design deficiencies have contributed to repeated ESF actuations during surveillances. Although the frequency of these actuations has decreased during this assessment period, they continue to occur. Further, these types of actuations will likely persist until system hardware modifications are completed. Engineering evaluation required to implement these modifications has been slow. Additionally, an erroneous assumption incorporated into a modification procedure resulted in an isolation of the Station Reserve Transformer and a loss of offsite power.

In summary, the licensee has established a strong engineering support organization to provide effective support to site organizations. The Interim Station Modification Program is functioning well as evidenced by the support from operations, maintenance, QA, training and other site organizations. Communications and interactions with plant staff have been effective. The quality and timeliness of designs and engineering support are steadily improving; however, improvement efforts should be concentrated in this area. Continued licensee attention is required to assure effective engineering support during full power operation of the facility.

Rating: Category 2

F. Emergency Preparedness (116 Hours, 3.3%)

Analysis

During the previous assessment period, the licensee performance in this area was rated Category 1 (consistent), based upon performance during the first annual exercise, and a high degree of management involvement in emergency preparedness as evidenced by responsiveness to identifying and correcting program deficiencies, and in response to actual emergencies.

During the current assessment period, two routine safety inspections were conducted, and changes to emergency plans and procedures were reviewed. The two routine safety inspections performed in February and June, 1987, related to new emergency response facilities and follow up of corrective actions taken as a result of previous inspections and maintenance of the emergency preparedness program.

During the assessment period, the licensee completed the construction of an Emergency Operations Facility (EOF) and Emergency News Center (ENC). These facilities are large, well equipped, and designed to enhance the effectiveness of personnel utilizing them.

The licensee has been responsive to NRC initiatives as evidenced by the training of all Watch Supervisors in the duties of Emergency Director. The drill program tests each emergency team every quarter. Additionally, the drill and training program is structured to enhance personnel effectiveness during different types of events, such as sabotage or other security events and events that develop quickly, and to test the on-shift operating crews prior to activation of the emergency response facilities.

The licensee has reacted quickly and correctly to several events during the assessment period, most notably threats against the station. Assessment actions, notifications, and communications have been proper and conservative. Actions taken were with due regard to safety. Problems encountered were analyzed and prompt corrective actions taken to prevent recurrence. During the Loss of Offsite Power event, notifications were found to be less timely than during previous events. Although the licensee completed these notifications within the required time, corrective actions were implemented to improve the notification process following complex plant transients. This demonstrates a continued commitment on the part of the licensee to self-assess its potential faults and implement corrective actions without regulatory prompting.

In summary, the licensee continues to exhibit the qualities necessary to ensure excellence in their emergency preparedness program. Training of all levels of personnel is extensive. Programs and facilities are continually analyzed and upgraded as appropriate to maintain a high level of preparedness. It is evident that the high degree of management attention and commitment to emergency preparedness has resulted in a high degree of performance in all areas of the onsite organization.

Rating: Category 1

While the emergency preparedness area was rated Category I, NRC inspection efforts will not be reduced in this area due to the unique licensing status of Shoreham.



G. Security and Safeguards (104 Hours, 2.9%)

Analysis

During the previous SALP period, the licensee was found to be implementing an effective program and received a Category 1 rating. Specific strengths were identified by audits and self appraisals that resulted in improvements and enhancements, prompt and effective response to events, and an effective training program. A minor problem with clerical support for the program was identified. No violations were identified.

During the current assessment period, three unannounced routine physical security program inspections were performed by region based inspectors. Routine inspections were conducted throughout the assessment period. One Severity Level IV violation was identified. The violation was not indicative of programmatic problems.

The licensee's involvement in support for and oversight of the security program remained evident and resulted in highly effective program implementation. Management oversight of the contract security force provided the licensee with the necessary and current knowledge of program implementation to preclude significant problems. The licensee continued to utilize its audit and appraisal programs to indicate areas where changes would benefit program implementation. Program improvements and enhancements are evident in systems operations and reliability, testing and maintenance, and facilities.

The licensee initiated the inclusion of safeguards contingency events in its emergency preparedness exercises in December 1986. Two such exercises have been conducted since, requiring the active participation of both the security and the operations organizations for their execution and successful completion. The licensee found those exercises very effective in surfacing organizational interface problems that had previously been overlooked. The licensee is also active in industry organizations formed to enhance nuclear power plant security and to discuss issues of mutual interest. These initiatives are evidence of the licensee's interest in developing and maintaining an effective security program.

Program implementing procedures and instructions were updated and improved, as necessary, to provide the security force with current, clear and concise directions in carrying out its duties. The effectiveness of the procedures and instructions, and also the training program, which is administered by the security force contractor, is apparent by the relatively small number of personnel errors identified during the period.



Both the licensee's and the contractor's staffing levels for the program are appropriate to ensure proper program implementation. The minor problem with clerical support, which was identified in the previous assessment period, has been corrected. All members of the security organization appear to be well qualified and exhibit high morale and a professional demeanor. Additionally, the turnover rate in the force is relatively low, which is indicative of a well run organization and job satisfaction.

There were five events that required reporting in accordance with 10 CFR 73.71 during the assessment period. Three of the events involved bomb threats, one event involved a computer failure, and one involved the degradation of a vital area barrier. The response by the security force to each of the events was prompt and appropriate for the circumstances, indicating a well disciplined and knowledgeable organization and an effective program. The event reports submitted to the NRC were clear, concise and adequate for NRC analysis. The quality of the event reports is indicative of thorough management review.

Three incidents involving security guards sleeping on duty occurred late in the assessment period. The licensee aggressively implemented corrective actions to prevent future occurrences. These included new disciplinary rules along with staffing changes intended to enhance the first-line supervision of the security guard force.

During the assessment period, the licensee submitted four revisions to the Security Plan under the provisions of 10 CFR 50.54(p) and provided its response to the August 4, 1986 Miscellaneous Amendments to 10 CFR 73.55 codified by the NRC. The plan changes were of high quality and indicative of management's continuing oversight of the program to ensure it is consistent with NRC performance objectives and to achieve consistency. Security personnel involved in maintaining plans current and consistent with NRC objectives are knowledgeable of NRC requirements.

In summary, the licensee has sustained a high level of performance during this assessment period. Minor problems occurred, but were promptly corrected effective with actions to prevent recurrence. It is evident by this performance that the licensee is determined to implement and maintain a high quality security program.

Rating: Category I

While the security area was graded as Category I, the inspection effort will not be reduced in this area due to the unique licensing status of Shoreham.

H. Training and Qualification Effectiveness (586 Hours, 16.5%)

Analysis

The various aspects of this functional area have been considered and discussed as an integral part of the other functional areas and the respective inspection hours have been included in each one. Consequently, this discussion is a synopsis of the assessments related to training conducted in other areas. Training effectiveness has been measured primarily by the observed performance of licensee personnel and, to a lesser degree, as a review of program adequacy. A special team inspection to evaluate training and qualification programs was completed late in the assessment period. This discussion addresses three principal areas: licensed operator training, non-licensed staff training, and the status of INPO training accreditation.

During the previous assessment period, training and qualification effectiveness was considered as a separate functional area for the first time and rated Category 3. The previous assessment was highly critical of the licensee's training program in the area on non-licensed personnel training, and direct management attention to improve this area was recommended by the Board. The current assessment is based on resident and specialist inspector observations, as well as two specific inspections into the training area.

Initiatives by the licensee to improve training effectiveness within this assessment period were extensive. Weaknesses identified in the previous assessment period have been largely addressed as the formation of the Office of Training has evolved. Record keeping deficiencies have been corrected, formal training for non-licensed personnel is now conducted primarily by Office of Training staff, and the reliance on plant staff for training activities other than on the job training has been greatly reduced. The development and implementation of formal, structured training courses for Chemistry Technicians, Health Physics Technician and non-licensed operators has been completed and appears to be effective.

Efforts to increase staffing levels within the Office of Training have generally been successful, plant staff department head involvement in training plan development and implementation is very good and overall program implementation is now uniform in all facility divisions.

Completion of the corporate training center and procurement of a plant specific simulator were both accomplished during this assessment period and are indicative of corporate commitment to a quality training program. Completion of the transfer of training records onto a computer tracking system will enhance the quality and availability of those records.

The number of reportable events attributed to personnel error is down significantly when compared to the previous assessment period, especially in the operations, maintenance, and surveillance areas. This reduction may be attributed to increased management attention and increased training effectiveness. Improvement in the performance of Control Room personnel can be attributed to an effective requalification training program which stresses "lessons learned" from previous events.

Use of the Quality Assurance department to monitor training has been particularly effective in identifying problems and effecting changes. Training of auditors and inspectors from the QA/QC department was extensive and has been particularly effective. The increased level of knowledge in the QA department has led to an increased number of technically significant findings and better acceptance of QA findings by plant staff.

During this assessment period the NRC administered one set of license examinations with five candidates participating in the RO exam and five candidates participating in the SRO exam. All candidates were successful in their attempts and were especially proficient in the use of plant drawings and Technical Specifications. The success of the plant staff in this area indicates that the licensed operator training program is performing well.

INPO accreditation of Shoreham training programs continued through the assessment period. Development and implementation of training programs are in varying stages of completion. The licensee has submitted, and INPO has accepted, Self Evaluation Reports (SER) for several of the training programs. An INPO Accreditation Team Visit is scheduled early in the next assessment period (October 26 - 30, 1987).

In summary, senior management involvement in resolving training deficiencies identified in the previous assessment period have yielded positive results. Training programs appear to be effectively implemented at all levels and positive results can be seen in the reduced number of LERs and personnel errors. Full implementation of all training programs is still in a transitional status. As such, an accurate assessment of the effectiveness of these programs cannot be made until this transitional period is complete. The commitment to quality training on the part of senior management should continue to provide improved staff performance.

Rating: Category 2, Improving

## I. Licensing

### Analysis

For the previous assessments period, this area was rated Category 3. It was noted that the licensee's analysis accompanying its requests for license amendments were perfunctory and with a minimal amount of bases. It was also noted that the licensee's responsiveness was slow on issues not on the critical path for full-power licensing. Those concerns were attributed to two fundamental causes. First, the licensee had an overly cautious attitude about formal submittals to the NRC because of the atmosphere of litigation that surrounds this project. A second cause appeared to be understaffing in the licensee's licensing organization. Since the beginning of this evaluation period, the licensee has taken aggressive actions for improvement. Although the atmosphere of litigation has not abated, the corrective actions taken by the licensee's senior management produced notable improvements in the area of licensing activities.

During this SALP evaluation period, the licensee performed two rounds of low power testing. The reactor was critical for a total period of about seven weeks. Except for issues related to emergency planning, all pre-full-power licensing issues have been resolved. During this period, two important issues; compliance with Appendix R and the Anticipated Transient Without Scram Rule were reviewed and approved by the NRC. On April 14, 1987, the licensee submitted a request before the Commission for authorization to operate Shoreham at 25% power. The request was accompanied by an extensive analysis on severe accidents at 25% power level and the demands on emergency planning under those circumstances. Although the NRR technical review was subsequently suspended, the licensee's interaction with the NRR staff during the review demonstrated that its staff has significant technical capability and a thorough understanding of the Shoreham plant and its safety systems.

Management involvement in the licensing area has been extensive. Progress in licensing activities was not inhibited by the effort necessary to support two Licensing Board hearings related to emergency planning contentions. The Licensing Division management met with the NRR Project Manager and technical reviewers on a regular basis to discuss the status and progress in the resolution of open licensing actions. These meetings were often attended by representatives from intervenor groups. In these meetings the discussions were open, non-inhibitive, and extremely productive. In addition, the licensee's Licensing Division issued weekly summary reports and held scheduled weekly briefings with the licensee's technical department managers. This close coordination enabled the licensee to substantially improve the quality of analysis that accompanied the submittals for licensing actions. In general, these submittals were timely, thorough and of high technical quality.

The licensee's responses to address safety issues continued to be technically sound. During this SALP evaluation period, the NRR staff completed its review of the outstanding fire protection issues related to the control of the Automatic Depressurization System and the controls of high-low pressure systems interfaces in the event of a severe fire in the Control Room. The approach by the licensee to resolve these issues showed a clear understanding of the plant systems and the analyses were realistic and yet allowed for substantial safety margins to exist. There were, however, some cases where the licensee's initial submittals appeared to be superficial and required additional information to enable the NRC staff to complete their review. Two of those cases were issues related to quantification of post-accident effluents and the surveillance requirements of the Reactor Coolant System Leakage Detection Systems. However, it should be noted that those two issues were initiated prior to this SALP evaluation period and do not fully reflect the recent efforts for improvements.

The licensee made good progress in responding to NRC initiated actions. The much improved capability of the Standby Liquid Control System, the change of the Main System Isolation Valve set-point and the improved reliability of Alternate Rod Insertion are some examples of these accomplishments. In addition, the licensee has initiated the conceptual design of a filtered containment vent for enhancement of containment integrity in the event of a severe accident. The staff's initiatives for containment enhancement were primarily directed at Mark I containments and the licensee recognizes that a number of areas the staff has suggested for possible improvements were already satisfied by the Shoreham Mark II containment configuration. The licensee's commitment to this major effort demonstrates its willingness to exceed the minimum regulatory requirement in responding to NRC's initiatives to enhance safety.

During the previous SALP evaluation period, the licensee appeared to be overly cautious in its interactions with the staff because of ongoing litigations; this resulted in ambiguities and delays. The licensee has since made substantial progress to be more direct and responsive. This was demonstrated during the discussions the NRC staff had with the licensee on the analysis related to the 25% power request.

During the period the licensee has increased staff to strengthen its Licensing Division staff. The Licensing Division is staffed with personnel who are technically competent and knowledgeable about the Shoreham facility. The group does an outstanding job in coordinating the efforts required from other technical departments. As a result, licensing activities were timely and of high technical quality. Considering the increased workload for the 25% power request and the licensee's ability to cope with it, it appears that the Licensing Division is adequately staffed for operations exceeding the present 5% power level.

In summary, the licensee has made substantial improvement in licensing activities. This resulted from a number of factors; intense involvement by the management, strengths in its technical capability, effectiveness of its licensing group and improvements in its training programs.

Rating: Category 1



## J. Assurance of Quality

### Analysis

Management involvement and control in assuring quality was initially considered as a separate functional area in the previous SALP, in addition to being one of the evaluation criteria in the other functional areas. The various aspects of Quality Assurance program requirements have been considered and discussed as an integral part of each functional area and the respective inspection hours are included in each area. This discussion is therefore a synopsis of the assessments relating to quality work conducted in all areas but it is not solely an assessment of the QA/QC Division. The previous SALP Assessment rating in this area was a Category 2 with a declining trend. A declining trend in this functional area can be a precursor to an overall decline in plant performance and therefore places additional emphasis on NRC assessment efforts in this area. In assessing how the licensee assures quality, the attributes considered are implementation of management goals, planning and control of routine activities, worker enthusiasm and attitudes, management involvement, staffing, training, and the use of QA/QC as a management tool.

Throughout this assessment period, there has been evidence that the work in the facility was performed to high quality standards at the operator-technician-mechanic level. This high quality work can be directly attributed to a positive attitude on the part of the first-line personnel, the quality of training they have received, a strong QC presence at the individual job level and increased management involvement and presence in the day-to-day activities of the plant.

Quality Assurance involvement in plant activities has been extensive throughout this assessment. The coverage typically consists of hold points on all safety related work requests, and physical coverage is given to items such as terminations, closure of mechanical components and paperwork reviews. In addition to safety related coverage, a greater percentage of important nonsafety related items are receiving QA/QC coverage. The QA/QC Department also conducted 46 performance based audits during the assessment period expending 15,330 man hours. The audits were conducted in all plant areas and audit findings were effectively used to improve plant programs. Auditor performance has been enhanced by increased training initiatives by QA/QC management personnel. Training programs for QA/QC personnel were greatly expanded during this assessment period and now include simulator training and visits to other sites.

Facility response to QA and Nuclear Review Board Audit findings and QC deficiency reports had been previously identified as an area lacking sufficient management attention. This area has received extensive senior management attention during this assessment period and, as a result, there has been a significant reduction in the number of overdue responses. Improvement in the format of the QA/QC monthly report has made it a valuable tool for plant management in assuring that responses are made by the appropriate division managers has focused additional management awareness on QA/QC findings and has improved facility response to identified problems.

The facility Review of Operations Committee (ROC) was convened on 179 occasions and the Nuclear Review Board (NRB) was convened on 11 occasions during this assessment period. Both have been instrumental in maintaining plant safety as a priority. Reviews of station modifications and procedure changes by ROC have been thorough and conducted with safety impact in mind. NRB commissioned 18 audits during the assessment period and the results were valuable in assessing licensee program effectiveness.

Development of a Quality Assurance Hotline by which employees can voice concerns anonymously to the QA division has opened another line of communication between plant staff and upper management. The hotline surfaced one valid safety concern regarding installed mechanical jumpers which was quickly resolved by plant management. Another initiative that upper management has taken to assure quality was the formation of an Operational Assessment Group which analyses plant performance and reports findings to the Vice President, Nuclear Operations.

Management actions in response to SALP comments have been extensive and timely. Tracking of commitments was a function of the Nuclear Review Board and progress toward resolution of these issues was an agenda item at every NRB meeting. This closely watched agenda insured that extensive management attention was given to noted areas of weakness.

In conclusion, the quality programs in effect at Shoreham have included QA/QC, NRB and ROC committees, ISEG and effective first line supervision of all disciplines. Senior management involvement in improving staff awareness of the importance attention to detail in improvement of quality has yielded positive results. The overall result has been an increase in manning levels, and decreases in Licensee Event Reports, ESF actuations, and personnel errors.

Rating: Category 1

While the assurance of quality area was rated as Category I, inspection efforts will not be reduced due to the unique status of the Shoreham facility.



V. Supporting Data and Summaries

A. Investigation and Allegation Review

During this SALP assessment period nine allegations were received and evaluated. Two licensee employee drug use allegations were received; however, these allegations were unsubstantiated due in part to a lack of cooperation on the part of the allegers and have been closed. Two allegations concerning questionable practices in the warehousing area were received; one of these resulted in a specialist inspection which discovered no instances of noncompliance with NRC requirements and has been closed; the other is under review at this time and remains open. Three concerns alleging falsification of documents were received; two have been investigated, with no evidence of falsification, and closed; one remains open while investigation continues. One allegation was made in both the Radiochemistry and Training and Qualification areas, both have been evaluated, found unsubstantiated, and closed.

During this assessment period the Office of Investigations conducted one investigation into the alleged falsification of documents by members of the Radiochemistry Section. These concerns were originally surfaced during the previous SALP period. NRC action is pending.

B. Escalated Enforcement Actions

There was no escalated enforcement action taken during this assessment period.

C. Management Conferences1. NRR/Licensee Meetings

|                  |          |
|------------------|----------|
| Licensing Status | 08/01/86 |
|                  | 09/04/86 |
|                  | 10/16/86 |
|                  | 11/25/86 |
|                  | 01/13/87 |
|                  | 02/19/87 |
|                  | 04/22/87 |

|                 |          |
|-----------------|----------|
| Fire Protection | 10/02/86 |
|-----------------|----------|

|                            |          |
|----------------------------|----------|
| Control Room Design Review | 11/03/87 |
|----------------------------|----------|

|                            |          |
|----------------------------|----------|
| 25% Power License Proposal | 04/30/87 |
|----------------------------|----------|

|                          |  |
|--------------------------|--|
| Supplemental Containment |  |
|--------------------------|--|

|                          |          |
|--------------------------|----------|
| System Conceptual Design | 07/21/87 |
|--------------------------|----------|

NRR Site Visits/Meetings

|                    |                |
|--------------------|----------------|
| Emergency Planning | 05/29-06/05/86 |
|--------------------|----------------|

|                        |          |
|------------------------|----------|
| Management Discussions | 03/12/87 |
|------------------------|----------|

|                    |                |
|--------------------|----------------|
| 25% Power Proposal | 05/12-05/13/87 |
|--------------------|----------------|

2. Region I/Licensee Meetings

|                         |          |
|-------------------------|----------|
| SALP Management Meeting | 07/29/86 |
|-------------------------|----------|

|  |          |
|--|----------|
| Review of Loss of Offsite Power<br>Event | 04/05/87 |
|--|----------|

D. Licensee Event Reports

1. Tabular Listing

|                        |    |
|------------------------|----|
| a. Personnel Error     | 16 |
| b. Design Management   | 12 |
| c. External            | 5  |
| d. Defective Procedure | 9  |
| e. Component Failure   | 8  |
| f. Other               | 10 |

2. Causal Analysis

Personnel Errors

There were 16 LERs generated this SALP period as a result of personnel errors. This number is a significant improvement over the previous assessment period when 32 LERs resulted from personnel error. Of the 16 personnel errors, 12 resulted in challenges to ESF Systems. The ESF system challenge number is misleading in that over half of those challenges occurred during the performance of work on two systems: Reactor Building Standby Ventilation/Control Room Air Conditioning and Reactor Building Closed Loop Cooling Water. There does not appear to be a common factor which has resulted in the large number of LERs associated with these two systems, but rather a number of factors appear to contribute. Surveillance procedures in these areas are quite complex and require numerous lifted leads and jumpers, access to terminal strips and relays are frequently in areas of limited visibility and accessibility and both systems are highly sensitive.

Radiochemistry and Fire Protection

During this assessment period there were 6 LERs generated as a result of Radiochemistry problems. The majority of these LERs resulted from personnel error, however, it is important to note that no LERs have occurred in this area since the last quarter of 1986. Six LERs can be directly attributed to the Fire Protection activities and, in all cases, directly involved the inability to meet Technical Specification fire watch requirements.

Overall Analysis

The number of LERs in this assessment period, 54, appears on the surface to be indicative of some performance problems, however, assessment of the types and frequency of LERs indicates otherwise. There has been a steady decline in the number of LERs per quarter since the last assessment period. There has also been a significant decrease in LERs when compared to the last rating period: 58 in 12 months for 85-98 versus 54 in 17 months for 86-99. Although there were 54 LERs in assessment period 86-99, 28 of those can be lumped into three discrete areas. Activities on Reactor Building Standby Ventilation System/Control Room Air Conditioning and Reactor Building Closed Loop Cooling Water accounted for 14 LERs, Chemistry LERs totalled 8 and Fire Protection related LERs totalled 6.

The licensee is aware of these problem areas and is attempting to reduce the numbers of LERs by correcting root causes. The licensee has generally addressed the problems associated with activities on the above mentioned systems. No LER's have occurred in the radiochemistry area since the last quarter of 1986. This decrease in LERs can be directly attributed to the aggressive program that was undertaken by licensee management to improve the Radiochemistry program after the last assessment rating of Category 3. The licensee is also making efforts at this time to reduce the number of required firewatches, which should in turn reduce the number of LERS in the fire protection area. Licensee awareness and activities in these areas have significantly reduced the number of LER's in the last six months.

### Overall Analysis

The number of LERs in this assessment period, 60, appears on the surface to be indicative of some performance problems, however, assessment of the types and frequency of LERs indicates otherwise. There has been a steady decline in the number of LERs per quarter since the last assessment period. There has also been a significant decrease in LERs when compared to the last rating period: 58 in 12 months for 85-98 versus 60 in 17 months for 86-99. Although there were 60 LERs in assessment period 86-99, 28 of those can be lumped into three discrete areas. Activities on Reactor Building Standby Ventilation System/Control Room Air Conditioning and Reactor Building Closed Loop Cooling Water accounted for 14 LERs, Chemistry LERs totalled 8 and Fire Protection related LERs totalled 6.

The licensee is aware of these problem areas and is attempting to reduce the numbers of LERs by correcting root causes. The licensee has generally addressed the problems associated with activities on the above mentioned systems. No LER's have occurred in the radiochemistry area since the last quarter of 1986. This decrease in LERs can be directly attributed to the aggressive program that was undertaken by licensee management to improve the Radiochemistry program after the last assessment rating of Category 3. The licensee is also making efforts at this time to reduce the number of required firewatches, which should in turn reduce the number of LERS in the fire protection area. Licensee awareness and activities in these areas have significantly reduced the number of LER's in the last six months.

E. Licensing ActionsLicense Amendments Issued

| <u>Amendment No.</u> | <u>Title</u>                                    | <u>Date</u> |
|----------------------|---|-------------|
| 2                    | Noble Gas Monitoring                            | 03/04/86    |
| 3                    | Process Control Program,<br>Radwaste Management | 11/03/87    |
| 4                    | Radwaste Sampling and<br>Milk Samples           | 12/09/86    |
| 5                    | Main Steam Isolation<br>Valve Setpoint Changes  | 05/04/87    |
| 6                    | Stand-by Liquid Control<br>System               | 05/18/87    |

Technical Request Approvals

|   |          |
|---|----------|
| - Post Maintenance Testing (ATWS 3.1.3, 3.2.3)          | 04/09/86 |
| - Analysis of Post Accident Radio-<br>Chemistry Samples | 05/20/86 |
| - Qualifications of Backup STAs                         | 05/07/86 |
|   | 12/09/86 |
| - Post-Accident Effluents Monitoring                    | 02/13/87 |
| - Appendix R Compliance                                 | 02/25/87 |
| - ATWS Rule Compliance                                  | 06/08/87 |

Orders Issued

Numerous Commission Orders related to EP Proceedings

TABLE 1

A. LISTING OF LERs BY FUNCTIONAL AREA

| AREA                | CAUSE CODES |    |    |    |    |    | TOTAL |
|---------------------|-------------|----|----|----|----|----|-------|
|                     | A           | B  | C  | D  | E  | X  |       |
| OPERATIONS          | 4           | 2  | 1  |    | 1  | 1  | 9     |
| RAD PROTECTION      | 4           |    |    | 2  |    |    | 6     |
| MAINTENANCE         |             | 3  |    | 1  | 3  |    | 7     |
| SURVEILLANCE        | 4           | 5  |    | 4  | 2  | 1  | 16    |
| EMERGENCY PREP.     |             |    |    |    |    |    |       |
| SECURITY/SAFEGUARDS |             |    | 1  |    | 1  |    | 2     |
| OUTAGES             |             |    |    | 1  |    | 2  | 3     |
| TRAINING            |             |    |    |    |    |    |       |
| LICENSING           |             |    | 1  | 1  |    |    | 2     |
| QUALITY ASSURANCE   |             |    |    |    |    |    |       |
| TECHNICAL SUPPORT   | 2           | 1  |    |    |    | 3  | 6     |
| FIRE PROTECTION-HK  | 2           |    | 2  |    | 1  | 2  | 7     |
| OTHER               |             | 1  |    |    |    | 1  | 2     |
| -----               | --          | -- | -- | -- | -- | -- | --    |
| TOTALS:             | 16          | 12 | 5  | 9  | 8  | 10 | 60    |

Cause Codes\*: A - Personnel Error  
 B - Design, Manufacturing, Construction or Installation Error  
 C - External Cause  
 D - Defective Procedure  
 E - Component Failure  
 X - Other

\*Cause Codes in this table are based on inspector evaluations and may differ from those specified by the licensee in the LER



## B. LER SYNOPSIS

| <u>LER NUMBER</u> | <u>EVENT DATE</u> | <u>CAUSE CODE</u> | <u>DESCRIPTION</u>   |
|-------------------|-------------------|-------------------|--|
| 86-011            | 03/18/86          | C                 | ULTIMATE HEAT SINK, ACCUMULATION OF SEDIMENT   |
| 86-012            | 03/03/86          | D                 | FAILURE TO MEET ACTION STATEMENT FOR LOSS OF CONTINUOUS MONITORING OF THE STATION VENTILATION EXHAUST DUE TO POWER LOSS TO SAMPLE PUMP |
| 86-013            | 03/05/86          | A                 | CONTINUOUS FIRE WATCH IN RELAY ROOM NOT MET DUE TO FIRE WATCH PERSON BEING ASLEEP  |
| 86-014            | 03/05/86          | B                 | FULL REACTOR LOW LEVEL TRIP WHILE I&C TECHNICIAN WAS VALVING IN PRESSURE TRANSMITTER.  |
| 86-015            | 03/10/86          | X                 | CONTINUOUS FIRE WATCH MISSED DUE TO FIRE WATCH BEING STUCK IN ELEVATOR   |
| 86-016            | 03/04/86          | X                 | SEISMIC MONITORING RECORDERS IN CONTROL BUILDING OUT OF SERVICE FOR MORE THAN 30 DAYS.   |
| 86-017            | 03/20/86          | D                 | SEALED SOURCE LEAK TEST NOT PERFORMED IN ACCORDANCE WITH TECH SPEC DUE TO PROCEDURAL DEFICIENCY.                                       |
| 86-018            | 04/10/86          | A                 | UNMONITORED DISCHARGE OF NON-RADIOACTIVE WATER (LESS THAN MINIMUM DETECTABLE ACTIVITY) FROM THE CONDENSATE STORAGE TANK SUMP.          |
| 86-019            | 05/09/86          | D                 | PROCEDURAL DEFICIENCY RESULTED IN A RBSVS/CRAC "A" INITIATION DUE TO LOW REACTOR BUILDING DIFFERENTIAL PRESSURE.                       |
| 86-020            | 05/12/86          | A                 | FULL REACTOR TRIP DURING AN OPERATIONS SURVEILLANCE TEST RESULTING FROM PERSONNEL ERROR.   |
| 86-021            | 05/12/86          | B                 | FULL RPS ACTUATION WHILE I&C TECHNICIANS WERE VALVING IN A LEVEL TRANSMITTER AFTER A SURVEILLANCE TEST.                                |

Table 1

T1-3

| <u>LER NUMBER</u> | <u>EVENT DATE</u> | <u>CAUSE CODE</u> | <u>DESCRIPTION</u>   |
|-------------------|-------------------|-------------------|--|
| 86-022            | 05/15/86          | A                 | FAILURE TO RETAIN PARTICULATE FILTERS FROM THE STATION VENTILATION EXHAUST MONITOR DUE TO PERSONNEL ERROR.                                 |
| 86-023            | 05/20/86          | A                 | MISSED NOBLE GAS GRAB SAMPLES REQUIRED BY ACTION STATEMENT 120 OF TECH. SPEC. 3.3.7.11 DUE TO PERSONNEL ERROR                              |
| 86-024            | 05/22/86          | A                 | RCCLCW "A" SIDE ISOLATION WHILE I&C TECHNICIANS WERE PERFORMING A SURVEILLANCE TEST.   |
| 86-025            | 06/11/86          | A                 | NOBLE GAS SAMPLES REQUIRED BY ACTION STATEMENT 120 OF TECH.SPEC.3.3.7.11 WERE DISCARDED PRIOR TO BEING ANALYZED FOR GROSS ACTIVITY.        |
| 86-026            | 07/03/86          | A                 | UNPLANNED AUTOMATIC INITIATION OF RBSVS "A" TRAIN DURING AN I&C SURVEILLANCE PROCEDURE WHEN A TECHNICIAN DROPPED A SCREWDRIVER IN PANEL.   |
| 86-027            | 08/15/85          | E                 | REACTOR POWER EXCURSIONS ABOVE 5% DUE TO FAILURE OF MECHANICAL LINKAGE BETWEEN POSITION FEEDBACK ARM AND CONTROLLER ON STARTUP LEVEL CONT. |
| 86-028            | 07/10/86          | B                 | NON ENVIRONMENTALLY QUALIFIED JUMPER WIRE INSTALLED IN MOTOR OPERATED VALVES   |
| 86-029            | 07/18/86          | X                 | ESF ACTUATIONS DUE TO EPA BREAKER TRIPS WHILE RPS POWER WAS BEING SUPPLIED BY THE ALTERNATE FEED TRANSFORMER.                              |
| 86-030            | 07/27/86          | C                 | UNPLANNED AUTOMATIC ACTUATIONS OF ESF SYSTEMS CAUSED BY POWER SPIKES ON THE GRID VOLTAGE DUE TO THUNDERSTORMS.                             |
| 86-031            | 07/16/86          | X                 | SEISMIC MONITORING RECORDERS IN CONTROL BUILDING OUT OF SERVICE FOR MORE THAN 30 DAYS.   |

Table 1

T1-4

| <u>LER NUMBER</u> | <u>EVENT DATE</u> | <u>CAUSE CODE</u> | <u>DESCRIPTION</u>   |
|-------------------|-------------------|-------------------|--|
| 86-032            | 07/28/86          | X                 | UNEXPLAINED RWCU ISOLATION WHILE PLACING THE FILTER DEMINERALIZERS IN OPERATION.   |
| 86-033            | 08/06/86          | D                 | EDG 101 MANUALLY SHUT DOWN DURING SURVEILLANCE TEST DUE TO HIGH LUBE OIL TEMPERATURE.  |
| 86-034            | 08/11/86          | X                 | REACTOR WATER LEVEL INSTRUMENT PROVIDING ERRONEOUS LEVEL INDICATION DUE TO IMPROPER CALIBRATION.   |
| 86-035            | 08/28/86          | A                 | RWCU ISOLATION DURING AN I&C SURVEILLANCE TEST DUE TO TECHNICIAN ERROR.  |
| 86-036            | 08/05/86          | D                 | VIOLATION OF TECH. SPEC. 3.4.3.1 DUE TO THE HEAT TRACING TO PRIMARY CONTAINMENT LEAKAGE DETECTION RADIATION MONITORING PANEL TURNED OFF. |
| 86-037            | 09/08/86          | E                 | MISSED CONTINUOUS FIRE WATCH IN RELAY ROOM REQUIRED BY TECH. SPEC. 3.7.7.3 DUE TO CO2 INJECTION IN THE NORMAL SWITCHGEAR ROOM.           |
| 86-038            | 10/04/86          | B                 | RBSVS "A" SIDE INITIATION DURING AN I&C SURVEILLANCE PROCEDURE WHEN A TECHNICIAN ACCIDENTALLY BRUSHED A RELAY WITH A LIFTED LEAD.        |
| 86-039            | 10/06/86          | A                 | RBSVS "B" SIDE INITIATION WHILE PERFORMING MAINTENANCE ON THE VALVE ACTUATOR FOR THE RBNVS SYSTEM INTAKE VALVE.                          |
| 86-040            | 10/07/86          | E                 | NSSSS INITIATION OF RBSVS/CRAC DURING I&C SURVEILLANCE DUE TO FAULTY RELAY SOCKET.   |
| 86-041            | 10/29/86          | A                 | UNCONTROLLED ACCESS TO THE PRIMARY CONTAINMENT OCCURRED FOR APPROXIMATELY TWO HOURS DUE TO THE HATCH NOT BEING PROPERLY SECURED.         |

Table 1

T1-5

| <u>LER NUMBER</u> | <u>EVENT DATE</u> | <u>CAUSE CODE</u> | <u>DESCRIPTION</u>   |
|-------------------|-------------------|-------------------|--|
| 86-042            | 10/09/86          | D                 | FAILURE TO SUBMIT A COPY OF SHOREHAM NUCLEAR POWER STATION'S SPDES RENEWAL APPLICATION TO THE NRC AT THE TIME OF SUBMITTAL TO THE NYDEC.   |
| 86-043            | 10/10/86          | E                 | EMERGENCY DIESEL GENERATOR 103 FAILURE REACH RATED SPEED DUE TO POOR GOVERNOR OIL QUALITY  |
| 86-044            | 10/11/86          | B                 | NSSSS INITIATION OF RBSVS/CRAC "B" SIDE DUE TO WIRE SLIPPING OUT OF I&C TECHNICIANS HANDS DURING A SURVEILLANCE.                           |
| 86-045            | 11/27/86          | A                 | RBSVS/CRAC INITIATION WITH A 1/2 RPS ACTUATION DUE TO PERSONNEL ERROR WHILE AN EQUIPMENT OPERATOR REPLACING RADIATION MONITOR SUPPLY BULB. |
| 86-046            | 11/21/86          | B                 | INADEQUATE BACKFLOW PROTECTION IDENTIFIED FOR EDG. ROOMS 101 AND 103.  |
| 87-001            | 01/13/87          | A                 | RBSVS INITIATION CAUSED BY I&C TECHNICIAN DURING SURVEILLANCE TEST.  |
| 87-002            | 01/13/87          | D                 | SEISMIC MONITORING INSTRUMENTATION IN CONTROL AND REACTOR BUILDING OUT OF SERVICE FOR MORE THAN 30 DAYS.                                   |
| 87-003            | 03/18/87          | D                 | LOSS OF OFFSITE POWER OCCURRED DUE TO A PROCEDURAL INADEQUACY IN A MODIFICATION WHICH CAUSED THE ISOLATION OF THE STATION SERVICE TRANS.   |
| 87-004            | 04/02/87          | C                 | FIRE WATCHES REQUIRED BY TECH SPEC WERE SUSPENDED IN THE REACTOR BUILDING DUE TO BOMB THREAT.  |
| 87-005            | 04/06/87          | E                 | METEOROLOGICAL AIR TEMPERATURE MONITORING INSTRUMENTATION INOPERABLE FOR MORE THAN 7 DAYS.   |

Table 1

T1-6

| <u>LER NUMBER</u> | <u>EVENT DATE</u> | <u>CAUSE CODE</u> | <u>DESCRIPTION</u>   |
|-------------------|-------------------|-------------------|--|
| 87-006            | 04/10/87          | A                 | CONTINUOUS RELAY ROOM FIRE WATCH NOT MET DUE TO FIRE WATCH PERSON BEING ASLEEP   |
| 87-007            | 04/25/87          | C                 | BOMB THREAT  |
| 87-008            | 04/14/87          | B                 | SHUTDOWN COOLING PARTIAL ISOLATION DUE TO ISOLATION OF PRESSURE SWITCH.  |
| 87-009            | 04/27/87          | X                 | FULL RPS ACTUATOR WHILE AND I&C TECH WAS VALVING IN A LEVEL TRANSMITTER TO THE REFERENCE LEG AFTER MAINTENANCE HAD BEEN PERFORMED ON IT. |
| 87-010            | 02/10/87          | E                 | VOLUNTARY REPORT ON FAILURE OF RHR CIRCUIT BREAKER.  |
| 87-011            | 04/27/87          | X                 | LOSS OF POWER TO "A" RPS BUS DUE TO SPURIOUS TRIPPING OF EPA BREAKER RESULTING IN ESF ACTUATIONS.  |
| 87-012            | 05/04/87          | X                 | RBCLCW UNPLANNED AUTOMATIC SYSTEM-SPLIT WHILE INSTRUMENT & CONTROLS TECHNICIANS WERE PERFORMING A SURVEILLANCE TEST.                     |
| 87-013            | 05/05/87          | A                 | SHUTDOWN COOLING ISOLATION DUE TO HIGH REACTOR PRESSURE RESULTING FROM OPERATOR ERROR.   |
| 87-014            | 05/07/87          | A                 | ESF ACTUATION DUE TO PERSONNEL ERROR: RBSW SYSTEM-SPLIT AND A START SIGNAL TO EDG 102.   |
| 87-015            | 05/15/87          | B                 | CRAC "B" INITIATION SIGNAL RECEIVED CAUSED BY LOW REACTOR BUILDING DIFFERENTIAL PRESSURE.  |
| 87-016            | 05/21/87          | X                 | UNSEALED HOLE THROUGH THE CONTROL BUILDING EXTERIOR WALL.  |
| 87-017            | 05-26-87          | B                 | REACTOR WATER CLEANUP ISOLATION ON A HIGH DIFFERENTIAL FLOW SIGNAL DURING NORMAL STATION STARTUP   |

| <u>LER NUMBER</u> | <u>EVENT DATE</u> | <u>CAUSE CODE</u> | <u>DESCRIPTION</u>  |
|-------------------|-------------------|-------------------|---|
| 87-018            | 06-29-87          | E                 | FAILURE OF SECURITY COMPUTER RESULTED IN A MODERATE LOSS OF SECURITY EFFECTIVENESS WHICH WAS NOT PROPERLY COMPENSATED FOR             |
| 87-019            | 07-04-87          | C                 | CONTINUOUS RELAY ROOM FIRE WATCH REQUIRED BY TECH SPECS NOT MET DUE TO BOMB THREAT  |
| 87-021            | 07-15-87          | B                 | HVAC PENETRATION DESIGN DEFICIENCIES IDENTIFIED AFTER DETAILED REVIEW OF INFO NOTICE 83-69 RESULTING IN LICENSE VIOLATION             |
| 87-022            | 06-04-87          | E                 | VOLUNTARY REPORT ON MOV DYNAMIC TESTING FAILURE OF THE HPCI RECIRCULATION VALVES  |
| 87-023            | 07-17-87          | B                 | RBCLCW SPLIT DUE TO A LOW "A" HEAD TANK WATER LEVEL   |
| 87-024            | 07/24/87          | D                 | I&C TECH SPEC SURVEILLANCE CALIBRATION AND RESPONSE TIME PROCEDURES FOUND TO NOT ADEQUATELY SATISFY TECH SPECS DURING PERIODIC REVIEW |
| 87-025            | 07/25/87          | X                 | HOURLY FIRE WATCH PATROLS REQUIRED BY THE FIRE PROTECTION PROGRAM WERE NOT MET DUE TO PERSONNEL INJURY                                |

TABLE 2  
INSPECTION HOUR SUMMARY

| <u>AREA</u>         | <u>HOURS</u> | <u>% OF TIME</u> |
|---------------------|--------------|------------------|
| OPERATIONS          | 1144         | 32.2             |
| RAD PROTECTION      | 299          | 8.4              |
| MAINTENANCE         | 528          | 14.8             |
| SURVEILLANCE        | 509          | 14.2             |
| EMERGENCY PREP.     | 116          | 3.3              |
| SECURITY/SAFEGUARDS | 104          | 2.9              |
| TRAINING            | 586          | 16.5             |
| LICENSING           | 0            | 0                |
| QUALITY ASSURANCE   | 10           | 0.3              |
| TECHNICAL SUPPORT   | 186          | 5.2              |
| FIRE PROTECTION-HK  | 80           | 2.2              |
| -----               | -----        | -----            |
| TOTALS:             | 3562         | 100.0            |



TABLE 3

ENFORCEMENT SUMMARY

| AREA                | SEVERITY LEVEL |     |     |     |     | DEV | TOTAL |
|---------------------|----------------|-----|-----|-----|-----|-----|-------|
|                     | 1              | 2   | 3   | 4   | 5   |     |       |
| OPERATIONS          |                |     |     |     |     |     |       |
| RAD PROTECTION      |                |     |     |     |     |     |       |
| MAINTENANCE         |                |     |     |     | 2   |     | 2     |
| SURVEILLANCE        |                |     |     | 1   |     |     | 1     |
| EMERGENCY PREP.     |                |     |     |     |     |     |       |
| SECURITY/SAFEGUARDS |                |     |     | 1   |     |     | 1     |
| TRAINING            |                |     |     |     |     |     |       |
| LICENSING           |                |     |     |     |     |     |       |
| QUALITY ASSURANCE   |                |     |     |     |     |     |       |
| *TECHNICAL SUPPORT  |                |     |     | 1   |     |     | 1     |
| FIRE PROTECTION-HK  |                |     |     |     |     |     |       |
| -----               | ---            | --- | --- | --- | --- | --- | ---   |
| TOTALS:             |                |     |     | 3   | 2   |     | 5     |

\* NRC Action on a potential violation in this area has not been completed due to the environmental qualification issues involved.

Table 3

T3-2

| <u>INSPECTION<br/>REPORT</u> | <u>REQUIREMENT</u>                       | <u>VIOL.<br/>LEVEL</u> | <u>FUNCTIONAL<br/>AREA</u> | <u>VIOLATION</u>  |
|------------------------------|--|------------------------|----------------------------|---|
| 322/86-08                    | TECH SPEC<br>6.8.1                       | 5                      | MAINTENANCE                | FAILURE TO PROVIDE WRITTEN<br>INSTRUCTIONS DESCRIBING<br>MAINTENANCE ON EMERGENCY<br>DIESEL GENERATOR 103 |
| 322/87-05                    | TECH SPEC<br>6.8.1                       | 4                      | TECHNICAL<br>SUPPORT       | LOSS OF OFFSITE POWER DUE<br>TO INADEQUATE PROCEDURE<br>REVIEW  |
| 322/87-10                    | TECH SPEC<br>4.1.5.e.1                   | 4                      | SURVEILLANCE               | FAILURE TO ANALYZE SLC B-10<br>ENRICHMENT PER TECH SPEC<br>4.1.5.e.1                                      |
| 322/87-10                    | E&DCR                                    | 5                      | MAINTENANCE                | INSTALLATION OF RAYCHEM END<br>CAPS IN VIOLATION OF E&DCR   |
| 322/87-08                    | SHOREHAM<br>PHYSICAL<br>SECURITY<br>PLAN | 4                      | SECURITY                   | SAFEGUARDS INFORMATION  |

TABLE 4

## INSPECTION REPORT ACTIVITIES

| REPORT/DATES               | INSPECTOR  | HOURS | AREAS INSPECTED   |
|----------------------------|------------|-------|---|
| 86-07<br>05/05/86 05/09/86 | SPECIALIST | 86    | ROUTINE, UNANNOUNCED, RADIOLOGICAL CONTROLS INSPECTION.                             |
| 86-09<br>03/24/86 03/27/86 | SPECIALIST | 27    | ROUTINE UNANNOUNCED INSPECTION OF LICENSEE ACTIONS ON PREVIOUS INSPECTION FINDINGS. |
| 86-10<br>04/16/86 05/31/86 | RESIDENT   | 192   | ROUTINE RESIDENT INSPECTION.  |
| 86-11<br>07/28/86 08/01/86 | SPECIALIST | 181   | SPECIAL ANNOUNCED SAFETY INSPECTION OF THE LICENSEE'S CHEMISTRY PROGRAM.            |
| 86-12<br>06/01/86 07/15/86 | RESIDENT   | 189   | ROUTINE RESIDENT INSPECTION.  |
| 86-13<br>06/30/86 07/02/86 | SPECIALIST | 17    | UNANNOUNCED INSPECTION OF LIMITORQUE MOTOR VALVE OPERATOR INTERNAL WIRING.          |
| 86-14<br>07/16/86 08/31/86 | RESIDENT   | 297   | ROUTINE RESIDENT INSPECTION.  |
| 86-15<br>08/25/86 08/29/86 | SPECIALIST | 38    | ROUTINE UNANNOUNCED INSPECTION OF THE RADIATION SAFETY PROGRAM.                     |
| 86-16<br>09/01/86 11/15/86 | RESIDENT   | 370   | ROUTINE RESIDENT INSPECTION.  |
| 86-17<br>09/08/86 09/12/86 | SPECIALIST | 51    | NON LICENSED STAFF TRAINING.  |
| 86-18<br>09/29/86 10/03/86 | SPECIALIST | 31    | ROUTINE UNANNOUNCED INSPECTION OF LICENSEE ACTIONS ON PREVIOUS INSPECTION FINDINGS  |
| 86-19<br>11/16/86 12/31/86 | RESIDENT   | 76    | ROUTINE RESIDENT INSPECTION   |

Table 4

T4-2

| <u>REPORT/DATES</u> |          | <u>INSPECTOR</u> | <u>HOURS</u> | <u>AREAS INSPECTED</u>   |
|---------------------|----------|------------------|--------------|--|
| 86-21<br>12/08/86   | 12/12/86 | SPECIALIST       | 72           | SECURITY PLAN AND IMPLEMENTING PROCEDURES  |
| 87-01<br>01/01/87   | 02/15/87 | RESIDENT         | 118          | ROUTINE RESIDENT INSPECTION.   |
| 87-02<br>01/17/87   | 01/21/87 | SPECIALIST       | 34           | ROUTINE UNANNOUNCED INSPECTION OF<br>PROCEDURE REVIEW.   |
| 87-03<br>02/10/87   | 02/12/87 | SPECIALIST       | 38           | ROUTINE ANNOUNCED EMERGENCY PREPAREDNESS<br>INSPECTION.  |
| 87-05<br>02/16/87   | 03/31/87 | RESIDENT         | 179          | ROUTINE RESIDENT INSPECTION OF PLANT<br>OPERATIONS, SEC., RAD CONTROLS<br>SURVEILLANCE/LOSS OF OFFSITE POWER EVENT<br>WAS REVIEWED   |
| 87-06<br>03/30/87   | 04/03/87 | SPECIALIST       | 96           | ROUTINE SAFETY INSPECTION OF RADIOLOGICAL<br>CONTROLS.   |
| 87-07<br>04/01/87   | 05/15/87 | RESIDENT         | 69           | ROUTINE RESIDENT INSPECTION  |
| 87-13<br>06/01/87   | 06/05/87 | SPECIALIST       | 35           | ROUTINE UNANNOUNCED INSPECTION OF STARTUP<br>TEST PROGRAM  |
| 87-14<br>06/22/87   | 06/26/87 | SPECIALIST       | 313          | SPECIAL TEAM INSPECTION OF TRAINING AND<br>QUALIFICATION PROGRAM<br>EFFECTIVENESS/REVIEW OF SELECTED<br>LICENSEE'S CORRECTIVE ACTION |

TABLE 5

FORCED OUTAGES AND UNPLANNED AUTOMATIC SCRAMS

| <u>DATE</u> | <u>POWER LEVEL</u> | <u>DESCRIPTION</u>   | <u>CAUSE* &amp; AREA*</u>                          |
|-------------|--------------------|--|--|
| 03/05/86    | S/D                | Inability to vent bourbon tube properly prior to placing in service  | Design<br>Deficiency<br>Area: Technical Support    |
| 05/10/86    | S/D                | During restoration of a LOCA, LOOP surveillance test, personnel caused an inadvertent reactor trip                       | Personnel Error<br>Area:<br>Operations             |
| 05/12/86    | S/D                | Valving in a level transmitter due to original piping arrangement, technicians could not adequately vent the transmitter | Design<br>Deficiency<br>Area:<br>Technical Support |
| 03/18/87    | S/D                | Loss of offsite power due to personnel isolating station service transformer   | Personnel Error<br>Area:<br>Technical Support      |
| 04/27/87    | S/D                | Valving in a level transmitter; due to original piping, technician could not adequately vent the transmitter             | Design<br>Deficiency<br>Area:<br>Technical Support |

\*Note - the cause attributed to these shutdowns is the NRC assessment of the cause, and may not agree with the licensee's assessment.

TABLE 5a

FORCED OUTAGES AND UNPLANNED AUTOMATIC SCRAMS

| <u>DATE</u> | <u>POWER LEVEL</u> | <u>DESCRIPTION</u>   | <u>CAUSE* &amp; AREA*</u>                          |
|-------------|--------------------|--|--|
| 03/05/86    | S/D                | Inability to vent bourdon tube properly prior to placing in service  | Design<br>Deficiency<br>Area:<br>Technical Support |
| 05/10/86    | S/D                | During restoration of a LOCA, LOOP surveillance test, personnel caused an inadvertent reactor trip                       | Personnel Error<br>Area:<br>Operations             |
| 05/12/86    | S/D                | Valving in a level transmitter due to original piping arrangement, technicians could not adequately vent the transmitter | Design<br>Deficiency<br>Area:<br>Technical Support |
| 03/18/87    | S/D                | Loss of offsite power due to personnel isolating station service transformer   | Personnel Error<br>Area:<br>Technical Support      |
| 04/27/87    | S/D                | Valving in a level transmitter; due to original piping, technician could not adequately vent the transmitter             | Design<br>Deficiency<br>Area:<br>Technical Support |

\*Note - the cause attributed to these shutdowns is the NRC assessment of the cause, and may not agree with the licensee's assessment.



ENCLOSURE 3  
UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
631 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406

Docket No. 50-322

DEC 01 1987

Long Island Lighting Company  
ATTN: Mr. John D. Leonard, Jr.  
Vice President - Nuclear  
P. O. Box 618  
Shoreham Nuclear Power Station  
Wading River, New York 11792

Gentlemen:

Subject: Systematic Assessment of Licensee Performance (SALP) Report  
No. 50-322/86-99

The NRC Region I SALP Board has reviewed and evaluated the performance of activities at the Shoreham Nuclear Power Station for the period March 1, 1986 to July 31, 1987. The results of this assessment are documented in the enclosed SALP Board report. A meeting to discuss the assessment will be scheduled in the near future. This meeting is intended to provide a forum for candid discussions of the performance evaluation. At the meeting, you should be prepared to discuss our assessment and your plans to enhance the program effectiveness in those areas that warrant additional attention. Additionally, you may provide written comments within 30 days after the meeting.

Following our meeting and receipt of your response, the SALP final report and your response will be placed in the NRC Public Document Room.

Your cooperation is appreciated.

Sincerely,

William T. Russell  
Regional Administrator

Enclosure: SALP Report No. 50-322/86-99

~~8712070305~~ 4pp.



DEC 01 1987

cc w/encl:

W. Steiger, Plant Manager  
B. McCaffrey, Manager, Nuclear Operations Support  
R. Kubinak, Director, QA, Safety and Compliance  
E. Youngling, Manager, Nuclear Engineering  
Anthony F. Earley, Jr., General Counsel  
Jeffrey L. Futter, Esquire  
J. Notaro, Manager, QA Department  
Director, Power Division  
Shoreham Hearing Service List  
Public Document Room (PDR)  
Local Public Document Room (LPDR)  
Nuclear Safety Information Center (NSIC)  
NRC Resident Inspector  
State of New York  
Chairman Zech  
Commissioner Roberts  
Commissioner Bernthal  
Commissioner Carr  
Commissioner Rogers

bcc w/encl:

Region I Docket Room (with concurrences)  
Management Assistant, DRMA (w/o encl)  
Director, DRS  
T. Martin, DRSS  
DRP Section Chief  
B. Bordenick, OGC  
R. Bachmann, OGC  
R. Goddard, ELD  
R. J. Bores, DRSS  
J. Taylor, DEDO  
W. Russell, RA  
J. Allan, DRA  
D. Holody, ES  
Board Members  
PAO (11)  
B. Clayton, EDO

SHOREHAM HEARING SERVICE LIST

Gerald C. Crotty, Esquire  
Ben Wiles, Esquire  
Counsel to the Governor  
Executive Chamber  
State Capitol  
Albany, New York 12224

Mr. Jay Dunkleberger  
New York State Energy Office  
Agency Building 2  
Empire State Plaza  
Albany, New York 12223

Energy Research Group, Inc.  
400-1 Totten Pond Road  
Waltham, Massachusetts 02154

W. Taylor Reveley, III, Esquire  
Hunton & Williams  
Post Office Box 1535  
Richmond, Virginia 23212

Honorable Michael Logrande  
Acting Suffolk County Executive  
County Executive/Legislative Bldg.  
Veteran's Memorial Highway  
Hauppauge, New York 11788

Martin Bradley Ashare, Esquire  
Suffolk County Attorney  
H. Lee Dennison Building  
Veteran's Memorial Highway  
Hauppauge, New York 11788

James B. Dougherty, Esquire  
3045 Porter Street, N.W.  
Washington, D.C. 20008

Alan S. Rosenthal, Esquire  
Chairman, Atomic Safety and Licensing  
Appeal Panel  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Fabian G. Palomino, Esquire  
Suffolk County Attorney  
Executive Chamber  
State Capitol  
Albany, NY 12224

Gary J. Edles, Esquire  
Atomic Safety and Licensing  
Appeal Panel  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Howard A. Wilbur, Esquire  
Atomic Safety and Licensing  
Appeal Panel  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Robert Abrams, Esquire  
Peter Bienstock, Esquire  
Department of Law  
State of New York  
Room 46-14  
Two World Trade Center  
New York, New York 10047

Richard M. Kessel  
Chairman and Executive Director  
New York State Consumer Protection Board  
Room 1725  
250 Broadway  
New York, New York 10007

MHB Technical Associates  
1723 Hamilton Avenue, Suite K  
San Jose, California 95125

Stephen Latham, Esquire  
John F. Shea, Esquire  
Twomey, Latham & Shea  
Post Office Box 398  
33 West Second Street  
Riverhead, New York 11901

Jonathan D. Feinberg, Esquire  
New York State  
Department of Public Service  
Three Empire State Plaza  
Albany, New York 12223

Ezra I. Bialik, Esquire  
Assistant Attorney General  
Environmental Protection Bureau  
New York State Department of Law  
2 World Trade Center  
New York, New York 10047

Herbert H. Brown, Esquire  
Lawrence Coe Lampher, Esquire  
Kirkpatrick, Lockhart, Hill,  
Christopher & Phillips  
1900 M Street, N.W.  
Washington, D.C. 20036

Karla J. Letsche, Esquire  
Kirkpatrick, Lockhart, Hill,  
Christopher & Phillips  
1900 M Street, N.W.  
Washington, D.C. 20036

Francis J. Gluchowski  
Assistant Town Attorney  
Town of Brookhaven  
Department of Law  
3233 Route 112  
Medford, New York 11763

Paul Sabatino, II, Attorney at Law  
Counsel to Legislature  
Legislative Building  
Veteran's Memorial Highway

Joseph I. Lieberman, Attorney General  
State of Connecticut  
30 Trinity Street  
Hartford, Connecticut 06106

Brookhaven Town Attorney  
3233 Route 112  
Medford, New York 11763

Department of Public Service  
Director, Power Division  
Three Empire State Plaza  
Albany, New York 12223