

U.S. NUCLEAR REGULATORY COMMISSION
REGION I
SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE
POWER AUTHORITY OF THE STATE OF NEW YORK
INDIAN POINT 3 NUCLEAR POWER PLANT
BOARD MEETING: AUGUST 14, 1984
PRESENTATION TO LICENSEE
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I. INTRODUCTION

a. Purpose and Overview

The Systematic Assessment of Licensee Performance (SALP) is an integrated NRC staff effort to collect the available observations on an eighteen month basis and evaluate licensee performance based on those observations with the objectives of improving the NRC Regulatory Program and licensee performance.

The assessment period for this SALP is January 1, 1983, through June 30, 1984. It should be noted that, although identified during the assessment period, some violations and licensee event reports occurred prior to the period. This assessment is based on licensee actions after these violations and events were identified to the licensee.

Significant findings of this assessment are provided in the applicable performance analysis functional areas (Section IV).

Evaluation criteria used during this assessment are discussed in Section III. Each criterion was applied using the "Attributes for Assessment of Licensee Performance" contained in NRC Manual, Chapter 0516.

b. SALP Board

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- H. B. Kister, Chief, Projects Branch No. 2, DPRP
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- D. F. Limroth, Project Engineer, Reactor Projects Section 2B, DPRP
- T. Kim, Reactor Engineer, Reactor Projects Section 2B, DPRP
- L. W. Rossbach, Resident Inspector, Indian Point 3 Nuclear Power Plant

c. Background

1. Licensee Activities

At the beginning of this SALP assessment period, the unit was in a refueling outage that had been extended to perform steam generator repairs. The repair of numerous cracks in the transition to upper shell girth weld on all four steam generators was completed in May 1983. Plant heat-up commenced on May 27 and the generator was synchronized to the bus on June 8. On June 18, 1983, the unit tripped due to a fault in the electrical generator. The unit remained shut down until January 1984 to perform major repairs to the electrical generator. During this outage, the licensee continued a program of rebuilding the secondary plant by replacing the moisture separator reheater tube bundles. Plant heat-up began on January 20, 1984, and the unit reached full power in February.

The unit has operated continuously since February 1984, except for four shutdowns, the longest of which lasted 1½ days. The licensee's current schedule projects continued full power operation until October, 1984, when the unit will enter a mid-cycle outage to perform eddy current and NDE inspection on the steam generators.

2. Inspection Activities

A senior resident inspector and a resident inspector were assigned to this unit throughout the entire assessment period. The inspection effort was supplemented by region based inspectors.

Inspection hours and activities are summarized in Tables 3 and 4 of this report.

II. SUMMARY OF RESULTS

The high level of performance noted in the previous assessment period in the functional areas of Operations, Radiological Controls, Maintenance, Surveillance, Fire Protection, Emergency Preparedness, Security and Safeguards, Refueling, and Modifications and Steam Generator Repairs was maintained throughout this assessment period. These are all managed at the station level.

An increased level of management attention has produced improved performance in the area of Licensing Activities; this effort should not be reduced.

A new functional area, Quality Programs and Administrative Controls Affecting Quality, has been added to this SALP in recognition of increased inspection effort on these matters. These had previously been included within Plant Operations. Performance in this area was evaluated as satisfactory.

INDIAN POINT 3 NUCLEAR POWER PLANT

<u>FUNCTIONAL AREAS</u>	<u>CATEGORY LAST PERIOD (1/1/82- 12/31/82</u>	<u>CATEGORY THIS PERIOD (1/1/83- 6/30/84)</u>	<u>TREND</u>
1. Plant Operations	1	1	Unchanged
2. Radiological Controls <ul style="list-style-type: none"> • Radiation Protection • Radioactive Waste Management • Transportation • Effluent Control and Monitoring 	1	1	Unchanged
3. Maintenance	1	1	Unchanged
4. Surveillance (Including Inservice and Preoperational Testing)	1	1	Unchanged
5. Fire Protection	1	1	Unchanged
6. Emergency Preparedness	1	1	Unchanged
7. Security and Safeguards	1	1	Unchanged
8. Refueling	1	1	Unchanged
9. Licensing Activities	3	2	Improved
10. Modifications and Steam Generator Repairs	1	1	Unchanged
11. Quality Programs and Administrative Controls Affecting Quality	Note 1	2	Note 1

Note: 1. Not previously evaluated. See introductory remarks above.

III. CRITERIA

The following evaluation criteria were applied to each functional area:

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

To provide consistent evaluation of licensee performance, attributes associated with each criterion and describing the characteristics applicable to Category 1, 2, and 3 performance were applied as discussed in NRC Manual Chapter 0516, Part II and Table 1.

The SALP Board conclusions were categorized as follows:

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

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

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

IV. PERFORMANCE ANALYSIS

1. Plant Operations (32.5%)

The operations area was under continual review by the resident inspectors. Inspections were conducted in the areas of QA and QC (Section 11), design changes/modifications, corrective actions, plant startup and physics testing, housekeeping and cleanliness, review of onsite events, and follow-up of safety system challenges.

The unit operated for five months during the assessment period. The remainder of the time was spent completing the steam generator girth weld repair and the rewinding of the main generator that was damaged due to a ground fault experienced during the startup of the unit following the steam generator repair.

The licensee took effective action in reestablishing operators skills following the long shutdown.

All operators received retraining on a simulator in the month prior to startup. System lineups were performed by operators on all major plant systems shortly before startup to assure that valves and breakers were in their proper position and systems were operable. The startup and subsequent operations, characterized by the lack of any significant problem, are attributed to the licensee's efforts in the latter stages of the outage.

Facility management continued to effectively manage the plant during the outages by making use of the time to install modifications to the secondary plant in order to improve secondary chemistry. The modification included a deaerator system, new moisture separator reheaters, a filtration system for cleanup of secondary water prior to unit heat-up and filters on all makeup water sources to prevent the intrusion of resin beads to the secondary system.

The site has demonstrated a clear understanding of regulatory issues and has also responded in a timely manner to all generic issues presented to them either by the Commission or the vendors. Site management has also demonstrated the ability to meet deadlines as exhibited by the completion of the main generator rewinding and secondary work schedule which was a duration of seven months and was completed within one week of the schedule.

Site management has aggressively pursued regulatory issues and has thoroughly resolved them in a timely manner. Analysis of generic issues such as Barton transmitter setpoint drift and resolution of the potential "gumming-up" of oil containing Vaportec additive which might possibly have been added to reactor coolant pumps were technically sound. The thoroughness of responses and the openness displayed by the licensee in the discussion of generic issues, allegations and other regulatory matters has significantly reduced the time necessary for closeout of such items by the inspectors.

Site management is prompt and complete in their reporting of issues and in the information presented to the NRC. Their reporting of events required by regulatory requirements have been on time and thorough.

As a result of system walkdowns by the inspectors, the need for improving the quality of check-off list (COL's) reviews was identified. The inspectors will continue to follow the results of on-going changes to the licensee's COL review process.

During this assessment period the licensee has staffed the Operations Department to meet the regulatory requirements for control room manning and has maintained the rest of the plant staff with the exception of engineering. The site engineering staff has decreased toward the end of this assessment period due to transfers and engineers leaving the company. Discussions with plant management indicated that they will be replaced. During the interim period, additional engineering support, including those who had transferred, will be obtained from the White Plains office as the need arises.

The licensee's training program has resulted in seven operators and eight senior operators being licensed during this assessment period. Two operators failed to attain their license on the first attempt but one of those completed the exam to receive his license on the second attempt. One of the candidates passing the RO exam is an instructor who also passed the SRO certification exam as part of his instructor qualifications. Also, three RO's were upgraded to SRO. Both the new license candidates and retrained licensed operators are plant knowledgeable as demonstrated by their success in the examinations given by the NRC.

The Plant Operations Review Committee (PORC) met with sufficient frequency to adequately review the events, procedure revisions, procedure changes and new plant modifications to provide timely input to the plant operations. The inspectors attended meetings of the PORC noting that they, were effectively conducted and that the minutes reflected the meetings content. The inspectors utilize the PORC minutes to aid them in the monitoring of plant activities. The inspectors also conducted an audit of the Offsite Review Committee and noted that the minutes were concise and well documented. The offsite committee members' qualifications exceed the standard set forth in Technical Specifications.

Management exhibits excellent controls in eliminating contaminated areas and keeping the plant clean and orderly. This is further evidenced by the low number of reported events and violations.

Conclusion

Category 1

Board Recommendations

Category 1 performance normally warrants a reduction in the inspection program, however, NRC policy requires that the current level of inspection be maintained due to the plant's proximity to a high population area.

2. Radiological Controls (9.7%)

There were six inspections performed in the area of Radiological Controls during the assessment period by region-based inspectors. These inspections examined the licensee's Radiological Controls program in the areas of radiation protection, radioactive waste management, transportation and effluent controls and monitoring. Resident inspectors also reviewed radiological controls on an on-going basis.

2.1 Radiation Protection

Three inspections of this program area were conducted by Region I Radiation Specialists. The inspections included reviews during normal operations and a steam generator maintenance outage. One violation involving failure to post a Radiation Exposure Authorization at a control point was identified. The licensee's action in response to the violation was timely, acceptable and effective to prevent recurrence. This violation was an isolated instance and not indicative of a programmatic breakdown.

The licensee's organization and staffing level were reviewed and considered adequate. However, ALARA responsibilities are distributed among three professional staff members each of whom has other duties. The licensee has assigned ALARA responsibilities to the Senior Radiological Engineer with the assistance of one Radiological Engineer and the General Health Physics Supervisor. The Senior Radiological Engineer is also responsible for supervision of respiratory protection, respiratory training, dosimetry and environmental monitoring. The Senior Radiological Engineer also provides technical assistance to operational health physics and radioactive waste disposal. The Radiological Engineer is responsible for the environmental monitoring program in addition to his ALARA duties. The General Health Physics Supervisor is responsible for supervision of operational health physics and radioactive waste disposal.

The implementation of the ALARA Program was reviewed. Review of pre-job planning and ongoing job review indicated adequate licensee attention was directed to this area. An NRC initiative to ensure ALARA input to design and modification projects was addressed and resolved by the licensee in a timely manner.

As discussed in Section 10 of this report, the licensee completed a design change to remove the RTD loop isolation valves due to ALARA considerations. Operations experience had shown that these valves were not needed and their removal would eliminate an unnecessary source of exposure. Preplanning to minimize worker exposure while completing this design change was evident. Radiation protection policies and procedures were followed during the performance of design changes.

The effectiveness of the licensee's training and qualification program was reviewed during normal operation and an outage. The training and qualification program is well defined and implemented for the radiation protection organization. An NRC initiative to improve training in radiation protection for Nuclear Plant Operators (NPO) was added to the existing NPO Training Program following a suggestion made during a routine NRC inspection.

Reviews of the licensee's external and internal dosimetry programs showed them to be well controlled and documented. Excellent personnel monitoring documentation was noted.

Reviews of the licensee's radiological surveillance program indicated an acceptable program was in place.

Excellence was noted in management control of materials and equipment in the Containment and Primary Auxiliary Building. Fresh paint had been applied. Equipment was stored in an orderly manner and cables/cable trays were clean.

In summary, this licensee was found to have maintained a well-defined and acceptable radiation protection program during the assessment period.

2.2 Radioactive Waste Management

One inspection reviewed the following aspects of the licensee's Radioactive Waste Management Program: effluent instrumentation, air cleaning systems, records and reports, procedures, and audits and appraisals.

The inspection conducted during this period did not identify any major deficiencies in the licensee's program. Policies are adequately stated and understood. Procedures and policies are strictly adhered to and seldom violated. Records, such as release permits and tests of air cleaning systems, were well-maintained and available. No major or minor violations were identified in the licensee's program. One unresolved item and four inspector follow-up items were identified during the period. These items appear to be due to a lack of attention to detail and do not indicate any programmatic problems. No effluent release limits were exceeded and the licensee was in compliance with Technical Specification requirements. With regard to staffing, key positions are identified and authorities and responsibilities are defined.

Based on the above considerations, the licensee is implementing an adequate and effective Radioactive Waste Management Program.

2.3 Transportation

One inspection reviewed the following aspects of the licensee's Transportation Program: package selection, procedures, training, audits and transuranic determinations.

The inspection conducted during this period did not identify any major deficiencies in the licensee's program. The licensee is implementing an adequate and effective Transportation Program. The licensee has exhibited evidence of prior planning in package selection for waste shipments. The licensee's records were complete, well maintained and available. QA audits of transportation activities are complete and thorough.

Staffing is adequate, based on the fact there are no difficulties with overtime and there is no backlog of work in the transportation and radwaste shipping areas. A defined training program has been implemented for a large portion of the staff. Two unresolved items were identified during the inspection: timely follow-up of audit findings, and determination of transuranic content of waste shipments.

No specific cause could be determined for these concerns; they are random in nature and are not indicative of any programmatic breakdown in the licensee's program. Both unresolved items were closed during the assessment period. The licensee's responses to the unresolved items were timely and acceptable.

2.4 Effluent Monitoring and Control

One inspection reviewed the following aspect of the licensee's Effluent Monitoring and Control Program: environmental monitoring program for operations. The areas reviewed during the inspection included management controls, quality control of analytical measurements, and program implementation.

The inspection conducted during this period did not identify any major deficiencies in the licensee's program. The licensee is implementing an adequate Effluent Monitoring and Control Program. The actual operational environmental monitoring program is carried out by Consolidated Edison (Con Ed) for the site under a memorandum of understanding with NYPA. Records were complete, well maintained and available during the inspection. The licensee has adequate management control of the program with decision making at a level that ensures adequate review. Audits are generally complete, timely and thorough with resolution of audit findings being timely and effective.

One problem involving failure to report data for Sr-90 in surface water and I-131 in drinking water was identified during the inspection. All values, however, were less than detectable. The licensee's response to the violation was timely and acceptable.

Conclusion

Category 1

Board Recommendations:

Category 1 performance normally warrants a reduction in the inspection program, however, NRC policy requires that the current level of inspection be maintained due to the plant's proximity to a high population area.

3. Maintenance (9.6%)

Routine and special inspections of maintenance activities and one inspection of the overall maintenance program form the basis for this assessment.

One problem was identified for failing to prescribe, by procedure, activities for establishing suitable environmental conditions and cleanliness controls. This finding dealt with program administration and does not indicate a breakdown in these areas in the actual performance of maintenance. The resident inspectors have observed that cleanliness controls are practiced during maintenance.

Maintenance activities are conducted with strict adherence to approved procedures and policies. Maintenance records are complete, easily retrievable for inspection, and maintained with the aid of a computerized system. The inspectors' monthly audit of maintenance records indicate they are reviewed by management to ensure complete and thorough documentation in accordance with administrative procedures. Procurement records are complete and well maintained by the warehouse personnel and QA department.

Overall, maintenance personnel are properly trained to perform their duties and management personnel are involved in the preplanning, performance, and review of maintenance activities. Observations of maintenance management indicate a desire to maintain high standards. NRC concerns which are identified to management as a result of inspector plant walkdowns are adequately addressed.

There is evidence of prior planning and effective control over contractor personnel. There is good contractor/licensee rapport resulting in clear understanding between parties.

While it is recognized that a significant portion of this evaluation period involved outage time during which reduction of outstanding maintenance work could have been accomplished, the licensee's approach to maintenance, and specifically the performance of maintenance within the constraints of limiting conditions for operation imposed by technical specifications while the plant is operating, has been one which does not condone the unnecessary accumulation of maintenance work.

One LER was required due to the failure to replace a seismic support collar upon completion of maintenance on service water pumps. The maintenance procedure did not specify that the collars should be replaced. This appears to have been an isolated incident, since other problems have not been observed with the as-left condition at work sites.

Management has put increased emphasis on the analysis of equipment failures and test histories to reduce repetitive failures. Improvements in the performance of several systems have resulted from their analysis and corrective actions.

Management has been innovative in assigning engineers to the maintenance department, and by having the engineers follow the maintenance history of types of equipment rather than systems.

Conclusion:

Category 1

Board Recommendations:

Category 1 performance normally warrants a reduction in the inspection program, however, NRC policy requires that the current level of inspection be maintained due to the plant's proximity to a high population area.

4. Surveillance (6.7%)

During the current assessment period, surveillance activities were routinely reviewed by the resident inspectors. One inspection was performed by the region-based inspectors.

The surveillance program has been computerized for scheduling purposes. Surveillance is completed within the technical specification time frame. Surveillance procedures are complete, well maintained, and available for inspection. Technical specification amendments are incorporated into surveillance procedures. A high degree of compliance with administrative and procedural controls is evident in the performance of surveillance tests. Management conducts the proper reviews of completed surveillance to ensure that the results are acceptable, the records are complete, on time, and that the necessary follow-up is completed.

The Performance Department is also responsible for issuing procedures and participating in the testing of newly installed equipment, and retesting repaired equipment. The testing is usually performed by the Operations Department in conjunction with the performance technicians. Interface between the departments is excellent and results in a smooth and efficient surveillance program. The test documents are explicit and tests are strictly controlled.

Management is sensitive to NRC inspection findings and responds in a timely and thorough manner. In response to an inspector's concerns about the retest program, the licensee revised an administrative procedure to more formally define retests following corrective maintenance, and they issued a new procedure to fully describe retesting methods.

Management involvement and control in assuring quality was adequate as evidenced by a timely and thorough review of snubber surveillance test results which indicated an excessive number of test failures. As a result of this review, management decided to replace or rework all but a selected number of snubbers. However, review by the inspector indicated that QA/QC involvement on this issue was inadequate. This is discussed in Section 11 of this report.

Technical Specifications allow the licensee to relax certain portions of the Surveillance Program during cold shutdown or refueling periods. The licensee opted to perform all surveillances during the outage periods which was a contributing factor in the rapid startup and successful physics testing of the reactor.

The Performance Department is adequately staffed and has a high respect for operational safety. This, in conjunction with management's attitude toward timely performance of surveillance requirements, demonstrates a high degree of safety effectiveness.

Conclusion

Category 1

Board Recommendations:

Category 1 performance normally warrants a reduction in the inspection program, however, NRC policy requires that the current level of inspection be maintained due to the plant's proximity to a high population area.

5. Fire Protection (1.2%)

Inspections by the resident inspectors form the basis for this assessment. This area is continually reviewed by the resident inspectors during observations of the fire protection program as part of every plant tour.

The licensee has maintained an effective fire prevention and protection program, which incorporates procedures and policies that are strictly adhered to. Good general plant housekeeping has been evident on plant tours. Fire protection systems have been maintained operable; fire protection equipment is checked regularly. The fire brigade qualification and training program, consisting of hands-on training, conducted at an offsite fire school and onsite preplanned drills, has provided more than the required number of qualified fire brigade members for each shift.

Conclusion:

Category 1. This conclusion is based on a limited amount of inspection time and does not address 10 CFR 50 Appendix R. The Appendix R plan is being addressed by NRC licensing and will be inspected when implemented.

Board Recommendations

Category 1 performance normally warrants a reduction in the inspection program, however, NRC policy requires that the current level of inspection be maintained due to the plant's proximity to a high population area.

6. Emergency Preparedness (11.9%)

A full scale emergency exercise inspection was conducted on June 2, 1983. As a result of the exercise, the inspectors concluded that, within the limitations of the exercise scenario, the licensee's emergency response provided adequate protection of the public health and safety. In addition, the licensee's emergency response organization demonstrated acceptable implementation of their Emergency Plan and Implementing Procedures. Several areas for improvement were identified as well as areas where the licensee's activities were thoroughly planned and efficiently implemented.

An emergency preparedness inspection was conducted on January 9-11, 1984, to verify installation of the Prompt Public Notification/Warning System. The inspector verified that the system provided administrative and physical means for alerting and promptly instructing the public within the plume exposure pathway EPZ.

The inspector determined that the licensee had installed a total of 149 pole-mounted sirens in Orange, Westchester, Rockland and Putnam counties. In addition, 246 tonal alert radios were distributed to special needs facilities (i.e., schools, hospitals, and nursing homes). During testing, the licensee determined that better acoustical coverage could be provided by relocating seven sirens and reactivating one siren.

A third emergency preparedness inspection was conducted on April 30 - May 4, 1984, to evaluate the emergency preparedness program. Within the scope of the inspection, no violations were observed. However, the inspectors identified the following two areas for improvement: upgrading and implementation of the training program, and clarification of the emergency organization as it appears in the Emergency Plan.

In order to accommodate state and local agencies and specifically, to afford Rockland County preparation time to participate in the annual exercise required by 10 CFR 50, Appendix E, on April 9, 1984, the licensee requested a one-time schedular exemption to conduct that exercise on November 14, 1984, rather than during the period between March and June 1984. (This schedular exemption was approved by the Commission on August 10, 1984.)

No violations were identified during the performance appraisal period. The licensee has been responsive to NRC initiatives and acceptable resolutions were proposed and implemented on a timely basis. Specifically, the licensee has implemented actions which corrected the following four deficiencies identified during the Emergency Plan Implementation Appraisal (EPIA): development of plans/schemes and procedures for handling, storing, transferring,

analyzing, and discharging post-accident liquid waste; determination of post-accident airborne effluent particulate sampling; performance of an engineering study of the existing area radiation monitor (ARM) systems to upgrade post-accident radiation level mapping capability and to extend the upper limit detection; and development and implementation of a program for dissemination of information to the public and the news media regarding the actions to be taken by individuals within the plume EPZ during an emergency. All appraisal-identified deficiencies have been closed.

Conclusion

Category 1

Board Recommendations

Category 1 performance normally warrants a reduction in the inspection program, however, NRC policy requires that the current level of inspection be maintained due to the plant's proximity to a high population area.

7. Security and Safeguards (3.1%)

Two unannounced physical protection inspections were performed during the assessment period by region-based inspectors. Routine resident inspections continued throughout the assessment period. One finding resulted from these inspections but it did not involve any degradation of the security and safeguards program; corrective actions were acceptable and were implemented promptly.

A meeting was held between licensee and NRC representatives on November 21, 1983, to discuss the proposed upgrade of the licensee's security program. At this meeting, the licensee committed to providing the NRC a revised security plan and an implementation schedule for the upgrade. By letter dated January 6, 1984, the licensee submitted revision #8 to the site security plan containing planned upgrade features and an implementation schedule. This revision is being reviewed currently by NRC pursuant to 10 CFR 50.90.

Management attention is evident in the current upgrade of the security program. While the security program upgrade is partially in response to NRC, licensee initiative is apparent in prior planning for resource commitments and implementation of the changes. Results achieved thus far include a significant reduction in the false/nuisance alarm rate on the perimeter intrusion detection system. This has been accomplished by making the sensor systems more resistant to vibrations and wind-currents via the installation of crossbars and posts.

Additionally, nonsecurity related doors have been systematically removed from the computer-based access control system thereby improving operator monitoring effectiveness. Fence barriers have been raised and several security and operations facilities are scheduled for hardening modifications to improve bullet-resistance features. Exterior lighting has been improved through the installation of additional fixtures in selected areas. Security communications has been improved with the installation of a backup base radio station. A new x-ray machine has been purchased and installed in the main site access point facility to enhance package search capabilities. The key and lock control program has been upgraded by procurement and installation of more resistant locks and the inclusion of sufficient spare cores in the inventory to meet change requirements.

The licensee's upgrade program for systems and equipment is continuing and additional features are in the procurement phase at this time.

Licensee management was effective in implementing the security program during the assessment period. Management resources, both onsite and at the corporate level, were adequate to administer the program. Corporate involvement and oversight of site activities was obvious based on the direction and funding of upgrade projects and the effectiveness of ongoing independent audits of the security program.

These audits were consistently comprehensive and included a detailed review of total program commitments including management, supervision, training and systems equipment performance adequacy. The security organization's training program was enhanced through the inclusion of management and human factors training for supervisors. Seminars were conducted using professional consultants and taped instructional films are now an available feature of the Training Department's inventory. Specialized entry level training for guards has been improved by utilizing experienced and qualified security supervisors to administer topical classroom and "hands-on" crucial tasks instructions. This approach is supplemented with the use of a consultant to teach unarmed defense, firearms safety and the use of force. Overall security organization individual performance standards have been notably improved.

Conclusion

Category 1

Board Recommendations:

Category 1 performance normally warrants a reduction in the inspection program, however, NRC policy requires that the current level of inspection be maintained due to the plant's proximity to a high population area.

8. Refueling Activities (5.6%)

The unit was in an outage condition for approximately 12 months of this assessment period. The actual fuel movements for the refueling portion of the outage were addressed in the previous assessment period. The resident inspectors routinely reviewed the outage activities. Startup activities were inspected by the resident inspectors and one region-based inspector.

There was one inspection on startup testing following the cycle 4 refueling outage. Management involvement and control in assuring quality was evidenced by prior planning of the cycle 4 startup physics test program. Tests were conducted in accordance with approved test procedures by qualified individuals. Records of the above were found to be complete, well maintained and available. Test results were properly evaluated.

Because the Reactor Engineering Group is comprised of only two individuals, the licensee contracts out to Westinghouse for all startup physics testing. Zero Power Physics Testing was performed by licensed personnel with Westinghouse personnel performing the data collection and evaluation of the results. The tests were then reviewed by plant reactor physics personnel and the safety committee.

Modifications performed by the licensee are addressed in section 10 of this report.

Throughout the outage, the resident inspectors made frequent inspections of the containment and auxiliary building; housekeeping was consistently above average. It should be noted that with the high level of work activity inside the containment, all areas were kept free of debris and many potentially contaminated areas were clean and contamination free. Many previously contaminated areas have been cleaned providing improved working conditions. This effort has contributed to a lower exposure to plant personnel.

Conclusion

Category 1

Board Recommendations

Category 1 performance normally warrants a reduction in the inspection program, however, NRC policy requires that the current level of inspection be maintained due to the plant's proximity to a high population area.

9. Licensing Activities (NA)

In general, licensee management involvement shows evidence of prior planning and work prioritization. In this perspective the licensee, by his own initiative, proposed a long-range integrated schedule for completion of all outstanding safety issues. In addition, the licensee has pioneered work in two areas: (1) the Indian Point Probabilistic Safety Study (IPPSS), and (2) The Systems Interaction Program. These new approaches to nuclear safety demonstrated significant and commendable management involvement at a time when personnel resources were strained by major steam generator repair efforts and by the present ongoing public hearing. Throughout this assessment period, significant personnel and management resources have been devoted to the effort of resolving interactions identified by the Systems Interaction (SI) study. While resolving systems interactions the staff has been alert to safety findings outside the area of SI resulting in the discovery of two LER reportable events: Non-class I isolation valves on accumulator drains and missing service water pump seismic supports.

With respect to individual licensing issues, management involvement could be improved. Evidence of meaningful involvement was apparent in many areas such as NUREG-0737 items; however, attention over the full range of licensing activities lacked consistency and resulted in varying levels of licensee performance. This may be due, to a certain extent, to a large backlog of work as well as the fact that a significant amount of managerial talent is devoted to contract administration. Over the evaluation period 28 actions were completed and further improvement is anticipated in the future. To a large extent, progress was made possible by: (1) a significant reduction in backlog of outstanding licensing actions, and (2) NRC/PASNY management level meetings on November 21, 1983, and May 23, 1984, to clarify technical issues and to finalize completion schedules.

In the approach to resolution of technical issues from a safety standpoint, the licensee's responses are generally sound and viable. For example, submittals and/or meetings regarding Quality Assurance, Security, and Environmental Qualification of Safety Related Equipment were well handled and contained sufficient justification for the staff to conclude that the IP-3 approach was commendable. Regarding Environmental Qualification, the licensee agreed to investigate the design of the Auxiliary Feedwater steam supply which was beyond the scope of the staff's review. Other examples of a very positive approach by PASNY include: (1) marked improvement in balance of plant chemistry and a decision to follow-up on steam generator tube problems by conducting mid-cycle tests, (2) the installation of post accident sampling modification, and (3) the timely submittal of a voluminous Systems Interaction Report, and the prompt correction of two significant SI findings.

Over the evaluation period there were also examples of marginal performance. These include: (1) the unanticipated withdrawal of Appendix R submittals and extension requests for fire protection resubmittal, (2) a last minute technical lapse with respect to steam generator tube plugging and shutdown margin, (3) the extensive negotiations regarding hydraulic snubber surveillance, and (4) an unnecessary exemption request regarding shift staffing. In addition, several items have remained incomplete for long periods of time. Examples include: (1) Degraded grid voltage and undervoltage protection, (2) Radiological effluent technical specifications, (3) Asymmetric blowdown loads, and (4) TMI Task Action Plan technical specifications. For these items, responses are generally not timely and frequently required schedule extensions. The licensee has recognized this deficiency. Additional resources to improve responsiveness have been acquired, and during the May 1984 management meeting, commitments were made which will facilitate the completion of these outstanding issues.

The licensee takes schedules seriously, usually makes an effort to be responsive, and most of the time is prompt in identifying schedule problems. Although the licensee usually remains abreast of NRC needs, on occasion, responses are reactionary in nature. Once NRC clarification has been received, the licensee usually pursues the solution. The number of last minute urgent requests for immediate staff action, as well as schedule relief requests due to manpower and/or equipment unavailability have decreased in frequency over the evaluation period. Management meetings required to discuss problems were timely and productive.

In the area of Reporting and Analysis of Reportable Events, the event reports are generally complete and prompt. Aside from formal reporting requirements, the licensee has been responsive in reporting delays to staff questions or meeting certain schedule requirements. In general, the staff is notified by telephone when delays will occur, and this is followed by a formal letter providing a revised schedule.

In summary, quality in management of licensing activities and responsiveness in responding to staff requests showed improvement over the evaluation period. Licensee performance improved in part, due to improved management involvement and increased staffing. As a result, the backlog of items was reduced and continued improvement is anticipated.

Conclusion:

Category 2

Licensee improvement in this function area is noted. Continued management support in this area is required for continuing progress.

Board Recommendations

Maintain routine inspection program.

10. Modifications and Steam Generator Repairs

Due to the amount of time the unit was in a cold shutdown condition, extensive modifications were made to the unit in addition to completing steam generator repairs and tests. The resident inspectors conducted reviews of these modifications, and two region-based inspections were conducted on the steam generator repairs.

The licensee made improvements in the modifications program. All procedures related to modifications were upgraded to more clearly define the methods of purchasing, documentation, and management control of modifications. These new practices have enhanced the modification program.

The licensee made modifications that have improved the overall operation of the plant. For example, in the area of plant secondary chemistry, the licensee has replaced the moisture separator reheaters (this eliminates a source of copper in the feedwater); added a start-up filter (this removes solids from the feedwater prior to the water entering the steam generators during plant heatup); added a makeup deaerator (this eliminates oxygen from the makeup water); and, added makeup water filters (this removes any resins that may carry over in makeup water). The licensee also removed isolation valves from the RTD bypass loops of the reactor coolant system. (These valves were found to be unnecessary and were removed to eliminate the exposure that was required to constantly repair and repack them.)

The licensee made some progress in the LMI modifications (NUREG-0737) area. Inspections of the plant shielding and post accident sampling area were conducted with no significant findings. There were several inspector follow items identified and several unresolved items which are currently being worked on by the licensee. The licensee still has many commitments in this area which are to be completed during the next refueling outage.

The steam generator girth weld repair was completed and the units were hydrostatically tested. The tests were conducted with pre-planning, timely execution, and satisfactory results, as witnessed by the resident inspector.

One problem was identified for failure to review design changes as required by 10 CFR 50.59. The design changes not reviewed were minor and consisted of temporary extensions on vent and drain fittings to permit drawing samples in lower radiation areas during the outage. Subsequent safety reviews showed that the design changes would not prevent systems from performing their safety functions. This was an isolated incident; inspection of other design changes showed that

they were prepared in accordance with approved procedures and were properly documented and reviewed. The licensee's response to this violation was prompt and adequate. Management attention was evident in resolving this problem.

The licensee exhibits a strong design change program with management reviews and concurrence in the preplanning and implementation stages of modifications. Records are clearly defined and easily retrieved. Documentation and the upgrading of system prints is timely. Operations is kept informed of the modifications in the field by the timely updating of key operating prints and use of a required reading log. New and modified systems are discussed in retraining sessions taken by licensed operators.

Conclusion:

Category 1

Board Recommendations

Category 1 performance normally warrants a reduction in the inspection program, however, NRC policy requires that the current level of inspection be maintained due to the plant's proximity to a high population area.

11. Quality Programs and Administrative Controls Affecting Quality (9.8%)

This area has been selected as an addition to the normal SALP report because of the amount of inspection time devoted in this area. Two of the eight findings identified during this assessment period have been placed into this category although one of the findings, "Seismic Analysis Not Documented", occurred during the anchor bolt assessment of 1979.

The licensee's responses, including corrective actions taken for IE Bulletins were reviewed by the NRC. Management involvement and control in assuring quality was evidenced by responding to Bulletins in a timely manner.

QA/QC records, which were readily available, indicated that accomplishment of the above listed IE Bulletins had been completed in a timely manner and that corrective actions to audit findings were promptly implemented. In the case of one bulletin, the licensee delegated seismic design verification to a contractor. It was later determined that this activity had been accomplished by the contractor without documented instructions, procedures or drawings.

In addition to the above finding, an inspection of the maintenance program resulted in two QA related findings. One finding for improper QA categorization of maintenance of the fire protection system resulted in the revision of administrative procedures for procurement, work requests, and modifications to more clearly define Category M systems. The licensee has continued to improve the system for designating equipment QA categories. In this same inspection a finding was identified for failing to define cleanliness, and environmental controls in the procedure for maintenance (This violation is discussed in section 3 of this report.) This finding had been previously identified by QA; however, the licensee had failed to take prompt or adequate corrective action. Inspections of QA activities have not shown this to be a recurring problem.

In the surveillance of snubbers during the refueling outage, QA performed the annual program audit required by Technical Specifications but did not observe any snubber surveillance work activity in the past year.

QA/QC planning and decision making are sound and there are complete and accurate records to document their activities. The organization is continuing to perform timely reviews and is considering the expansion of the department to more fully encompass the physical operation of the unit. This will involve training QA personnel in the operations area or an infusion of operating personnel in the QA area.

In summary, the QC/QA department exhibits prior planning and assignment of priorities, adequately controls the maintenance and modification of systems as well as procurement of materials for these systems. Audits performed are generally complete and thorough with timely reviews and corrective actions taken.

Conclusion:

Category 2

Board Recommendations

Increased observations of activities in progress and expansion of QA audits to concentrate on performance and compliance with specifications as well as completeness of paper work.

V. SUPPORTING DATA AND SUMMARIES

1. Licensee Event Reports

Tabular Listing

Type of Events:

A. Personnel Error	1
B. Design/Mfg/Constr/Install.	1
C. External Cause	0
D. Defective Procedures	1
E. Component Failures	12
X. Other	0
TOTAL	<u>15</u>

Licensee Event Reports Reviewed

1983: Reports 83-01 through 83-07

1984: Reports 84-01 through 84-08

Causal Analysis

There is an insufficient number of events to be linked to a common cause.

2. Investigation Activities

None

3. Escalated Enforcement Actions

None

4. Management Conferences Held During the Assessment Period

SALP Management Meeting, 50-286/83-01, May 20, 1983.

TABLE 1

TABULAR LISTING OF LERs BY FUNCTIONAL AREA (1/1/83 - 6/30/84)

INDIAN POINT 3 NUCLEAR POWER PLANT

<u>Area</u>	<u>Number/Cause Code</u>	<u>Total</u>
1. Plant Operations	1/A	1
2. Radiological Controls	None	
3. Maintenance	1/D	1
4. Surveillance	2/E	2
5. Fire Protection	None	
6. Emergency Preparedness	None	
7. Security and Safeguards	None	
8. Refueling	None	
9. Licensing Activities	None	
10. Modifications and Steam Generator Repairs	None	
11. Quality Programs and Administrative Controls Affecting Quality	None	
12. Other (Original Design Errors and Equipment Failures Not Classifiable Into Areas 1-11)	1/B, 10/E	11
TOTAL		15

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

TABLE 2

VIOLATIONS (1/1/83 - 6/30/84)

INDIAN POINT 3 NUCLEAR POWER PLANTA. Number and Severity Level of Violations1. Severity Level

Severity Level I	0
Severity Level II	0
Severity Level III	0
Severity Level IV	3
Severity Level V	5

Total	8
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B. Violations Vs. Functional Area

FUNCTIONAL AREAS	Severity Levels					DEV
	I	II	III	IV	V	
1. Plant Operations					1	
2. Radiological Controls					2	
3. Maintenance					1	
4. Surveillance						
5. Fire Protection						
6. Emergency Preparedness						
7. Security & Safeguards				1		
8. Refueling						
9. Licensing Activities						
10. Modifications and Steam Generator Repairs				1		
11. Quality Programs and Administrative Controls Affecting Quality				1	1	
12. Others						
				TOTALS	3	5

Total Violations - 8

TABLE 2 (Cont'd)
INDIAN POINT 3 NUCLEAR POWER PLANT
ENFORCEMENT DATA
JANUARY 1, 1983 - JUNE 30, 1984

Inspection Number	Date	Subject	Req.	Sev.	Area
82-25	12/16/82-1/15/83	Transient or operational cycling records not kept and record vault fire protection system inoperable	10 CFR 50 App. B	V	1
83-01	1/11/-1/14/83	Failure to post Radiation Exposure Authorization	TS 6.8	V	2
83-06	3/21-3/25/83	Improper quality assurance categorization of fire protection system maintenance	10 CFR 50 App. B	IV	11
		Cleanliness controls and environmental conditions not specified in procedures	10 CFR 50 App. B	V	3
83-12	5/16-5/20/83	Guard House roof lacked intrusion detection system	Security Plan	IV	7
83-20	10/5-10/14/83	Failure to include SR-90 and I-131 in annual report	ETS 5.6	V	2
84-02	1/16-2/15/84	No written safety evaluation for design change	10 CFR 50.59	IV	10
84-04	2/27-3/2/84	Seismic analysis lacked documentation	10 CFR 50 App. B	V	11

TABLE 3
INSPECTION HOURS SUMMARY (1/1/83-6/30/84)
INDIAN POINT 3 NUCLEAR POWER PLANT

	<u>Hours*</u>	<u>% of Time</u>
1. Plant Operations	1220	32.5
2. Radiological Controls	362	9.7
3. Maintenance	360	9.6
4. Surveillance	250	6.7
5. Fire Protection	46	1.2
6. Emergency Preparedness	448	11.9
7. Security and Safeguards	117	3.1
8. Refueling	210	5.6
9. Licensing Activities	N/A	N/A
10. Modifications and Steam Generator Repairs	370	9.9
11. Quality Programs and Administrative Controls	366	9.8
	Total 3,749	100%

*Allocation of inspection hours are approximations.

TABLE 4
INSPECTION REPORT ACTIVITIES (1/1/83 - 6/30/84)
INDIAN POINT 3 NUCLEAR POWER PLANT

REPORT	INSPECTION HOURS	AREAS INSPECTED
82-25	61	Routine Resident
83-01	70	Radiation Protection
83-02	75	Routine Resident
83-03	29	Steam Generator Repairs
83-04	77	Routine Resident and Followup on Reactor Trip Breakers
83-05	63	TMI Item I ^r .B.2
83-06	68	Maintenance
83-07	111	Routine Resident
83-08	70	Packaging, Transportation, and Girth Weld ALARA Review
83-09	46	Girth Weld Repairs
83-10	262	Emergency Preparedness Drill
83-11	142	Routine Resident
83-12	62	Physical Security
83-13	229	Routine Resident and Plant Startup
83-14	137	Routine Resident and Electrical Generator Fault
83-15	105	Routine Resident
83-16	133	Routine Resident
83-17	132	Routine Resident
83-18	24	Radiation Protection

TABLE 4 (Cont'd)

INSPECTION REPORT ACTIVITIES (1/1/83 - 6/30/84)INDIAN POINT 3 NUCLEAR POWER PLANT

<u>REPORT</u>	<u>INSPECTION HOURS</u>	<u>AREAS INSPECTED</u>
83-19	34	Physical Security
83-20	20	Environmental Monitoring
83-21	159	Routine Resident
83-22	119	Routine Resident
83-23	151	Routine Resident
84-01	18	Public Notification System
84-02	209	Routine Resident and Plant Startup
84-03	28	Radiation Protection
84-04	132	Anchor Bolts and Seismic Stress Analysis
84-05	33	Startup Physics Tests
84-06	134	Routine Resident
84-07	145	Routine Resident
84-08	139	Routine Resident
84-09	24	Snubber Surveillance
84-10	168	TMI: Sampling and Rad Monitoring
84-11	108	Emergency Preparedness
84-12	32	Radioactive Waste
84-13	145	Routine Resident
84-14	<u>55</u>	Routine Resident
TOTAL	3,749	