U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Docket/Report No.	50-322/91-01
License No.	NPF-82
Licensee:	Long Island Lighting Company P. O. Box 618, North Country Road Wading River, New York 11792
Facility Name:	Shoreham Nuclear Power Station
Dates:	December 30, 1990 - June 29, 1991
Inspectors:	S. Brown, Project Manager, NRR P. Kaufman, Project Engineer, RI L. Myers, Resident Inspector (Peach Bottom) J. Moulton, Project Engineer, NRR B. Norris, Project Inspector (Shoreham) J. Raleigh, Project Engineer, NRR

Approved By: Paul D. Kaufman 7/29/91
for L. T. Doerflein, Chief — Date
Reactor Projects Section 2B

Areas Inspected: Routine, on-site inspection by members of the Region I and NRR staffs, consisting of facility tours, fitness for duty program, system layup review, housekeeping, radiological controls, maintenance observations, training requalification program, modification of ventilation system, physical plant security, and review of licensee reports.

EXECUTIVE SUMMARY

Facility Status

Shoreham Nuclear Power Station has been shut down and defueled since 1989. The licensee continues to maintain the facility in a manner consistent with the status of the plant. The NRC denied the Long Island Lighting Company's (LILCo's) request that they be allowed to ship the fuel support castings and the peripheral pieces from the reactor vessel off site for burial.

Surveillance and Maintenance

LILCo committed extensive manpower and other resources for an in-depth cleaning and decontamination effort on the reactor pedestal, the suppression pool, and the reactor water cleanup (RWCU) system. After this work, contamination levels in the suppression pool and the reactor pedestal area were found to be within acceptable limits for release.

Decontamination of the RWCU system required the use of a chemical cleaning setup. The setup and preparation of this temporary chemical decontamination system were well coordinated and the work activities associated with the operation of the system were properly conducted in accordance with the special procedures. Where necessary, health physics, quality control, and vendor involvement was included in the procedures and the work packages and was observed to be implemented properly during the work activities.

Personnel performing the five year inspection/overhaul of emergency diesel generator 101 appeared to be knowledgeable of the procedural requirements. Overall, LILCo management continues to be very attentive to the scheduling and progress of work items.

During the conduct of plant tours and system walkdowns, the inspectors noted that the housekeeping was generally good and plant material conditions were acceptable, with the exception of the suppression pool which was in need of painting.

Staffing and Staff Training

There is a slight downward trend in the number of personnel assigned to the site, but LILCo was able to complete all necessary maintenance and continued to maintain the required staffing for the control room and auxiliary positions.

There were two occurrences during the inspection period where the Technical Specifications required unit staffing was not met. Both cases involved an individual not receiving the appropriate medical certification prior to standing a Technical Specification required watch.

Radiological Controls

The ALARA program for control of occupational exposure appears to have been implemented such that personnel receive minimum exposure while also resulting in more efficient maintenance completion.

The Site Characterization Plan was developed by LILCo to outline the selection process to identify the areas and structures to be decontaminated and surveyed. NRC review included the development of the Plan, the organizations that must support the implementation of the plan, and ongoing activities in the field. The inspector concluded that the effort resulted in an in-depth study of all potentially contaminated areas.

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DETAILS

1.0 FACILITY STATUS

1.1 General Status

Shoreham Nuclear Power Station (SNPS) has been shut down since 1989 due to an agreement between the State of New York and Long Island Lighting Company (LILCo), the owner and operator of SNPS. The facility is defueled, the fuel is in the spent fuel pool, and most non-essential systems are in a layup condition. The licensee continues to maintain the facility in a manner consistent with the status of the plant.

1.2 Shipment of Reactor Vessel Internals

Inspection report 50-322/90-04 discussed LILCo's request to ship 137 fuel support castings and 12 reactor vessel peripheral pieces from the site, for burial. As of that report, the NRC had stated that the shipment should be delayed until after the possession only license (POL) had been issued. Correspondence continued between the licensee and the NRC regarding the shipment of the reactor vessel internals. On April 12, 1991, the NRC issued a letter specifically denying LILCo's request to ship the fuel support castings and the peripheral pieces.

2.0 SURVEILLANCE AND MAINTENANCE (37700, 42700, 54834, 61726, 62703, 71707, 71710, 71715, 86700)

The inspectors reviewed the below activities to verify that work was being done in accordance with approved procedures, that systems were properly returned to service, and that other departments (e.g., Quality Control, Health Physics, etc.) were involved, as required. During this process, the associated procedures listed in Attachment 1 were reviewed. In general, the maintenance activities were well managed and implemented.

2.1 Decontamination Efforts

During the reporting period, the inspectors monitored various decontamination activities and the supporting surveys in the following areas: the inner reactor vessel pedestal, the suppression pool, and the reactor water cleanup (RWCU) system.

With the suppression pool drained, the licensee performed radiation contamination surveys around the inner reactor vessel pedestal area and the area above the normal water level line within the suppression pool. The surveys were taken after manual cleaning and subsequent hydro-lazing of the surface areas. Contamination levels were found to be below the required release levels.

To control the setup, operation, and demobilization of the temporary chemical decontamination equipment for the RWCU system the licensee developed special procedure S2.002.01, Rev 0, "Dilute Chemical Decontamination Equipment Setup, Operation, and Demobilization." The inspectors observed and verified that preparation work activities

associated with decontamination of the RWCU system piping were conducted in accordance with the special procedure. The inspectors performed walk-downs of the installed temporary equipment, interconnecting hoses, piping, spools, and electrical power and control cables to verify configuration and equipment lineup. The established configuration of the temporary decontamination equipment and components was determined to be adequately controlled and consistent with the special procedure.

The decontamination process for the RWCU system is detailed in special procedure S4.709.01, Rev 0, "RWCU System Dilute Chemical Decontamination Procedure." The inspectors verified initial implementation of the procedure. Portions observed consisted of the following: filling and venting the RWCU system; filling ion columns with cation resins, leak test and preoperational walkdown of RWCU system; and heat-up of the RWCU system.

Only three minor flange leaks were found during the licensee system walkdown. The licensee leaks resolved the by tightening the flange bolts. The initial cation resins that were put into the columns on the temporary ion exchange skid had to be removed because of high concentration problems. The resins were sluiced and vacuumed out of each of the ion columns. The ion columns were then re-filled with new resins. Actual injection of the concentrated Citrox solution into the RWCU system occurred on February 9, 1991. Overall, the inspectors determined that the RWCU system decontamination process was well planned and being adequately controlled.

Maintenance efforts in preparation for the decontamination of the RWCU system were observed. These maintenance efforts included the unloading of vendor equipment and subsequent equipment manipulations to facilitate ion-exchange resin transfer, system line-up, and various piping and electrical connections. The activities were conducted with adequate procedural adherence, and very good maintenance practices and techniques. Where necessary, health physics (HP), quality control (QC), and vendor involvement was included in the procedures and work packages and was observed to be implemented properly during the work activities.

The RWCU decontamination effort stayed essentially on schedule. The licensee was anticipating the start of the Citrox acid flush, and made the necessary preparations; these preparations included: equipment delivery, preparation, and set-up; vendor personnel physicals and site training (GET); piping, hose, and electrical runs and connections; and system leak checks. Overall, the inspector found LILCo adequately prepared for the RWCU decontamination. No concerns were identified in this area.

2.2 Five Year Inspection of Emergency Diesel Generator

During this inspection period, LILCo performed a five year inspection/overhaul of Emergency Diesel Generator (EDG) 101. The inspector monitored work in progress and performed a review of the associated procedure and work request; it was noted that personnel associated with the maintenance appeared knowledgeable of procedural requirements and the maintenance was completed with no significant delays. Applicable authorizations for the work were verified.

The inspector also observed portions of the EDG break-in run following maintenance. During a review of the surveillance procedure, it was noted that one step in the prerequisite checklist was marked "NP" indicating that the step was not performed; when questioned, LILCo personnel stated that the diesels were not required to be operable and that the step in question could not be verified because of system status. No other problems were noted in this area.

During observations at staff meetings and discussions with task managers, the inspector noted that management continues to be attentive to scheduling and progress of work. The inspector concluded that maintenance activities were well planned and executed.

2.3 Housekeeping

LILCo has made a concerted effort to maintain the cleanliness of the plant. Areas that the inspector had previously noted as being a problem and discussed with plant management, such as the lower levels in the reactor building, especially showed improvement.

While performing plant walk-throughs and various system walkdowns, the inspector observed that the housekeeping and plant material conditions were generally good. Systems and locations were well marked, areas were well lit, and materials were in order. Floor paint is in a degraded state, but is expected to improve based on discussions with plant management.

The inspectors noted significant peeling of paint on the suppression pool floor and rusting of unpainted carbon steel in the suppression pool. In response to the inspector's concern, the licensee initiated a Deviation Report to determine if this might be a generic issue.

Overall, the housekeeping at Shoreham is acceptable and, on plant tours, appears to be on an improving trend.

3.0 STAFFING AND STAFF TRAINING (36800)

3.1 Staffing Levels

The inspector reviewed staffing and noted that there is a slight downward trend in the number of personnel assigned to the site, but LILCo was able to complete all necessary maintenance and continued to maintain the staffing for the daily manning of the control room and auxiliary positions. The inspector discussed the expected issuance of the Possession Only License (POL) with members of the staff and with plant management to determine its impact on morale. Although there was a noticeable decline in the moral on the part of the staff, there was no indication it would affect the ability or willingness of the staff to continue to perform their jobs.

3.2 Waiver of Compliance for the Simulator

On June 5, 1991, the NRC granted a Waiver of Compliance to LILCo regarding the 10CFR55.45(b) requirement for the use of a certified plant referenced simulator. The waiver was based on (1) Shoreham's current defueled status; (2) the Confirmatory order of March

29, 1990, which prohibits LILCo from placing the fuel into the reactor vessel; (3) LILCo's commitment to refrain from operating the plant; and (4) the design basis accidents for the current condition are all associated with a loss of water inventory from the spent fuel pool. The waiver did not exempt LILCo from the requirement of using a simulator for the licensed operator requalification training, only from the requirement that the simulator be certified.

3.3 Licensed Operator Requalification

LILCo continues to train the licensed operators in accordance with the current full power operating license. The program describing the training and requalification of the operators was reviewed for compliance with 10 CFR 55 requirements; the inspector identified no discrepancies during the review. The inspector also reviewed the results of the annual examinations; of the twenty-five operators, one reactor operator (RO) failed the written portion of the examination and one senior reactor operator (SRO) failed the simulator portion. Both operators passed their reexamination; however, it was noted that the SRO was retested using the same simulator scenario that he had failed earlier. Although this is not in violation of the LILCo procedure controlling the examination process, the inspector pointed out to the licensee that this is not a normally accepted practice at most facilities. The Plant Manager agreed with the inspector and another simulator examination was administered to the SRO, which he passed. No other discrepancies were identified in this area.

3.4 Maintenance of Watch Standing Qualifications

During the inspection period, LILCo identified two occurrences where they violated their Technical Specifications (TS) with respect to unit staffing.

Technical Specification section 6.2.2.a requires a minimum shift complement of one SRO and one RO for the current plant condition. 10 CFR 55.53(i) requires each licensed operator to have a biennial (every two years) medical examination as a condition of their license. On January 1, 1991, a licensed RO stood the TS required watch, although his NRC required medical examination had expired on December 31, 1990. The operator's last physical had been on December 27, 1988. The RO had originally been scheduled for his physical on December 7, but he called in sick and did not reschedule. The operator had been notified at least twice that he was to reschedule and complete the medical examination before the end of December. The RO was removed from licensed duties until the results of his physical examination (January 8, 1991) were known.

LILCo's investigation of the cause for the RO being allowed to stand the watch without the physical being completed revealed that the requirement for a biennial examination was not included within their training and qualification (T&Q) computer tracking system. Corrective actions to prevent recurrence included: (1) modification of the T&Q computer program to include the physical examination, and (2) a memorandum to all operations personnel reminding them of individual responsibilities. In addition, the date of the physicals for the other licensed operators was checked to verify that no other medical examinations had expired.

Technical Specification section 6.2.2.e requires a fire brigade of at least five members on site

at all times. LILCo has an administrative requirement that all fire brigade members undergo an annual respirator fit test. One of the five individuals designated as part of the fire brigade on June 1, 2 and 3, had not undergone the required annual fit test and was, therefore, not fully qualified.

The respirator fit test is not an NRC requirement; however, the instances are related, in that, both requirements should have been identified by the existing T&Q process. LILCo Nuclear Review Board (NRB) has initiated a root cause analysis. This item will remain unresolved pending the NRC review of the results of the NRB analysis. (50-322/91-01-01)

4.0 EMERGENCY PREPAREDNESS

On June 24, 1991, the NRC Emergency Notification System (ENS) Line was removed from the Shoreham site. The removal of the phone system at Shoreham was part of the first phase of replacing the outdated ENS system with a newer system. The ENS lines have also been removed at various other sites across the country, and all ENS lines are scheduled to be removed by the end of 1992. LILCo was verbally informed by the project inspector to notify the NRC Operations Center of reportable events using the existing commercial phone numbers.

5.0 RADIOLOGICAL CONTROLS (83750, 84750, 83523, 83526, 83722, 83723, 83726, 83727, 83523, 84525, 84723)

5.1 ALARA Program

The inspector noted that the occupational exposure controls and ALARA (As Low As Reasonably Achievable) programs appear well-managed and have been implemented with a proper focus on plant activities. The HP efforts have been coordinated with maintenance to prevent any job holdup time, this has resulted in more efficient job completion. Third quarter 1990 ALARA goals were exceeded due to conservative efforts to reduce the radiation levels of shipping casks to well below the Department of Transportation limits. There were no deficiencies noted in this area.

5.2 Site Characterization Plan

LILCo initiated and developed a program in 1989 to evaluate the Shoreham site for radiological contamination. The program would supply information for the ultimate decommissioning of the Shoreham Nuclear Power Station. The program, known as the Site Characterization Plan (SCP), was initially drafted in 1989, reviewed by the Operational Safety Committee and Nuclear Quality Assurance, and published in May, 1990. The SCP was implemented and continued during 1990. The program was revised (Final Report) in August, 1990, based on the data the program obtained. The SCP is an ongoing program which will be updated by Addendum. The inspector reviewed the original plan, the organizations that supported the implementation of the plan, staffing of the various groups that implemented the plan, activities in the field, methodologies of characterization, instrumentation used, and the Final Report.

The Program

The SCP outlines the radiological characterization selection process for the physical plant based on historical information; the general characterization methodology; the methods selected; the selection of survey points based upon statistical methodology; and presents the results. Characterization included structures, systems and equipment, the reactor pressure vessel (RPV), and the environment (which includes the site and the area surrounding the site). In addition, the program includes the quality assurance and quality control verification process, and a discussion of the implications for decommissioning. The Final Report of the SCP compiles the data obtained from each area of study so that decisions can be made regarding radioactive material disposal, decontamination requirements, decommissioning methodologies, and real and potential radiological hazards expected to be encountered during decommissioning. The primary purpose of the SCP is a support vehicle for future decommissioning activities related to the structures, systems and equipment, and the environment in and around the site.

Specifically excluded from the scope of the SCP are: nuclear fuel; control rod blades, control rod drives, and control rod blade guides; fuel support castings; incore instrumentation (source range monitors, intermediate range monitors, local power range monitors, and transversing incore probe monitors); radioactive fluids, sludge, resins, and filter media currently contained in piping, equipment, and sumps. The items listed above will be handled separately from the physical plant decommissioning effort.

Organization

The organization that primarily is responsible for this program is Radiological Controls Division. Radiological Controls Division consists of the departments of Health Physics, Radiochemistry, and Radwaste. Maintenance has responsibility for dismantling and assembly of systems and equipment, and in decontamination efforts; while Plant Operations supports all the activities.

The Manager of Radiological Controls Division is the designated Radiological Protection Manager. The Manager is well qualified and experienced. His qualifications exceed the requirements of ANSI 18.1 and Regulatory Guide 1.8. The Health Physics Department is managed by the Health Physics Engineer who directs the activities of four groups; Engineering, Operations, Instrumentation, and Dosimetry. Health Physics technicians are shared between the Operations, Instrumentation, and Dosimetry groups. The Radiochemistry Department supports the characterization by providing gross gamma and beta counts, gamma spectroscopy, and counting and analysis information. At this time, Radwaste had given regular support to plant activities. The inspector determined that the licensee appeared to have a well qualified staff with an adequate number of personnel to carry out plant activities while supporting the SCP program.

Characterization Selection Process

Historical data consisting primarily of survey records were reviewed to select data points for the following categories; structural, systems and equipment, RPV, and the environment.

Additional information, such as operating history and piping drawings, were studied to ensure that the selection of data points included all the areas where contamination could potentially exist or components that could have come into contact with contaminated fluids and/or gases. In the structural category three buildings were selected; turbine, reactor and radwaste buildings. Historical information indicated no evidence of contamination in other structures. In the systems and equipment category, all components that had came into contact with contamination, fluids or gases, were selected for characterization, these included: ventilation systems of the three buildings; drain systems of the three buildings; nine systems that had contained reactor coolant including the recirculation system, reactor water cleanup system, sampling system, control rod drive system, and condensate demineralizer and liquid radwaste; those systems that provide emergency core cooling including reactor heat removal system and core spray system; and those systems that come into contact with nuclear fuel storage, the fuel pool cleanup system. In the reactor pressure vessel and internals category, all internal components and the external biological shield wall were selected for characterization. In the environmental category, three broad areas were selected for characterization: airborne, soil/sediment water, and soil analysis.

Characterization Methodology

The structures, systems and equipment, and reactor pressure vessel and internals were characterized by total and removable surface contamination. Smears were beta counted. If beta particles were detected, a gross alpha activity was done. If contamination was found, then qualitative and quantitative gamma isotopic analysis were performed. The reactor pressure vessel and internals received an activation analysis, performed using the reactor physics code ORIGEN2. The ORIGEN2 code is based on the component's composition and proximity to the core. The resulting calculated activity for each point selected was expressed in Curies and that value was entered into a program to calculate the exposure rates for each data point. Other codes were used for specific analysis. Environmental characterization analysis were performed using typical analysis, as required by the Radiological Environmental Monitoring Program (REMP).

The structural areas were divided into two sampling categories, unbiased and biased. Unbiased sampling was where little or no known contamination had existed. General areas were selected which were divided into smaller survey units, populations, with about 30 sample points. Biased sampling was where contamination was known to exist or likely to exist. Biased sample points were selected in the same manner as the unbiased, general areas subdivided into population sample points. For systems and equipment characterization, components or equipment were selected for survey points on the basis of systems. If the system was complex or traversed several elevations, components were surveyed at several elevations to assure a representative survey of the system. For reactor pressure vessel and internals characterization, in addition to the neutron activation products, components were smear sampled for fission products and for regular contamination.

All methods of detection were subjected to statistical analysis to determine if the sample number was adequate. The results of the count were compared to the background count to determine if the result was significantly above background by statistical analysis. The inspector reviewed the statistical methods and found them to be acceptable.

For environmental characterization, in addition to the typical REMP sampling and analysis, additional soil/sediment and ground water sampling were done. These samples were analyzed using the methods described in the REMP.

The inspector reviewed the instrumentation used for detection of contamination. The number and type of instruments used was found to be adequate to perform the required analysis. Instrument calibration methods were adequate. Personnel performing analysis were well trained and knowledgeable of the instruments.

All analysis was subjected to 5% re-analysis for quality control. Sediment and soil samples were subjected to the same quality control program as is specified in the REMP.

Decontamination

An integral part of the SCP was to evaluate decontamination methods that are in general use, explore new methods, and to conclude what methods are effective in removing contamination. Acceptance criteria for contamination and unrestricted release of components are based on Regulatory Guide 1.86/NUREG-0586 and the value used for research reactors, respectively; those criteria are:

- Total surface contamination not to exceed 5000 beta disintegrations per minute per 100 square centimeters (dpm/100 cm^2) above background.

- Removable surface contamination not to exceed 1000 dpm/100 cm^2 above background.

- For reactor pressure vessel and internals, and soil; 5 microRoentgen per hour (5 μR/h) above background at a distance of one meter (m).

Nuclear Quality Assurance Audit

Radiological Control programs and implementation were audited by Nuclear Quality Assurance (NQA) during the period of March, 1991. The audit also reviewed the SCP and it's implementation. The audit concluded that the Radiological Controls programs and the SCP are being effectively implemented. Three findings were identified which were closed during the audit.

Conclusions

The inspector reviewed the initial SCP and the conclusions in the Final Report. The characterization selection process was reviewed in depth to assure that all areas that could have been contaminated were selected. Several systems in the plant were reviewed and walked down including a complete tour of the suppression pool area. The inspector concluded that the characterization was an in-depth study of all contaminated areas that were accessible. Some areas remain to be characterized, including the spent fuel pool and reactor pressure vessel and internals. Each sampling point in each category was recorded, marked, and tracked for restudy and will be retained for historical information.

Of those structural areas found to be contaminated, some areas such as the suppression pool and the dryer-separator pit have been decontaminated. Remaining structural contaminated areas are the reactor cavity, the radwaste laydown area, and the floor drains and sumps. Decontamination efforts on the reactor cavity have been partially effective, but several areas require more decontamination. Floor drains and sumps present some difficulties, decontamination methods are being examined for these areas. The radwaste laydown area will be decontaminated when no longer required.

Systems and equipment decontamination is continuing as time and manpower permit. The final method of decontamination or dismantlement has not been decided for equipment and piping. The method of decontamination of the reactor pressure vessel and internals has not been decided. Portions of the biological shield wall and the internal walls will require characterization before removal. All samples of the environment indicated negative for contamination above natural background radiation.

The inspected found the licensee developed a well constructed plan to characterize the plant and site for radiological contamination. Sufficient experienced staff implemented the plan with detailed surveys. The Final Report includes about 6000 survey points and the analysis of each point. The sampling selection and tracking of the sampling points will provide historical information for the eventual decommissioning of the plant.

No deficiencies were noted by the inspector during this review.

6.0 REVIEW OF LICENSEE EVENT REPORTS (LERS) (90712, 92700)

The below listed LERs were submitted to the NRC:

LER No. LER Date Event Date	Subject
90-009, Rev 0 01/09/91 12/11/90	Unplanned Actuation of ESF Systems due to EPA Breaker Trip
90-010, Rev 0 01/01/91 12/13/90	Unplanned Actuation of Engineered Safety Feature Systems while Lifting a Jumper
91-001, Rev 0 04/22/91 03/24/91	Unplanned Actuation of Engineered Safety Feature Systems

The inspector reviewed each of the LERs to verify that the details were clearly reported, and that the corrective action was adequate. The review also considered whether further investigation was required, and generic implications were indicated, and whether on-site follow-up was warranted. It was determined that there was no common root cause. The inspector had no further questions with respect to these reports.

7.0 REVIEW OF REPORTS (90713)

The reports listed in Attachment 1 were reviewed to verify that the information was technically adequate, submitted in a timely manner, and satisfied the appropriate reporting requirements, as required. No problems were observed in this area.

8.0 FOLLOWUP OF PREVIOUS INSPECTION FINDINGS (92702)

(Closed) Unresolved Item 50-322/90-04-01

The testing laboratory (Roche) used by LILCo for sampling of the Fitness-for-Duty program samples twice sent the samples to a location other than the LILCo approved location.

The inspector reviewed the corrective actions taken by LILCo to prevent recurrence. These included:

- developing a new shipping label with specific directions as to the location, and
- training of the health center personnel who collect and ship the samples.

The inspector determined that LILCo had thoroughly reviewed this event and had implemented adequate corrective actions to prevent recurrence. This item is considered closed.

9.0 MANAGEMENT MEETINGS (30702, 30703, 94702)

9.1 Daily Management Meetings

Through attendance at the morning and afternoon management meetings, the inspector observed that these meetings were conducted in an orderly, smooth, and informative manner. Involving the key plant staff members, these meetings provide the opportunity to floor issues of importance, monitor progress, and resolve any logistic problems that arise. Upper plant management showed genuine interest in all aspects of site activities.

9.2 LILCo/LIPA/NYPA-License Transfer

On February 13, 1991, representatives from LILCo, the Long Island Power Authority (LIPA), and the New York Power Authority (NYPA) briefed the NRC staff on matters pertaining to the pending Shoreham license transfer and decommissioning. After introductory remarks by the staff, LIPA presented an overview on: (1) the relationship between the possession only license (POL), license transfer, and decommissioning; (2) license transfer methodology; and (3) decommissioning methodology. Detailed discussions followed the overview. The main concern identified by the NRC staff was related to the financial funding methods for the decommissioning. The handouts from the meeting are enclosed as Attachment 2 to this report.

9.3 LILCO/LIPA-Status of Possession Only License

On April 2, 1991, representatives from LILCo and LIPA met with the NRC to discuss the status of the POL and to further clarify issues raised at the February 13 meeting.

9.4 LILCo-Licensed Operator Requalification Program

On June 7, 1991, representatives from the LILCo training and operations staffs met with the NRC to answer questions related to the proposed revision to the Licensed Operator Requalification (LOR) program. Handouts associated with the meeting are enclosed as Attachment 3 to this report.

9.5 Exit Meeting

The issues within this report were discussed with licensee management throughout the inspection period. A verbal summary was provided by Mr. B. Norris to Mr. L. Caione, Plant Manager, at a meeting on June 6, 1991, at the Shoreham site. Based upon the NRC Region I review of this report and discussions with licensee representatives, it was determined that this report does not contain any proprietary information or safeguards information subject to 10CFR2.790 restrictions.

9.6 Additional NRC Inspections this Period

Date	Subject	Report No.	Inspector
July 3, 1991	Radiological Controls	50-322/91-02	P. O'Connell

LIST OF ATTACHMENTS

Attachment 1	Documents Reviewed
Attachment 2	Handouts from the LILCo/LIPA/NYPA License Transfer Meeting
Attachment 3	Handouts from the LILCo Licensed Operator Requalification Program Meeting

Attachment 1

Documents Reviewed

ATTACHMENT J

DOCUMENTS REVIEWED

LILCo NED SAFETY EVALUATION REPORTS

90-031, Rev 1 & 2	90-034, Rev 0	90-036, Rev 0
90-037, Rev 0	90-039, Rev 0	90-040, Rev 0
90-042, Rev 0	90-043, Rev 0	91-009, Rev 0
91-012, Rev 0		

LILCo DEFICIENCY REPORTS

- Open
  90-111, 90-112, 90-113, 90-114, 90-116, 90-117, 90-118, 90-119, 90-120, 90-121, 90-122, 90-123, 90-124, 90-125, 90-126, 90-127, 90-128, 91-001, 91-002, 91-003, 91-004, 91-005, 91-006, 91-006, 91-008, 91-010, 91-011, 91-012, 91-013, 91-014, 91-015, 91-016, 91-017, 91-018, 91-019, 91-020, 91-021, 91-023, 91-024, 91-025, 91-026, 91-027, 91-028, 91-029, 91-030
- Closed
  89-185, 89-198, 89-213, 90-007, 90-021, 90-063, 90-083, 90-086, 90-089, 90-094, 90-096, 90-097, 90-100, 90-104, 90-118, 90-123, 90-106, 90-108, 90-115, 90-116, 90-117, 91-003 (voided), 91-004, 91-013, 91-022

LILCo PROCEDURES

• ARP-0365	Rev 8	Spent Fuel Storage Pool Level High/Low
• SP-12.016.01	Rev 22	Surveillance Program
• SP-12.014.07	Rev 9	Licensed Operator Requalification Program
• SP-23.307.01	Rev 30	TDI Emergency Diesel Generator
• SP-34.307.01	Rev 20	Transamerica Delaval Inc. (TDI) Emergency Diesel Generator 18 Month Manufacturers Inspection
• SP-61.081.01	Rev 4	Chi-Square Test and Control Chart for HP Counting Instruments
• SP-63.011.01	Rev 2	Operation of the Bicron Micro-Rem Meter
• SP-63.020.03	Rev 5	Operation of Eberline Model RM-14
• SP-63.020.04	Rev 3	Operation of Ludlum Model 177 Ratemeter
• SP-73.033.10	Rev 8	Gamma Spectrometer System Operation
• SP-74.020.50	Rev 15	Appendix 12.3, Dose Equivalent I-131, E-Bar Data Sheet
• SP-76.033.12	Rev 7	Gamma Spectrometer System Calibration and Calibration Check
• SP-78.081.60	Rev 2	Determination of Gross Beta and Alpha Activity on the Gas Flow Proportional Counter
• SP-78.081.66	Rev 13	Sampling and Analysis of Liquids and Gases for Tritium
• SP-S2.002.01	Rev 0	Dilute Chemical Decontamination Equipment Setup, Operation, and Demobilization
• SP-S4.709.01	Rev 0	RWCU System Dilute Chemical Decontamination Program
• MWR 91-276		Perform Engine Inspection/Overhaul as Required per Technical Specification 4.8.1.1.2.e.1

ATTACHMENT 1 (cont.)

DOCUMENTS REVIEWED

MONTHLY OPERATING REPORTS

- December, 1990
- January, 1991
- February, 1991
- March, 1991
- April, 1991
- May, 1991

OTHER REPORTS

- Annual Operating Report for 1990
- 10CFR50.59 Annual Report for 1990, including Revision
- Annual Environmental Operating Report for 1990
- Radiological Environmental Monitoring Report (REMP) Annual Report for 1990
- 10CFR20.407 Annual Dose Report for 1990
- Annual Financial Report for 1990
- Safeguards Event Log for October 1, 1990 through December 31, 1990
- Report of Abnormal Condition - RAC 91-01 - Missed NRC Medical
- LILCo Nuclear Quality Assurance Organization Chart dated April 1, 1991
- NQA Audit Report No. NQA-90-05, and Response to Audit Finding #2
- NQA Audit of Radiological Controls, dated April 18, 1991
- Review of Operations Committee (ROC) Meeting Minutes for meeting 91-038
- 1990 SNPS Requalification Program Description
- Stone & Webster - Engineering & Design Coordination Reports (H-631, H-706A, H-727, H-739B, H-792, H-844A, H-868, H-947, H-993, H-1040, H-1109, H-1111, H-1135, H-1184, H-1240, H-1259, H-1275, H-1283A/B, H-1284, H-1290, H-1294, H-1296, H-1327, H-1329, H-1335, H-1336, H-1346, H-1351, H-1353, H-1365, H-1370, H-1382, H-1383, H-1398A, H-1399, H-1400, L-102/A/B/C, L-465J, L-1484, L-828/A/B, L-1551/A/B/C/D/E/F)
- Site Characterization Plan and Report
- Structural Termination Surveys, WI 20-3, dated February 1, 1991
- Radiological Characterization for System Decontamination, WI 21-2, dated April 5, 1991
- Organizational Chart of Radiological Controls Division, dated April 30, 1991

NYPA PROCEDURE

- OMPD-P-6, Rev 1 — Incorporation and Revision of LILCo Procedures for LIPA/SNPS

Attachment 2

Handouts from the LILCo/LIPA/NYPA License Transfer Meeting (February 13, 1991)

Long
Island
Power
Authority

LILCO
LONG ISLAND LIGHTING

SHOREHAM NUCLEAR POWER STATION

PRESENTATION
TO THE
US NUCLEAR REGULATORY COMMISSION
AT WHITEFLINT, MD
FEBRUARY 13, 1991

FEBRUARY 13, 1991

OUTLINE NO.		AGENDA
1.	9:00	INTRODUCTION
2.	9:10	RELATION BETWEEN LICENSE TRANSFER, DECOMMISSIONING, AND "POSSESSION ONLY LICENSE" (LIPA)
3.	9:15	OVERVIEW OF LICENSE TRANSFER METHODOLOGY (LILCO/LIPA)
4.	9:50	OVERVIEW OF DECOMMISSIONING METHODOLOGY (LILCO/LIPA)
	10:30	BREAK
5.	11:00	PRESENTATION OF LICENSE TRANSFER APPLICATION (LILCO/LIPA)

INCLUDING THE FOLLOWING:

1. PROPOSED ORGANIZATIONAL STRUCTURE APPLICABILITY TO THE CURRENT SHOREHAM LICENSE, "POSSESSION ONLY LICENSE", AND/OR PROJECTED DECOMMISSIONING PHASE.

2. THE MEANING OF THE TERM LIPA/NYPA COEMPLOYEE WITH RESPECT TO:

   A. ADMINISTRATIVE CONTROL OF EMPLOYEE (ASSIGNMENT, PAY BENEFITS, PROMOTION, ET AL).
   B. TECHNICAL DIRECTION OF EMPLOYEE.

3. TERMS OF LIPA'S MANAGEMENT SERVICES AGREEMENT WITH NYPA WITH RESPECT TO OBTAINING AND RETAINING NYPA PERSONNEL FOR TECHNICAL AND MANAGEMENT SERVICES.

4. TERMS OF LIPA'S SITE AGREEMENT WITH LILCO WITH RESPECT TO OBTAINING AND RETAINING PERSONNEL FOR MAINTENANCE AND DECOMMISSIONING ACTIVITIES.

5. PROJECTED SIZE AND COMPOSITION OF THE PROPOSED ORGANIZATION WITH RESPECT TO THE NUMBER OF NYPA, LILCO, AND CONTRACT PERSONNEL: AND ASSIGNMENTS OF SUCH PERSONNEL TO SUPERVISORY OR OTHER SPECIFIC POSITIONS.

	12:00	LUNCH
5.	1:00	PRESENTATION OF LICENSE TRANSFER APPLICATION (CONT.)
6.	2:00	PRESENTATION OF PROPOSED DECOMMISSIONING PLAN (LIPA/LILCO)

1. MAJOR TECHNICAL ACTIVITIES
2. FUEL DISPOSITION
3. COST OF DECOMMISSIONING AND FUEL MANAGEMENT

RELATION BETWEEN LICENSE TRANSFER, DECOMMISSIONING AND "POSSESSION ONLY LICENSE"

RELATION BETWEEN LICENSE TRANSFER, DECOMMISSIONING, AND POSSESSION ONLY LICENSE

REQUESTED NRC ACTION	RELATED REGULATORY SUBMITTALS
1. REDUCE LILCO FULL POWER OPERATING LICENSE TO A POSSESSION ONLY LICENSE	o LILCO "LICENSE CHANGE APPLICATION" AND ACCOMPANYING "DEFUELED SAFETY ANALYSIS REPORT", SUBMITTED VIA LILCO LETTER SNRC-1664 ON JANUARY 5, 1990. THIS DOCUMENT REQUESTED ISSUANCE OF A "DEFUELED FACILITY OPERATING LICENSE", WHICH WAS LATER DEEMED TO BE EQUIVALENT TO A POSSESSION ONLY LICENSE. o LIPA "DECOMMISSIONING REPORT" (PLAN FOR ULTIMATE DISPOSITION), SUBMITTED BY LILCO VIA LETTER SNRC-1713 ON APRIL 16, 1990. THIS DOCUMENT SUPPORTS LILCO'S JANUARY 5, 1990 APPLICATION.
2. TRANSFER POSSESSION ONLY LICENSE FROM LILCO TO LIPA	o "JOINT APPLICATION OF LILCO AND LIPA FOR LICENSE AMENDMENT TO AUTHORIZE TRANSFER OF SHOREHAM", SUBMITTED BY BOTH LILCO AND LIPA VIA LETTER SNRC-1734 ON JUNE 28, 1990. THIS APPLICATION IS PREDICATED ON NRC APPROVAL OF LILCO'S JANUARY 5, 1990 REQUEST.

RELATION BETWEEN LICENSE TRANSFER, DECOMMISSIONING, AND POSSESSION ONLY LICENSE (CONT'D)

REQUESTED NRC ACTION	RELATED REGULATORY SUBMITTALS
3. AUTHORIZE LIPA TO DECOMMISSION SHOREHAM	o LIPA "SHOREHAM NUCLEAR POWER STATION DECOMMISSIONING PLAN" AND ACCOMPANYING "SUPPLEMENT TO ENVIRONMENTAL REPORT (DECOMMISSIONING)", SUBMITTED BY LIPA ON DECEMBER 29, 1990. o LIPA SHOREHAM LICENSE TERMINATION REQUEST (TO BE SUBMITTED AFTER TRANSFER OF A POSSESSION ONLY LICENSE TO LIPA).

OVERVIEW OF LICENSE TRANSFER METHODOLOGY

LIPA'S REQUESTED AUTHORITY UNDER THE TRANSFERRED SHOREHAM LICENSE

- TO POSSESS AND USE, BUT NOT OPERATE, THE SHOREHAM FACILITY, UNDER 10 CFR PART 50.

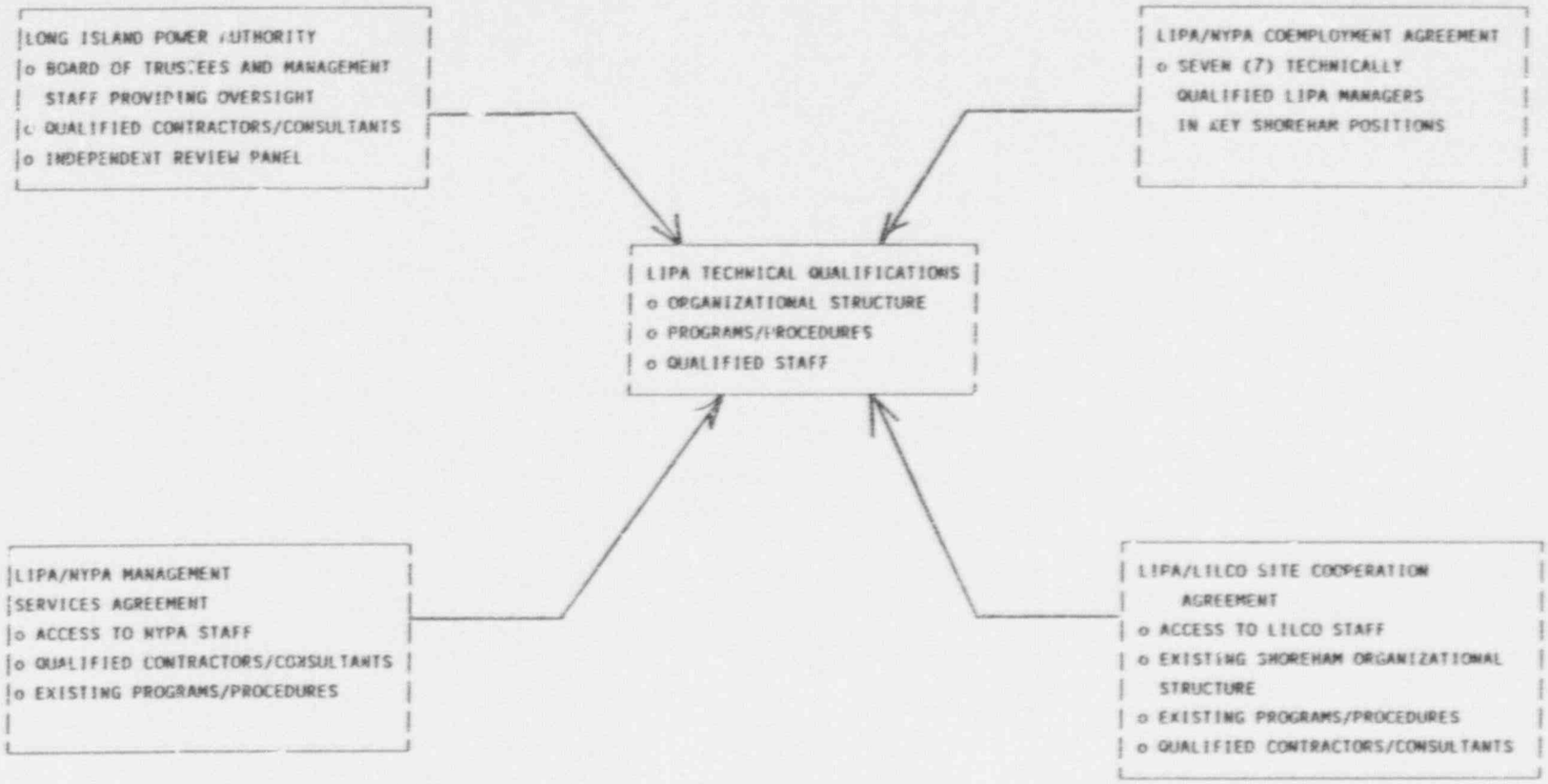
- TO POSSESS SPECIAL NUCLEAR MATERIAL AS CONTAINED IN THE EXISTING SHOREHAM FUEL, UNDER 10 CFR PART 70.

- TO POSSESS BYPRODUCT, SOURCE, AND SPECIAL NUCLEAR MATERIAL AS EXISTING STARTUP SOURCES; AS REACTOR INSTRUMENTATION AND RADIATION MONITOR CALIBRATION SOURCES; AND AS FISSION DETECTORS, UNDER 10 CFR PARTS 30, 40 AND 70.

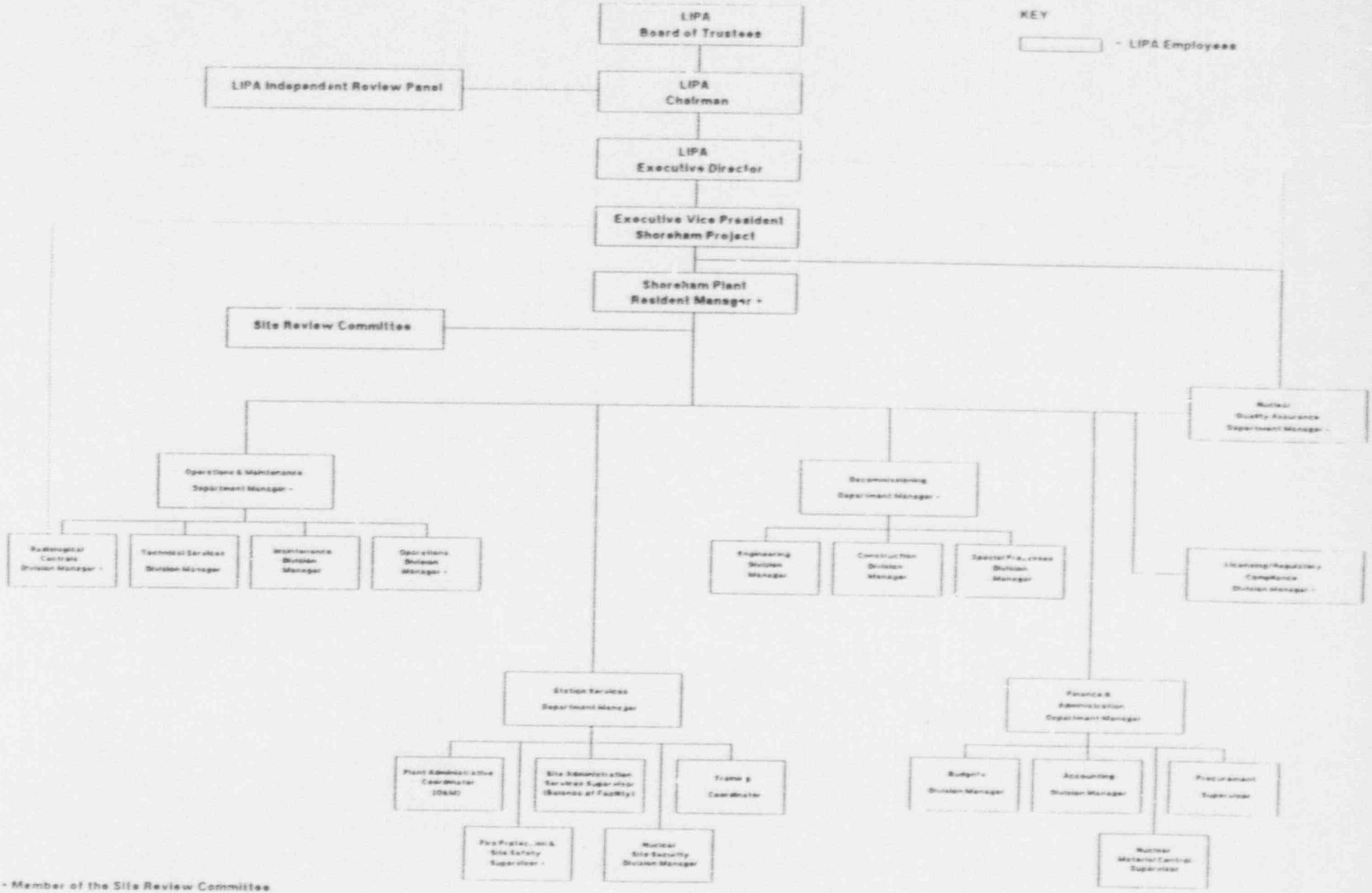
- TO RECEIVE, POSSESS AND USE BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL FOR SAMPLE ANALYSIS OR INSTRUMENT CALIBRATION OR IN ASSOCIATION WITH RADIOACTIVE APPARATUS OR COMPONENTS, UNDER 10 CFR PARTS 30, 40, AND 70.

- TO POSSESS, BUT NOT SEPARATE, SUCH BYPRODUCT AND SPECIAL NUCLEAR MATERIAL AS HAVE BEEN PREVIOUSLY PRODUCED BY OPERATION OF THE FACILITY, UNDER 10 CFR PARTS 30, 40 AND 70.

TECHNICAL QUALIFICATION OVERVIEW

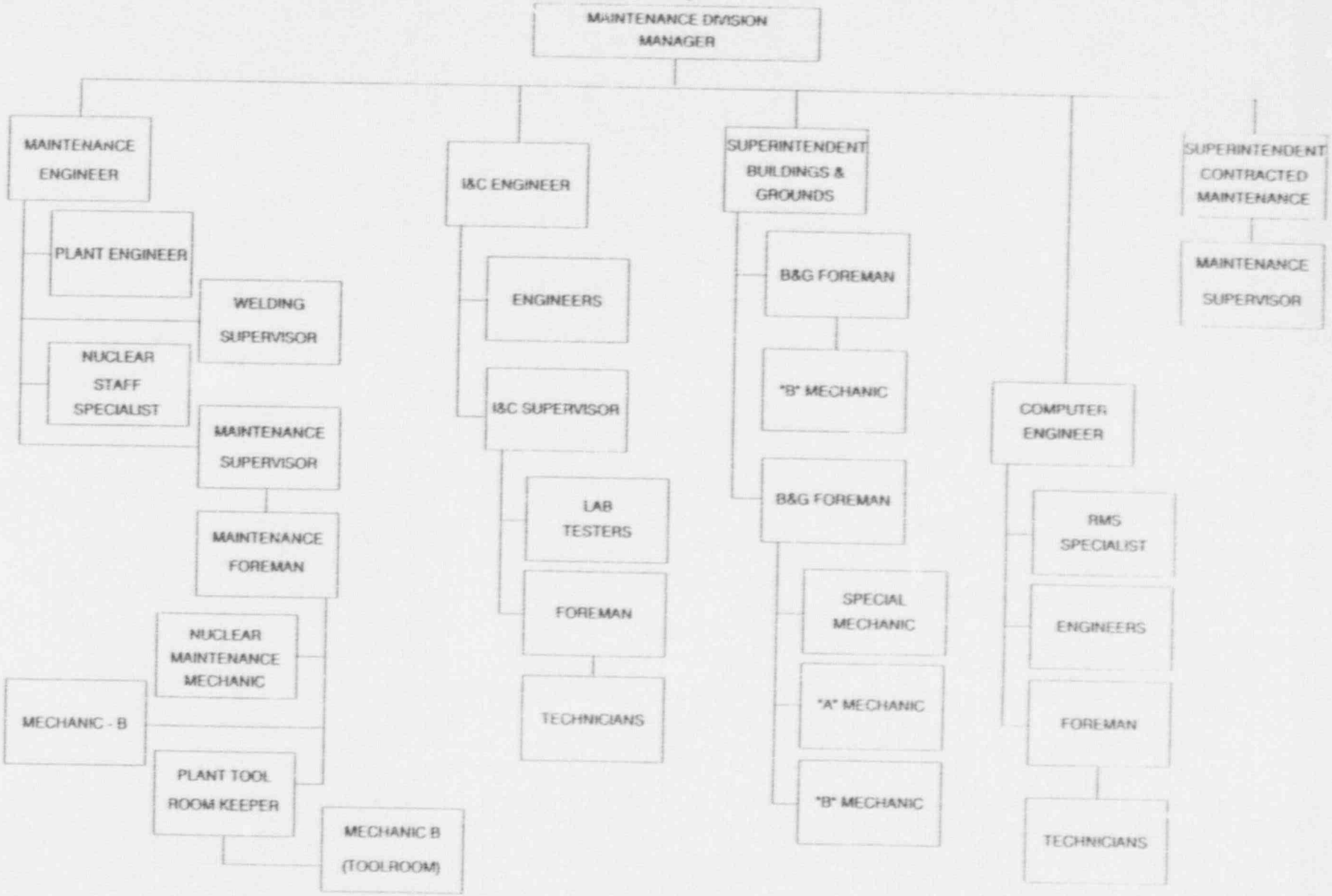


Shoreham Plant Organization Chart

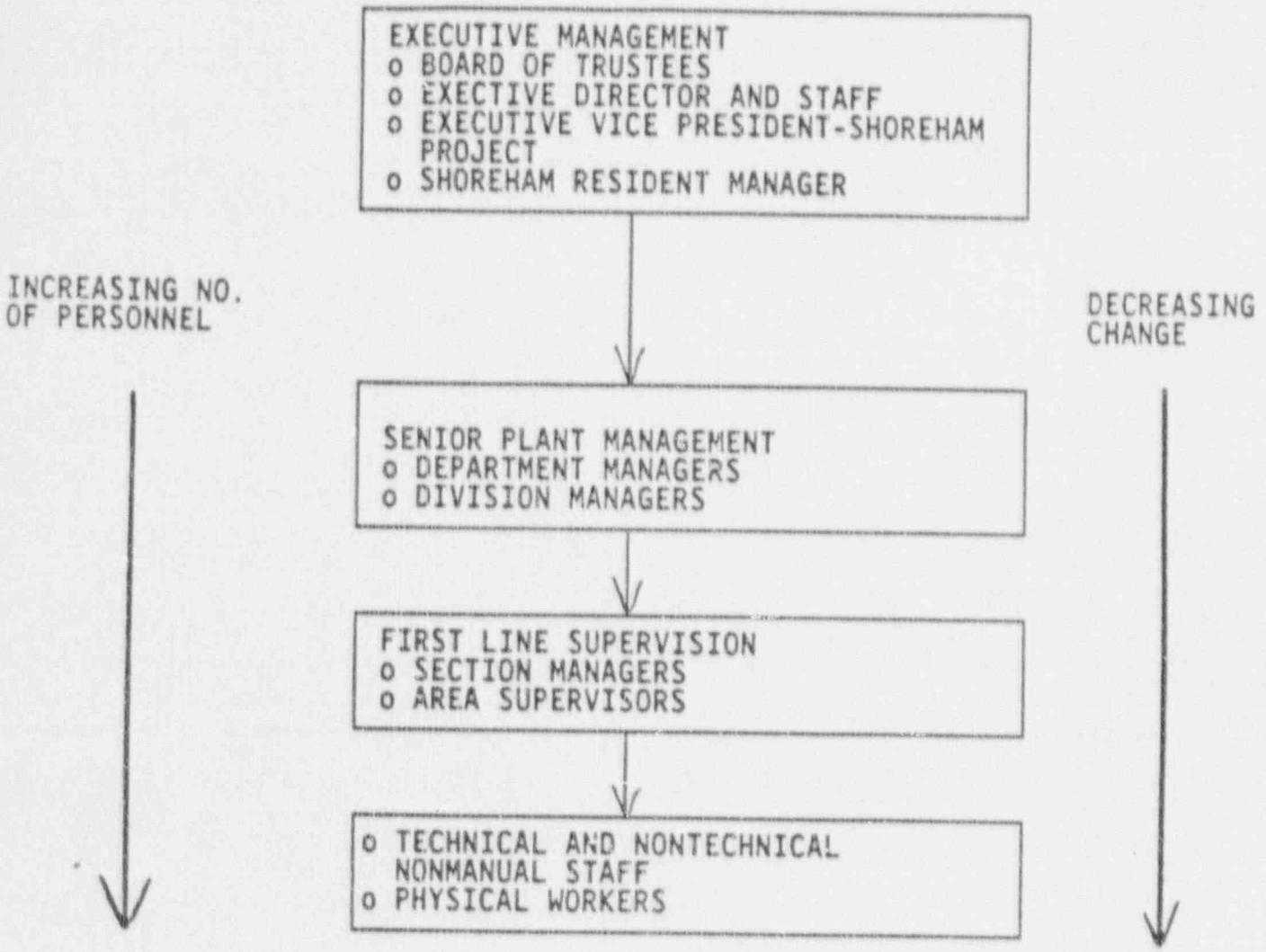


- Member of the Site Review Committee

LILCO MAINTENANCE DIVISION



SHOREHAM STAFFING OVERVIEW



OPERATIONS AND MAINTENANCE PROGRAM DEVELOPMENT (OMPD) PROCESS OVERVIEW

LILCO PLANT OWNERSHIP
(OPERATING LICENSE)

LILCO PROGRAMMATIC INFRASTRUCTURE

- o ORGANIZATION
- o POLICIES
- o PROGRAM DESCRIPTIONS
- o ADMINISTRATIVE PROCEDURES
- o DETAILED IMPLEMENTING PROCEDURES

→

OMPD

- o OL/POL TRANSITION
- o PROGRAM/PROCEDURE REVIEW AND ADAPTATION

→

LIPA PLANT OWNERSHIP
(POSSESSION ONLY LICENSE)

LIPA PROGRAMMATIC INFRASTRUCTURE

- o ORGANIZATION
- o POLICIES
- o PROGRAM DESCRIPTIONS
- o ADMINISTRATIVE PROCEDURES
- o DETAILED IMPLEMENTING PROCEDURES

OPERATIONS AND MAINTENANCE PROGRAM DEVELOPMENT (OMPD) FOR LICENSE TRANSFER

- OMPD OBJECTIVES:
  - DEVELOP PROGRAMS AND PROCEDURES NECESSARY FOR LIPA/NYPA MANAGEMENT OF SNPS IN THE DEFUELED CONDITION.
  - ENABLE SMOOTH TRANSFER OF NRC LICENSE AND RESPONSIBILITIES.
  - IDENTIFY AND ESTABLISH SCOPE AND MECHANISMS FOR TRANSFER OF LILCO, LICENSES, PERMITS AND CONTRACTS.
  - PROVIDE FOR THE DEVELOPMENT OF AN EFFECTIVE SNPS SITE ORGANIZATION.
- OMPD SCOPE:
  - DETERMINE EXISTING SNPS PROGRAMS, PROCEDURES, LICENSES, PERMITS, CONTRACTORS, ETC. REQUIRED TO MANAGER DEFUELED FACILITY.
  - MODIFY EXISTING PROGRAMS AND PROCEDURES TO COMPLY WITH NYPA CORPORATE REQUIREMENTS AND WITH LIPA/NYPA PLANT ORGANIZATION FOR SNPS.

OPERATIONS AND MANTENANCE PROGRAM DEVELOPMENT (OMPD) FOR LICENSE TRANSFER (CONT'D)

- OMPD SCOPE (CONT'D):
  - DEVELOP NEW PROGRAMS AND PROCEDURES, AS REQUIRED.
  - DETERMINE WHICH REQUIRED SNPS LICENSES, PERMITS, AND CONTRACTS ARE TRANSFERABLE AND INITIATE ACQUISITION/REPLACEMENT OF THOSE WHICH ARE NOT TRANSFERABLE.
  - DEVELOP MEMORANDA OF UNDERSTANDING AS REQUIRED TO CLARIFY DIVISION OF RESPONSIBILITIES BETWEEN LILCO & LIPA.

OMPD FOR LICENSE TRANSFER

- OMPD FOR PROGRAM AND PROCEDURE REVIEW TO CONSIDER:

  - * ADMINISTRATION
  - * OPERATIONS
  - * MAINTENANCE
  - * INSTRUMENTATION AND CONTROL
  - * REACTOR ENGINEERING
  - * HEALTH PHYSICS
  - * RADIOCHEMISTRY
  - * TECHNICAL SUPPORT
  - * EMERGENCY PLANNING
  - * SECURITY
  - * PLANT COMPUTERS
  - * RADWASTE
  - * QUALITY ASSURANCE/ QUALITY CONTROL
  - * FIRE/SAFETY
  - * SYSTEMS ENGINEERING
  - * RECORDS MANAGEMENT
  - * LICENSING
  - * TRAINING

- OTHER KEY OMPD ASPECTS AND GUIDELINES:

  - USE LILCO DSAR AND RELATED NRC SUBMITTALS AS BASIS FOR REVIEW.

  - UTILIZE LILCO STAFF PERSONNEL TO THE EXTENT POSSIBLE AFTER LICENSE TRANSFER.

  - LIPA/NYPA ORGANIZATION WILL BE ONSITE PRIOR TO LICENSE TRANSFER.

SHOREHAM POLICIES, PROGRAMS & PROCEDURES

- ALIGN EXISTING LILCO DOCUMENTS INTO AN ADMINISTRATIVE HIERARCHY.

- REVIEW DOCUMENTS AND DETERMINE THOSE REQUIRED TO SUPPORT MANAGEMENT OF SHOREHAM IN THE DEFUELED CONDITION.

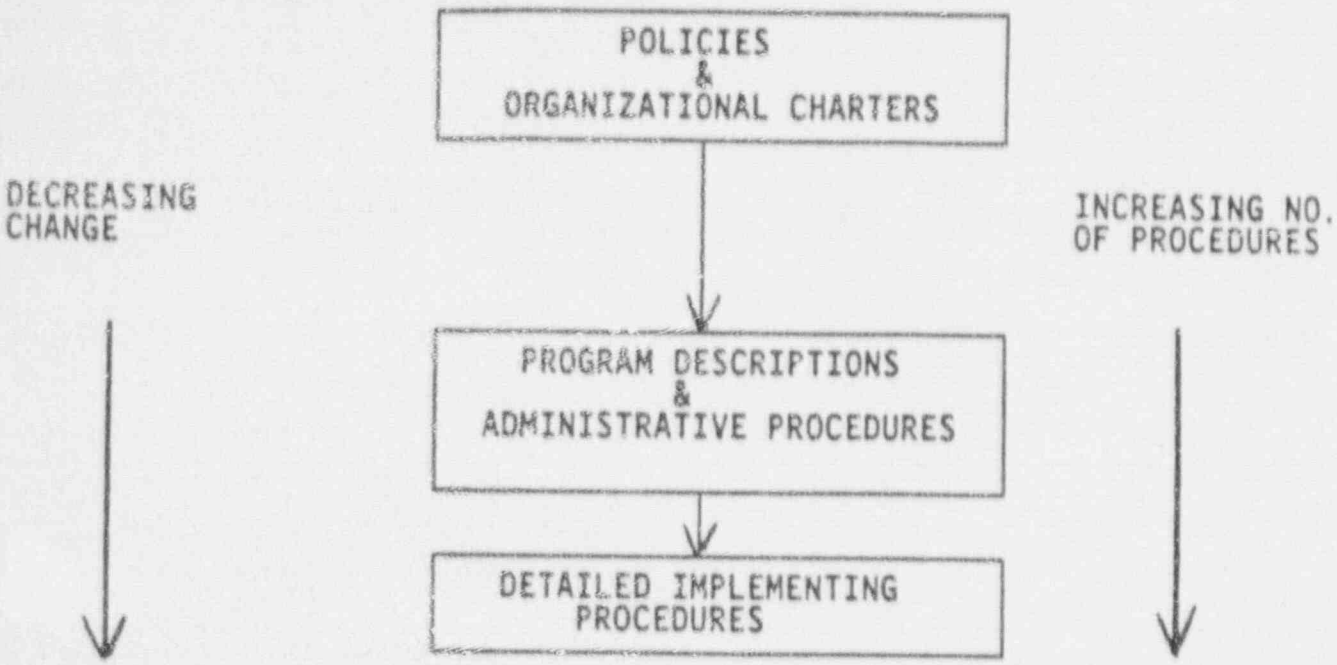
- REVISE APPLICABLE ADMINISTRATIVE CONTROLLING DOCUMENTS AND IMPLEMENTING PROCEDURES TO CONFORM TO LIPA ORGANIZATION AND MISSION AS FOLLOWS:

  A. LIPA PLANT MANAGEMENT DIRECTLY RESPONSIBLE FOR REVISING/DEVELOPING FOLLOWING ADMINISTRATIVE DOCUMENTS:

  - POLICIES
  - CHARTERS
  - POSITION DESCRIPTIONS
  - PROGRAM DESCRIPTIONS
  - ADMINISTRATIVE PROCEDURES

  B. PLANT AND SUPPORT STAFF RESPONSIBLE FOR DEVELOPING/IMPLEMENTING PROCEDURES TO SUPPORT (A) ABOVE.

OMPD CHANGES TO
LILCO PROGRAMMATIC HIERACHY



SHOREHAM CONTRACTS

- REVIEW EXISTING CONTRACTS REQUIRED TO MANAGE SHOREHAM.
- DETERMINE WHICH SERVICES WILL BE REQUIRED POST TRANSFER.
- TRANSFER/ASSIGN REQUIRED CONTRACTS TO ASSURE CONTINUITY, FAMILIARITY, SAFETY, AND TIMELY TRANSFER OF PLANT OWNERSHIP.

STATUS

- 225 CONTRACTS IN REVIEW PROGRAM
- 97 REVIEWED TO DATE
- 64 DETERMINED TO BE NECESSARY TO DATE

SHOREHAM PERMITS/LICENSES

- o REVIEW EXISTING PERMITS/LICENSES REQUIRED TO MAINTAIN SHOREHAM IN DEFUELED CONDITION.

- o TRANSFER, ASSIGN OR APPLY FOR PERMITS/LICENSES THAT LIPA WILL NEED AS LICENSEE.

STATUS

TOTAL NUMBER TO BE REVIEWED	113
NUMBER REVIEWED TO DATE	106
NUMBER NEEDED	25

- o FEDERAL (19)

  - (15) CERTIFICATES OF COMPLIANCE FOR RADIOACTIVE MATERIAL PACKAGES
  - (1) FACILITY OPERATING LICENSE*
  - (3) RADIO LICENSES*

- o STATE (6)

  - (2) RADWASTE DISPOSAL PERMITS
  - (1) SPDES PERMIT*
  - (1) SERVICE WATER WELL PERMITS*
  - (2) EASEMENTS (INTAKE CANAL, DISCHARGE PIPE)

* AGENCIES HAVE BEEN NOTIFIED OF NEED TO TRANSFER LICENSE/PERMIT.

OVERVIEW OF DECOMMISSIONING METHODOLOGY

DECOMMISSIONING PLAN EVOLUTION

- INITIAL SCOPING STUDIES PERFORMED IN EARLY 1990 WHICH CULMINATED IN APRIL, 1990 LIPA DECOMMISSIONING REPORT.

- ENGINEERING AND ENVIRONMENTAL EVALUATIONS OF DECOMMISSIONING ALTERNATIVES (I.E., DECON, SAFTSOR, ENTOMB) CONTINUED THROUGHOUT SUMMER 1990.

- NEW YORK STATE DRAFT GEIS PUBLISHED AND NOTICED FOR PUBLIC COMMENT DURING SUMMER, 1990; DECON METHOD SELECTED FOR SHOREHAM'S DECOMMISSIONING.

- BECHTEL HIRED BY LIPA DURING SEPTEMBER, 1990 AS PRINCIPAL ARCHITECT ENGINEER; CONCEPTUAL DEVELOPMENT DECOMMISSIONING INITIATED.

- DECOMMISSIONING PLAN AND ENVIRONMENTAL SUPPLEMENT COMPLETED AND SUBMITTED TO THE NRC ON DECEMBER 29, 1990.

- LIPA'S SHOREHAM DECOMMISSIONING PLAN SUBMITTED TO THE NRC REFLECTS:
  (1) INVOLVEMENT AND COOPERATIVE WORK EFFORTS AMONG THE SHOREHAM PRINCIPALS (I.E., LIPA, NYPA AND LILCO).
  (2) EXPERIENCE OFFERED BY SEVERAL CONSULTANTS INCLUDING BECHTEL, TLG ENGINEERING, POWER CUTTING, INC. AND STONE AND WEBSTER.
  (3) GUIDANCE PROVIDED BY DRAFT REG. GUIDE DG-1005.
  (4) LIPA'S SELECTION OF DECON ALTERNATIVE.

SHOREHAM RADIOLOGICAL STATUS

- o VERY LIMITED PERIOD OF PLANT OPERATION - EQUIVALENT TO APPROXIMATELY 2 EFFECTIVE FULL POWER DAYS.

- o RESULTING EXTENT OF ACTIVATION AND CONTAMINATION ARE MINOR IN COMPARISON TO DESIGN-LIFE OPERATION.

- o SITE RADIOLOGICAL STATUS CONFIRMED THROUGH EXTENSIVE SURVEY PROGRAM PERFORMED BY LILCO DURING 1990.

  - LIPA AND NYPA INVOLVED IN PLANNING.
  - SITE STUDY REMAINS A "LIVING" PROGRAM (I.E., ADDITIONAL DATA IS ACQUIRED AS REQUIRED).
  - SITE CHARACTERIZATION STUDY USED AS BASIS OF DECOMMISSIONING PLAN DEVELOPMENT.

- o PRINCIPAL FINDINGS OF STUDY:

  - TOTAL OF 9 SYSTEMS ARE CONTAMINATED, LEVELS OF CONTAMINATION ARE MUCH LESS THAN NORMAL OPERATING PLANT CONDITIONS.
  - VERY LIMITED EXTENT OF STRUCTURAL SURFACE CONTAMINATION.
  - NO CONTAMINATION OF AREAS EXTERNAL TO THE SHOREHAM PLANT BUILDINGS.

- o MAJORITY OF SHOREHAM'S APPROXIMATELY 600 Ci. RADIONUCLIDE INVENTORY (EXCLUDING FUEL) RESIDES WITHIN REACTOR VESSEL AND INTERNALS, APPROXIMATELY 3 mCi LOCATED IN ALL 9 CONTAMINATED PIPING SYSTEMS.

SYSTEM DECONTAMINATION AND DISMANTLEMENT

- "SOFT" DECONTAMINATION TECHNIQUES ARE UNDER EVALUATION BY LILCO AT THIS TIME; IT IS EXPECTED THAT APPLICATION OF THESE TECHNIQUES WILL BE COMPLETE DURING SPRING, 1991.

- "SOFT" DECONTAMINATION RESULTS WILL BE EVALUATED BY LIPA, NYPA AND LILCO TO DETERMINE FURTHER COURSE OF ACTIONS, INCLUDING:
  (1) DECONTAMINATION USING AGGRESSIVE TECHNIQUES.
  (2) SYSTEM DISMANTLEMENT.

- DECOMMISSIONING PLAN COST ESTIMATE, WASTE PROJECTIONS, SCHEDULE, ETC. ASSUME FULL SYSTEM DISMANTLEMENT (I.E., NO CREDIT TAKEN FOR POTENTIAL SCOPE REDUCTIONS OFFERED BY "SOFT" DECONTAMINATION PROGRAM).

- DISMANTLEMENT METHODOLOGY (E.G.: PIPE CUTTING) WILL BE CAREFULLY EVALUATED AND SELECTED WITH THE OBJECTIVE OF MINIMIZING THE POTENTIAL SPREAD OF CONTAMINATION.

- IN-PROCESS RADIOLOGICAL SURVEYS WILL BE EMPLOYED TO DETERMINE DECONTAMINATION AND DISMANTLEMENT EFFECTIVENESS.

REACTOR VESSEL AND INTERNALS
DECONTAMINATION AND DISMANTLEMENT

- VESSEL AND INTERNALS TO BE DECOMMISSIONED THROUGH A PROCESS OF DECONTAMINATION AND SEGMENTATION OPERATIONS.

- SEGMENTATION OPERATIONS WILL BE PERFORMED WITHIN THE REACTOR BUILDING.

- EXPERIENCED SPECIALTY CONTRACTORS USED IN THE EVALUATION OF SEGMENTATION PROCESSES.

- TECHNIQUES AND PROCESSES DESCRIBED IN DECOMMISSIONING PLAN, SUCH AS UNDERWATER PLASMA ARC CUTTING, MDM, WIRE ROPE CUTTING, ETC. ARE FIELD PROVEN IN SIMILAR APPLICATIONS.

- DUE TO LIMITED EXTENT OF PLANT OPERATION, PROCESS DEPLOYMENT WILL RANGE FROM REMOTE/UNDERWATER SEGMENTATION OPERATIONS TO HANDS-ON CUTTING IN AIR.

- ACTIVATED COMPONENTS TO BE PACKAGED AND SHIPPED OFF-SITE FOR DIRECT BURIAL OR FURTHER VOLUME REDUCTION/PROCESSING.

- CONTAMINATED, NONACTIVATED COMPONENTS TO BE DECONTAMINATED ON-SITE OR SHIPPED OFF-SITE FOR DECONTAMINATION BY A QUALIFIED AND LICENSED VENDOR.

SHOREHAM DECOMMISSIONING SCHEDULE

- o SUMMARY LEVEL SCHEDULE INCLUDED IN LIPA'S DECOMMISSIONING PLAN, LIPA WILL CONTINUE TO DEVELOP SCHEDULE DETAILS THROUGHOUT DETAILED ENGINEERING.

- o SCHEDULE BASED ON SHOREHAM SPECIFIC SCOPE USING DATA PROVIDED BY EXPERIENCED CONTRACTORS AND CONSULTANTS.

- o ESTIMATED TOTAL PROJECT DURATION OF 27 MONTHS FROM NRC APPROVAL OF DECOMMISSIONING PLAN AND ISSUANCE OF DECOMMISSIONING ORDER.
  - DECOMMISSIONING PLAN ASSUMES OCTOBER, 1991 DECOMMISSIONING ORDER RESULTING IN LATE 1993 PROJECT COMPLETION.

- o FUEL DISPOSITION IS A DETERMINANT OF THE OVERALL PROJECT DURATION.
  - FINAL DECONTAMINATION AND/OR DISMANTLEMENT OF FUEL STORAGE-RELATED SYSTEMS AND STRUCTURES RESTRAINED BY FUEL DISPOSAL.

- o LINKAGE BETWEEN DECOMMISSIONING SCHEDULE AND COST ESTIMATE.
  - DECOMMISSIONING SCHEDULE USED TO DEVELOP PERIOD-DEPENDENT COSTS.
  - CONSISTENCY BETWEEN COST AND SCHEDULE WORK BREAKDOWN STRUCTURES.

DECOMMISSIONING COST ESTIMATE

- o ESTIMATE COST TO DECOMMISSION SHOREHAM IS $186 MILLION (1991 DOLLARS)

- o ESTIMATE SCOPE IS ALL - INCLUSIVE WITH EXCEPTION OF FUEL DISPOSAL COSTS.
  - DECOMMISSIONING ENGINEERING.
  - SPECIAL TOOLING DEVELOPMENT/PROCUREMENT.
  - DIRECT COSTS OF DECONTAMINATION AND DISMANTLEMENT ACTIVITIES.
  - INDIRECT/DISTRIBUTABLE LABOR.
  - WASTE MANAGEMENT.
  - PLANT STAFF/DECOMMISSIONING SUPPORT COSTS.

- o COST ESTIMATE APPROACH, METHODOLOGY, FORMAT, ETC. CONSIDERED GUIDANCE OFFERED BY GENERIC INDUSTRY PUBLICATIONS (E.G., PNL AND AIF DECOMMISSIONING STUDIES).

- o ESTIMATE IS SHOREHAM SPECIFIC.
  - BASED ON SHOREHAM DECONTAMINATION AND DISMANTLEMENT SCOPE.
  - LOCAL WAGE RATES, CRAFT ASSIGNMENTS AND PRODUCTIVITY.
  - TIME DEPENDENT COSTS CONSISTENT WITH DECOMMISSIONING SCHEDULE.

- o AREAS OF CONSERVATISM.
  - NO CREDIT FOR "SOFT" DECONTAMINATION EFFECTIVENESS.
  - NO CREDIT FOR WASTE VOLUME REDUCTION.
  - ESTIMATE ASSUMES REMOTE/UNDERWATER DISMANTLEMENT OF ALL REACTOR INTERNALS.

RADIATION EXPOSURE ESTIMATE

- TOTAL ESTIMATED PERSONNEL RADIATION EXPOSURE ASSOCIATED WITH SHOREHAM'S DECOMMISSIONING IS APPROXIMATELY 190 PERSON-REM.

- FOR COMPARISON PURPOSES, THE SHOREHAM ESTIMATE IS 10% OF THAT ESTIMATE FOR THE REFERENCE BWR IN NUREG 0586.

- RADIATION FIELDS USED IN DOSE ESTIMATING CALCULATIONS WERE BASED ON FIELD MEASUREMENTS AND CALCULATED EXPOSURE RATES.

- PERSONNEL STAY-TIMES AND INTEGRATED JOB HOURS WITHIN RADIOLOGICAL WORK ENVIRONMENTS WERE CONSERVATIVELY ESTIMATED AND WERE BASED ON THE SHOREHAM-SPECIFIC DECONTAMINATION AND DISMANTLEMENT SCOPE.

- AS EXPECTED, THE MAJORITY (83%) OF PERSONNEL RADIATION EXPOSURE IS ASSOCIATED WITH TASKS AND ACTIVITIES RELATED TO RPV AND INTERNALS SEGMENTATION.

RADIOACTIVE WASTE MANAGEMENT

- ESTIMATED VOLUME AND TOTAL ACTIVITY OF SHOREHAM'S DECOMMISSIONING RADIOACTIVE WASTE:
  - 80,000 FT^3
  - 602 Ci
- GENERIC INDUSTRY STUDIES FOR REFERENCE BWR ESTIMATE WASTE QUANTITY OF 670,000 FT^3.
- ALL OF SHOREHAM'S WASTE IS EXPECTED TO BE CLASS A (10CFR61).
- DECOMMISSIONING ACTIVITIES ARE NOT EXPECTED TO GENERATE MIXED WASTE.
- ESTIMATED WASTE VOLUMES ARE CONSERVATIVE, NO CREDIT TAKEN FOR "SOFT" DECONTAMINATION EFFECTIVENESS OR PLANNED VOLUME REDUCTION ACTIVITIES.
- AGGRESSIVE VOLUME REDUCTIONS UNDER CONSIDERATION BY LIPA.
  - ON-SITE DECONTAMINATION AND SEGREGATION OF DISMANTLEMENT EQUIPMENT.
  - OFF-SITE DECONTAMINATION/WASTE PROCESSING BY LICENSED AND QUALIFIED VENDORS.
- LIPA IS ADAPTING LILCO'S EXISTING WASTE PROGRAMS AND PROCEDURES FOR ITS USE FOLLOWING LICENSE TRANSFER AND THROUGHOUT DECOMMISSIONING.
- ULTIMATE DISPOSAL OF SHOREHAM'S PROCESSED WASTE AT A LICENSED BURIAL FACILITY.

DECOMMISSIONING PLAN

ACCIDENT ANALYSIS

FUEL DAMAGE ACCIDENT:

- WORST CASE SCENARIO IS POSTULATED RELEASE OF ALL GASEOUS Kr-85 FROM ALL 560 FUEL ASSEMBLIES.

- MAXIMUM OFFSITE INDIVIDUAL DOSES ARE LESS THAN 0.11% AND 1.9% OF EPA PROTECTIVE ACTION GUIDE (PAG) WHOLE BODY AND ORGAN LOWER DOSE LIMITS, RESPECTIVELY.

- SAME ANALYSIS AS APPROVED BY NRC FOR CURRENT LILCO EXEMPTION FROM OFFSITE EMERGENCY PREPAREDNESS REQUIREMENTS, AND AS SUBMITTED BY LILCO WITH POSSESSION ONLY LICENSE AMENDMENT REQUEST.

ACCIDENTS WITHOUT FUEL DAMAGE:

- RANGE OF POSTULATED ACCIDENTS IS COMPARABLE TO ANALYSIS OF REFERENCE BWR DECOMMISSIONING.

- OFFSITE RELEASES ARE BELOW REFERENCE BWR ACCIDENT RELEASES IN ALL CASES.

- MAXIMUM OFFSITE INDIVIDUAL DOSES ARE AT LEAST 3 ORDERS OF MAGNITUDE BELOW EPA PAG'S.

DECOMMISSIONING PLAN

QUALITY ASSURANCE SUMMARY

- THE LIPA EXECUTIVE VP-SHOREHAM PROJECT WILL HAVE ULTIMATE QA RESPONSIBILITY.

- THE SHOREHAM NUCLEAR QUALITY ASSURANCE (NQA) DEPARTMENT MANAGER WILL REPORT DIRECTLY TO THE LIPA EXECUTIVE VP-SHOREHAM PROJECT.

- BOTH OF THE ABOVE INDIVIDUALS WILL BE LIPA/NYPA COEMPLOYEES.

- THE LIPA QA PROGRAM WILL BE DERIVED FROM LILCO'S QA PROGRAM.

- CRITERIA OF 10 CFR 50 APPENDIX B WILL BE ADDRESSED AS APPLICABLE FOR THE FOLLOWING ELEMENTS OF THE DECOMMISSIONING PROCESS:

  (1) RADIOLOGICAL PROTECTION OF PLANT PERSONNEL, PUBLIC HEALTH AND SAFETY, AND THE ENVIRONMENT.
  (2) CONTROL OF RADIATION EXPOSURE.
  (3) REGULATORY COMPLIANCE.
  (4) DESIGN, PROCUREMENT, FABRICATION AND OPERATION OF DECONTAMINATION EQUIPMENT.
  (5) DESIGN, PROCUREMENT, ERECTION, TESTING AND OPERATION OF SPECIALTY/ENGINEERING EQUIPMENT FOR DISMANTLEMENT AND DISPOSITION OF CONTAMINATED EQUIPMENT.
  (6) CONTROL OF RADIOACTIVE MATERIAL AND CONTAMINATION.
  (7) SHIPMENT OF RADIOACTIVE WASTE.
  (8) SITE CHARACTERIZATION.
  (9) CONTROL OF ACTIVITIES FOR THE FINAL RADIATION SURVEY.

DECOMMISSIONING/FUEL DISPOSITION INTERFACE

- PRESENCE OF FUEL IN SPENT FUEL STORAGE POOL AND SCHEDULE(S) FOR FUEL DISPOSITION ALTERNATIVES CONSIDERED THROUGHOUT ALL PHASES OF DECOMMISSIONING PLAN DEVELOPMENT.

- DECONTAMINATION AND DISMANTLEMENT ACTIVITIES THAT ARE TO BE PERFORMED DURING PERIODS IN WHICH FUEL IS STORED IN THE SPENT FUEL STORAGE POOL WILL BE PERFORMED UNDER APPROPRIATE CONTROLS SO AS TO PRECLUDE A FUEL DAMAGE EVENT.

- ACCIDENT ANALYSES INCLUDED IN DECOMMISSIONING PLAN, NONETHELESS, CONSIDER A FUEL DAMAGE EVENT.

- DECONTAMINATION AND DISMANTLEMENT SCHEDULE CONFIGURED TO REFLECT REFUELING DECK CASK/FUEL HANDLING ACTIVITIES.

- GIVEN CURRENT OPTIONS, FUEL DISPOSITION IS A MAJOR DETERMINANT IN THE OVERALL COMPLETION OF SHOREHAM DECOMMISSIONING.

PRESENTATION OF LICENSE TRANSFER APPLICATION

LIPA/LILCO LICENSE TRANSFER APPLICATION CONTENTS

THE SHOREHAM AGREEMENTS

- SETTLEMENT AGREEMENT - LILCO AGREES WITH NY STATE:
  (1) NOT TO OPERATE SHOREHAM.
  (2) TO TRANSFER PLANT AND LICENSE TO LIPA.

- ASSET TRANSFER AGREEMENT - LILCO AND LIPA AGREE:
  (1) ON SPECIFIC SHOREHAM "ASSETS" TO BE TRANSFERRED TO LIPA
  (2) LILCO TO FUND LIPA COSTS FOR TRANSFER, MAINTENANCE AND DECOMMISSIONING OF SHOREHAM.

- MANAGEMENT SERVICES AGREEMENT - LIPA AND NYPA AGREE THAT:
  (1) NYPA WILL SERVE AS PRIME CONTRACTOR TO LIPA FOR SHOREHAM TRANSFER, MAINTENANCE AND DECOMMISSIONING.

- SITE COOPERATION AND REIMBURSEMENT AGREEMENT - LILCO AND LIPA AGREE:
  (1) ON SPECIFIC MECHANISM FOR LILCO FUNDING OF LIPA COSTS ATTRIBUTABLE TO SHOREHAM.
  (2) ON COOPERATIVE EFFORTS AT SHOREHAM SITE BEFORE AND AFTER TRANSFER, INCLUDING LILCO EMPLOYEE SUPPORT FOR LIPA ACTIVITIES.

LIPA'S REQUESTED AUTHORITY UNDER THE TRANSFERRED SHOREHAM LICENSE

- TO POSSESS AND USE, BUT NOT OPERATE, THE SHOREHAM FACILITY, UNDER 10 CFR PART 50.

- TO POSSESS SPECIAL NUCLEAR MATERIAL AS CONTAINED IN THE EXISTING SHOREHAM FUEL, UNDER 10 CFR PART 70.

- TO POSSESS BYPRODUCT, SOURCE, AND SPECIAL NUCLEAR MATERIAL AS EXISTING STARTUP SOURCES; AS REACTOR INSTRUMENTATION AND RADIATION MONITOR CALIBRATION SOURCES; AND AS FISSION DETECTORS, UNDER 10 CFR PARTS 30, 40 AND 70.

- TO RECEIVE, POSSESS AND USE BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL FOR SAMPLE ANALYSIS OR INSTRUMENT CALIBRATION OR IN ASSOCIATION WITH RADIOACTIVE APPARATUS OR COMPONENTS, UNDER 10 CFR PARTS 30, 40, AND 70.

- TO POSSESS, BUT NOT SEPARATE, SUCH BYPRODUCT AND SPECIAL NUCLEAR MATERIAL AS HAVE BEEN PREVIOUSLY PRODUCED BY OPERATION OF THE FACILITY, UNDER 10 CFR PARTS 30, 40 AND 70.

GENERAL INFORMATION ABOUT THE
LONG ISLAND POWER AUTHORITY

HEADQUARTERS OFFICE	-	GARDEN CITY, NEW YORK (LONG ISLAND)
TYPE OF BUSINESS	-	CORPORATE MUNICIPAL INSTRUMENTALITY AND POLITICAL SUBDIVISION OF NEW YORK STATE.
PRINCIPAL CURRENT AND FUTURE ACTIVITIES	-	ASSESSMENT OF GAS AND ELECTRIC POWER NEEDS ON LONG ISLAND.
	-	ACQUISITION AND DECOMMISSIONING OF SHOREHAM NUCLEAR POWER STATION.
PRESENT EXECUTIVE COMPOSITION	-	9 APPOINTED TRUSTEES, INCLUDING CHAIRMAN.
	-	2 PRINCIPAL OFFICERS.
	-	ALL ARE U.S. CITIZENS.
FOREIGN OR ALIEN INTERESTS IN LIPA	-	NONE

ANTICIPATED SCOPE OF LICENSE AND SHOREHAM CONDITIONS

- NO PLANT OPERATION, I.E. POSSESSION ONLY.

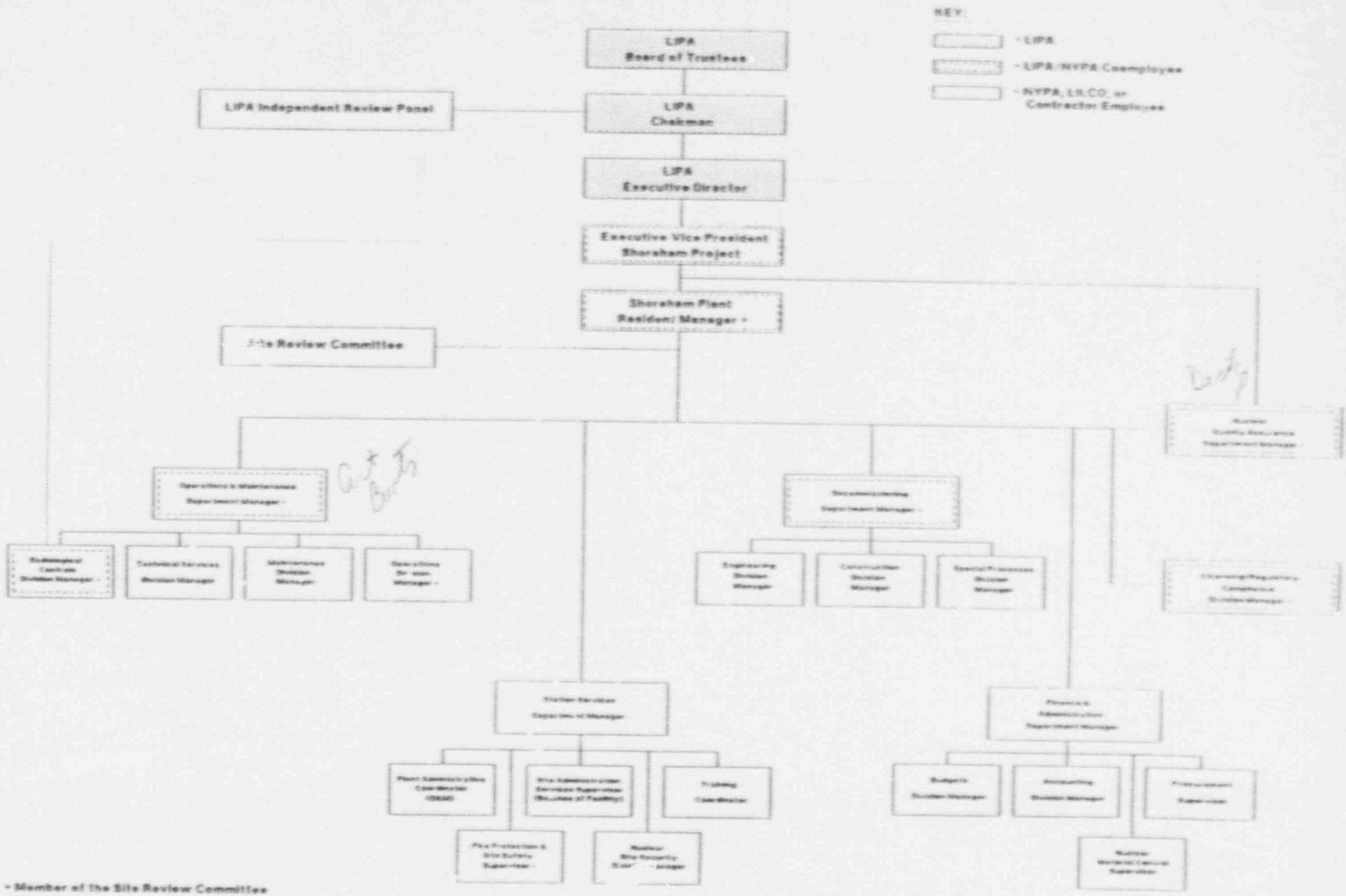
- MAINTAIN PRESENT DEFUELED CONDITION INITIALLY, THEN DISPOSE OF FUEL AND DECOMMISSION FACILITY.

- FUEL CONDITIONS:
  - (1) 560 ASSEMBLIES UNDERWATER IN SPENT FUEL STORAGE POOL.
  - (2) 2 EFFECTIVE FULL POWER DAYS FUEL BURNUP.
  - (3) NEVER EXCEEDED 5 PERCENT POWER.
  - (4) 550 WATTS DECAY HEAT RATE AS OF JUNE 1989.
  - (5) TOTAL FUEL ACTIVITY WAS 176,000 CURIES AS OF JUNE 1989.
  - (6) TOTAL FUEL GASEOUS ACTIVITY WAS 1560 CURIES OF KRYPTON-85 AS OF JUNE 1989.

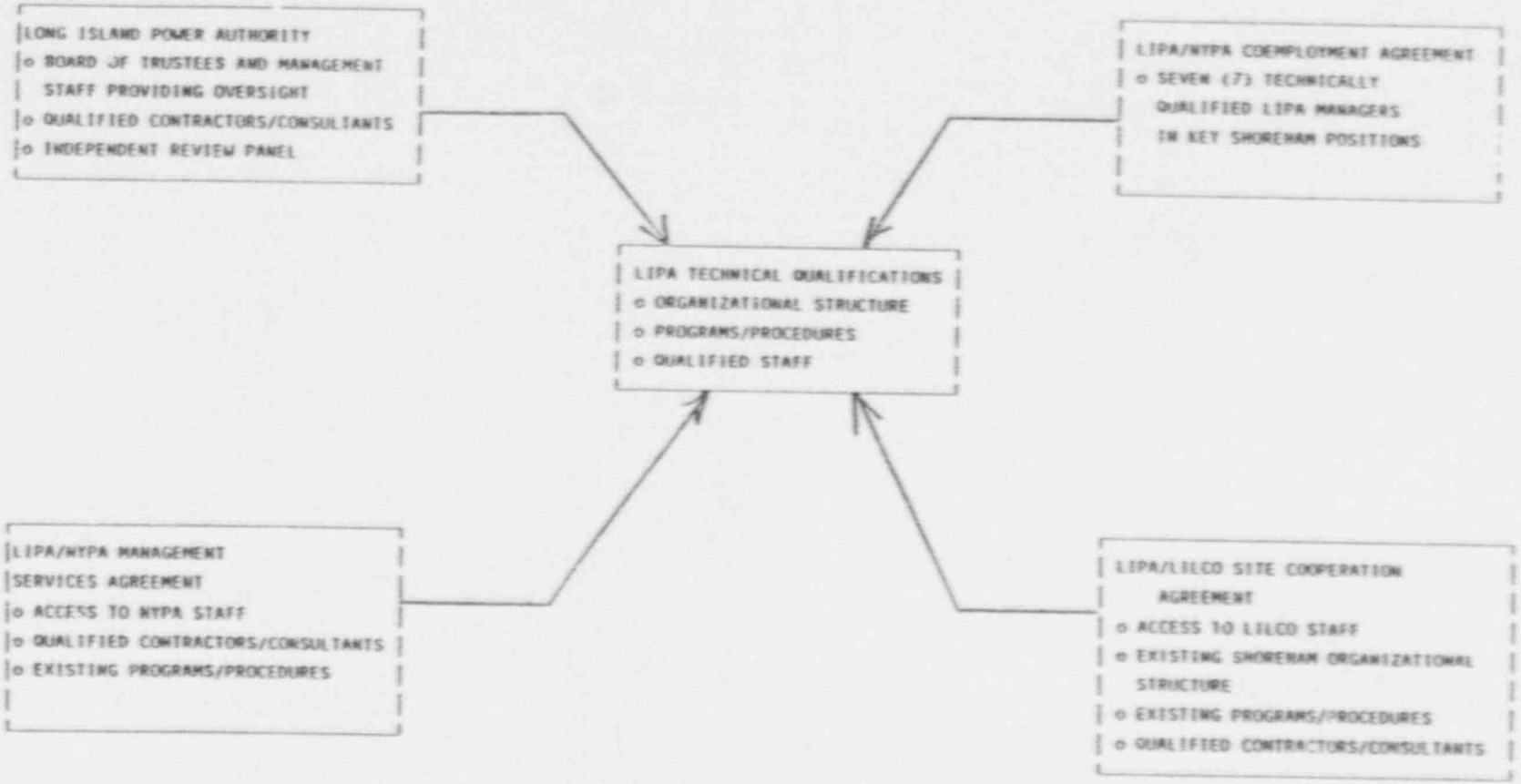
- PLANT CONDITIONS:
  - (1) LIMITED ACTIVATION OF REACTOR PRESSURE VESSEL SEGMENTS AND REACTOR INTERNALS.
  - (2) LOW CONTAMINATION LEVELS AT FACILITY, PRIMARILY CONFINED TO REACTOR BUILDING.
  - (3) TOTAL ACTIVATION AND CONTAMINATION LEVELS ARE ORDERS OF MAGNITUDE BELOW REFERENCE END-OF-LIFE BWR.

- SAFETY ANALYSIS INDICATES NO ACCIDENT WHICH WOULD REQUIRE OFFSITE EMERGENCY RESPONSE, EVEN IF ALL FUEL IS RUPTURED; NO ACTIVE COOLING REQUIRED.

Shoreham Plant Organization Chart



TECHNICAL QUALIFICATION OVERVIEW



COEMPLOYMENT APPROACH

- 7 KEY NYPA INDIVIDUALS TO BECOME LIPA COEMPLOYEES:
  - EXECUTIVE VICE-PRESIDENT - SHOREHAM PROJECT.
  - RESIDENT MANAGER.
  - OPERATIONS AND MAINTENANCE DEPARTMENT MANAGER.
  - DECOMMISSIONING DEPARTMENT MANAGER.
  - NUCLEAR QUALITY ASSURANCE DEPARTMENT MANAGER.
  - RADIOLOGICAL CONTROLS DIVISION MANAGER.
  - LICENSING/REGULATORY COMPLIANCE DIVISION MANAGER.

- FORMAL COEMPLOYMENT AGREEMENT APPROVED BY NYPA TRUSTEES AND UNDER FINAL REVIEW BY LIPA.

- ALL COEMPLOYEES EXCEPT EXECUTIVE VICE PRESIDENT - SHOREHAM PROJECT WILL BE DEDICATED FULL-TIME TO SHOREHAM, AND ARE CURRENTLY INVOLVED ON A FULL-TIME BASIS.

- THE COEMPLOYEES WILL BE DIRECTLY ACCOUNTABLE TO LIPA EXECUTIVE MANAGEMENT AND WILL HAVE THE NECESSARY AUTHORITY TO CARRY OUT THEIR DUTIES.

- ADMINISTRATIVE OBLIGATIONS TO COEMPLOYEES (I.E., SALARY, BENEFITS, ETC.) WILL REMAIN WITH NYPA.

- POLICY DIRECTION OF COEMPLOYEES WILL EMANATE FROM LIPA.

LILCO PROJECT STAFFING

UNDER

SITE COOPERATION AND REIMBURSEMENT AGREEMENT

- o LILCO TO MAKE ITS EMPLOYEES AVAILABLE TO SATISFY LIPA'S SHOREHAM STAFFING NEEDS ON A BEST EFFORT BASIS.

- o TERMS OF AGREEMENT ARE GLOBAL IN NATURE.

  - APPLICABLE TO PLANT MAINTENANCE AND DECOMMISSIONING ACTIVITIES.
  - LILCO "EMPLOYEES" INCLUDE MANAGEMENT AND PROFESSIONAL PERSONNEL IN TECHNICAL AND NONTECHNICAL AREAS AS WELL AS PHYSICAL WORKERS WORKING UNDER LILCO'S COLLECTIVE BARGAINING AGREEMENTS.

- o ASSIGNED LILCO PERSONNEL WILL REMAIN AS LILCO EMPLOYEES, LILCO WILL RETAIN RESPONSIBILITY FOR LABOR RELATIONS WITH RESPECT TO SUCH EMPLOYEES.

- o LIPA AND NYPA WILL BE RESPONSIBLE FOR THE DIRECTION AND SUPERVISION OF LILCO EMPLOYEES WORKING AT SHOREHAM.

- o SITE COOPERATION AND REIMBURSEMENT AGREEMENT WITH LILCO VIEWED AS LIPA'S PRIMARY STAFFING MECHANISM.

NYPA PROJECT STAFFING

UNDER

MANAGEMENT SERVICES AGREEMENT

- LIPA CONTRACT WITH NYPA WHEREBY NYPA AGREES TO PROVIDE GLOBAL TECHNICAL AND MANAGEMENT SERVICES TO ASSIST LIPA WITH LICENSE TRANSFER AND THE MAINTENANCE/DECOMMISSIONING OF SHOREHAM.

- NYPA ASSIGNEES WORKING UNDER THE AGREEMENT REMAIN AS NYPA EMPLOYEES.

- THE AGREEMENT INCLUDES PROVISIONS FOR THE USE OF CONTRACTED ASSISTANCE THAT IS HIRED DIRECTLY BY NYPA.

- ESTIMATED THAT PROJECT WILL PEAK AT 20 TO 25 NYPA EMPLOYEES ASSIGNED TO SHOREHAM.

INDEPENDENT REVIEW PANEL (IRP)

- GENERAL RESPONSIBILITIES:

  (1) ASSESS THE NUCLEAR SAFETY, REGULATORY COMPLIANCE AND MANAGEMENT EFFECTIVENESS OF THE SHOREHAM PROJECT.

  (2) PROVIDE INDEPENDENT OBSERVATIONS AND RECOMMENDATIONS TO LIPA ON THE OVERALL CONDUCT OF LIPA'S SHOREHAM ACTIVITIES.

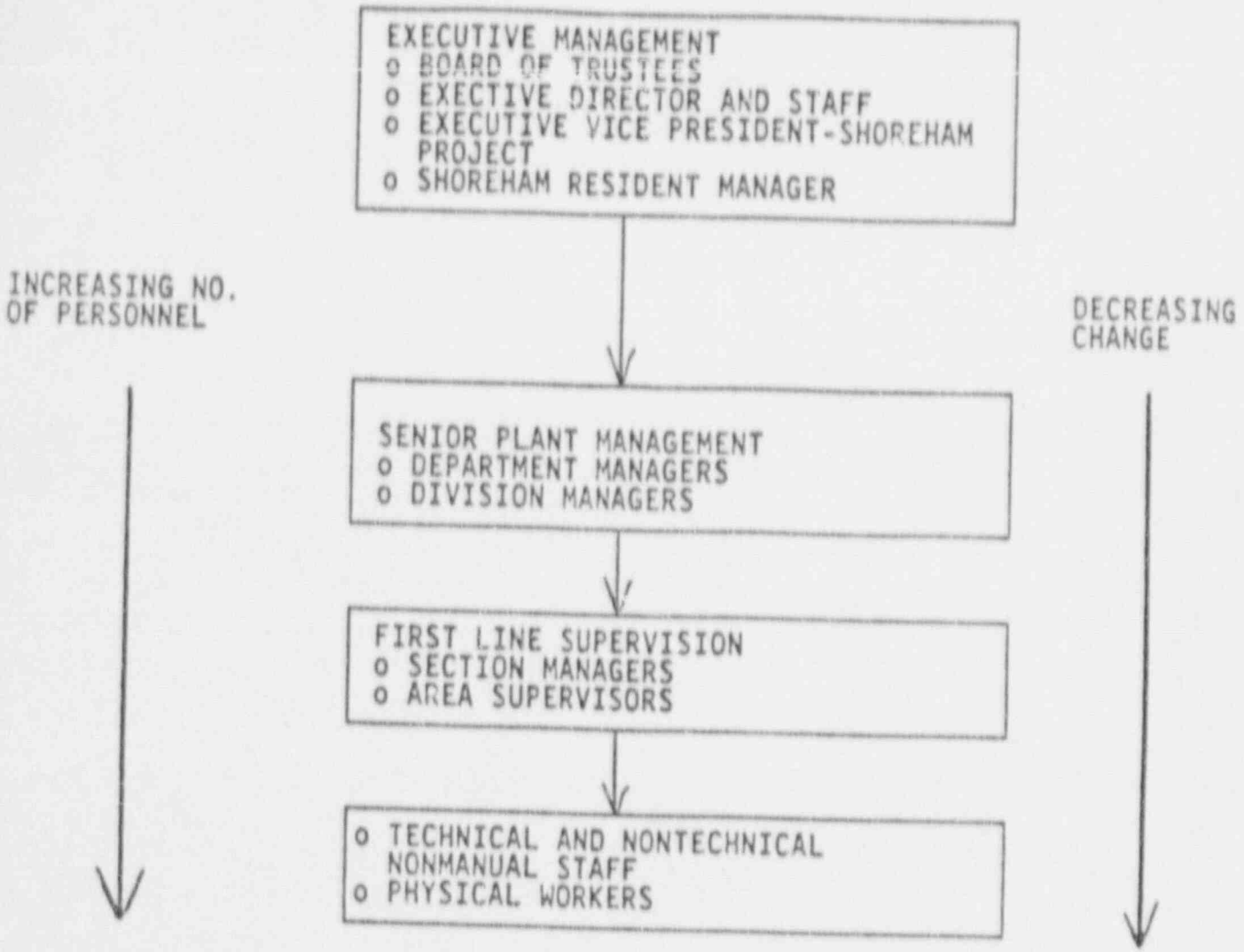
- THE IRP'S ROLE IS TO BE A HYBRID BETWEEN THAT OF THE LILCO NUCLEAR REVIEW BOARD AND THOSE OF VARIOUS CORPORATE NUCLEAR UTILITY OVERSIGHT COMMITTEES.

- THE IRP WILL REPORT DIRECTLY TO THE LIPA CHAIRMAN.

- THE IRP WILL HAVE AUTHORITY TO REVIEW ANY PROJECT ACTIVITIES OR DOCUMENTS.

- THE IRP WILL BE COMPOSED OF 5 MEMBERS WITH DEMONSTRATED EXPERTISE AND EXPERIENCE IN NUCLEAR FIELDS.

SHOREHAM STAFFING OVERVIEW



DISTRIBUTION OF LIPA, NYPA AND LILCO PERSONNEL

IN THE LIPA SHOREHAM ORGANIZATION

	PERCENT		
	LIPA (INCLUDING COEMPLOYEES)	NYPA (NOT INCLUDING COEMPLOYEES)	LILCO
EXECUTIVE LEVEL (RESIDENT MANAGER AND ABOVE)	100	0	0
DEPARTMENT MANAGER LEVEL	60	20	20
DIVISION MANAGER LEVEL	13	47	40
STAFF LEVEL (SUPERVISORS AND BELOW)	0	0	100*

Total staff (485 ±) includes all contractor guard force

* INCLUDES CONTRACTOR SUPPORT TO THE SAME EXTENT AS PRESENTLY USED

FUNDING OF LIPA'S SHOREHAM ACTIVITIES

- EVERY MONTH, LIPA PROVIDES LILCO WITH A PROJECTION OF LIPA'S ANTICIPATED CASH NEEDS FOR THE THIRD FOLLOWING MONTH.

- LILCO IN TURN ADVANCES THE FUNDS AS PROJECTED BY LIPA ON A MONTHLY BASIS.

- LIPA THEN DEPOSITS SUCH FUNDS INTO DEDICATED SHOREHAM ACCOUNTS.

- LIPA MAY AT ANY TIME SUBMIT REVISED MONTHLY CASH FLOW PROJECTIONS WHICH LILCO IS OBLIGATED TO PROVIDE FUNDING FOR.

- LILCO WILL ADVANCE LIPA AN ADDITIONAL AMOUNT OF OPERATING OR OTHER FUNDS IF REQUIRED BY REGULATORY AUTHORITIES OR BY MUTUAL AGREEMENT.

OPERATIONS AND MAINTENANCE PROGRAM DEVELOPMENT (OMPD) PROCESS OVERVIEW

LILCO PLANT OWNERSHIP
(OPERATING LICENSE)

LILCO PROGRAMMATIC INFRASTRUCTURE

- o ORGANIZATION
- o POLICIES
- o PROGRAM DESCRIPTIONS
- o ADMINISTRATIVE PROCEDURES
- o DETAILED IMPLEMENTING PROCEDURES

→

OMPD

- o OL/POL TRANSITION
- o PROGRAM/PROCEDURE REVIEW AND ADAPTATION

→

LIPA PLANT OWNERSHIP
(POSSESSION ONLY LICENSE)

LIPA PROGRAMMATIC INFRASTRUCTURE

- o ORGANIZATION
- o POLICIES
- o PROGRAM DESCRIPTIONS
- o ADMINISTRATIVE PROCEDURES
- o DETAILED IMPLEMENTING PROCEDURES

OPERATIONS AND MAINTENANCE PROGRAM DEVELOPMENT (OMPD) FOR LICENSE TRANSFER

- OMPD OBJECTIVES:
  - DEVELOP PROGRAMS AND PROCEDURES NECESSARY FOR LIPA/NYPA MANAGEMENT OF SNPS IN THE DEFUELED CONDITION.
  - ENABLE SMOOTH TRANSFER OF NRC LICENSE AND RESPONSIBILITIES.
  - IDENTIFY AND ESTABLISH SCOPE AND MECHANISMS FOR TRANSFER OF LILCO, LICENSES, PERMITS AND CONTRACTS.
  - PROVIDE FOR THE DEVELOPMENT OF AN EFFECTIVE SNPS SITE ORGANIZATION.
- OMPD SCOPE:
  - DETERMINE EXISTING SNPS PROGRAMS, PROCEDURES, LICENSES, PERMITS, CONTRACTORS, ETC. REQUIRED TO MANAGER DEFUELED FACILITY.
  - MODIFY EXISTING PROGRAMS AND PROCEDURES TO COMPLY WITH NYPA CORPORATE REQUIREMENTS AND WITH LIPA/NYPA PLANT ORGANIZATION FOR SNPS.

OPERATIONS AND MANTENANCE PROGRAM DEVELOPMENT (OMPD) FOR LICENSE TRANSFER (CONT'D)

- OMPD SCOPE (CONT'D):
  - DEVELOP NEW PROGRAMS AND PROCEDURES, AS REQUIRED.
  - DETERMINE WHICH REQUIRED SNPS LICENSES, PERMITS, AND CONTRACTS ARE TRANSFERABLE AND INITIATE ACQUISITION/REPLACEMENT OF THOSE WHICH ARE NOT TRANSFERABLE.
  - DEVELOP MEMORANDA OF UNDERSTANDING AS REQUIRED TO CLARIFY DIVISION OF RESPONSIBILITIES BETWEEN LILCO & LIPA.

OMPD FOR LICENSE TRANSFER

- OMPD FOR PROGRAM AND PROCEDURE REVIEW TO CONSIDER:

  - * ADMINISTRATION
  - * OPERATIONS
  - * MAINTENANCE
  - * INSTRUMENTATION AND CONTROL
  - * REACTOR ENGINEERING
  - * HEALTH PHYSICS
  - * RADIOCHEMISTRY
  - * TECHNICAL SUPPORT
  - * EMERGENCY PLANNING
  - * SECURITY
  - * PLANT COMPUTERS
  - * RADWASTE
  - * QUALITY ASSURANCE/ QUALITY CONTROL
  - * FIRE/SAFETY
  - * SYSTEMS ENGINEERING
  - * RECORDS MANAGEMENT
  - * LICENSING
  - * TRAINING

- OTHER KEY OMPD ASPECTS AND GUIDELINES:

  Jan 5,90 phone at Jones Island

  - USE LILCO DSAR AND RELATED NRC SUBMITTALS AS BASIS FOR REVIEW.

  - UTILIZE LILCO STAFF PERSONNEL TO THE EXTENT POSSIBLE AFTER LICENSE TRANSFER.

  - LIPA/NYPA ORGANIZATION WILL BE ONSITE PRIOR TO LICENSE TRANSFER.

SHOREHAM POLICIES, PROGRAMS & PROCEDURES

- ALIGN EXISTING LILCO DOCUMENTS INTO AN ADMINISTRATIVE HIERARCHY.

- REVIEW DOCUMENTS AND DETERMINE THOSE REQUIRED TO SUPPORT MANAGEMENT OF SHOREHAM IN THE DEFUELED CONDITION.

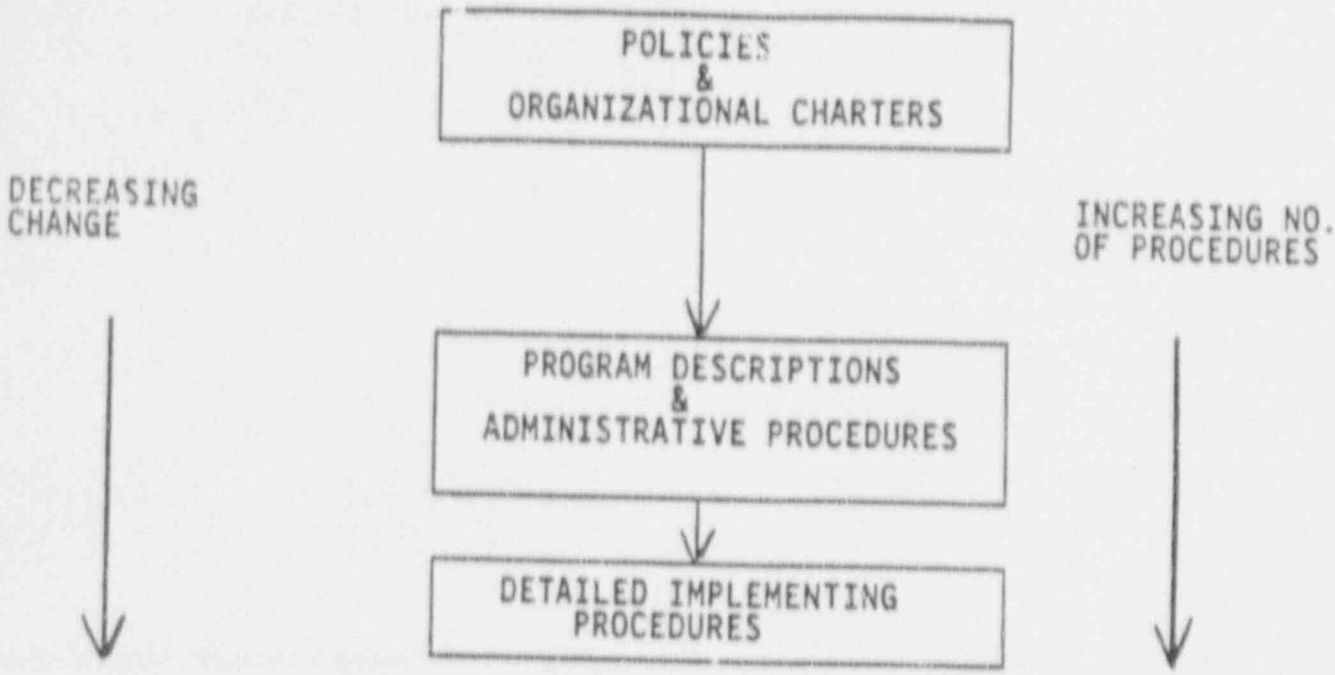
- REVISE APPLICABLE ADMINISTRATIVE CONTROLLING DOCUMENTS AND IMPLEMENTING PROCEDURES TO CONFORM TO LIPA ORGANIZATION AND MISSION AS FOLLOWS:

  A. LIPA PLANT MANAGEMENT DIRECTLY RESPONSIBLE FOR REVISING/DEVELOPING FOLLOWING ADMINISTRATIVE DOCUMENTS:

  - POLICIES
  - CHARTERS
  - POSITION DESCRIPTIONS
  - PROGRAM DESCRIPTIONS
  - ADMINISTRATIVE PROCEDURES

  B. PLANT AND SUPPORT STAFF RESPONSIBLE FOR DEVELOPING/IMPLEMENTING PROCEDURES TO SUPPORT (A) ABOVE.

OMPD CHANGES TO LILCO PROGRAMMATIC HIERACHY



SHOREHAM CONTRACTS

- REVIEW EXISTING CONTRACTS REQUIRED TO MANAGE SHOREHAM.
- DETERMINE WHICH SERVICES WILL BE REQUIRED POST TRANSFER.
- TRANSFER/ASSIGN REQUIRED CONTRACTS TO ASSURE CONTINUITY, FAMILIARITY, SAFETY, AND TIMELY TRANSFER OF PLANT OWNERSHIP.

STATUS

- 225 CONTRACTS IN REVIEW PROGRAM
- 97 REVIEWED TO DATE
- 64 DETERMINED TO BE NECESSARY TO DATE

SHOREHAM PERMITS/LICENSES

- o REVIEW EXISTING PERMITS/LICENSES REQUIRED TO MAINTAIN SHOREHAM IN DEFUELED CONDITION.

- o TRANSFER, ASSIGN OR APPLY FOR PERMITS/LICENSES THAT LIPA WILL NEED AS LICENSEE.

STATUS

TOTAL NUMBER TO BE REVIEWED	113
NUMBER REVIEWED TO DATE	106
NUMBER NEEDED	25

- o FEDERAL (19)

  - (15) CERTIFICATES OF COMPLIANCE FOR RADIOACTIVE MATERIAL PACKAGES
  - (1) FACILITY OPERATING LICENSE*
  - (3) RADIO LICENSES*

- o STATE (6)

  - (2) RADWASTE DISPOSAL PERMITS
  - (1) SPDES PERMIT*
  - (1) SERVICE WATER WELL PERMITS*
  - (2) EASEMENTS (INTAKE CANAL, DISCHARGE PIPE)

* AGENCIES HAVE BEEN NOTIFIED OF NEED TO TRANSFER LICENSE/PERMIT.

FUEL HANDLER CERTIFICATION PROGRAM APPROACH

- RETAIN LILCO NRC-LICENSED OPERATORS UNTIL REQUALIFICATION IS DUE.

- CERTIFY AS FUEL HANDLERS INSTEAD OF REQUALIFYING AS NRC-LICENSED OPERATORS.

- DEVELOP SHOREHAM CERTIFICATION PROGRAM BASED ON GENERAL ELEMENTS OF COMPARABLE PROGRAMS AT OTHER FACILITIES. GENERAL ELEMENTS WOULD BE SIMILAR TO THOSE FOR AN ISFSI UNDER 10 CFR PART 72. THESE WOULD INCLUDE:

  (1) ESTABLISHMENT OF CERTIFICATION AND TRAINING OFFICERS, OFFICER QUALIFICATIONS, TRAINING AREAS, AND TEST RATIONALE.
  (2) TRAINING IN RADIOLOGICAL SAFETY, EQUIPMENT DESIGN AND OPERATING CHARACTERISTICS, AND MANAGEMENT SYSTEMS AND PROCEDURES.
  (3) WRITTEN AND PRACTICAL EXAMINATIONS.
  (4) CERTIFICATION OF INDIVIDUALS BASED ON TRAINING COMPLETION, EXAMINATION COMPLETION, AND MEDICAL EXAMINATION RESULTS.
  (5) BIENNIAL MEDICAL EXAMINATIONS.
  (6) RECORDS REQUIREMENTS.

SUMMARY OF ENVIRONMENTAL IMPACT OF LICENSE TRANSFER

LICENSE TRANSFER WILL NOT HAVE ANY ENVIRONMENTAL IMPACT BECAUSE:

- LICENSE TRANSFER IS AN ADMINISTRATIVE ACTION.
- LIPA WILL MAINTAIN THE SAME RADIOLOGICAL AND NON-RADIOLOGICAL ENVIRONMENTAL PROGRAMS AND REQUIREMENTS EMPLOYED BY LILCO AT THE TIME OF TRANSFER.
- LIPA WILL CONTINUE TO MAINTAIN APPLICABLE PERMITS AND LICENSES CONCERNING:
  - (1) LAND USE
  - (2) WASTE HANDLING
  - (3) AIR QUALITY
  - (4) WATER QUALITY

- LIPA IS SEEKING TRANSFER OF NO FURTHER AUTHORITY THAN THAT REQUESTED IN LILCO'S POSSESSION ONLY LICENSE REQUEST.

LICENSE TRANSFER

NO SIGNIFICANT HAZARDS CONSIDERATION ANALYSIS

LICENSE TRANSFER WILL RESULT IN:

- NO SIGNIFICANT INCREASE IN PROBABILITIES OR CONSEQUENCES OF ACCIDENTS PREVIOUSLY EVALUATED IN THE LILCO DSAR.
- NO NEW OR DIFFERENT ACCIDENTS.
- NO SIGNIFICANT DECREASE IN TECHNICAL SPECIFICATION SAFETY MARGINS.

THESE CONCLUSIONS ARE BASED ON:

- LIPA'S TECHNICAL AND MANAGERIAL QUALIFICATIONS TO MAINTAIN SHOREHAM IN THE DEFUELED CONDITION, VIA:
  - (1) COEMPLOYMENT OF QUALIFIED NYPA MANAGERS.
  - (2) ESTABLISHMENT OF A LIPA INDEPENDENT REVIEW PANEL.
  - (3) USE OF OTHER QUALIFIED PERSONNEL AND RESOURCES FROM NYPA AND LILCO.
- FINANCIAL QUALIFICATION OF LIPA THROUGH AUTHORIZED LILCO FUNDS OBTAINED FROM RATEPAYERS.
- CONFORMANCE OF LIPA'S PROPOSED ACTIVITIES TO THE POSSESSION ONLY LICENSE ACTIVITIES FOR WHICH LILCO IS SEEKING AUTHORIZATION.
- THE LIMITED SCOPE OF CREDIBLE ACCIDENTS WHICH CAN BE POSTULATED UNDER CONTINUATION OF THE PRESENT CONDITIONS.

PRESENTATION OF PROPOSED DECOMMISSIONING PLAN

DECOMMISSIONING PLAN EVOLUTION

- o INITIAL SCOPING STJDIES PERFORMED IN EARLY 1990 WHICH CULMINATED IN APRIL, 1990 LIPA DECOMMISSIONING REPORT.

- o ENGINEERING AND ENVIRONMENTAL EVALUATIONS OF DECOMMISSIONING ALTERNATIVES (I.E., DECON, SAFTSOR, ENTOMB) CONTINUED THROUGHOUT SUMMER 1990.

- o NEW YORK STATE DRAFT GEIS PUBLISHED AND NOTICED FOR PUBLIC COMMENT DURING SUMMER, 1990; DECON METHOD SELECTED FOR SHOREHAM'S DECOMMISSIONING.

- o BECHTEL HIRED BY LIPA DURING SEPTEMBER, 1990 AS PRINCIPAL ARCHITECT ENGINEER; CONCEPTUAL DEVELOPMENT DECOMMISSIONING INITIATED.

- o DECOMMISSIONING PLAN AND ENVIRONMENTAL SUPPLEMENT COMPLETED AND SUBMITTED TO THE NRC ON DECEMBER 29, 1990.

- o LIPA'S SHOREHAM DECOMMISSIONING PLAN SUBMITTED TO THE NRC REFLECTS:
  - (1) INVOLVEMENT AND COOPERATIVE WORK EFFORTS AMONG THE SHOREHAM PRINCIPALS (I.E., LIPA, NYPA AND LILCO).
  - (2) EXPERIENCE OFFERED BY SEVERAL CONSULTANTS INCLUDING BECHTEL, TLG ENGINEERING, POWER CUTTING, INC. AND STONE AND WEBSTER.
  - (3) GUIDANCE PROVIDED BY DRAFT REG. GUIDE DG-1005.
  - (4) LIPA'S SELECTION OF DECON ALTERNATIVE.

DECOMMISSIONING PLAN SCOPE AND CONTENTS

- SUMMARY OF PLAN (I.E., EXECUTIVE SUMMARY).

- CHOICE OF DECOMMISSIONING ALTERNATIVE AND DESCRIPTION OF ACTIVITIES INVOLVED.
  - (1) DECOMMISSIONING ALTERNATIVE.
  - (2) DECOMMISSIONING ACTIVITIES, TASKS AND SCHEDULE.
  - (3) ORGANIZATION AND RESPONSIBILITIES.

- PROTECTION OF OCCUPATIONAL AND PUBLIC HEALTH AND SAFETY.
  - (1) FACILITY RADIOLOGICAL STATUS.
  - (2) RADIATION PROTECTION.
  - (3) RADIOACTIVE WASTE MANAGEMENT.
  - (4) ACCIDENT ANALYSIS.

- FINAL RADIATION SURVEY PLAN AND RELEASE CRITERIA.

- DECOMMISSIONING COST ESTIMATE AND FUNDING PLAN.

- TECHNICAL AND ENVIRONMENTAL SPECIFICATIONS.

- QUALITY ASSURANCE.

- PLANT SECURITY.

DECON DECOMMISSIONING ALTERNATIVE

- DECON ALTERNATIVE SELECTED BY LIPA FOR SHOREHAM'S DECOMMISSIONING.

- LIMITED OPERATING HISTORY AND LOW LEVELS OF CONTAMINATION/ACTIVATION SUPPORT IMMEDIATE DECON.

- DECON WILL RESULT IN NEAR TERM RELEASE OF THE SITE FOR UNRESTRICTED USE AND MAXIMIZE FLEXIBILITY IN SELECTING FUTURE USE OF FACILITY.

- SELECTED OPTION ALLOWS FOR USE OF EXISTING STAFF IN CARRYING OUT SHOREHAM'S DECOMMISSIONING; SUCH PERSONNEL ARE FAMILIAR WITH THE SHOREHAM PLANT AND ITS LIMITED PERIOD OF OPERATION.

- AVOIDANCE OF LONG-TERM CUSTODIAL CARE/MAINTENANCE COSTS ASSOCIATED WITH DEFERRED DECOMMISSIONING ALTERNATIVES (I.E., SAFSTOR AND ENTOMB).

- OVERALL APPROACH: DECONTAMINATION AND DISMANTLEMENT ONLY TO THE EXTENT NECESSARY TO REMOVE THE PLANT IRREVOCABLY FROM SERVICE AS A NUCLEAR GENERATING FACILITY AND REMOVE RADIOACTIVE MATERIAL TO PERMIT RELEASE OF THE SITE FOR UNRESTRICTED USE.

SYSTEM DECONTAMINATION AND DISMANTLEMENT

- "SOFT" DECONTAMINATION TECHNIQUES ARE UNDER EVALUATION BY LILCO AT THIS TIME; IT IS EXPECTED THAT APPLICATION OF THESE TECHNIQUES WILL BE COMPLETE DURING SPRING, 1991.

- "SOFT" DECONTAMINATION RESULTS WILL BE EVALUATED BY LIPA, NYPA AND LILCO TO DETERMINE FURTHER COURSE OF ACTIONS, INCLUDING:
  (1) DECONTAMINATION USING AGGRESSIVE TECHNIQUES.
  (2) SYSTEM DISMANTLEMENT.

- DECOMMISSIONING PLAN COST ESTIMATE, WASTE PROJECTIONS, SCHEDULE, ETC. ASSUME FULL SYSTEM DISMANTLEMENT (I.E., NO CREDIT TAKEN FOR POTENTIAL SCOPE REDUCTIONS OFFERED BY "SOFT" DECONTAMINATION PROGRAM).

- DISMANTLEMENT METHODOLOGY (E.G.: PIPE CUTTING) WILL BE CAREFULLY EVALUATED AND SELECTED WITH THE OBJECTIVE OF MINIMIZING THE POTENTIAL SPREAD OF CONTAMINATION.

- IN-PROCESS RADIOLOGICAL SURVEYS WILL BE EMPLOYED TO DETERMINE DECONTAMINATION AND DISMANTLEMENT EFFECTIVENESS.

REACTOR VESSEL AND INTERNALS
DECONTAMINATION AND DISMANTLEMENT

- VESSEL AND INTERNALS TO BE DECOMMISSIONED THROUGH A PROCESS OF DECONTAMINATION AND SEGMENTATION OPERATIONS.

- SEGMENTATION OPERATIONS WILL BE PERFORMED WITHIN THE REACTOR BUILDING.

- EXPERIENCED SPECIALTY CONTRACTORS USED IN THE EVALUATION OF SEGMENTATION PROCESSES.

- TECHNIQUES AND PROCESSES DESCRIBED IN DECOMMISSIONING PLAN, SUCH AS UNDERWATER PLASMA ARC CUTTING, MDM, WIRE ROPE CUTTING, ETC. ARE FIELD PROVEN IN SIMILAR APPLICATIONS.

- DUE TO LIMITED EXTENT OF PLANT OPERATION, PROCESS DEPLOYMENT WILL RANGE FROM REMOTE/UNDERWATER SEGMENTATION OPERATIONS TO HANDS-ON CUTTING IN AIR.

- ACTIVATED COMPONENTS TO BE PACKAGED AND SHIPPED OFF-SITE FOR DIRECT BURIAL OR FURTHER VOLUME REDUCTION/PROCESSING.

- CONTAMINATED, NONACTIVATED COMPONENTS TO BE DECONTAMINATED ON-SITE OR SHIPPED OFF-SITE FOR DECONTAMINATION BY A QUALIFIED AND LICENSED VENDOR.

SHOREHAM DECOMMISSIONING SCHEDULE

- SUMMARY LEVEL SCHEDULE INCLUDED IN LIPA'S DECOMMISSIONING PLAN, LIPA WILL CONTINUE TO DEVELOP SCHEDULE DETAILS THROUGHOUT DETAILED ENGINEERING.

- SCHEDULE BASED ON SHOREHAM SPECIFIC SCOPE USING DATA PROVIDED BY EXPERIENCED CONTRACTORS AND CONSULTANTS.

- ESTIMATED TOTAL PROJECT DURATION OF 27 MONTHS FROM NRC APPROVAL OF DECOMMISSIONING PLAN AND ISSUANCE OF DECOMMISSIONING ORDER.
  - DECOMMISSIONING PLAN ASSUMES OCTOBER, 1991 DECOMMISSIONING ORDER RESULTING IN LATE 1993 PROJECT COMPLETION.

- FUEL DISPOSITION IS A DETERMINANT OF THE OVERALL PROJECT DURATION.
  - FINAL DECONTAMINATION AND/OR DISMANTLEMENT OF FUEL STORAGE-RELATED SYSTEMS AND STRUCTURES RESTRAINED BY FUEL DISPOSAL.

- LINKAGE BETWEEN DECOMMISSIONING SCHEDULE AND COST ESTIMATE.
  - DECOMMISSIONING SCHEDULE USED TO DEVELOP PERIOD-DEPENDENT COSTS.
  - CONSISTENCY BETWEEN COST AND SCHEDULE WORK BREAKDOWN STRUCTURES.

if schedule is delayed, estimate additional cost is $30M/yr

RADIATION EXPOSURE ESTIMATE

- TOTAL ESTIMATED PERSONNEL RADIATION EXPOSURE ASSOCIATED WITH SHOREHAM'S DECOMMISSIONING IS APPROXIMATELY 190 PERSON-REM.

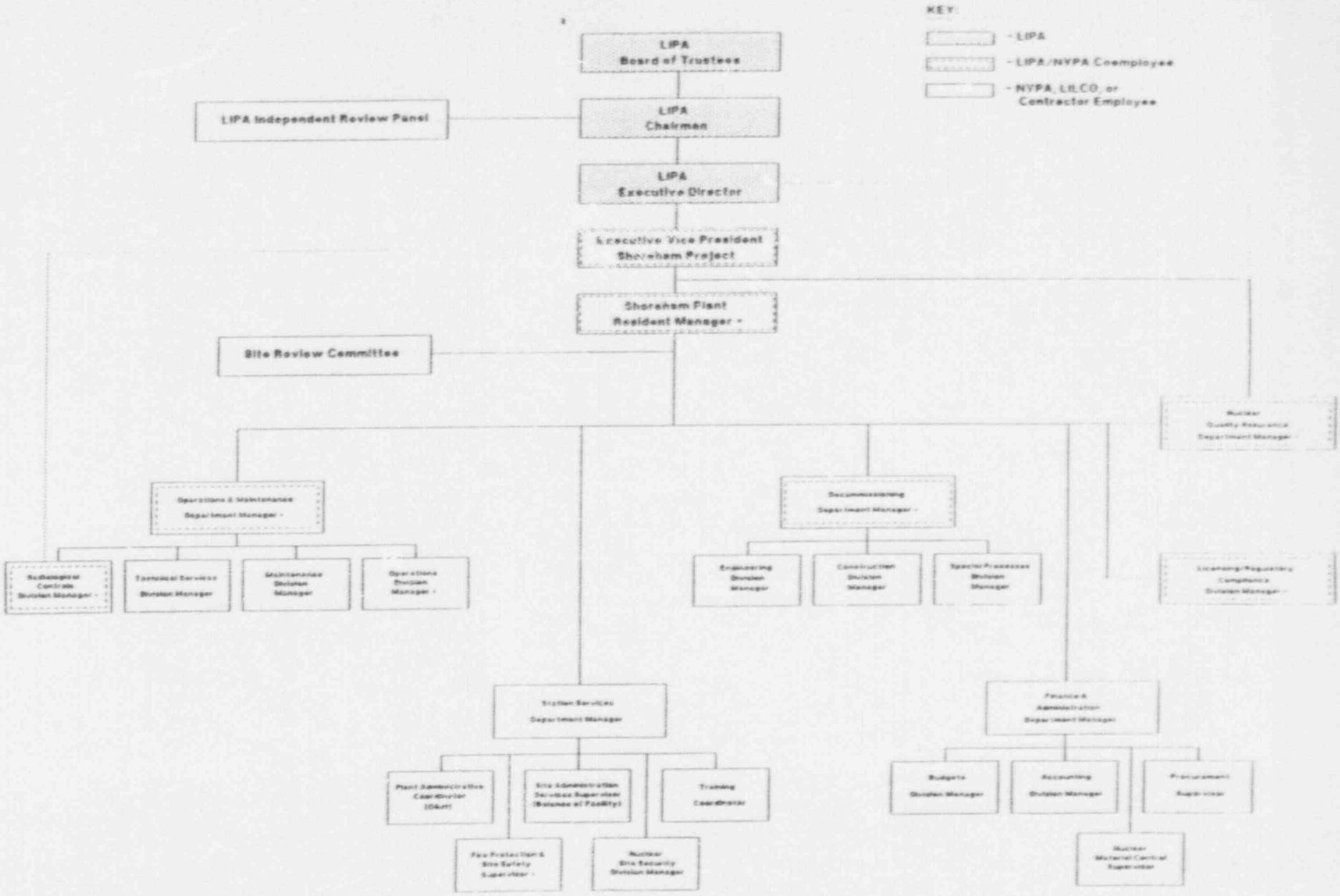
- FOR COMPARISON PURPOSES, THE SHOREHAM ESTIMATE IS 10% OF THAT ESTIMATE FOR THE REFERENCE BWR IN NUREG 0586.

- RADIATION FIELDS USED IN DOSE ESTIMATING CALCULATIONS WERE BASED ON FIELD MEASUREMENTS AND CALCULATED EXPOSURE RATES.

- PERSONNEL STAY-TIMES AND INTEGRATED JOB HOURS WITHIN RADIOLOGICAL WORK ENVIRONMENTS WERE CONSERVATIVELY ESTIMATED AND WERE BASED ON THE SHOREHAM-SPECIFIC DECONTAMINATION AND DISMANTLEMENT SCOPE.

- AS EXPECTED, THE MAJORITY (83%) OF PERSONNEL RADIATION EXPOSURE IS ASSOCIATED WITH TASKS AND ACTIVITIES RELATED TO RPV AND INTERNALS SEGMENTATION.

Shoreham Plant Organization Chart



- Member of the Site Review Committee

SHOREHAM RADIOLOGICAL STATUS

- o VERY LIMITED PERIOD OF PLANT OPERATION - EQUIVALENT TO APPROXIMATELY 2 EFFECTIVE FULL POWER DAYS.

- o RESULTING EXTENT OF ACTIVATION AND CONTAMINATION ARE MINOR IN COMPARISON TO DESIGN-LIFE OPERATION.

- o SITE RADIOLOGICAL STATUS CONFIRMED THROUGH EXTENSIVE SURVEY PROGRAM PERFORMED BY LILCO DURING 1990.

  - LIPA AND NYPA INVOLVED IN PLANNING.
  - SITE STUDY REMAINS A "LIVING" PROGRAM (I.E., ADDITIONAL DATA IS ACQUIRED AS REQUIRED).
  - SITE CHARACTERIZATION STUDY USED AS BASIS OF DECOMMISSIONING PLAN DEVELOPMENT.

- o PRINCIPAL FINDINGS OF STUDY:

  - TOTAL OF 9 SYSTEMS ARE CONTAMINATED, LEVELS OF CONTAMINATION ARE MUCH LESS THAN NORMAL OPERATING PLANT CONDITIONS.
  - VERY LIMITED EXTENT OF STRUCTURAL SURFACE CONTAMINATION.
  - NO CONTAMINATION OF AREAS EXTERNAL TO THE SHOREHAM PLANT BUILDINGS.

- o MAJORITY OF SHOREHAM'S APPROXIMATELY 600 Ci. RADIONUCLIDE INVENTORY (EXCLUDING FUEL) RESIDES WITHIN REACTOR VESSEL AND INTERNALS, APPROXIMATELY 3 mCi LOCATED IN ALL 9 CONTAMINATED PIPING SYSTEMS.

RADIATION PROTECTION

- RADIATION PROTECTION PROGRAM CONTEMPLATED FOR SHOREHAM DECOMMISSIONING IS LARGELY CONSISTENT WITH THAT WHICH CAN BE FOUND AT AN OPERATING PLANT.

- PERSONNEL REQUIREMENTS, PROCEDURES, CONTROLS, EQUIPMENT AND INSTRUMENTATION NEEDS, ETC. LARGELY CONSISTENT WITH OUTAGE ENVIRONMENT.

- LIPA IS ADAPTING FOR ITS USE AT SHOREHAM THE RADIATION PROTECTION INFRASTRUCTURE THAT WAS DEVELOPED BY LILCO THAT CURRENTLY EXISTS AT THE PLANT.

- RADIATION PROTECTION PROGRAM TO BE MANAGED BY A QUALIFIED LIPA/NYPA COEMPLOYEE.

- SPECIAL ATTENTION TO ALARA:
  (1) NEED TO BE PARTICULARLY AWARE OF ALARA OBJECTIVES GIVEN EXISTING SITE CONDITIONS (I.E., AVOID FALLING INTO "FALSE SENSE OF SECURITY" OR "ALARA DESENSITIZATION").
  (2) ALARA PROGRAM TO BE ADMINISTERED BY COMMITTEE (ALARA REVIEW COMMITTEE, OR ARC) COMPRISED OF SHOREHAM MANAGEMENT PERSONNEL.
  (3) ARC FUNCTIONS TO BE MONITORED BY "INDEPENDENT REVIEW PANEL" AT LIPA CORPORATE LEVEL.

- RADIOLOGICAL ENGINEERING AND RELATED EXPERTISE ACTIVELY INVOLVED THROUGHOUT INITIAL PLANNING PHASES OF SHOREHAM DECOMMISSIONING.

RADIOACTIVE WASTE MANAGEMENT

- ESTIMATED VOLUME AND TOTAL ACTIVITY OF SHOREHAM'S DECOMMISSIONING RADIOACTIVE WASTE:
  - 80,000 FT^3
  - 602 Ci
- GENERIC INDUSTRY STUDIES FOR REFERENCE BWR ESTIMATE WASTE QUANTITY OF 670,000 FT^3.
- ALL OF SHOREHAM'S WASTE IS EXPECTED TO BE CLASS A (10CFR61).
- DECOMMISSIONING ACTIVITIES ARE NOT EXPECTED TO GENERATE MIXED WASTE.
- ESTIMATED WASTE VOLUMES ARE CONSERVATIVE, NO CREDIT TAKEN FOR "SOFT" DECONTAMINATION EFFECTIVENESS OR PLANNED VOLUME REDUCTION ACTIVITIES.
- AGGRESSIVE VOLUME REDUCTIONS UNDER CONSIDERATION BY LIPA.
  - ON-SITE DECONTAMINATION AND SEGREGATION OF DISMANTLEMENT EQUIPMENT.
  - OFF-SITE DECONTAMINATION/WASTE PROCESSING BY LICENSED AND QUALIFIED VENDORS.
- LIPA IS ADAPTING LILCO'S EXISTING WASTE PROGRAMS AND PROCEDURES FOR ITS USE FOLLOWING LICENSE TRANSFER AND THROUGHOUT DECOMMISSIONING.
- ULTIMATE DISPOSAL OF SHOREHAM'S PROCESSED WASTE AT A LICENSED BURIAL FACILITY.

DECOMMISSIONING PLAN

ACCIDENT ANALYSIS

FUEL DAMAGE ACCIDENT:

- WORST CASE SCENARIO IS POSTULATED RELEASE OF ALL GASEOUS Kr-85 FROM ALL 560 FUEL ASSEMBLIES.

- MAXIMUM OFFSITE INDIVIDUAL DOSES ARE LESS THAN 0.11% AND 1.9% OF EPA PROTECTIVE ACTION GUIDE (PAG) WHOLE BODY AND ORGAN LOWER DOSE LIMITS, RESPECTIVELY.

- SAME ANALYSIS AS APPROVED BY NRC FOR CURRENT LILCO EXEMPTION FROM OFFSITE EMERGENCY PREPAREDNESS REQUIREMENTS, AND AS SUBMITTED BY LILCO WITH POSSESSION ONLY LICENSE AMENDMENT REQUEST.

ACCIDENTS WITHOUT FUEL DAMAGE:

- RANGE OF POSTULATED ACCIDENTS IS COMPARABLE TO ANALYSIS OF REFERENCE BWR DECOMMISSIONING.

- OFFSITE RELEASES ARE BELOW REFERENCE BWR ACCIDENT RELEASES IN ALL CASES.

- MAXIMUM OFFSITE INDIVIDUAL DOSES ARE AT LEAST 3 ORDERS OF MAGNITUDE BELOW EPA PAG'S.

FINAL RADIATION SURVEY

- DESIGNED TO MEET INTENT OF:
  - -NUREG/CR-2082
  - -NUREG/CR-0586
  - -NUREG/CR-2241
  - -REG. GUIDE 1.86

- APPROPRIATE TECHNIQUES TO BE USED TO DETERMINE BACKGROUND LEVELS.

- UNBIASED SAMPLING TO BE PERFORMED FOR ALL SITE AREAS (INDOORS AND OUTDOORS)

- BIASED SAMPLING FOR:
  (1) AREAS KNOWN TO BE CONTAMINATED DURING LIMITED PLANT OPERATION.
  (2) AREAS WHERE DECONTAMINATION IS PERFORMED PRIOR TO DECOMMISSIONING.
  (3) AREAS WHERE DECOMMISSIONING ACTIVITIES OCCUR AND POTENTIALLY AFFECTED ADJACENT AREAS.

- QUALITY ASSURANCE REQUIREMENTS TO BE INCORPORATED.

- MINIMUM RESIDUAL RELEASE CRITERIA PER TABLE 1 OF REG. GUIDE 1.86, AND 5uR/HR ABOVE BACKGROUND GAMMA EXPOSURE AT ONE METER.

DECOMMISSIONING COST ESTIMATE

- ESTIMATE COST TO DECOMMISSION SHOREHAM IS $186 MILLION (1991 DOLLARS)

- ESTIMATE SCOPE IS ALL - INCLUSIVE WITH EXCEPTION OF FUEL DISPOSAL COSTS.
  - DECOMMISSIONING ENGINEERING.
  - SPECIAL TOOLING DEVELOPMENT/PROCUREMENT.
  - DIRECT COSTS OF DECONTAMINATION AND DISMANTLEMENT ACTIVITIES.
  - INDIRECT/DISTRIBUTABLE LABOR.
  - WASTE MANAGEMENT.
  - PLANT STAFF/DECOMMISSIONING SUPPORT COSTS.

- COST ESTIMATE APPROACH, METHODOLOGY, FORMAT, ETC. CONSIDERED GUIDANCE OFFERED BY GENERIC INDUSTRY PUBLICATIONS (E.G., PNL AND AIF DECOMMISSIONING STUDIES).

- ESTIMATE IS SHOREHAM SPECIFIC.
  - BASED ON SHOREHAM DECONTAMINATION AND DISMANTLEMENT SCOPE.
  - LOCAL WAGE RATES, CRAFT ASSIGNMENTS AND PRODUCTIVITY.
  - TIME DEPENDENT COSTS CONSISTENT WITH DECOMMISSIONING SCHEDULE

- AREAS OF CONSERVATISM.
  - NO CREDIT FOR "SOFT" DECONTAMINATION EFFECTIVENESS.
  - NO CREDIT FOR WASTE VOLUME REDUCTION.
  - ESTIMATE ASSUMES REMOTE/UNDERWATER DISMANTLEMENT OF ALL REACTOR INTERNALS.

DECOMMISSIONING FUNDING METHOD

- DECOMMISSIONING ACTIVITIES TO BE FUNDED UNDER THE PROVISIONS OF THE LIPA/LILCO ASSET TRANSFER AGREEMENT AND SITE COOPERATION AND REIMBURSEMENT AGREEMENT (SAME FUNDING METHOD AS DESCRIBED BY THE JOINT LIPA/LILCO LICENSE TRANSFER AMENDMENT REQUEST).

- ADDITIONAL ASSURANCES:

  - COST ESTIMATE RELIABILITY.
  - IMMEDIATE DECON ALTERNATIVE LEADING TO NEAR TERM COMPLETION OF PROJECT.
  - DECOMMISSIONING CASH FLOWS THROUGHOUT PROJECT LIFE CYCLE WITHIN THOSE EXPERIENCED BY LILCO IN THE RECENT PAST.

DECOMMISSIONING PLAN

TECHNICAL SPECIFICATIONS AND OTHER CONTROLS

WITH FUEL IN THE SPENT FUEL STORAGE POOL (SFSP):

- MAINTAIN "DEFUELED TECHNICAL SPECIFICATIONS" (DTS) SUBMITTED BY LILCO IN SUPPORT OF POSSESSION ONLY LICENSE AMENDMENT (SUBSEQUENT TO DSAR). THESE INCLUDE:

  (1) FUEL-RELATED CONTROLS ON CRITICALITY MONITORING, SFSP WATER LEVEL AND CHEMISTRY, HEAVY LOAD HANDLING, FUEL HANDLING EQUIPMENT OPERABILITY, COMMUNICATIONS, BUILDING SETTLEMENT, SEISMIC MONITORING, AND ELECTRIC POWER AVAILABILITY.

  (2) NON-FUEL-RELATED CONTROLS ON METEOROLOGICAL MONITORING, SEALED SOURCE CONTAMINATION, AREA TEMPERATURE MONITORING, LIQUID HOLD-UP TANK CURIE CONTENT LIMITS, AND ORGANIZATIONAL AND PROGRAMMATIC CONTROLS.

WHEN FUEL IS NO LONGER IN THE SFSP, THE ABOVE FUEL-RELATED TECHNICAL SPECIFICATIONS WOULD NO LONGER APPLY, AND PERMISSION WOULD BE SOUGHT TO ELIMINATE REMAINING ELEMENTS OF THE DTS OR TRANSFER THEM TO OTHER MECHANISMS.

DECOMMISSIONING PLAN

TECHNICAL SPECIFICATIONS AND OTHER CONTROLS (CONT.)

- OTHER NON-TECHNICAL SPECIFICATION CONTROLS WILL BE IN PLACE WHICH ARE ORIENTED TOWARD DECOMMISSIONING ACTIVITIES. SUBJECTS WOULD INCLUDE:

  (1) ORGANIZATIONAL CONTROLS
  (2) TRAINING
  (3) RADIATION PROTECTION
  (4) RADIOACTIVE WASTE MANAGEMENT
  (5) COMMITMENTS AND ASSUMPTIONS RELATED TO ACCIDENT ANALYSES
  (6) OCCUPATIONAL SAFETY
  (7) FINAL RADIATION SURVEY
  (8) RESIDUAL RELEASE CRITERIA
  (9) ENVIRONMENTAL CONTROLS AND LIMITS
  (10) QUALITY ASSURANCE
  (11) SECURITY

DECOMMISSIONING PLAN

QUALITY ASSURANCE SUMMARY

- THE LIPA EXECUTIVE VP-SHOREHAM PROJECT WILL HAVE ULTIMATE QA RESPONSIBILITY.

- THE SHOREHAM NUCLEAR QUALITY ASSURANCE (NQA) DEPARTMENT MANAGER WILL REPORT DIRECTLY TO THE LIPA EXECUTIVE VP-SHOREHAM PROJECT.

- BOTH OF THE ABOVE INDIVIDUALS WILL BE LIPA/NYPA COEMPLOYEES.

- THE LIPA QA PROGRAM WILL BE DERIVED FROM LILCO'S QA PROGRAM.

- CRITERIA OF 10 CFR 50 APPENDIX B WILL BE ADDRESSED AS APPLICABLE FOR THE FOLLOWING ELEMENTS OF THE DECOMMISSIONING PROCESS:

  (1) RADIOLOGICAL PROTECTION OF PLANT PERSONNEL, PUBLIC HEALTH AND SAFETY, AND THE ENVIRONMENT.
  (2) CONTROL OF RADIATION EXPOSURE.
  (3) REGULATORY COMPLIANCE.
  (4) DESIGN, PROCUREMENT, FABRICATION AND OPERATION OF DECONTAMINATION EQUIPMENT.
  (5) DESIGN, PROCUREMENT, ERECTION, TESTING AND OPERATION OF SPECIALTY/ENGINEERING EQUIPMENT FOR DISMANTLEMENT AND DISPOSITION OF CONTAMINATED EQUIPMENT.
  (6) CONTROL OF RADIOACTIVE MATERIAL AND CONTAMINATION.
  (7) SHIPMENT OF RADIOACTIVE WASTE.
  (8) SITE CHARACTERIZATION.
  (9) CONTROL OF ACTIVITIES FOR THE FINAL RADIATION SURVEY.

DECOMMISSIONING PLAN

SECURITY SUMMARY

SECURITY PLANS:

- LIPA TO SUBMIT REVISED VERSIONS OF EXISTING LILCO SECURITY SUBMITTALS ADDRESSING FUEL-ON-SITE AND NO-FUEL-ON-SITE SCENARIOS.

- LIPA REVISIONS WILL REFLECT LILCO/LIPA PROPERTY BOUNDARIES AND DIVISION OF SECURITY ORGANIZATION RESPONSIBILITIES BETWEEN LIPA AND LILCO.

SECURITY AREAS:

- OWNER CONTROLLED AREA BOUNDARY WILL NOT BE CHANGED AND WILL REMAIN UNDER LILCO CONTROL.

- PROTECTED AREA TO BE LIMITED TO THE REFUELING DECK OF THE REACTOR BUILDING WHILE FUEL IS IN THE SFSP. THIS WILL BE UNDER LIPA'S CONTROL.

- NO PROTECTED AREA ONCE FUEL IS REMOVED FROM THE SFSP.

- NO VITAL AREAS.

DECOMMISSIONING/FUEL DISPOSITION INTERFACE

- PRESENCE OF FUEL IN SPENT FUEL STORAGE POOL AND SCHEDULE(S) FOR FUEL DISPOSITION ALTERNATIVES CONSIDERED THROUGHOUT ALL PHASES OF DECOMMISSIONING PLAN DEVELOPMENT.

- DECONTAMINATION AND DISMANTLEMENT ACTIVITIES THAT ARE TO BE PERFORMED DURING PERIODS IN WHICH FUEL IS STORED IN THE SPENT FUEL STORAGE POOL WILL BE PERFORMED UNDER APPROPRIATE CONTROLS SO AS TO PRECLUDE A FUEL DAMAGE EVENT.

- ACCIDENT ANALYSES INCLUDED IN DECOMMISSIONING PLAN, NONETHELESS, CONSIDER A FUEL DAMAGE EVENT.

- DECONTAMINATION AND DISMANTLEMENT SCHEDULE CONFIGURED TO REFLECT REFUELING DECK CASK/FUEL HANDLING ACTIVITIES.

- GIVEN CURRENT OPTIONS, FUEL DISPOSITION IS A MAJOR DETERMINANT IN THE OVERALL COMPLETION OF SHOREHAM DECOMMISSIONING.

Attachment 3

Handouts from the LILCo Licensed Operator Requalification Program Meeting (June 7, 1991)

DRAFT

REVISED REQUALIFICATION

PROGRAM DESCRIPTION

AWAITING NRC APPROVAL

OF EXEMPTION REQUEST

SNRC 1749

_____	_____
OPS ENGINEER	NUCLEAR TRAINING DIVISION MANAGER
_____	_____
OPS MANAGER	NUCLEAR TRAINING DEPARTMENT MANAGER

Rev. _____

Date _____

SNPS Revised Requal Program

The SNPS revised Requal Program shall be conducted for a continuous period not to exceed two (2) years. The program shall consist of preplanned classroom lectures, on the job training, plant drills and examinations as necessary to document operator proficiency and annual evaluations. The revised Requal Program will be developed using the Systematic Approach to Training. A revised task list will be generated from a current job survey from 6 RO's and 4 SRO's. The tasks selected for training will be from those job survey's and the program will developed based on those tasks.

A. Lectures.

A minimum of forty (40) hours of reasonably spread, pre-planned lectures shall be scheduled each year. Each license holder shall participate in the training program. Classroom lectures should provide, as a minimum, training in the following subjects based on the present plant conditions.

- Theory Principles of Operation
- General and Specific Plant Characteristics
- Plant Instrumentation and Control Systems
- Plant Protection Systems
- Engineered Safety Systems
- Normal Abnormal and Emergency Operating Procedures
- Radiation Control and Safety
- Technical Specifications
- Applicable Portions of Title 10 Code of Federal Regulations
- Fundamentals of Thermodynamics, Heat Transfer and Fluid Flow
- SNPS LER

Each license holder shall review the abnormal and emergency operating procedures on an annual basis. Compliance with is requirement may be met by:

- Actual performance under abnormal or emergency operating conditions
- Walkthrough of the procedural step necessary to cope with the situation
- On-site pre-planned drill scenario
- Supervised self study. All self study will be under supervision of the training section and documentation will include examinations to verify effectiveness of the self-study
- Procedure review and/or rewrite as part of normal job function

No more than 50% if the lecture series outlined in this section may be presented by videotape or film presentation. All lectures should be a balanced presentation of live instruction with related training aids. Periodic lecture series exams shall be administered during the requalification year.

B. On the Job Training.

The SNPS Revised Requalification Training Program utilizes plant drills and Job Performance Measures (JPM's) for retraining licensed operators. The plant drills should include the following:

- SNPS normal, abnormal and emergency operating procedures as well as the appropriate SNPS alarm response procedures shall be used by the SNPS operators
- Training should be conducted using a crew concept; the students should be required to duplicate to the extent practical the functions and responsibilities of the normal SNPS control room staff
- Plant drills should involve reviewing plant procedures step, action identification, equipment control location, expected instrumentation response, plant communications and Technical Specification action identification

Each Drill should be planned in a drill scenario and shall include the following:

- Plant Condition
- Expected Plant Response
- References
- Objectives

The following is a list of drill scenarios for Revised Requal:

1. Loss of Instrument Air
2. Loss of electrical power (and/or degraded power sources)
3. Loss of Reactor Building Service Water
4. Loss of protective system channel
5. Station Blackout
6. Loss of heat sink
7. Accidental Liquid or Gas Release

Job Performance Measures will be conducted as part of the Revised Requal Program. There will be a minimum of twenty seven (27) JPM's selected for training applicable to the conditions of the plant. Each JPM should consist of several steps of which one or more is a "critical" step which must be completed properly to pass the JPM. The number of questions per JPM shall be a function of the number of knowledge areas in the task analysis. However, there shall be at least two (2) questions per JPM. The nature of the JPM questions shall be such that the answer cannot be determined simply by looking it up in a procedure. The intent of JPM questions is to provide a method for evaluating an operators knowledge at a greater depth than on a written examination.

The following is a list of JPM's selected for Revised Requal Training:

1. 122-1 Secure A Loop of RBSW

2. 307-1 Local EDG S/U

3. 307-2 EDG Local Test

4. 307-3 Local EDG S/O

5. 308-1 NSST to RSST Shift

6. 309-1 De ENERG A 4 KV Bus (Emerg)

7. 309-2 Restore A 4KV Bus (Emerg)

8. 309-3 I ocally operate 4KV Brk

9. 313-1 Energize A UPS Bus

10. 315-1 S/U Batt Charger A

11. 315-2 Shift DC and Secure Charger

12. 405-1 Reactor Building Truck Bay Door Operation

13. 411-1 Shift RR Fans

14. 412-1 S/D CR HVAC

15. 412-2 S/U CR HVAC

16. 418-1 Restore RBNVS

17. 419-1 Shift TB HVAC

18. 421-1 S/U CRAC CW

19. 421-2 S/D CRAC CW

20. 503-1 Operate Diesel FP

21. 940-3 Re-energize RPS

22. 940-4 Isol an Air Receiver

23. 940-8 Manually close TDI Brk onto Bus

24. 944-4 Open CB-3A/3B (RPS Trip in Field)

25. 631-1 Monitor Refuel Floor Exhaust Rad Monitoring System

26. 631-2 Monitor Area Rad Monitoring System

27. 631-3 Monitor Liquid Rad Waste Discharge System

C. Station Design, Procedure and Facility Changes.

All License personnel shall be kept cognizant of SNPS design, procedural and facility license changes using one or more of the following methods:

- Brief lectures conducted by section supervision or other appropriate personnel
- Staff meetings
- Written communications to each licensed individual
- Preplanned lecture series
- Required reading list

D. Evaluation.

Licensed Operation Management personnel should review all phases of the Requalification Training Program. This should include:

- Periodic observation of training sessions
- Conduct of plant walkthrus (JPM's)
- Review of individuals training records
- Technical review of new training material.

- Review and approval of overall training schedule

The performance and competency of all licensed operators and senior operators shall be evaluated thru systematic observation by supervisors or training staff members. This shall include an evaluation of actions taken or to be taken during actual or simulated abnormal and emergency procedures. Actual performance is evaluated on an annual basis, as a minimum, for all personnel with inactive licenses. These performance evaluations should be reviewed by the Operations Section and training needs identified. These needs should be used to identify topics to be presented in the Requalification Program. However, accelerated retraining for an individual license holder should also be identified.

An annual written examination comparable in scope and degree of difficulty to an NRC Examination will be administered based on current conditions of the plant.

The annual exam will consist of two (2) parts 1) Written Exam and 2) Plant Walkthru Exam.

The written exam will consist of knowledge items pertaining to Plant and Control Systems and Administrative Controls/Procedural Limits. The exam will be in an open reference format administered in the classroom. It will be designed such that it could be completed by a competent operator in one and a half hours. An additional one-half hour will be allowed for review. Therefore the written exam will last for two (2) hours.

Test items for the written examination will be chosen from the topics covered in the Revised Requal Program.

In order to be judged satisfactory on the written portion of the examination, each operator must achieve at least 80% overall score.

The Plant Walkthru Exam will consist of Job Performance Measures. There will be five (5) JPM's with two or more follow-up questions associated with each JPM. The JPM's should cover plant systems that are important to the safe operation of the facility. Each JPM should consist of several steps of which one or more is a critical step that must be completed properly to pass the JPM. The five (5) JPM's should be divided so that at least two are conducted in the control room and at least two are done in the plant itself. While in the plant or the control room, controls will not be actually manipulated, but steps or actions will be described to the examiners. An operator (or group of operators) shall have no more than three

(3) of the same JPM's as any other operator (or group of operators) who had their exams administered earlier. This applies to JPM's administered across a multi-week evaluation as well. The walkthru will be planned for approximately 1.5 hours in length. This includes the time actually expended performing five (5) JPM's and answering the associated questions.

In order to be judged satisfactory on the walk-thru portion of the examination, each operator shall achieve a score of 80% or greater by using a weighted average of the JPM's and the associated questions. JPM's shall constitute 75% of the weight and the questions shall account for 25%. A Grade of less than 70% on any lecture series examination shall require that individual to be retrained and rescheduled for reexamination in that area. A licensed individual who receives a failing grade on the annual operating examination shall be placed in an accelerated requalification program.

E. Records

Records for each individual shall be maintained by the Training Division until the individuals license is reviewed or terminated. Requal Program records should be sent to SR2 for retention after the One (1) year anniversary date of the end of the requal year. These records should include the following:

- Copies of written examinations administered and answer keys that contain point values for each correct answer
- Answers given by the licensee to written examination
- Results of performance evaluations (drill scenarios)
- Documentation of operating tests and of additional training administered to licensed individuals in areas where deficiencies have been demonstrated
- Records of attendance at pre-planned lectures
- Documentation of licensed personnel cognizance of changes made to station design, appropriate procedures and the station license
- Documentation of the annual review of abnormal and emergency procedures.

F. Upgrade from Inactive to Active License Status.

Persons holding an inactive NRC License may be moved to active status provided that the Vice President, Office of Nuclear, certifies (in the form of a letter to the individuals training folder) the following:

- That the qualifications and status of the licensee are valid
- That the licensee has completed a minimum of forty (40) hours of shift functions under the direction of an operator or senior operator as appropriate and in the position to which the individual will be assigned. The forty (40) hours shall have included a complete tour of the plant and all required shift turnover procedures. For SRO license holders whose activities will be limited to fuel handling, one eight (8) hour shift shall be completed.