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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:	§	
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HOUSTON LIGHTING & POWER COMPANY, ET AL.	§	Docket Nos. 50-498OL 50-499OL
	§	
(South Texas Project, Units 1 & 2)	§	
	§	
	§	

TESTIMONY ON BEHALF OF HOUSTON LIGHTING & POWER COMPANY, ET AL.

OF

MR. JEROME H. GOLDBERG
MR. JERROLD G. DEWEASE

REGARDING

THE OPERATION OF THE SOUTH TEXAS PROJECT

UNITED STATES OF AMERICA
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Testimony of Jerome H. Goldberg
and Jerrold G. Dewease
Regarding the Operation of the South Texas Project

Q1. State your names and current employment.

A1. (JHG): Jerome H. Goldberg, Vice President, Nuclear Engineering and Construction, for Houston Lighting & Power Company (HL&P).

(JGD): Jerrold G. Dewease, Vice President, Nuclear Plant Operations, for HL&P.

Q2. Mr. Goldberg, describe your professional experience and educational background.

A2. (JHG): That information is presented in my testimony regarding HL&P's management of the STP.

Q3. Mr. Dewease, describe your professional experience and educational background.

A3. (JGD): I received the degree of bachelor of science in electrical engineering from the Christian Brothers College in Memphis, Tennessee in 1960. I am a registered professional engineer in Tennessee.

From 1960 to 1965 I was employed by Memphis Light, Gas and Water at its T. H. Allen Electric Generating Station, a fossil fueled steam plant near Memphis. I was initially employed as an Electrical Engineer, providing engineering support and technical guidance to the electrical maintenance section and was subsequently promoted to Assistant Electrical Maintenance Supervisor. In 1965, the power plant was leased to the Tennessee Valley Authority (TVA) and I became an employee of the TVA.

In 1968 I became an Instrument Engineer at TVA's Browns Ferry Nuclear Plant near Athens, Alabama, which consists of three 1098 MWe BWR units. There I initially worked on the establishment of the instrument program and Technical Specifications for the plant. I was promoted to Assistant Engineering Supervisor in 1971, and given supervisory responsibility over the Reactor Engineering, Radio-chemistry, Testing and Instrumentation and Control groups. In this position I supervised the establishment of the initial surveillance program which implemented the Technical Specifications and participated in the initial startup of units 1 and

2. In 1974 I was promoted to QA Supervisor at Browns Ferry and in 1976 I was promoted to Assistant Plant Superintendent. I was responsible for plant QA during the recovery from the March 1975 fire, the restart of units 1 and 2 after the fire and the initial startup of unit 3. From 1977 to 1979 I was Plant Superintendent at Browns Ferry.

In 1979 I was made Assistant Director of Nuclear Operations at TVA. I had responsibility for the plant operations staffs of four TVA nuclear plants: Browns Ferry; Sequoyah, which consists of two Westinghouse 1148 MWe PWR units now in operation; Watts Bar, which consists of two Westinghouse 1177 MWe PWR units now under construction; and Bellefonte, which consists of two Babcock & Wilcox 1213 MWe PWR units now under construction. I was also responsible for the TVA training center, which provides classroom and simulator training for reactor operators for all of TVA's nuclear plants.

In July 1981, I joined HL&P as Vice President, Nuclear Plant Operations.

Q4. Mr. Goldberg and Mr. Dewease, what is the purpose of your testimony.

A4. (JHG, JGD): The purpose of our testimony is to describe HL&P's current management organization and plans

for the operation of STP; to show that HL&P will have the necessary technical competence to operate STP safely and has already taken important steps in that direction; and to show that HL&P's planned staffing and organization meet applicable NRC requirements.

Q5. Describe HL&P's management organization for the operation of STP.

A5. (JHG, JGD): The Executive Vice President has ultimate responsibility for nuclear operations, including STP. The nuclear plant operations staff reports to him through Mr. Dewease, the Vice President, Nuclear Plant Operations. Mr. Dewease will be responsible for operation of both the Allens Creek and STP plants. The organization for management of STP is shown on the attached chart (figure 1).

Also reporting directly to the Executive Vice President are the Manager of the QA Department and the Director, Nuclear Fuels.

There will be a technical support group which will be a part of the Nuclear Engineering and Construction organization that reports to Mr. Goldberg.

In addition to the staff working full time in the nuclear area, there are other HL&P staffs that will be providing support services for STP. Our Fossil Plant Engineering and Construction organization represents a resource of

engineering expertise that will be utilized as needed. Although assistance from other HL&P groups and from outside consultants will be available to supplement our full time staff on the STP, we plan to make HL&P essentially self sufficient in regard to the conduct of our nuclear operations.

There is also a committee of executives and managers, called the Nuclear Safety Review Board (NSRB) that will be reviewing the performance of Plant operations. This committee is described in Section 13.4 of the Final Safety Analysis Report (FSAR) and is discussed below.

Q.6 Mr. Dewease, describe the organization of the Plant Operations staff.

A.6 (JGD): HL&P's plan for the organization and staffing for plant operations has been developed on the basis of NRC guidance and industry experience and will continue to evolve as that guidance and experience dictate. At present, we have underway a review of the organizational structure which may result in additional changes; however, the present organization is basically representative of the eventual plant organization.

Figure 13.1-2 of FSAR Section 13.1 shows the current organization for the operation of the two STP units, including the number of personnel per our current plans.

As described in Section 13.1, the organization includes four major Sections: Operating; Technical; Maintenance; and Training, each headed by a General Supervisor. The two other groups shown, the Radiation Protection Group and the Administrative Group, will also have senior level Supervisors. Section 13.1 of the FSAR summarizes the responsibilities of each group as well as the qualifications of key personnel.

In my answers to the next few questions I describe the functions of each of these organizations, their proposed staffing levels, and their staffing levels as of March 1, 1982. It should be understood that the total staffing levels identified for each organization are approximate. Although actual staffing levels may vary in specific instances, at a minimum NRC requirements will be satisfied.

Q.7 Describe the Operating Section.

A.7 (JGD): The Operating Section includes personnel licensed to operate the reactor and Auxiliary Operators. The Operating General Supervisor is in overall charge of reactor operations and will hold a Senior Reactor Operator (SRO) license on each unit.

The organization chart shows six Shift Supervisor positions in the Operating Section. Shift Supervisors will hold an SRO license on each unit. A corporate management directive will be issued prior to fuel load, clearly establishing the command duties of the Shift Supervisor and emphasizing his primary responsibility for safe operation of the Plant. Plant procedures will clearly define the duties, responsibilities and authority of the Shift Supervisor and other licensed personnel.

The Unit Supervisors, reporting to Shift Supervisors, will be licensed SRO's and will be responsible for reactor operations command in the control room. Each one will receive supervisory training designed to optimize his performance as a Unit Supervisor.

We currently have one Shift Supervisor, three Unit Supervisors and 17 other personnel in the Operating Section. The Shift Supervisor and one Unit Supervisor were previously licensed SRO's on operating commercial nuclear power plants. We are preparing all 21 personnel to be eligible for cold licensing on Unit 1. At present 20 of them either have the required nuclear experience or have been certified in the

Westinghouse Reactor Operator Training Program, and training for the other one is in progress.

We will have 24 Reactor Operators (RO's) and approximately 30 Auxiliary Operators for two unit operation.

The Reactor Operations personnel are currently involved in writing system descriptions and/or operating procedures. As systems are turned over to HL&P these people will be participating in preoperational testing.

Q.8 Describe the Technical Section.

A.8 (JGD): The Technical Section is made up of four groups: Reactor Engineering, Chemical Analysis, Chemical Operations, and Results Engineering.

The Reactor Engineering Group will consist of a Lead Reactor Engineer and two Reactor Engineers, one for each unit. These three positions are currently filled. The Lead Reactor Engineer joined HL&P upon receipt of a Bachelor of Science degree in Nuclear Engineering from Texas A&M in 1977. He has completed the 30-week Westinghouse Reactor Operator Training Program, certifying at the SRO level, and the Westinghouse Station Nuclear Engineers Course. He is currently on a six-month assignment with the Reactor Engineering staff at the Joseph M. Farley Nuclear Plant. One Reactor Engineer has had extensive nuclear experience, including several years as a Navy Reactor Operator and

Reactor Technician and 12 years as a licensed SRO at the Research Reactor at the Texas A&M Nuclear Science Center. He has also completed the 30-week Westinghouse Reactor Operator Training Program, certifying at the SRO level, and the Westinghouse Station Nuclear Engineers Course. In addition, he has served as a qualified startup test engineer while on assignment at the North Anna and McGuire Nuclear Stations. The other Reactor Engineer joined HL&P upon receipt of his Bachelor of Science degree in Nuclear Engineering from Mississippi State in 1981.

The Reactor Engineers are currently developing the core physics and thermal hydraulic testing programs to monitor core performance. They are developing the Initial Startup Test Program, the onsite Special Nuclear Materials Accountability Program, and the New Fuel Receipt, Inspection and Storage Procedures. Their responsibilities during Plant operation will include operational planning to determine plant loading and stretchout or coastdown capability to ensure that refueling periods correspond to the proper core burnup and system load demand. The Reactor Engineers will also implement the Special Nuclear Materials Accountability Program for control and accountability of all special nuclear material at the Plant site. They ensure that the receipt,

inspection, and storage of fuel is conducted in accordance with applicable criteria.

The Chemical Operations Group will consist of 42 personnel, including a Supervisor, 6 Foremen, 15 Chemical Operators and 20 Operator Trainees and Auxiliary Operators. The number of Chemical Operations Foremen has been increased to provide supervision on each shift. We have one Chemical Operations Foreman, three Chemical Operators, and four Chemical Operator Trainees on board at this time. Six of these Chemical Operators and Operator Trainees have nuclear navy backgrounds. The other has experience at a commercial nuclear power plant.

The Chemical Operations Group is responsible for the operation of Chemical Process Systems, Demineralizer Systems, Radioactive Waste Processing Systems, and Non-Radioactive Waste Processing Systems. They are currently writing procedures and developing training materials.

The Chemical Analysis Group will consist of 23 personnel, including a Supervisor, 2 Lead Technicians, a Nuclear Plant Chemist, and 19 chemical technicians and monitors. The Chemical Analysis Group presently consists of a Supervisor, Lead Technician, and six chemical technicians. At the time HL&P reviewed its organization after TMI, it had one Supervisor over both Chemical Analysis and Chemical

Operations. HL&P review concluded that this job was more than one man could properly handle, so it was split into two. A Nuclear Chemist also has been added on the current chart.

The Chemical Analysis Group is responsible for plant chemistry and radiochemistry. Chemical Analysis personnel perform laboratory analyses on samples as contrasted with Chemical Operations personnel who operate systems supporting reactor operation. Currently Chemical Analysis personnel are writing procedures, developing training materials, conducting the preoperational environmental sampling program, and providing chemical analysis support for hydrostatic tests.

The Results Engineering Group will consist of a Lead Results Engineer and approximately eleven Results Engineers. We have the Lead Results Engineer and six Plant Results Engineers at this time, all of whom have engineering degrees. The Lead Engineer has had nuclear experience as a Navy Electrical Division Officer, Reactor Controls Division Officer, Engineering Officer of the Watch, and Engineer Officer and has attended an eight-week Westinghouse training program at Zion. One of the Results Engineers has also had nuclear experience as a Navy Propulsion Plant Watch Officer.

In addition, two of the Results Engineers have completed the 30-week Westinghouse Reactor Operator Training Course.

The Plant Results Engineers prepare test procedures, perform tests, and prepare test reports for initial startup, post-maintenance, and performance testing of Plant systems. They implement programs for In-service Testing of Pumps and Valves, HEPA Filter Testing, Containment Integrated Leak Rate Testing, and Technical Specification Surveillance Testing. One of these Engineers will have lead responsibility for implementation of the Plant Fire Protection Program. Results Engineers develop solutions to problems and analyze equipment malfunctions in various Plant systems. The Results Engineers are currently developing the programs discussed above, writing procedures, and coordinating the Plant staff review of documents. The two Engineers developing the Fire Protection Program have each attended several schools and seminars on fire protection. In addition, we expect to utilize the services of a consultant to review our Fire Protection Program.

Q.9 Describe the Maintenance Section.

A.9 (JGD): The Maintenance Section is divided into four Groups; Electrical, Mechanical, Instruments & Controls

and Maintenance Support, each headed by a Supervisor. Electrical and Mechanical Maintenance were originally headed by a single Supervisor, but this position was split so that each Group will have its own Supervisor. This was done because of the magnitude of the workload. With the exception of the I&C and Electrical Maintenance Groups, the Supervisor positions have been filled.

The Maintenance Support Group will consist of 16 personnel, including a Supervisor, a Planning Scheduler, 9 Specialists, 3 Parts Technicians and 2 Clerk-Typists. The Supervisor, 3 of the Specialists and one Parts Technician positions are now filled.

The Electrical Maintenance Group will consist of 21 personnel, including a Supervisor, 2 Foremen and 18 Electricians, Apprentices and Helpers. One Foreman, 5 Electricians and 3 Apprentice positions are now filled.

The Mechanical Maintenance Group will consist of 44 personnel, including a Supervisor, a Welding Specialist, 5 Foremen and 37 Mechanics, Apprentices and Helpers. The Supervisor, 2 Foremen, 10 Mechanics and one of the Apprentice positions are now filled.

The Instrumentation & Control (I&C) Group will consist of 51 personnel, including a Supervisor, 2 Engineers, 4 Foremen and 44 I&C Technicians and Apprentices. An Engineer, a Foreman and 9 Technician positions are now filled.

Maintenance personnel are currently performing preventative and corrective maintenance on the Reservoir Makeup Pumping Facility and Meteorological Tower equipment. They will assume maintenance responsibility for Plant equipment as it is released for Preoperational Testing. Maintenance personnel will provide support, both manpower and procedural, for initial wire checks and functional checks, instrument and relay calibration, initial motor checks, initial pump checks, checkout of valves, electrical continuity, meggar and hi-potential tests, and final coupling alignment. The Maintenance Section will also provide support for test calibration and assistance in leak testing, flushing of piping systems, and the preoperational testing. All Maintenance Groups are currently writing procedures, developing spare parts requirements and developing the Preventive Maintenance Program.

Q.10 Describe the Training Section.

A.10 (JGD): The Training Section is responsible for Plant staff training activities. We plan a large Training Section, consisting of three Groups: Operator Training, Simulator Training and General Training. The Simulator Training Group will utilize a plant specific simulator which is now on order and is scheduled to be installed on the site by mid-1983.

The Training General Supervisor has 20 years Navy experience, 15 in the nuclear area. He has attended an 8-week training course at the training center in Zion and is participating in the INPO Instructor Qualification and Certification Workshops.

The Operator Training Group will consist of.the Operator Training Supervisor and 3 Training Instructors, all of whom will be licensed SRO's. This group will be responsible for all operator license training, except that utilizing the simulator.

The Simulator Training Group will consist of a Supervisor, 3 Instructors, 2 Software Specialists, 2 Technicians, and a Clerk. This Group will utilize the plant specific simulator to train Reactor Operators and a number of other personnel, including members of the Technical Support Staff.

The General Training Group will consist of a Supervisor and 7 Instructors. This Group will provide technical and general employee training.

The three Instructor positions in the Operator Training Group have been filled. The Instructors each have about 7 years of nuclear Navy experience. All three have attended the 30-week Westinghouse Reactor Operator Training Program, and each is certified at the SRO level.

Q.11 Describe the Radiation Protection Group.

A.11 (JGD): The Radiation Protection Supervisor is assigned to the Plant staff from the corporate Health Physics organization. The Supervisor receives technical direction from the corporate Health Physics organization but receives direction on scheduling from the Plant Superintendent. The Group is responsible for radiation protection of personnel on site.

The Radiation Protection Group will consist of 33 personnel, including a Supervisor, two Health Physicists and 30 Radiation Protection Technicians, Monitors and Trainees. We currently have a Supervisor and one Health Physicist. The Supervisor has 30 years experience in applied radiation protection including both Navy and commercial nuclear power plant experience.

Q.12 Describe the Administrative Group.

A.12 (JGD): The Administrative Group will consist of 15-20 personnel, including a Supervisor. Its function will be to provide clerical and administrative support to the Plant organization.

Q.13 Mr. Goldberg, is HL&P planning how to provide technical support for Plant operation?

A.13 (JHG): Yes. In 1979, a study was completed recommending that HL&P develop its own capability to perform non-LOCA transient analysis. We are now developing that capability. HL&P personnel have visited nuclear facilities of Public Services of Colorado, Sacramento Municipal Utilities District, Southern California Edison, Virginia Electric and Power Company, Arizona Public Services, and Florida Power & Light to review various organizational structures used for technical support of Plant operations. Findings from these trips have been factored into our plans.

In January, 1980, Nuclear Services Corporation (NSC) completed a study which evaluated in light of TMI, the HL&P staff expertise needed to provide technical support during Plant operation. Numbers, skill type and skill levels of personnel as well as technical review areas were identified.

Q.14 What are HL&P's current plans for providing technical support for Plant operations?

A.14 (JHG): The present Site Engineering Group will form the nucleus for the technical group supporting Plant operation. We plan to have a technical group on-site, close to the activities it will support, to aid in developing a close relationship with the operating staff. Although formal procedures will govern such matters as requested design changes, a close relationship will be an aid to communications and mutual understanding. Additional technical support will also be available from the headquarters office.

Our goal is to have an on-site staff technically capable of performing the design or design verification for all technical areas, especially those that are uniquely nuclear. For very specialized and complex areas, such as soil-structure interaction, we will most likely continue to employ outside consulting assistance. We believe that a utility should have an in-depth knowledge and involvement in technical matters affecting Plant operation and we are directing our recruiting and training efforts to that end.

As we move into the operations phase, our technical activities will shift from the headquarters to the site to

perform, in support of the Plant Operations staff, such functions as:

1) Provide a program and procedures for control of Plant design.

2) Review proposed changes to operating procedures.*

3) Review and evaluate operating experience and performance of selected systems and components.

4) Review activities such as maintenance, outages, and surveillance testing and the associated procedures.*

5) Provide engineering design for Plant modifications (in-house and/or through contractors).

6) Participate in the resolution of nonconformances.

7) Participate in procurement of engineered equipment, including spare parts.

8) Interface with the Plant technical staff.

Q.15 Mr. Dewease, please summarize the current staffing level of the STP Operations Division.

A.15 (JGD): Staffing the Plant organization began when a Plant Superintendent and Assistant Plant Superintendent

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* If requested by Plant operations staff.

were named to their respective positions in February of 1977. (Currently the Plant Superintendent position is vacant.) Since 1977 we have grown to a staff of over 100 persons. We expect to build up to a staff of approximately 450 for two unit operation. To plan an orderly development of the operations staff we have identified the tasks which must be accomplished by the Plant staff up through commercial operation of Unit No. 2.

We have been hiring personnel with nuclear experience in the military services. We plan to continue to do this, realizing, however, that the demand for these personnel has greatly increased since TMI. We also plan to fill some key positions with personnel with commercial nuclear power plant operating experience.

Q.16 What are Plant Operations personnel doing during the construction phase?

A.16 (JGD): Major pre-operational activities include procedure development, training and experience visits to commercial nuclear power plants, spare parts evaluations and development of training materials.

Another major activity in which Plant personnel will be involved in the future is pre-operational testing. Operators, Electricians, Mechanics, and I&C Technicians will be assigned to the Test Engineers as needed. Very valuable

experience will be gained by our personnel in this way. Present personnel are giving emphasis to development of procedures that will be utilized for pre-operational testing.

In addition to working on plans for Plant operation, the staff is reviewing and commenting on the Plant design. Their review has resulted in suggested changes to the design to improve system operability and maintenance.

Q.17 Please describe the transition from construction to Plant operation.

A.17 (JGD): Before fuel is loaded in the Plant, HL&P will conduct tests of the Plant equipment and systems. A separate HL&P organization, called the Startup Group, has been established to conduct these tests. The Startup Manager, Barry Duncan, is also Assistant Plant Superintendent and his qualifications are described in Section 13.1 of the FSAR. The Startup Organization is described in Section 14.2 of the FSAR. It includes a number of experienced engineers working on STP under a contract with Westinghouse. Plant Operations personnel, including Operators, Chemical Technicians, and I&C Technicians will be assigned to the Startup Group to assist in the performance testing. The Startup Group is now writing the Startup test procedures utilizing, where practical, Plant procedures.

As each Plant system nears completion the HL&P Startup Group, HL&P Plant QA, Bechtel Power Corporation (Bechtel) QA, and Bechtel Engineering will jointly review the status of the system to determine what must be done for the system to be ready for testing. This activity includes "walk-downs" of the system to identify hardware exceptions or deficiencies.

When nonconforming conditions are identified by HL&P Plant QA or Startup an NCR will be generated. The NCR will be dispositioned by the organization that has design responsibility at the time the nonconforming condition is identified. Depending on the scope of work necessary to disposition the NCR, either HL&P Maintenance or the Constructor will implement the disposition of the NCR.

Once a system is tested and the test results approved, it will be turned over to Operations.

Q.18 Mr. Goldberg, has HL&P hired the personnel who will provide technical support for Plant operations?

A.18 (JHG): As I mentioned before, the current design and construction technical staff will form the nucleus for the technical staff during operations. Technical activities on the Project are under the direction of the Project Engineering Manager. The experience and qualifications of that

staff were described in my previous testimony in this proceeding, and will be updated in testimony on HL&P's relationship with Bechtel and Ebasco Corporations.

NUREG-0731 identifies technical support skills required for both normal and emergency operations. We already have on staff individuals that meet or will meet most of the qualifications outlined in that document. We plan to acquire or train additional individuals so that all the requirements are satisfied. For instance, in 1981 we recruited specialized skills in the areas of weld engineering, ASME Division III pipe stress analysis, transient analysis, metallurgy, system engineering, and stronger engineering and licensing management.

Q.19 Mr. Dewease, describe the program for training STP Plant operations staff.

A.19 (JGD): An important element of our training program will be the use of the plant specific simulator which we have ordered in accordance with one of the recommendations made after review of the lessons learned from TMI.

We have formed a project organization to follow the design, manufacture, installation, and testing of our simulator. It is expected that the nucleus of our Simulator Training Group will come from this project organization.

The Operator Training Group will be responsible for all operator license training except that utilizing the simulator. The objective of HL&P's operator training is to equip the operator to assess any postulated situation and to use the available information to evaluate the Plant parameters displayed in the control room. The key to the operator's ability to do this is understanding such factors as the physical laws that govern the operation of Plant systems and how those systems function.

Our on-site operator license training program consists of three parts: the Nuclear Steam Supply System (NSSS) Training Package, a Balance of Plant Package, and a Procedures Package. The NSSS Training Package consists of 43 lessons including health physics, chemistry, reactor theory, systems, accidents, transient and instrument failure analysis. It includes system descriptions, lesson plans, and training aids. This Package is completed. The Balance of Plant Package is being developed by our Operator Training Group. It will consist of 62 lessons on the remainder of the Plant systems. Each lesson will include system descriptions, lesson plans, and training aids. The approximate current status is:

System Descriptions:	47 completed, 5 in draft
Lesson Plans:	34 completed
Training Aids:	8 completed, 22 in Graphic Arts

The Procedures Package has not yet been developed. It will consist of approximately 12 lessons covering operating procedures, including normal, abnormal, emergency, and annunciator response.

The General Training Group will provide the other training for the Plant staff including General Employee Training (Security, QA, health physics, etc.). Technical Training will also be provided for six of the Plant groups: Chemical Analysis, Chemical Operations, Radiation Protection, Mechanical Maintenance, Electrical Maintenance, and Instrumentation and Controls.

Q.20 Describe the training completed to date.

A.20 (JGD): Since 1977, we have sent three groups of trainees through the Westinghouse Phase I, Phase II, and Phase III programs at Zion, Illinois.

These groups consisted of RO's, Supervisors, Plant management personnel and Engineers. Through this program we have 15 individuals certified at the SRO level and 8 individuals certified at the RO level. In addition to that program, we have nine individuals who were already cold licensable

that have completed a Westinghouse 8-week intensive course to familiarize them with Westinghouse commercial PWR's.

We think it is important to periodically provide refresher training to those individuals who have been through the Westinghouse programs. Accordingly, we have contracted with Westinghouse for 4-day Requalification programs on their simulator. To meet current retraining requirements we intend to send our licensed operators to Zion on an annual basis for the 4-day Requalification program.

In late 1979, we sent 24 personnel to the Westinghouse 4-day Requalification program at Zion. In early 1981 we returned 33 personnel to Zion for that program.

Q.21 How will the training program be utilized to prepare for initial Plant operation?

A.21 (JGD): Prior to cold license exams and in addition to the on-site lecture series and periodic refresher training such as the 4-day requalification program at Zion, we plan two weeks of simulator training. When that is completed we will have the Westinghouse Pre-License Review Series and Audit before our personnel take the license examination. Our plan is to put enough people into the start of this program to man both Units 1 and 2. Although we do not expect a 100% pass rate, we are confident that this approach

will ensure that we have enough licensed personnel for Unit 1.

Q.22 How will the training program be utilized once the Plant begins operation?

A.22 (JGD): After Unit 1 fuel load, our program will be structured to bring people in at the entry level and train them to qualify for the SRO license by means of three programs. The first is the Auxiliary Operator Training Program. Annually, we intend to have one class which will include the following: 2 weeks indoctrination, 7 weeks Nuclear Power Plant fundamentals, 8 weeks of systems, 8 months of on-the-job training, and 20 hours of simulator training.

After an Auxiliary Operator has been with us for 18 months, he will be eligible to go into hot license training at the RO level. That is the second of the three programs. We intend annually to have one class which will include: 10 week lecture series, 200 hours of simulator training, and 13 weeks of standing watch in the control room under the direction of a licensed RO. Finally, candidates for RO and SRO certificates will take the Westinghouse Pre-License Review Series and Audit, followed by the license examination.

The third program is the RO to SRO upgrade. Annually, we will conduct one class which will include: 13 weeks of standing watch at the SRO level under the direction

of a licensed SRO, 40 class room hours of supervisory leadership training, 40 hours of simulator training at the SRO level, and 4 weeks of advanced theory.

All Auxiliary Operators, RO's, and SRO's will undergo retraining on a continuous basis. We plan to utilize a six shift rotation which provides that five days in each 42 are used exclusively for training. Another four days in 42 are available for relief duty. When relief operators are not standing relief watches in the plant, they will be involved in additional training activities on an as-needed basis.

The retraining program will include lectures, simulator exercises, examinations, general employee training, Licensee Event Report (LER) review, respiratory training, fire brigade training, procedures review, and supervisory training.

Our plant specific simulator for STP will be located at the site. We plan to have the simulator operational in time to utilize it during the cold license training of our first group of Operators. Of the simulator training that I mentioned previously, that which is done before we have our simulator operational will be conducted at Zion.

Q.23 Mr. Goldberg, will there also be training programs for technical support personnel?

A.23 (JHG): Yes. Training of the technical support groups is planned to cover each technical discipline. Included in this planned training will be the use of the STP simulator.

Q.24 Mr. Dewease, describe the organization for each shift during reactor operation.

A.24 (JGD): The shift organization is shown in Figure 2. A Shift Supervisor with an SRO license will be on site anytime a unit is loaded with fuel. All personnel on shift are responsible to him.

Reporting directly to him is an organization for each reactor unit headed by a Unit Supervisor with an SRO license and a Chemical Operations Foreman with associated staff. Each unit will also have two operators with RO licenses, a Radiation Protection Technician/ Monitor and a Chemical Technician/Monitor.

Chemical Operations personnel working on a unit will keep the Unit Supervisor informed of their activities, but will receive direction on priorities for scheduling work activities from the Shift Supervisor.

We have added administrative aides on shift as a result of TMI lessons learned. Administrative functions that detract from or are subordinate to the Shift Supervisor's

management responsibility for the safe operations of the Plant will be delegated to these personnel.

Our current plans call for the fire brigade to be headed up by the Chemical Operations Foreman. The other four members will be made up of Chemical Technicians, Chemical Operators and/or maintenance personnel.

Q.25 Does HL&P plan to include a Shift Technical Advisor (STA) in its shift organization?

A.25 (JGD): Our present plan is to provide the expertise of the STA through increased training of our Shift Supervisors. The STA position was recommended as a lesson learned from TMI in NUREG-0578. The purpose was to provide an individual on-shift, with training in nuclear engineering or a related science and training in plant design and transient response, to complement the functions of other shift operations personnel. The STA would be available in the control room within 10 minutes of being summoned to diagnose off-normal events and advise the shift supervisor. STA's are serving now at currently operating commercial nuclear power plants.

In NUREG-0731, "Guidelines for Utility Management Structure and Technical Resources", the NRC Staff took the position that "the long-term need for a shift technical advisor to provide advice to the control room supervisor may be eliminated when upgraded qualifications for the control

room supervisor ... and improved control rooms ... have been attained." We believe that the long-term approach discussed in NUREG-0731 is preferable. The person making the decisions about reactor operation should have the necessary experience and education to perform properly.

However, if the NRC continues to require STA's as separate advisors, HL&P will add qualified STA's in accordance with the NRC requirement.

Q.26 Will there be procedures to control access to the control room?

A.26 (JGD): Yes. Plant procedures will limit normal access to the Control Room to those individuals responsible for direct operation of the Plant, technical advisors, and specified NRC personnel, and will establish a clear line of authority, responsibility, and succession in the control room. Limited special access to the control room may be approved by the Unit Supervisor for specified purposes.

Q.27 Will there be shift turnover procedures?

A.27 (JGD): Yes. Plant procedures for shift relief and turnover will require signed check-lists and logs to assure that the operating staff (including Auxiliary Operators and maintenance personnel) possess adequate knowledge of critical plant parameter status, system status, availability and alignment.

Q.28 Mr. Goldberg, how does HL&P plan to control design changes during plant operation?

A.28 (JHG): All changes affecting basic engineering design (equipment, structures, sizing and arrangement) or Plant operability will be reviewed and approved by the technical staff. Changes will also require the concurrence of the PORC and the NSRB. In addition to the normal review for technical adequacy or desirability, these requests for design changes will be reviewed with close attention to the impact on FSAR commitments, any affected analyses and whether or not an unreviewed safety question is involved. Once the request is approved, implementation of the design change will be directed by the site technical group through the normal engineering process.

Q.29 Does HL&P have a system for learning from the operating experience of other utilities?

A.29 (JHG): Yes, that type of information is available in documents such as NRC I&E Bulletins and LER's. At present, NRC generated input, including I&E Bulletins, Notices, new regulations, and Regulatory Guides are screened by our Nuclear Licensing Department for applicability and importance and then sent for action to the appropriate management and technical personnel, including those in Operations. The publication, Nuclear Power Experience Reports, is used as

another source of input to the technical support and Operations staffs. The reports are reviewed by the cognizant discipline and factored into the Plant design, construction and/or planned operation as appropriate along with other inputs.

In addition, Dr. James Sumpter, of my staff, is a member of the EEI Nuclear Operations Subcommittee. This group is composed of the chief technical support and operations personnel from many utilities in the U.S. They meet tri-annually and exchange information concerning operational experiences.

Through the efforts of Nuclear Safety Analysis Center and the Institute of Nuclear Power Operations, the many hundreds of LER's are now being screened and distributed to interested parties, through a service known as NOTEPAD. We are a user of that service.

Q.30 Mr. Dewease, please describe the PORC.

A.30 (JGD): The PORC is a committee established in accordance with the Technical Specifications. Its members include the Assistant Plant Superintendent, the Operating General Supervisor, the Technical General Supervisor, the Maintenance General Supervisor, the Lead Reactor Engineer, the Radiation Protection Supervisor, and the Plant QA Supervisor. The PORC advises the Plant Superintendent on matters important to safety.

The PORC reviews procedures, tests, changes to Technical Specifications and safety-related systems, Technical Specification violations, 24-hour notification items, Plant operations, and the Security and Emergency plans.

We have built safeguards into this mechanism to minimize the possibility of suppression of dissenting opinions regarding safety matters. In the event of a disagreement between a PORC member and the Plant Superintendent, the member may request that the disagreement be documented in the meeting minutes. PORC meeting minutes go to the Chairman of the NSRB, which is discussed below. If a majority of PORC members disagree with the Plant Superintendent, the NSRB Chairman and the Executive Vice President must be notified in writing within 24 hours.

The PORC has been meeting monthly since July 1978. The Committee's primary function to date has been the review of safety-related procedures.

Q.31 Mr. Goldberg, describe the NSRB.

A.31 (JHG): The NSRB is a corporate headquarters committee that is chaired by me as Vice President, Nuclear Engineering and Construction. Its members include the Manager, QA; the Manager, Nuclear Services; the Director, Nuclear Fuel; and the Manager, Nuclear Licensing.

The NSRB reviews such matters as proposed changes to procedures, equipment, systems, Technical Specifications and the operating licenses. It reviews reports and meeting minutes of the PORC and significant operating abnormalities, including violations of license requirements or internal procedures having nuclear safety significance.

In addition, it conducts periodic audits of the following areas:

1. The conformance of facility operation to provisions contained within the Technical Specifications and applicable license conditions.
2. The performance, training, and qualifications of the entire facility staff.
3. The results of actions taken to correct deficiencies occurring in facility equipment, structures, systems or method of operation that affect nuclear safety.
4. The performance of activities required by the Operations QA Plan to meet the criteria of Appendix B to 10 CFR 50.
5. The facility Emergency Plan and implementing procedures.
6. The facility Security Plan and implementing procedures.

Q.32 Will there also be a dedicated engineering staff at the site, without operational responsibilities, which will perform independent safety reviews?

A.32 (JHG): Yes, as a result of our review of the NRC proposed post-TMI requirements, HL&P is committed to having an effective Independent Safety Engineering Group (ISEG) and we have under study the details of its operation. Our current plan is that the ISEG will report to me and will be composed of a small staff of on-site, full-time engineering personnel. Its responsibilities will include those specified in NUREG-0737, "Clarification of TMI Action Plan Requirements."

Q.33 Mr. Goldberg and Mr. Dewease, does the FSAR describe how HL&P will conduct the operation of STP?

A.33 (JHG, JGD): Yes, Chapter 13 of the FSAR is entitled Conduct of Operations. It describes the HL&P organization for Plant operations, the personnel training program, certain Plant operating procedures and the review and audit program. Section 13.3 references the separate volume containing the Emergency Plan which is now being revised to meet post-TMI requirements, and Section 13.6 references the Security Plan.

Q.34 How were Sections 13.0, 13.1, 13.2, 13.4 and 13.5 of the FSAR prepared?

A.34 (JHG, JGD): The Plant operations staff was responsible for drafting major portions of those sections. The Nuclear Licensing Section then coordinated an internal review of the drafts. These sections were reviewed and updated earlier this year and we both personally reviewed and approved these FSAR sections as revised through amendment 24.

Q.35 Are the contents of FSAR Section 13.0, 13.1, 13.2, 13.4 and 13.5 as revised through amendment 24 true and correct to the best of your knowledge and belief?

A.35 (JHG, JGD): Yes.

TH:13:A

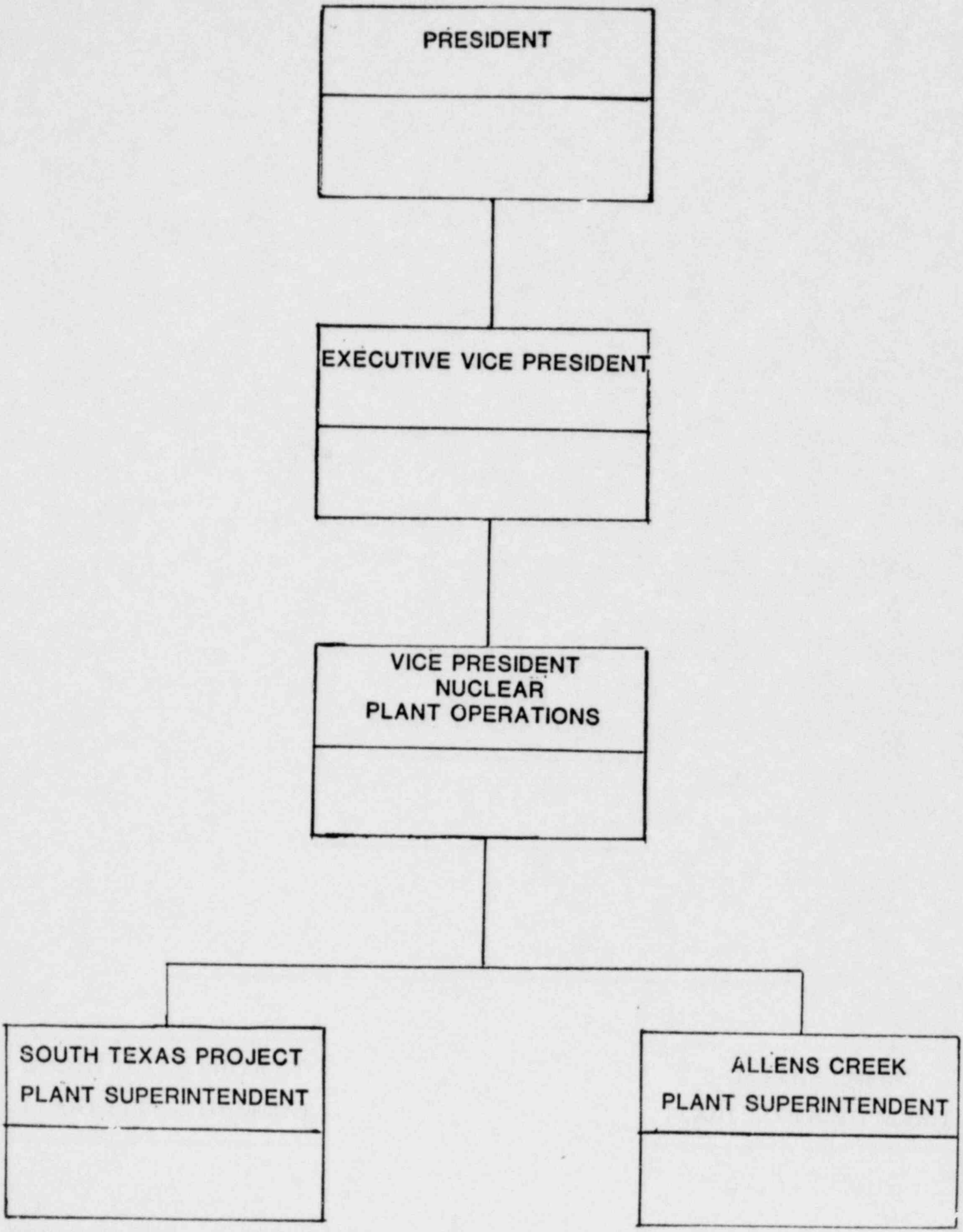
PRESIDENT
EXECUTIVE VICE PRESIDENT
VICE PRESIDENT
NUCLEAR
PLANT OPERATIONS
SOUTH TEXAS PROJECT
PLANT SUPERINTENDENT
ALLENS CREEK
PLANT SUPERINTENDENT

Figure 1

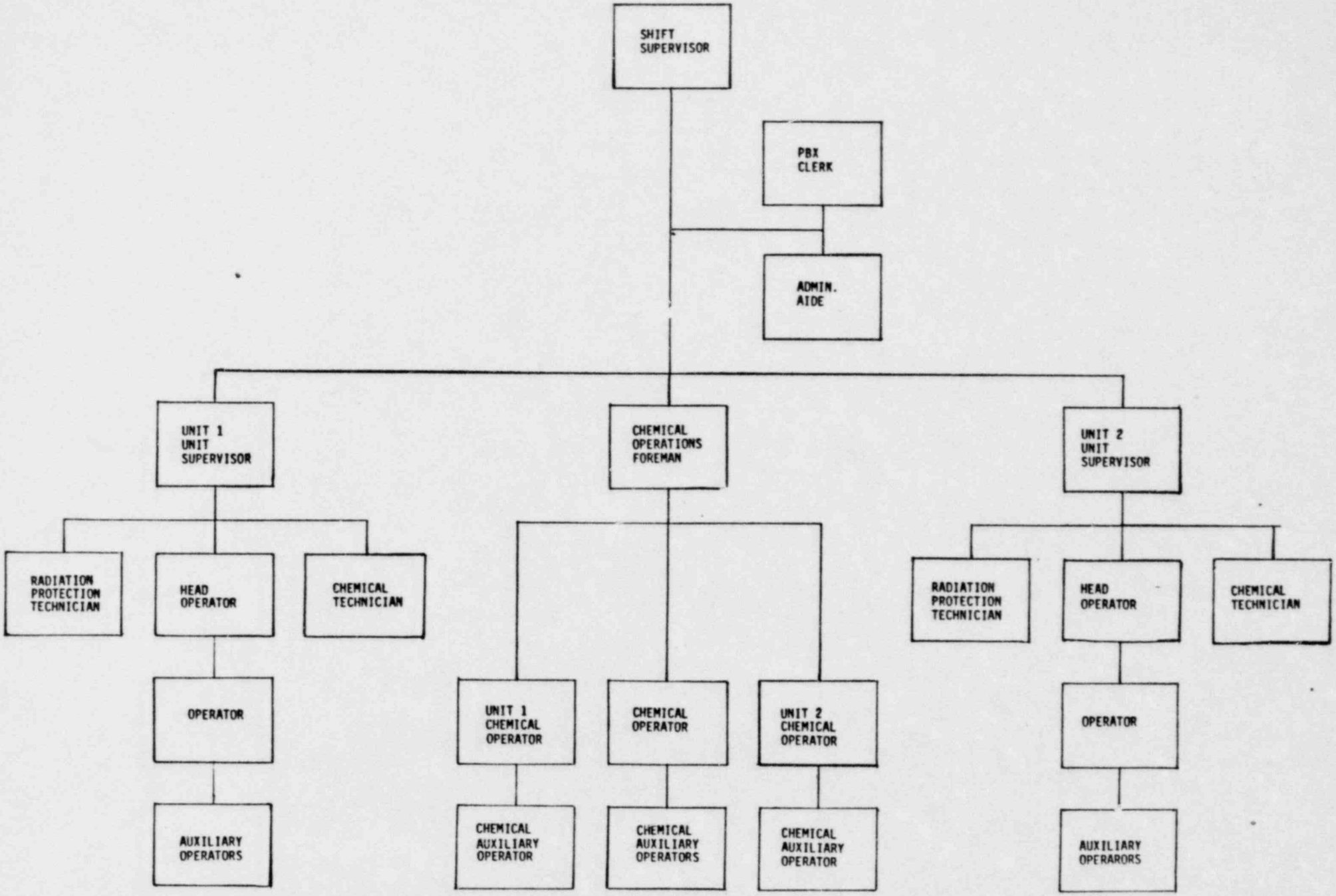
SHIFT SUPERVISOR
PBX CLERK
ADMIN. AIDE
UNIT 1 UNIT SUPERVISOR
CHEMICAL OPERATIONS FOREMAN
UNIT 2 UNIT SUPERVISOR
RADIATION PROTECTION TECHNICIAN
HEAD OPERATOR
CHEMICAL TECHNICIAN
OPERATOR
AUXILIARY OPERATORS
UNIT 1 CHEMICAL OPERATOR
CHEMICAL OPERATOR
UNIT 2 CHEMICAL OPERATOR
CHEMICAL AUXILIARY OPERATOR
CHEMICAL AUXILIARY OPERATORS
CHEMICAL AUXILIARY OPERATOR
RADIATION PROTECTION TECHNICIAN
HEAD OPERATOR
CHEMICAL TECHNICIAN
OPERATOR
AUXILIARY OPERARORS

Figure 2

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
HOUSTON LIGHTING AND POWER	)	
COMPANY, ET AL.	)	Docket Nos. 50-498OL
	)	50-499OL
(South Texas Project,	)	
Units 1 and 2)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of Testimony of Jerome H. Goldberg and Jerrold G. Dewease Regarding the Operation of the South Texas Project have been served on the following individuals and entities by deposit in the United States mail, first class, postage prepaid on this 11th day of March, 1982.

Charles Bechhoefer, Esq.
Chairman, Administrative Judge
Atomic Safety and Licensing
Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. James C. Lamb, III
Administrative Judge
313 Woodhaven Road
Chapel Hill, North Carolina 27514

Ernest E. Hill
Administrative Judge
Lawrence Livermore Laboratory
University of California
P. O. Box 808, L-46
Livermore, California 94550

Mrs. Peggy Buchorn
Executive Director
Citizens for Equitable
Utilities, Inc.
Route 1, Box 1684
Brazoria, Texas 77422

Brian Berwick, Esq.
Assistant Attorney General
for the State of Texas
Environmental Protection
Division
P. O. Box 12548, Capitol Station
Austin, Texas 78711

William S. Jordan, III, Esq.
Harmon & Weiss
1725 I Street, N.W.
Washington, D.C. 20006

Kim Eastman, Co-coordinator
Barbara A. Miller
Pat Coy
Citizens Concerned About
Nuclear Power
5106 Casa Oro
San Antonio, Texas 78233

Lanny Sinkin
2207-D Nueces
Austin, Texas 78705

Jay M. Gutierrez, Esq.
Office of the Executive
Legal Director
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Atomic Safety and Licensing
Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Atomic Safety and Licensing
Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Docketing and Service Section
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Thomas B. Hudson, Jr.