

# UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

Title: DISCUSSION/POSSIBLE VOTE ON FULL POWER OPERATING  
LICENSE FOR SOUTH TEXAS, UNIT 2

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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DISCUSSION/POSSIBLE VOTE ON FULL POWER  
OPERATING LICENSE FOR SOUTH TEXAS. UNIT 2

\* \* \*

PUBLIC MEETING

\* \* \*

Nuclear Regulatory Commission  
One White Flint North  
Rockville, Maryland

TUESDAY, MARCH 28, 1989

The Commission met in open session, pursuant to  
notice, at 2:00 p.m., the Honorable LANDO W. ZECH, JR.,  
Chairman of the Commission, presiding.

COMMISSIONERS PRESENT:

LANDO W. ZECH, JR., Chairman of the Commission  
THOMAS M. ROBERTS, Member of the Commission  
KENNETH M. CARR, Member of the Commission  
KENNETH C. ROGERS, Member of the Commission  
JAMES R. CURTISS, Member of the Commission

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

SAMUEL J. CHILK, Secretary

JOSEPH SCINTO, Deputy General Counsel

VICTOR STELLO, JR., Executive Director for Operations

JAMES SNIEZEK, Deputy Office Director, NRR

GEORGE DICK, Project Manager

RICHARD MARTIN, Administrator, Region IV

JOSE CALVO, Project Director for South Texas

FOR HOUSTON LIGHTING AND POWER COMPANY

DON D. JORDAN, Chief Executive Officer

JEROME H. GOLDBERG, Group Vice President, Nuclear

GERALD VAUGHN, Vice President, Nuclear Operations

WARREN H. KINSEY, Plant Manager

P R O C E E D I N G S

(2:00 p.m.)

CHAIRMAN ZECH: Good afternoon, ladies and gentlemen.

The purpose of this afternoon's meeting is for the staff and the Houston Lighting and Power Company to brief the Commission concerning the readiness of South Texas Project, Unit 2 to receive a full power license.

At the conclusion of the meeting, the Commission may vote to authorize the Director of NRR, after making the appropriate findings, to issue full power operating license for South Texas Project, Unit 2.

The Commission will first be briefed by Houston Lighting and Power Company, and then by the NRC staff.

Copies of the slides to be used during the briefing should be available at the entrance of the meeting room.

Do any of my fellow Commissioners have any opening comments, before we begin this afternoon?

(No response)

CHAIRMAN ZECH: I would like to welcome all of you here from the Houston Lighting and Power Company.

Mr. Jordan, are you going to start off?

MR. JORDAN: Yes.

CHAIRMAN ZECH: You may proceed.

1 MR. JORDAN: Thank you, Mr. Chairman, and  
2 members of the Commission.

3 I am Don Jordan, Chairman of the Board and Chief  
4 Executive Officer of Houston Lighting and Power Company.  
5 With your permission, I would like to first introduce some  
6 of the people who are here today.

7 Representing the co-owners, scheduled to be  
8 here, although they may be a minute or two late, are Mr.  
9 Arthur Von Rosenberg, General Manager of the City Public  
10 Service Board of San Antonio, and Mr. Tom Shockley,  
11 President of Central Power and Light Company. The key  
12 members of our nuclear organization with me today are  
13 Jerry Goldberg, our Group Vice President of Nuclear; Mr.  
14 Gerald Vaughn, our Vice President of Nuclear Operations,  
15 and Mr. Warren Kinsey, our Plant Manager.

16 Also representing Houston Lighting and Power  
17 Company, along with those who will have an active part in  
18 the program, includes Dr. Ed Bishop, President Emeritus of  
19 the University of Houston, a member of our Board of  
20 Directors, and a member of the Nuclear Committee of our  
21 Board.

22 Mr. Chairman, it is again a pleasure to appear  
23 before you, this time to ask your approval for a full  
24 power authorization for Unit No. 2 of the South Texas  
25 Project. It was just about a year ago that we met with

1 you to request a similar approval for Unit No. 1, and you  
2 expressed your confidence by authorizing the issuance of a  
3 full-power license.

4           You wisely warned us at that time, Mr. Chairman,  
5 that one of the biggest challenges ahead was the  
6 transition from a construction to an operating  
7 organization. They are, indeed, two very different  
8 worlds.

9           Although we have had some bumps along the way,  
10 our operational experience in Unit 1 and the start-up of  
11 Unit 2 shows that we have learned a great deal and  
12 continue to make significant progress through the  
13 transition.

14           When we met with you last year, I described the  
15 extremely difficult early years in the design and  
16 construction of STP, but I expressed my conviction that we  
17 were better for having had that experience; especially in  
18 having made certain changes in Houston Lighting and Power  
19 Company and Contractor Management, which turned out to be  
20 crucial.

21           More importantly, I told you of my confidence  
22 that we had built a good plant. That has been borne out in  
23 the operation of Unit 1, and in the start-up of Unit 2.  
24 Repeated reviews, audits and inspections have established  
25 that STP has been completed in compliance with the

1 regulatory requirements and, equally important, we think,  
2 in accordance with our own high expectations for quality.

3           The performance in Unit 1 thus far has been  
4 good; it compares favorably with first year experiences in  
5 other large nuclear units. Obviously, there is still room  
6 for improvement; however, we know that it will always be  
7 the case. Unless an organization is constantly improving,  
8 to meet rising standards of excellence, it will inevitably  
9 fall behind, and we are absolutely determined not to let  
10 that happen at STP.

11           There are also other lessons to be learned from  
12 STP. First, quality objectives are not inconsistent with  
13 productivity. In 1982, seven years ago, our new  
14 architect-engineer, Bechtel, developed a schedule which  
15 projected that Unit 2 would begin fuel loading in December  
16 1988, and that schedule was met. Unit 2 received its  
17 operating license and began to load fuel on December the  
18 16th. We remain on schedule for commercial operation this  
19 June.

20           Second, there is no doubt that the success of  
21 Unit 2 is, in large part, attributable to the lessons  
22 learned from Unit 1. Design changes in Unit 1, and other  
23 corrective actions, were incorporated in Unit 2, before  
24 fuel loading.

25           In general, overall productivity in the



1 completion of Unit 2 was helped enormously by the  
2 experience gained during the construction of Unit No. 1.  
3 I might add, Mr. Chairman, that this argues persuasively  
4 for the standardization policy which I know you have done  
5 so much to encourage.

6 We expect parallel experience on the operations  
7 side. Performance thus far on Unit 2 has generally been  
8 good. We are applying the lessons learned from the  
9 startup of Unit 1, and anticipate a higher level of  
10 performance in Unit 2. The management programs which we  
11 successfully implemented on Unit 1 are being applied  
12 effectively to Unit 2.

13 While our track record so far has been good, it  
14 is limited. It is obviously too early to tell you that we  
15 are a mature nuclear utility. That sort of complacency  
16 can be devastating in this business. Our management  
17 recognizes that no matter how well we perform, tomorrow  
18 presents another day of challenge.

19 We are keenly aware that involved leadership is  
20 essential to ensure that complacency does not set in at  
21 any level of organization, and that responsibility starts  
22 with me.

23 I have personally conveyed to our employees the  
24 importance of each individual's contribution to the safety  
25 of plant operations. I have emphasized the need for

1 unremitting attention to detail, to discipline, to  
2 formality in the conduct of operations, and the absolute  
3 necessity for personal as well as organizational integrity  
4 and accountability.

5 To assure that each new employee hears that  
6 message from the top, I have made a short videotape  
7 covering these points, which is part of the general  
8 training given to every new project employee.

9 I am also proud of the fact that our Board of  
10 Directors is actively involved in South Texas; that the  
11 project continues to be on the agenda of every board  
12 meeting, and our Nuclear Committee, headed by former NRC  
13 Chairman Joe Hendrie, does a very effective job of  
14 overseeing the management of our nuclear program. Our  
15 Nuclear Committee also meets monthly, and the entire  
16 Committee makes quarterly inspections of the plant.

17 Our employees remain the key ingredient, of  
18 course, to our success. We are providing them with  
19 educational and career development opportunities, which  
20 are essential in attracting and retaining a highly  
21 professional staff. I believe strongly that education is  
22 one of the keys to a rewarding career. Jerry Goldberg  
23 will discuss the status of our college degree program for  
24 STP employees. This emphasis on education is only one of  
25 several initiatives which I know you, Mr. Chairman, and

1 other members of the Commission have stressed over the  
2 past five years.

3 Now, I would like to digress for just a moment,  
4 Mr. Chairman, to acknowledge the contribution which you  
5 and the staff have made in so many critical areas, by  
6 stressing the importance of fitness for duty,  
7 professionalism in the conduct of plant operations, and  
8 other performance-based programs. I would also like to  
9 thank you for your visits to the site, and in taking the  
10 time to meet our people personally. They were further  
11 reminded of the importance of their contribution to their  
12 country's energy needs.

13 I would like to leave you with just a few  
14 general impressions. When I go to Bay City, and I hope  
15 you have had the same experience, I come away with the  
16 feeling that STP is a project of which Texas and the  
17 entire nation may be proud. As you know, South Texas has  
18 been selected by the NRC as the US plant to be represented  
19 in the upcoming information exchange with the Soviet Union  
20 regarding Nuclear Plant Design, pursuant to the agreement  
21 which you, Mr. Chairman, signed in Moscow. I might also  
22 mention that we will exchange technical information with  
23 other nuclear units in Western Europe that have design  
24 features similar to STP.

25 We also expect to benefit from participating in

1 the World Association of Nuclear Operators. The  
2 development of the Association is progressing well, and I  
3 will have the honor of traveling to the Soviet Union to  
4 sign, on behalf of Houston Lighting and Power Company, the  
5 charter governing the activities of this organization.

6 Thank you for your attention, Mr. Chairman, and  
7 members of the Commission. And now other members of our  
8 management team will discuss the status of South Texas and  
9 our readiness to begin full power operations in Unit No.  
10 2.

11 Mr. Goldberg.

12 MR. GOLDBERG: Mr. Chairman, members of the  
13 Commission, I am Jerry Goldberg, Nuclear Group Vice  
14 President, Houston Lighting and Power Company.

15 My purpose this afternoon is to outline for you  
16 the reasons why I believe the South Texas Project Unit 2  
17 is ready to begin its ascent to full power. My  
18 conclusions are based on self-assessments of our readiness  
19 which have been documented and submitted to the  
20 Commission. I will summarize the high points of those  
21 self-assessments.

22 First, the plant meets regulatory requirements  
23 relating to design, construction and engineering. This  
24 was demonstrated during both the pre-critical and low-  
25 power testing periods. We derive additional assurance of

1 safety from our SAFETEM Program, which provides the means  
2 for STP employees to identify any concerns that they may  
3 have in regard to nuclear safety or quality.

4 SAFETEM includes a staff of interviewers and  
5 investigators who determine the validity of concerns  
6 promptly. As a matter of fact, the Texas Public Utility  
7 Commission recently forwarded a letter from a former HL&P  
8 employee who expressed a variety of concerns about the  
9 South Texas Project. SAFETEM has investigated each of  
10 those concerns, and showed that none had any safety  
11 significance. The results of that SAFETEM investigation  
12 have been provided to the NRC.

13 South Texas Unit 2 has been relatively free of  
14 significant design, or operational problems during its  
15 startup. I will discuss two specific problems, however,  
16 before we close.

17 South Texas meets regulatory criteria governing  
18 personnel and training, as well as procedures and  
19 technical specifications. We have a total of 49 licensed  
20 Senior Reactor Operators, and 27 licensed Reactor  
21 Operators, all of whom have been trained on a plant-  
22 specific simulator and many of whom have had operating  
23 experience at power on Unit 1.

24 All plant personnel are subject to a stringent  
25 Fitness for Duty program with strong emphasis on random

1 drug and alcohol abuse testing. This program, which has  
2 been in place since 1986, will be in compliance with the  
3 proposed rule currently under consideration by the NRC.

4           During your visits to the site, and in our  
5 previous full power meeting, Mr. Chairman, we discussed  
6 our plan to provide further educational opportunities to  
7 qualified and motivated personnel. The University of  
8 Maryland Nuclear Science Degree Program got underway  
9 initially at STP with 40 employees enrolled in the  
10 program. Those on the operations staff are given first  
11 priority. However, any employee has the opportunity to  
12 gain entry to this program. We are strongly encouraging  
13 the reactor operators to obtain college degrees, so that  
14 they will have additional career opportunities, including  
15 entry into corporate management. We believe this program  
16 will assist us in attracting and retaining highly  
17 qualified and motivated people.

18           We have a formal policy which defines what we  
19 expect to see from a true professional at STP, and we do  
20 not intend to accept anything less from our people.

21           (Slide) This slide highlights some of the  
22 elements of our policy on professionalism. Although we  
23 discussed our policy last year, I would like to point out  
24 a few elements which I particularly emphasize, those  
25 being: attention to detail, learning from mistakes,

1 personal integrity and candor, the need to face facts  
2 squarely and deal with their implications, and above all,  
3 not to be satisfied with mere compliance and to strive to  
4 meet higher standards.

5 In addition, the operators have developed and  
6 obtained management concurrence on an "operator code of  
7 ethics" which is consistent with the INPO principles of  
8 professionalism and the recent NRC policy statement.

9 Procedures governing operations, maintenance and  
10 surveillance tests have been prepared for Unit 2. These  
11 are, in essence, the same procedures that have served us  
12 well over the last year on Unit 1, and they are entirely  
13 adequate for safe operation of the power plant. There is,  
14 however, an ongoing procedure upgrade program to further  
15 enhance these procedures.

16 I would now like to discuss a few examples of  
17 how lessons learned from Unit 1 have been applied to Unit  
18 2. We had several design problems which held up the  
19 operation of Unit 1. These included dealuminization of the  
20 essential cooling water system cast valves and fittings;  
21 flow-induced vibration in the auxiliary feedwater system;  
22 flow-induced vibration in component cooling water heat  
23 exchangers; and destructive overspeed of a turbine-driven  
24 feedwater pump. These events provided a real challenge to  
25 our engineers and operators. They had to support power

1 plant operations by resolving tough, complex problems  
2 cutting across several disciplines. These problems, which  
3 were identified on Unit 1, were all corrected on Unit 2  
4 prior to issuance of the low power license.

5           When I spoke to you last year, I described the  
6 actions being taken on Unit 1 to prevent leakage in the  
7 Bottom Mounted Instrumentation thimble tubes involving the  
8 installation of flow limiters. I also mentioned our plans  
9 to inspect the tubes at intervals, to verify the  
10 effectiveness of our actions. Those inspections found  
11 that the thimble tubes were experiencing unacceptable  
12 wear, despite our design changes. We took actions,  
13 including repositioning of some thimbles and plugging  
14 others, to prevent the initiation of leakage. To mitigate  
15 the effects of leakage, should it occur, we installed  
16 isolation valves and check valves in the Unit 1 thimble  
17 tubes. All the Unit 1 thimble tubes will be replaced  
18 during the first refueling outage, with a new tube design  
19 which does not require flow limiters.

20           That new design of thimble tube is already  
21 installed on Unit 2. The design utilizes stiffer tubes  
22 which, during prototype testing, did not vibrate. We will  
23 retain the manual isolation valves and automatically  
24 closing check valves. We plan a confirmatory inspection  
25 of the Unit 2 thimbles during the first cycle, to verify



1 that the new design performs as expected.

2 Another technical issue which was resolved,  
3 prior to fuel load for Unit 2, is the effects of thermal  
4 stratification in the pressurizer surge line. This issue  
5 was identified by the NRC staff during the middle of 1988,  
6 based on observations at another operating plant. We were  
7 able to collect data from Unit 1 and perform the detailed  
8 analysis necessary to demonstrate the adequacy of the Unit  
9 2 pressurizer surge line.

10 I would now like to discuss other indicators  
11 that point to our readiness to proceed. Security  
12 problems, hardware and training, you may recall delayed  
13 the issuance of the operating license for Unit 1. These  
14 have been thoroughly resolved. The security program for  
15 both units is functioning effectively.

16 Since the operating license for Unit 2 was  
17 issued on December 16th, 1988, nine Licensee Event Reports  
18 have been submitted on that unit. On Unit 1, 32 such  
19 reports were initiated in the comparable time period  
20 between issuance of the operating license and receipt of  
21 the full power authorization. I believe this further  
22 demonstrates that the lessons learned from Unit 1 are  
23 being effectively integrated into our Unit 2 program.

24 Fraudulent material is a significant concern to  
25 all licensees. Not only has HL&P acted swiftly to deal

1 with those items identified to be potentially fraudulent  
2 within the industry, we have participated in industry  
3 programs with NUMARC, INPO and EPRI in developing  
4 strategies to detect fraudulent material. In the case of  
5 fraudulent flanges, HL&P participated in the NUMARC  
6 program to test flanges to demonstrate their adequacy for  
7 use in their intended service. The NRC staff reviewed and  
8 concurred with our approach.

9           The area of molded case circuit breakers is also  
10 being resolved. As part of our Startup test program, we  
11 performed tests on safety-related breakers, prior to their  
12 use in the plant. This has given us confidence that the  
13 breakers will function properly. Typically, we purchase  
14 our replacement safety-related breakers from those  
15 equipment suppliers who originally provided the safety-  
16 related equipment to us. Since it is possible, however,  
17 for fraudulent material to be furnished by a dishonest  
18 supplier, we are proceeding expeditiously to perform those  
19 additional actions recommended by the NRC, to determine if  
20 any irregularities exist.

21           As I mentioned previously, there were two  
22 problems I would discuss further. First, we experienced a  
23 fire adjacent to the Unit 1 generator which was triggered  
24 by a loss of generator hydrogen rotor cooling. We  
25 determined that the most likely cause was loose lead to

1 the cooling water temperature regulator, which controls  
2 cooling of the hydrogen. Without adequate cooling, the  
3 hydrogen pressure inside the generator began to rise,  
4 until gas escaped through a bearing seal and ignited just  
5 outside the seal. As a result, we have made a number of  
6 improvements in the balance of plant design, maintenance  
7 and operation to enhance plant reliability, as well as  
8 protect our investment.

9 We also discovered last November, shortly before  
10 issuance of the fuel load license for Unit 2, that the  
11 vortex suppression devices which should have been  
12 installed in the containment sumps in both units were not  
13 installed. Unit 1 was immediately shut down. A thorough  
14 investigation established that this oversight was an  
15 isolated event; that other comparable devices had in fact  
16 been installed as required. This was independently  
17 confirmed by our Nuclear Safety Review Board. The vortex  
18 suppression devices were installed in both units, and Unit  
19 1 resumed operation.

20 The NRC staff has recently cited HL&P for a  
21 level three violation and proposed a civil penalty in  
22 connection with this incident. Our response to the  
23 proposed penalty will be submitted by April 17th.

24 As I noted earlier, startup and testing of Unit  
25 2 has been relatively trouble free. The problems that

1 have been encountered have been analyzed properly; the  
2 follow up actions have been very conservative. The fact  
3 that our people have handled these, and other matters  
4 during startup, in a highly professional manner, provides  
5 additional basis for requesting your authorization to  
6 begin the ascent to full power on Unit 2.

7 Of course, our power ascension program includes  
8 an assessment of operations prior to proceeding above 50  
9 percent power, as in the case of Unit 1. Experience has  
10 demonstrated that moving forward in a very deliberate and  
11 controlled fashion will yield the quality operation we  
12 must have.

13 In summary, Mr. Chairman and Commissioners, I am  
14 confident that Unit 2 can and will be operated safely.

15 With your permission, I would like Mr. Kinsey to  
16 describe our operating experience during low power  
17 testing.

18 CHAIRMAN ZECH: Thank you very much.

19 You may proceed.

20 MR. KINSEY: Thank you. Mr. Chairman, members  
21 of the Commission, I am Warren Kinsey, Plant Manager at  
22 South Texas. I will cover three principal subjects: an  
23 overview of operating experience during low power testing,  
24 including problems we encountered and our response to  
25 these problems, the status of our maintenance program, and

1 shift manning.

2 First, a word on the status of Unit 2. Initial  
3 criticality was achieved on March 12th, at 8:50 p.m. Low  
4 power testing has been successfully completed and the unit  
5 is being operated at low power to give our staff  
6 additional operating experience. On Unit 1, we have  
7 recently completed a 37-day outage, and are now in our  
8 23rd day of operation.

9 Our schedule provided for a testing program that  
10 was to lead to criticality in 12 weeks. We are pleased  
11 that the testing went quite smoothly, and we were able to  
12 achieve criticality on schedule. We did, however,  
13 encounter three minor operating problems during pre-  
14 critical testing.

15 (Slide) I will touch briefly on the highlights  
16 of each event for you.

17 First, during the successful demonstration of  
18 the rapid refueling system, leakage was identified in the  
19 containment refueling cavity. The leakage was from seals  
20 on covers which provided access to inspect the reactor  
21 pressure vessel nozzles. It was determined that access  
22 without these openings was sufficient to perform the  
23 required inspections. Accordingly, the covers were welded  
24 in place and the leakage was stopped. The covers in Unit  
25 1 were also welded in place during our February outage.

1           The second problem encountered involved setting  
2 up the turbine-driven auxiliary feedwater pump governor  
3 valve. The adjustments and subsequent testing, required  
4 several days to complete. No significant problems were  
5 discovered, only minor ones inherent in an electro-  
6 hydraulic control system setup.

7           The third event was a hydraulic transient in the  
8 Steam Generator Blowdown System, during return to service  
9 after a short system shutdown. Inspections of the system  
10 piping and supports revealed damaged snubbers. It was  
11 determined that the transient was a result of putting high  
12 temperature water into a voided pipe too rapidly.

13           The damaged snubbers have been repaired, the  
14 piping integrity has been verified, and plant procedures  
15 have been modified to slowly warm and pressurize the  
16 system during startup. The Unit 1 steam generator  
17 blowdown system has also been inspected and similar  
18 corrective action taken.

19           You may recall, for the Unit 1 briefing, I  
20 described several significant engineering and operational  
21 problems that had occurred during startup and testing. In  
22 comparison, the Unit 2 startup has proceeded smoothly with  
23 just the problems I have noted. Of note, Unit 2 has been  
24 critical for approximately two weeks and has had no  
25 reactor trips.

1           This operational history demonstrates, I  
2 believe, that we have applied to Unit 2 the lessons  
3 learned from Unit 1.

4           I would like to briefly discuss our Unit 2 LERs.  
5 The most significant of the reported events involved a  
6 failure to properly restore one train of our three-train  
7 control room HVAC system to service following the  
8 installation of a temporary modification. This event has  
9 been the only one of its kind to occur at South Texas. We  
10 recognize the seriousness of the event, and have taken  
11 steps to ensure it will not recur.

12           We have had five events caused by hardware  
13 failures. Two events have resulted from personnel errors  
14 in determining proper post-maintenance testing, and one  
15 event was the result of a missed surveillance caused by  
16 personnel error.

17           Regarding maintenance, a few points on the  
18 classification program at South Texas will help put our  
19 numbers in perspective. Our maintenance work order  
20 classification system consists of a priority designation  
21 which determines how quickly a problem must be worked and  
22 a code by which management, planners and schedulers can  
23 determine the relative impact on component or system  
24 operation. Priority One is assigned to those activities  
25 requiring prompt attention to maintain safe plant

1 conditions, address industrial safety concerns, and to  
2 maintain the plant in operation.

3 Priority Two is assigned to those activities  
4 requiring expeditious attention. Priority Two items are  
5 usually handled within a few working days, whereas  
6 Priority One items are handled immediately, expending  
7 overtime and resources as required. The final general  
8 classification category, Priority Three, are those  
9 activities that can be planned for scheduled unit or  
10 system outages, or to work when resources are available.

11 With this background on priorities, we can  
12 further discuss the current Unit 2 corrective maintenance  
13 statistics as shown on this slide -- (slide). As you can  
14 see, there are a minimal number of Priority One and Two  
15 items outstanding.

16 The "impact" codes are: "Out of Service",  
17 "Degraded Service", and "Equipment Operation Not  
18 Affected". As indicated, there are currently very few  
19 items classified as "safety-related out of service".  
20 Those items currently in this category do not impair  
21 operability of any system. The classification implies  
22 that a component of a safety-related system is classified  
23 as not operable. A good example of this type of situation  
24 would be a local pressure gauge that may be damaged. The  
25 gauge is not required for overall system operability, but



1 needs to be repaired.

2           Using the same gauge as an example, if the gauge  
3 was found to be out of tolerance in a region of scale not  
4 normally used for operation, it would be classified as  
5 "degraded in service".

6           Finally, an example of a piece of equipment  
7 classified as "system operation not affected" would be a  
8 gauge which needed a new glass face plate.

9           We have found that using this classification  
10 system -- that is, Priority Code plus "impact" code,  
11 allows us to focus our resources on the most important  
12 problems.

13           The Unit 2 safety-related corrective maintenance  
14 backlog is 257 items, and the non-safety-related backlog  
15 is 656. This compares to Unit 1 values at full power  
16 licensing of approximately 300 safety-related and 1200  
17 non-safety-related.

18           As a two unit site, the maintenance discussion  
19 must include the proper utilization of resources to  
20 support both units. I have discussed our priority system  
21 and "impact" codes. This information is utilized to  
22 schedule the maintenance work. Scheduling is performed  
23 daily and on weekends, as required, by our Work Control  
24 Center, staffed by representatives from all station line  
25 departments. Priorities are further refined by senior

1 management in plan-of-the-day meetings.

2 South Texas Project has an aggressive and  
3 comprehensive preventive maintenance program. Our goal is  
4 to reach a preventive maintenance effort of 60 percent.  
5 To date, we have averaged approximately 40 percent  
6 preventive maintenance which approaches the industry  
7 average for mature plants.

8 The station has a predictive maintenance program  
9 which includes evaluation of equipment vibration, pump  
10 performance, heat exchanger performance and other  
11 parameters to facilitate early diagnosis of problems. We  
12 have seen benefits in terms of both safety and reliability  
13 as a result of this program. For example, this program  
14 identified vibration anomalies in the Unit 1 auxiliary  
15 feedwater pumps. Further investigations revealed the need  
16 for replacement of bearing material, which was  
17 subsequently accomplished, before performance of the pumps  
18 was affected.

19 Finally, with regard to shift manning,  
20 operations at South Texas are conducted using a five shift  
21 rotation. Shifts are eight hours in length. On any one  
22 day, three shifts operate the plant, one shift is in  
23 training and one shift is off. Extensive overtime has not  
24 been required utilizing this rotation.

25 (Slide) As shown on this slide, each shift on

1 each unit typically has a shift supervisor, one Senior  
2 Reactor Operator and three Reactor Operators, while both  
3 units share one shift technical advisor. Operators are  
4 licensed on both units but are assigned primarily to a  
5 single operating shift on one unit.

6           Regarding adequate staffing levels, we have just  
7 completed a major outage on Unit 1, while conducting the  
8 startup testing program on Unit 2. This, we believe, is a  
9 good indicator of our capability to effectively manage and  
10 operate both units.

11           The plant operations staff has gained extensive  
12 experience on the use of procedures, testing, radiological  
13 controls, chemistry, and plant performance during Unit 1  
14 startup and operation, and Unit 2 startup and low power  
15 physics testing.

16           We strongly believe we are ready for full power  
17 operation on our second unit. This concludes our  
18 presentation, and we will be glad to answer any questions.

19           CHAIRMAN ZECH: Thank you very much.

20           Any questions or comments from my fellow  
21 Commissioners? Commissioner Roberts?

22           COMMISSIONER ROBERTS: No.

23           CHAIRMAN ZECH: Commissioner Carr?

24           COMMISSIONER CARR: Do you plan to go to six-  
25 shift operation?

1 MR. KINSEY: No, sir, we do not, we plan on  
2 staying with five-shift rotation.

3 CHAIRMAN ZECH: Do you have eight-hour shifts or  
4 12-hour shifts?

5 MR. KINSEY: We have eight-hour shifts  
6 currently. We are evaluating 12-hour shifts.

7 CHAIRMAN ZECH: Commissioner Rogers?

8 COMMISSIONER ROGERS: There were some ORAT  
9 possible violations, ORAT inspection. Can you say a  
10 little bit about what you are doing with regard to the  
11 problems of procedure -- in the area of procedures?

12 MR. KINSEY: Yes, sir. In the area of  
13 procedures, and the one of most importance is the  
14 emergency operating procedures. We have put together a  
15 comprehensive program, lasting over the next year, where  
16 we have revised our operators procedure writing guide, and  
17 we are rewriting, as well as validating by log-downs and  
18 independent verification, all of our emergency operating  
19 procedures. That will culminate in August of next year.

20 We have verified that we have no significant  
21 problems in our emergency operating procedures, that they  
22 are minor clerical-type typo mistakes, and some nameplate  
23 differences between the procedure and what is out in the  
24 field.

25 As I stated, the EOPs will be completed next

1 year. We have just completed a review of our off-normal  
2 procedures, and they will be completed over the next year  
3 and a half.

4 And finally, we have a five-year program where  
5 the normal plant operating procedures will be reviewed and  
6 revised over the next five years.

7 COMMISSIONER ROGERS: Thank you.

8 Could you say something also about the simulator  
9 deficiencies? There was some note of some deficiencies in  
10 the simulator, and I wonder if you could touch on that?

11 MR. VAUGHN: I will address that, Mr.  
12 Commissioner. Last November, when we had the NRC in doing  
13 exams on our employees, we had a large number of  
14 deficiencies. We started the plant up, and we were  
15 working to get these deficiencies taken care of, with the  
16 simulator. It caught us early. We did up-grade the  
17 simulator in December, and reduced those deficiencies by  
18 70 percent. So, today our simulator is in much better  
19 shape.

20 COMMISSIONER ROGERS: Could you just  
21 characterize where those shortcomings are? What sorts of  
22 situations do you run into trouble with?

23 MR. VAUGHN: Our operators pointed out that our  
24 steam generator did not respond -- the steam generator  
25 model did not respond like the plant. That was major. The

1 other major one is our computer system is just fully  
2 loaded, and response time is slow, and it is having an  
3 impact on the timing.

4 This year -- and I have just gotten the bids in  
5 -- we are doing a major upgrade on our computer, to  
6 improve the timing. So those were the two large ones.

7 COMMISSIONER ROGERS: One of you mentioned  
8 something about agreements with overseas plants, and I  
9 would like to hear just a little bit about what you are  
10 doing with respect to any formal mechanisms for sharing of  
11 operational experience on similar plants. You are the  
12 only RESAR 41 in the US, and it would be, I would think  
13 important to have sister plants to be in touch with, just  
14 so that, on a regular basis, you have someone else that is  
15 sharing direct operating experience with you.

16 Could you say something about where that stands?

17 MR. GOLDBERG: I can address that, Commissioner.  
18 We have entered into a formal agreement with the French to  
19 exchange information with their parallel units and our  
20 South Texas unit. We are just in the early stages of  
21 framing the mechanics of how that is going to proceed.

22 In parallel, we started dialogue with the  
23 Belgians because the DOL 4 unit is also very similar to  
24 South Texas. And we hope to have in place agreements with  
25 the Belgians as well. I can't elaborate anymore at this

1 time as to exactly the mechanics of how this is going to  
2 be done.

3 COMMISSIONER ROGERS: When would you expect  
4 those -- more or less expect those to be in place?

5 MR. GOLDBERG: This summer.

6 COMMISSIONER ROGERS: This summer?

7 MR. GOLDBERG: This summer.

8 COMMISSIONER ROGERS: Fine.

9 And I wonder if you could just tell us about  
10 your view on these allegations with respect to -- that  
11 came in more or less at the last minute, of a former  
12 employee, I guess, and their relationship to safety issues  
13 at the plant?

14 MR. GOLDBERG: I guess I can address that. As I  
15 indicated in my prepared remarks, we did thoroughly  
16 investigate each of the allegations that was safety-  
17 related. Many of the allegations were dealing with  
18 matters that had been previously investigated by SAFETEAM.

19 We were unable to substantiate any safety  
20 concerns contained in those allegations. The particular  
21 employee who authored those allegations was given a chance  
22 before he left the site, to share any concerns with  
23 SAFETEAM, he chose not to. And, of course, the first time  
24 we became aware he had any concerns was after we received  
25 a copy of his filed letter with the Texas Public Utility

1 Commission.

2 COMMISSIONER ROGERS: Thank you very much.

3 CHAIRMAN ZECH: Commissioner Curtiss?

4 COMMISSIONER CURTISS: Just two quick follow-up  
5 questions. On the simulator question that Commissioner  
6 Rogers raised, have you actually installed the revised  
7 programs for the simulator now, or is that scheduled for  
8 some point in the near future?

9 MR. VAUGHN: In December we installed a revised  
10 program. We are working on another one, to pick up  
11 additional deficiencies, and will probably install that in  
12 June. So that will help keep our deficiencies low.

13 We are headed toward, you know, the NRC  
14 certification of our simulator within the time frame that  
15 has been set for that certification.

16 COMMISSIONER CURTISS: Okay.

17 MR. VAUGHN: So I think we are getting on top of  
18 the deficiencies.

19 COMMISSIONER CURTISS: All right. One other  
20 question, could you briefly describe your employee concern  
21 program, what you have instituted and what you have in  
22 place, to respond to employee concerns?

23 MR. GOLDBERG: Let me start with that, and maybe  
24 Gerald would like to complement my remarks. We have a  
25 program which we call SAFETEAM, which we initiated at the



1 South Texas facility in early 1985. Since the inception  
2 of that program, we have made a number of contacts, in  
3 excess of 30,000, where we pro-actively will go out and  
4 ask employees if they have anything on their mind.

5 We catalog these concerns into safety-related  
6 and non-safety-related. I don't happen to have the  
7 current statistics at my fingertips, but since this  
8 program was put in place, there has been, I think, less  
9 than 200 safety-related concerns substantiated and, as I  
10 remember, 25 were ultimately found to be very substantive.  
11 And, of course, once we became aware of that information,  
12 we were able to take appropriate action.

13 We are using that program, in effect, to  
14 virtually make almost every employee on that site a member  
15 of our quality assurance team. It's another pair of eyes  
16 and it is another mind, and we are actively soliciting  
17 employees to bring forth any concerns.

18 There is a supplemental program to SAFETEAM  
19 which is a suggestion box type program, which the  
20 operations people have initiated.

21 And, perhaps, Warren, you'd like to comment on  
22 that.

23 MR. KINSEY: Well, I might mention, yes, the  
24 suggestion program, which is really open to any employee  
25 who comes inside the protected area. It is usually more

1 mundane issues, rather than the safety-related issues. And  
2 then we do have another program that picks up -- that is  
3 more open than the SAFETEAM, which is a confidential type  
4 of reporting. It is called our Station Problem Reporting  
5 Process, and it allows the employees to report problems of  
6 any level of concern that he would like an answer to,  
7 technical or otherwise. That's been a very effective  
8 program.

9 CHAIRMAN ZECH: Concerning the allegations, do I  
10 understand you to say that, as far as Houston Lighting and  
11 Power is concerned, that there are no unresolved safety  
12 issues? Is that your conclusion?

13 MR. GOLDBERG: Yes, sir.

14 CHAIRMAN ZECH: I would like to emphasize the  
15 importance of procedures. I notice that was emphasized  
16 during the operational readiness assessment team visit,  
17 and I think good, understandable, usable procedures and a  
18 practice of following those procedures is extremely  
19 important to safe operations.

20 Have you done anything, or could you talk,  
21 perhaps just very briefly, on what you are doing to make  
22 sure you are maintaining good procedures and they are  
23 formal, they are providing the attention to detail, and  
24 the confidence that you need to assure yourself that those  
25 procedures, first, are good and, second, they are being

1 followed?

2 MR. GOLDBERG: Warren, would you like to  
3 respond?

4 MR. KINSEY: Yes, I would. First of all, I  
5 think one of the programs that enhances our operation at  
6 the station is we have what we call a Senior Management  
7 Tour and Program. That program has senior managers from  
8 the station go out and visit in the field, at different  
9 times, back shifts, day shifts, evening shifts. They  
10 observe the plant operations staff using the procedures  
11 that are mentioned.

12 In addition to that, our own quality assurance  
13 staff goes out in the field and observes the operators and  
14 technicians using the procedures. And as a result of one  
15 of the audit findings, our quality assurance staff is now  
16 paying more particular attention to performance-based  
17 procedures. And by that I mean that they are ensuring that  
18 when we say we are going to write procedures in a  
19 formalized fashion, that, in fact, we are accomplishing  
20 that, not just the fact that we have a program that says  
21 we will, but that the program is actually being  
22 implemented in the field.

23 CHAIRMAN ZECH: Could you discuss very briefly  
24 your simulator training, preparation for your startup  
25 process?

1 MR. VAUGHN: Well, as part, of course, the  
2 Licensed Operator Program, there's five weeks of simulator  
3 training in the licensing.

4 CHAIRMAN ZECH: I mean specifically what you  
5 have done on the simulator to get ready for the startup  
6 ascension program.

7 MR. VAUGHN: The operators have gone through the  
8 emergency scenarios on the simulator. They have also done  
9 regular startup activities on the simulator.

10 CHAIRMAN ZECH: All shifts have done that?

11 MR. VAUGHN: Yes, sir.

12 CHAIRMAN ZECH: All right, fine.

13 Well, during my visits down there, I certainly  
14 was impressed with your efforts to create an environment  
15 of professionalism. And I think -- I hope you will  
16 continue those efforts, particularly among the operating  
17 staff and others, too, but I thought those efforts were  
18 very important to continue and, certainly, worth  
19 commenting on because I thought they were very good.

20 If we do authorize full power for your second  
21 unit, what have you done to make sure you can fully  
22 prepare your management and your people for coping with  
23 two operating units, instead of one?

24 MR. VAUGHN: Mr. Chairman, one thing that we  
25 have recently done is completed the development of an

1 operating organization that we will use to operate both  
2 units. As I mentioned, that development is completed. I  
3 will be announcing that this coming month, and then we  
4 will transition to it by the time Unit 2 will be  
5 commercial.

6 It is a more streamlined organization, a little  
7 tighter control without matrixing, that we have in our  
8 current organization. And it shortens some lines of  
9 communications. It is not a major reorganization for us  
10 because it keeps the functional groups that we now have,  
11 that are covering the areas, it just realigns our upper  
12 management.

13 CHAIRMAN ZECH: Do you intend to have your  
14 operators go from one unit to another, or will they remain  
15 with one unit?

16 MR. VAUGHN: They will remain for a period of  
17 time on one unit. Now, we may well move from one unit to  
18 the other, as we need to maintain balanced shifts or,  
19 periodically, we will be moving some operators.

20 CHAIRMAN ZECH: Why are you staying with five  
21 shifts, instead of six? What have you decided -- what was  
22 your rationale for that?

23 MR. VAUGHN: Early in life, five shifts is a  
24 good operation because it reduces the number of shifts you  
25 are spreading your experience over. It helps you maintain

1 a higher level of experience. And if you -- we are  
2 considering, as Mr. Kinsey mentioned, going to 12-hour  
3 shift operations.

4 If we do go to 12, the five shifts gives you  
5 essentially what the six 8-hour shifts give. So, the five  
6 shift rotation is a good rotation. And we are getting our  
7 training weeks in with that.

8 CHAIRMAN ZECH: How many total number of  
9 operators do you have, SROs and ROs?

10 MR. KINSEY: We have 49 and 27, I believe is  
11 what Mr. Goldberg said in his prepared speech.

12 I might add, Mr. Chairman, that one of the  
13 things that might not be obvious on the surface about our  
14 five shift rotation is the number of people that we will  
15 staff on each shift. We call our shift self-relieving.  
16 Most people who use the six shift rotation use the sixth  
17 shift as the relieving shift.

18 What we do is we have an extra person on each  
19 shift, so that we can handle that vacation or that sick  
20 leave, without having to bring somebody in off the other  
21 shift.

22 COMMISSIONER CARR: According to your figures,  
23 you've got five operators per shift per plant license and,  
24 so, that's five shifts, that's 25 operators. So, you've  
25 got 50 that you're using and you've got 76 licensed. So,

1 you've got another 25 doing something.

2 MR. KINSEY: We've got some over in our training  
3 organization. We've got some in our support organization.  
4 We've got some in our quality assurance organization.  
5 Those are the total numbers, you know, for the staff.

6 COMMISSIONER CARR: Of those 25 that you're  
7 going to use on Number 2, how many of those have got hot  
8 operational experience on 1?

9 MR. KINSEY: What we did is, we went through and  
10 we split up the experience between Unit 1 and Unit 2, so  
11 that we have at least one person on each shift on Unit 2,  
12 with experience from Unit 1. In some cases, there's more.

13 COMMISSIONER CARR: So, one per shift, or maybe  
14 two.

15 MR. KINSEY: At least, right.

16 CHAIRMAN ZECH: Your degree program, tell us a  
17 little bit more about that, and how you think it's going.  
18 You mentioned it briefly in your remarks.

19 MR. GOLDBERG: We initially started with 40  
20 candidates in September of last year. Since the program  
21 started, we have lost four of the students. The  
22 particular program is not sanctioned by ABET, but it is a  
23 five-year program --

24 CHAIRMAN ZECH: Who's paying for it?

25 MR. GOLDBERG: Houston Lighting and Power

1 Company. When a student completes the program, he'll get  
2 a degree in nuclear science, a Bachelor of Science. We do  
3 intend to have another group starting this September and  
4 it would be another 40, and once we get the second group  
5 going, we're going to evaluate whether or not we have the  
6 capacity to get a third group started.

7 I think this first year is going to prove to be  
8 perhaps the toughest because the people are working, you  
9 know, long hours on the plant, but we are doing everything  
10 that we can to encourage people to --

11 CHAIRMAN ZECH: The first year is the toughest,  
12 I can assure you of that, for lots of reasons -- people  
13 are very busy with the plant and so forth, but also it's  
14 been my experience that lots of people sign up for it, but  
15 then when they find out it's going to be a lot of hard  
16 work, some of them drop by the wayside.

17 I would suggest that management do what they can  
18 to encourage people to stay in that program, and you do  
19 what you can to make it as easy for them as you can  
20 because, recognizing they do have a lot of work, shift  
21 work, and it's difficult, but I would encourage you to  
22 give them the support that you can to keep that program  
23 going because the first year is kind of crucial in getting  
24 it started, it's been my experience, so, I'd encourage you  
25 to do that.



1 COMMISSIONER CARR: How many years does it take  
2 a guy in that program to get a degree?

3 MR. GOLDBERG: Five.

4 COMMISSIONER CARR: Five years. So, our  
5 proposed four years won't hack it then.

6 MR. VAUGHN: It would be a little tight. In our  
7 program right now, we have 11 of our licensed people in  
8 operations. Of the 40, 11 of them are licensed people.

9 COMMISSIONER CARR: But not through that program  
10 yet.

11 MR. VAUGHN: No, sir, they are in the early  
12 stage of it, so the proposed rule would be very tight from  
13 a timing standpoint, for us.

14 CHAIRMAN ZECH: Well, I encourage you to  
15 continue it, and watch it closely, and give it your  
16 support because it needs that in order to succeed.

17 I did notice in your prepared remarks, you've  
18 mentioned a preventive maintenance goal of 60 percent, and  
19 you're already attaining an average preventive  
20 maintenance goal of 40 percent. I commend you for that.  
21 It's important, it's very good, it's a fine way to start.

22 I fully appreciate how difficult that is, and I  
23 know that the tendency is to go towards corrective  
24 maintenance alone but, if you don't go towards some  
25 preventive maintenance, in my judgment, you're making a

1 big mistake. It's in your best interest and the interest  
2 of safety, reliability and efficiency of plant. It just  
3 makes good common sense, not only from a regulator  
4 standpoint, but I would certainly think from the utility  
5 standpoint.

6 So, I commend you for getting off to a good  
7 start in that maintenance program, and would ask you to--  
8 certainly, recommend that you continue that emphasis.

9 As I recall, the recent SALP report that I saw  
10 showed indication of considerable improvement in the  
11 security area. Could you talk about that for just -- very  
12 briefly.

13 MR. GOLDBERG: All right. Gerald, would you  
14 like to cover it?

15 MR. VAUGHN: I think the improvements in  
16 security -- of course, a lot of it resulted from security  
17 guards gaining experience on Unit 1 and just expanding to  
18 Unit 2.

19 We have upgraded hardware that was a problem on  
20 Unit 1, and we took our security training program and  
21 applied -- while it's not in the accreditation briefing of  
22 industry programs for accreditation, we applied the same  
23 principles for the systematic approach to training, to the  
24 security training program, and revamped that early while  
25 we were working hard on Unit 1, and it serves as well, I

1 think, in training our new security guards.

2 So, it's a combination of just gaining  
3 experience, improving our equipment and, finally, it takes  
4 a while for all of your employees in the plant, who really  
5 make up your security program, to just be complying with  
6 it as 100 percent as you need. So, those are the  
7 improvements.

8 CHAIRMAN ZECH: You're gaining experience and  
9 you're getting better --

10 MR. VAUGHN: Yes, sir.

11 CHAIRMAN ZECH: -- and you think that's shown?.

12 Well, it looks like it has.

13 Commissioner Rogers?

14 COMMISSIONER ROGERS: What's your experience  
15 with your fitness for duty program, all aspects of it,  
16 alcohol as well as illegal substances?

17 MR. GOLDBERG: Right now, our random testing,  
18 which we're testing approximately 30 employees a day,  
19 we've had a reject rate -- it's about a little over .6 of  
20 1 percent.

21 With respect to candidates for employment where  
22 there's a pre-employment screen, the reject rate has been  
23 running over 2 percent, a little over 2 percent.

24 Our program is very unforgiving. Employees are  
25 advised up front that we have a program. They have a

1 career decision to make. If they have a drug problem,  
2 they have to come forward voluntarily and ask for  
3 assistance, and we will provide rehabilitation.

4 Alternatively, if they are tested positive,  
5 there is no second chance; it is a termination.

6 COMMISSIONER ROGERS: What about alcohol?

7 MR. GOLDBERG: Same for alcohol.

8 CHAIRMAN ZECH: Let me just comment on the same  
9 subject. As I recall, I was impressed by the Houston  
10 Lighting and Power Company's aggressive fitness for duty  
11 program even before the Commission went to, or was even  
12 considering going to a rule. During the time we had a  
13 policy in effect, as I recall, your organization was doing  
14 an excellent job in the fitness for duty program. I think  
15 I remember that when I visited your plant, and commented  
16 on that.

17 As I recall, too, it was my impression that that  
18 program, that strong program you had, fitness for duty,  
19 did create an atmosphere of professionalism in your  
20 organization, which I thought was contributing overall to  
21 strong safety culture, if you will. It was a good, tough  
22 program I thought -- I'm pretty sure I remember it  
23 correctly -- and I would hope that you will continue that.

24 It would be my judgment that when our rule does  
25 go in place, you're probably already doing what you have

1 to do. I think you might have mentioned that in your  
2 remarks but, if you didn't, it would certainly be my  
3 understanding that you have done -- certainly, you've got  
4 a good start in that regard, and I would commend you to  
5 keep it up, and I do think it helps to contribute to the  
6 professionalism of your organization.

7 Well, let me just offer a challenge to you, and  
8 a caution to you, again, that if we do authorize this  
9 plant to go to full power, that your real big challenge,  
10 again, is the transition from construction to operations.

11 Now, you've had some experience in Unit 1. You  
12 have had a few bumps, as you point out, but you've learned  
13 a lot, I think, from that, in all areas, as far as I can  
14 understand in reviewing your program, but, again, now,  
15 you've got another challenge and, yes, you have learned  
16 from Unit 1, but you've still got another baby that's  
17 about to be born, and it's different when it is born than  
18 when it is unborn.

19 The plant you have now is still to be proven,  
20 and the transition stage, from construction to operation,  
21 is a very real challenge to every utility in the country,  
22 and it will be a challenge to you because you'll have two  
23 to worry about now, perhaps, instead of one.

24 So, I would say, continue the lessons you've  
25 learned from Unit 1, apply them vigorously to Unit 2, and

1 don't be complacent. Don't be over-confident. You're not  
2 there yet.

3 And, so, take a conservative, careful approach  
4 to the transition period, from construction to operations.  
5 It's very important that you convey that to all your  
6 people, and those of you experienced in it and the other  
7 operational people experienced in it understand that  
8 difficulty of going from construction to operations, and  
9 it's something that experience is the greatest supporter  
10 in that area, but it's very real.

11 So, I would challenge you to do the best job you  
12 can there, and watch it carefully; be conservative, be  
13 careful, be cautious, and be safety-minded all the way  
14 through.

15 Any other questions?

16 COMMISSIONER ROBERTS: A quick question.  
17 Refresh my memory, when did you go down there? You came  
18 from Stone and Webster?

19 MR. GOLDBERG: That's right, Commissioner.

20 COMMISSIONER ROBERTS: When?

21 MR. GOLDBERG: In October of 1980.

22 COMMISSIONER ROBERTS: October, '80?

23 MR. GOLDBERG: Yes, sir.

24 COMMISSIONER ROBERTS: Thank you.

25 CHAIRMAN ZECH: Any other questions, comments?

1 (No response.)

2 All right. Thank you very much, gentlemen.

3 We'll call on the NRC staff now, please.

4 (Whereupon, the Houston Lighting and Power  
5 Company representatives left the table and the NRC staff  
6 came forward and were seated.)

7 CHAIRMAN ZECH: Mr. Stello, you may proceed.

8 MR. STELLO: Thank you, Mr. Chairman. I'll ask  
9 Jim Sniezek to introduce the main members of the staff in  
10 a moment. I wanted to make two points, first. One is  
11 that we are satisfied with the status of the plant. We're  
12 satisfied they meet all of our regulations and, with the  
13 Commission's concurrence, we are now prepared to issue  
14 full power license to the South Texas, Unit 2 project.

15 The second point deals with -- we will, in the  
16 briefing, show you the results of the startup of Unit 1,  
17 and I think I listened carefully as you presented a  
18 challenge to the licensee and, as I look at their chart,  
19 what I would like to see is perhaps the second unit, as it  
20 starts up, to do what we have seen other projects  
21 worldwide do, and that's maybe go to an absolute perfect  
22 startup, perhaps a goal of zero SCRAMS. They did quite  
23 well in Unit 1, and I think they ought to set themselves  
24 some targets that are better.

25 I would conclude by suggesting that this is a

1 utility that has seemed to learn the lessons, as you will  
2 see from the data we will present, and they have done that  
3 and done that well, and we are pleased with that kind of  
4 approach.

5 We will summarize a number of issues that we  
6 think is important to get through, and I'll ask Jim to  
7 make some brief introductory remarks and introduce the  
8 others at the table.

9 CHAIRMAN ZECH: Thank you very much. Mr.  
10 Sniezek, you may proceed.

11 MR. SNIEZEK: Good afternoon, Mr. Chairman,  
12 Commissioners.

13 We are here today to discuss with the Commission  
14 the actions the staff has taken to arrive at our  
15 conclusion that South Texas, Unit 2 has been constructed  
16 in accordance with the Commission's regulations and will  
17 be operated safely.

18 With me at the table today, on my right, is  
19 George Dick, the Project Manager for South Texas. On the  
20 right of Mr. Stello is Bob Martin, the Regional  
21 Administrator of Region IV, and on his right is Jose  
22 Calvo, the Project Director for South Texas.

23 Also with us today are various members of the  
24 staff, who had a key role in performing the licensing  
25 reviews and inspections at South Texas, including the



1 senior resident inspectors at South Texas, Unit 1 and Unit  
2 2. They are also with us today.

3 George Dick will brief the Commission on the  
4 licensing aspects of Unit 2, and Bob Martin will brief the  
5 Commission on the construction and operations aspects of  
6 Unit 2.

7 Before we start, I'd like to mention two matters  
8 of interest, which have come up within the past two weeks.  
9 One of them was mentioned by Commissioner Rogers. We have  
10 recently received copies of allegations to the Texas  
11 Public Utilities Commission, concerning plant  
12 construction, operations and plant management practices.  
13 Mr. Martin will discuss the results of our review of those  
14 issues during his briefing.

15 The second item concerns questions raised  
16 regarding the South Texas atmospheric steam dump valves,  
17 which were brought about by a problem which occurred at  
18 another operating unit. Mr. Dick will cover this matter  
19 in his briefing. Both issues have been resolved to the  
20 satisfaction of the staff.

21 I would like now to turn the briefing over to  
22 Mr. Dick. George?

23 MR. DICK: Thank you, sir.

24 A lot of the material that I have for the first  
25 part of the briefing was covered by the licensee, so I

1 will go through the slides quickly. Let me have slide 2,  
2 please. (Slide) Slide 2 just presents the outline of  
3 what we will be covering today.

4 Slide 3, please. (Slide) The one point I'd  
5 like to make on this slide is that in addition to being  
6 the operator and part owner, there are three other owners  
7 of South Texas project, both units.

8 Slide 4, please. (Slide) The plant is a  
9 Westinghouse PWR, RESAR 41, and I'll say a little bit more  
10 about that in a few minutes. Just from an historical  
11 point of view, originally, the architect engineer was  
12 Brown and Root, as well as being the constructor. That  
13 was until 1981. After 1981, then Bechtel became the  
14 architect engineer and EBASCO was the constructor.

15 COMMISSIONER ROBERTS: Did those two things  
16 happen simultaneously?

17 MR. DICK: Very close together, sir. It  
18 happened in the '81-82 time frame.

19 Slide 5, please. (Slide) As I mentioned  
20 earlier, South Texas, Units 1 and 2 are the Westinghouse  
21 RESAR 41 design. These two units are the only two units  
22 of their design operating, or will be operating in the  
23 United States. Unique characteristics of them -- they are  
24 four-loop, three train systems. They have 14-foot cores,  
25 and each unit is capable of a rated power of 3800

1 megawatts thermal.

2 Slide 6, please. (Slide) This slide just has  
3 key dates in the Unit 2 licensing milestones. The two I  
4 want to mention in particular is this past December they  
5 did receive the low power license on Unit 2 and, as was  
6 mentioned earlier, they did achieve initial criticality on  
7 March the 12th.

8 Slide 7, please. (Slide) With the license, we  
9 are issuing three exemptions. The first two exemptions,  
10 Appendix J air lock testing and the criticality monitoring  
11 system are ones that are technical exemptions which have  
12 been issued on a number of plants, including these two.

13 The decommissioning planning rule is a scheduled  
14 exemption, and what that will do will permit Unit 2 to  
15 submit its decommissioning plan at the same time it  
16 submits a plan for Unit 1, which will be in July of 1990,  
17 and July of 1990 is the date for all operating reactors.

18 Slide 8, please. (Slide) The items mentioned  
19 on this slide have all been covered, to various degrees,  
20 by Houston Lighting and Power, so I won't go into them  
21 individually. I will say that the staff has followed and  
22 reviewed the actions of the licensee, and we concur with  
23 their findings.

24 The one item I do want to mention that isn't on  
25 here -- and Mr. Sniezek mentioned it earlier -- is the

1 atmospheric dump valve. This came up as a -- was brought  
2 forward from a problem at one of the other units. It is  
3 relevant to South Texas because the vendor that makes the  
4 valves is the same in both cases.

5 We have looked into it and have concluded that  
6 the valves are of somewhat improved design. They are  
7 smaller, which would prevent the problems that occurred at  
8 the other units, and they have a different type of  
9 actuator, and we feel confident that were they called upon  
10 to function, that they would do so.

11 And with that, I'll turn it over to Mr. Martin.

12 CHAIRMAN ZECH: Thank you very much. Mr.  
13 Martin, welcome; you may proceed.

14 MR. MARTIN: Thank you. Could I have slide 9,  
15 please. (Slide) As noted, this is a very rough, quick  
16 review of some key milestones relative to the  
17 construction. The permit was issued originally in 1975.

18 In response to Commissioner Roberts' question,  
19 while I was not in Region IV at the time, my memory was  
20 that the essential features were that Brown and Root was  
21 replaced as the architect engineer.

22 There was a period of time at which they were  
23 going to be retained as the constructor, and they chose  
24 not to remain -- that is my understanding -- chose not to  
25 remain in that role, and subsequently were replaced by

1 EBASCO. So, they were close on, but not simultaneous  
2 exchanges.

3 The inspection staff hours are identified there  
4 as only being this plant, as all plants in the  
5 construction-startup phase receive a magnitude of  
6 inspection of this kind.

7 Two unique issues that are continuing to be  
8 reviewed, or have been reviewed by us. A few years back,  
9 you may recall, there was a litigation between HL&P and  
10 Brown and Root, which offered the potential of perhaps  
11 during the discovery process, producing technical  
12 information. A separate review process was proposed by  
13 HL&P to technically review that in an independent fashion.  
14 We certainly acknowledged that as a good idea, and we  
15 monitored that process. So, there is litigation also now  
16 going on between --

17 COMMISSIONER ROBERTS: Ongoing?

18 MR. MARTIN: We used that process for the Brown  
19 and Root. Ongoing right now is another litigation between  
20 the operator of the plant and one of the other owners of  
21 the facility. At the present time, this same litigation  
22 review process is being followed relative to information  
23 being brought out during that.

24 So, we are confident that on an ongoing basis,  
25 any safety information would rapidly receive

1 identification to us and technical review.

2 The operator -- the next slide, slide 10,  
3 please. (Slide) This slide addresses operator staffing.  
4 I believe the licensee has probably -- presumably, has  
5 answered the full spectrum of your questions that you  
6 raised there, so I won't linger on this area.

7 I think, however, with regard to the operational  
8 experience, some insights that we had in looking at the  
9 startup of Unit 1 -- and albeit while this meeting is  
10 clearly for authorization for Unit 2, we draw heavily on  
11 our observations of the management staff performance on  
12 Unit 1.

13 In the main, our overall assessment is that they  
14 have shown above average performance, on the startup of  
15 Unit 1. When compared to recent plants at this power  
16 level and size starting up, that in many factors they have  
17 done as well as the average and better than the average in  
18 certain areas.

19 So, I think, overall, our basic assessment is,  
20 they are doing better than average for recent plant  
21 performance.

22 More important to us, from certain respects, is  
23 their ability to do critical self-assessments. They have  
24 been on Unit 1, challenged a few times with some rather  
25 dramatic technical challenges -- the turbine fire, the

1 turbine hydrogen fire, the destructive failure of the main  
2 feed pump -- and the quality of their engineering work and  
3 their ability to get on top of those problems, scope the  
4 issues, and then bring them to resolution, we consider to  
5 be above the norm that we have seen in most of the plants  
6 that we deal with. So, we find that a strong performance  
7 factor for this utility.

8           Their willingness to learn from errors, I think,  
9 goes along with that. We basically find that we believe  
10 there's been a good transfer of technology between Unit 1  
11 to Unit 2, and we believe it's being reflected in the  
12 operational experience thus far.

13           Could I have slide 11, please. (Slide) Now, in  
14 preparing and trying to assess their readiness for  
15 operation, in addition to the usual implementation of the  
16 inspection program, we had a series of inspection  
17 activities which were primarily focused toward their  
18 readiness for operation.

19           In addition, there was an EOP inspection team.  
20 If you recall, I believe you have been briefed on this  
21 program separately. There is a program underway, to look  
22 at all plants, at emergency operating procedures. Such a  
23 team also went to the South Texas facility, which gave us  
24 another dimension of readiness.

25           In a number of the areas that you have already

1 discussed with the licensee, relative to the procedures  
2 and procedural deficiencies which were identified by these  
3 inspections and in the SALP report, while we did identify  
4 a number of areas -- and I do not want to minimize them as  
5 not being important because they certainly are -- however,  
6 I think it perhaps is helpful to characterize that teams  
7 doing these kinds of inspections, the findings we had in  
8 South Texas with regard to EOPs were not dissimilar from  
9 the spectrum of findings that we had found at other  
10 operating plants.

11 This was perhaps the best prepared EOP  
12 inspections, the use of these teams by the agency, over  
13 the last year. It's probably the best EOP inspections  
14 that have ever been done in the last ten years. So, we  
15 had an ability to find flaws that we had not had in  
16 previous years.

17 Therefore, the findings at South Texas are not,  
18 while they are there and very real and have to be dealt  
19 with, we had a scope of findings similar to -- at other  
20 operating plants. That is offered only as a matter of  
21 perspective.

22 In general, we found their operational readiness  
23 good, and as I believe we mentioned in your briefing  
24 material that was developed, their professionalism on Unit  
25 2 high, and their performance high. So, we think they are



1 a strong operating group.

2 May I see slide 12, please. (Slide) This slide  
3 refers to a few brief bullets on our low power operations  
4 evaluation. Basically, they have gone through fuel  
5 loading, initial criticality, and startup for low power  
6 testing in a smooth fashion. They've had a few problems  
7 that they have dealt with, clearly, far smoother, not  
8 hurried but in a nice, smooth, orderly fashion.  
9 Basically, we think this, more than anything else, has  
10 demonstrated to us their ability to learn the lessons from  
11 Unit 1, for the startup and operational phases, and apply  
12 them to Unit 2.

13 Could I have slide 13, please. (Slide) This  
14 one merely shows for a selected aspect, which is the  
15 unplanned reactor SCRAMS, the performance of Unit 1,  
16 relative to other plants. Unit -- perhaps on your slide  
17 package you'll be able to see it more readily than you can  
18 on the screen but, basically, for the unplanned SCRAMS,  
19 they are amongst the lowest lines demonstrated on the  
20 chart. So this is compared to other units in startup  
21 since they started criticality. So, in general, their  
22 performance seems good.

23 There are other parameters that the agency has  
24 studied on these plants in startup, which are published, I  
25 believe, in the NUREG -- I believe someone may know which

1 the NUREG number is but, in any event, there is a NUREG--  
2 publishes this data.

3 Now, in some of those other comparisons, South  
4 Texas does not look as good, but it certainly is never the  
5 outlier in terms of poor performance. It is either within  
6 the bulk average or is in the lower portion. So, in  
7 general, it's been a good startup.

8 CHAIRMAN ZECH: The lower portion, you mean the  
9 better performer?

10 MR. MARTIN: The better performer, yes.

11 CHAIRMAN ZECH: Thank you.

12 MR. MARTIN: I'm sorry -- yes, that  
13 classification is worthwhile.

14 Could I see slide 14, please. (Slide) We did,  
15 in fact, just complete the SALP process. The staff  
16 completed the SALP process up through December 31 of '88,  
17 so this data is an assessment of the performance of the  
18 facility against the SALP criterion and, basically, they,  
19 I would say, for a new plant, are demonstrating a good  
20 performance.

21 There are a number of problems. They've already  
22 been discussed previously. I think several of the  
23 Commissioners, or a few of the Commissioners, did raise  
24 some questions from things in the SALP report, and those  
25 were -- in fact, the items that were pursued were the very

1 ones that I had originally intended to highlight to you,  
2 so I don't see a need to go through them again.

3 Based on all of this, I fully expect -- as Mr.  
4 Stello mentioned almost as a challenge to them, I fully  
5 expect the startup of Unit 2 overall, to full power,  
6 should go much more smoothly than Unit 1 went.

7 If I may, let me now spend just a moment on the  
8 allegations that Mr. Sniezek mentioned that I would come  
9 to discuss those. We did, on receipt of the allegations,  
10 set a team together to look at the information.

11 We have looked at the concerns that had been  
12 identified by the allegor. Almost without exception, all  
13 of those issues were known to us to one degree or another.  
14 We have, in those few cases where they were not well known  
15 to us, done further field inspection to satisfy ourselves  
16 that they do not present a picture or a perspective about  
17 that licensee that causes us to fundamentally change our  
18 view of the licensee or the readiness of this plant to  
19 operate.

20 We have identified a few issues which we will  
21 continue to follow-up, by using some of the information  
22 that will be developed by the licensee in their follow-up  
23 of the issues. We are doing that only because that will  
24 broaden our base, and we are currently confident, and I  
25 think that will just add to our confidence.

1           In addition to that, we have discussed with the  
2   allegor whether or not that information that's contained  
3   in the letter he wrote is the totality of his information,  
4   and whether or not he had other concerns about safety, and  
5   he has indicated that that is the totality of his  
6   concerns. His concerns were more budget-oriented than  
7   they were safety-oriented, and he had no other additional  
8   information to review.

9           We are confident there is either no change in  
10   perspective or change in confidence in the ability of this  
11   plant to startup, warranted by the information that was  
12   provided to the Texas PUC and subsequently to us and HL&P.

13           With that, I basically come to the final slide,  
14   which Mr. Stello has already summarized.

15           MR. STELLO: We're through, Mr. Chairman, and  
16   our conclusion is as stated on the slide.

17           CHAIRMAN ZECH: All right. Why don't you state  
18   it for us?

19           MR. STELLO: Well, I already did. I'll do it  
20   again.

21           CHAIRMAN ZECH: Do it again.

22           MR. STELLO: The staff is, in fact, now prepared  
23   to issue the full power license, if the Commission  
24   concurs. It is our view that they meet the regulations  
25   and are ready to operate Unit 2 at full power.

1 CHAIRMAN ZECH: All right. Thank you very much.  
2 Questions, comments from my fellow  
3 Commissioners? Commissioner Roberts?

4 COMMISSIONER ROBERTS: No.

5 CHAIRMAN ZECH: Commissioner Carr?

6 COMMISSIONER CARR: It seemed to me in one of  
7 the wider inspections there, when we turned up the  
8 labeling and procedure prints and installed in equipment  
9 matching problems, that that's very important for a plant  
10 that's new, inexperienced operators, and if the prints and  
11 the labels don't match, it's going to cause them some  
12 problems. Are they going to fix that?

13 MR. MARTIN: The answer to that is, yes. We've  
14 already --

15 COMMISSIONER CARR: Is it already fixed?

16 MR. MARTIN: Not in its entirety. Let me ask--  
17 Jim, were you able to -- this is Jim Milhoan, my Division  
18 Director for Reactor Safety. If he could address that  
19 issue --

20 CHAIRMAN ZECH: Step to the microphone and  
21 identify yourself, please, to the Reporter.

22 MR. MILHOAN: Jim Milhoan, Director, Division  
23 for Reactor Safety in Region IV. At the time of that  
24 inspection, we sat down with HL&P and discussed the  
25 deficiencies with them.

1 I might say that we looked at the procedures  
2 from the standpoint of those deficiencies, were  
3 significant, but also with the walk-throughs and the  
4 experience that we had of exercising the operators on  
5 those procedures, we found that the state of the training  
6 of the operators was such that they could carry out those  
7 procedures reasonably well, in a satisfactory manner, even  
8 given the labeling mistakes.

9 We have discussed the labeling problems with  
10 South Texas. They are in the process of correcting the  
11 procedures to reflect the labels in the field. They have  
12 not completed that process as yet.

13 COMMISSIONER CARR: In addition, while you're  
14 there, the March '89 Operational Readiness Assessment Team  
15 gave us a promissory note that Region IV would confirm the  
16 resolution, and correction of those issues would be sought  
17 before this briefing. Has that all been accomplished?

18 MR. MILHOAN: I'm not aware of the statement  
19 you're reading in the report, but we have conducted a  
20 recent operational readiness inspection of Unit 2, and  
21 that team came to the conclusion that they were ready for  
22 operation, from the result of the latest operational  
23 readiness inspection.

24 COMMISSIONER CARR: Thank you.

25 CHAIRMAN ZECH: Commissioner Rogers?

1 COMMISSIONER ROGERS: Just that these  
2 exemptions, these three exemptions that were granted, to  
3 what extent are they really a result of shortcomings in  
4 our own regulations, and to what extent are they things  
5 that are minor that the licensee will correct in the  
6 future?

7 MR. STELLO: The first two are clearly  
8 shortcomings in the regulations. We have changes to fix  
9 that. Second is an issue that we think makes sense --

10 CHAIRMAN ZECH: The third one you mean.

11 MR. STELLO: I mean the third one -- excuse me  
12 -- to combine the two plants and get the answer to the  
13 decommissioning issue which is due in July 1990, be  
14 brought together rather than separate. We think that's  
15 the proper thing to do, and have given an exemption for  
16 that purpose. So, the first two, I think, are our own  
17 problems, and the third, it could go either way, but our  
18 view is that that's the better way to do it.

19 COMMISSIONER ROGERS: Well, it's just nice to  
20 try to get some of those things cleared up so that the  
21 record with regard to the application doesn't show that an  
22 exemption was granted when it really is something that, in  
23 a sense, is irrelevant to the particular licensing action,  
24 and it just -- it's a little fly in the ointment that  
25 doesn't perhaps have to be there. We'll have to get those

1 out of the way.

2 CHAIRMAN ZECH: Commissioner Curtiss?

3 COMMISSIONER CURTISS: Just two quick questions.  
4 First, has this facility met all the post-TMI  
5 modifications?

6 MR. MARTIN: Yes, they have met all the post-TMI  
7 modifications.

8 COMMISSIONER CURTISS: Second question, on the  
9 simulator issue which we talked about earlier, the SALP  
10 was rather critical of the simulator tests as late as  
11 November. You've heard the utility talk about the changes  
12 that they have made. Have we had an opportunity to  
13 examine the changes that have been implemented, and what  
14 will the earliest opportunity be to look at the June  
15 modifications?

16 MR. MARTIN: Let me, again, ask Jim Milhoan  
17 because the operator licensing and simulator assessments  
18 are really done through his division. Jim?

19 MR. MILHOAN: Jim Milhoan, again, Region IV. We  
20 have been informed by the utility that those disks have  
21 been installed. Our next opportunity to look at it is on  
22 the re-examination of the operators that failed the  
23 November exam. That should be next week. If scheduling  
24 is accomplished as we think it will be, there will be  
25 another examination class, I believe it's in August of



1 this year, but I'll have to check that exam schedule. I  
2 think it's in August of this year, but the earliest  
3 opportunity we will go in and look at that.

4 We've also requested in the examination report,  
5 a formal response from HL&P, on each one of the simulator  
6 deficiencies that were noted in our exam report, and we  
7 will be following up on that.

8 CHAIRMAN ZECH: Let me just say, I would like to  
9 comment on Mr. Martin's review of the South Texas, Unit 2  
10 plant. He mentioned the professionalism he sees there at  
11 Houston Light and Power Company, and I think that's very  
12 important for a relatively new utility, to get those kind  
13 of comments this early in the stage.

14 I do think -- from my personal observation down  
15 there, I think they are deserved. Performance, obviously,  
16 is good, and, Mr. Martin, I appreciate your own personal  
17 observations there, and your people in Region IV, and your  
18 comment about a strong operating organization.

19 Those are the kind of things that do give the  
20 Commission confidence, and I would commend the Houston  
21 Light and Power Company. Those kind of comments don't  
22 come from the regional administrators or from our senior  
23 staff, to this Commission, very lightly.

24 I would ask you to certainly take those thoughts  
25 back with you, and although you certainly would appear to

1     deserve them, I would think that it would make it even  
2     more challenging for you to continue to deserve that kind  
3     of -- those kind of high performance marks that you're  
4     getting, and your emphasis on professionalism across-the-  
5     board. So, I think those are things that you should  
6     certainly cherish, but you should not be, again,  
7     complacent or over-confident.

8             I think it gives you even more of a challenge to  
9     show by your results now, that those comments were truly  
10    deserved. So, you have even more of a challenge to show  
11    us that it's not just the impression that our people have  
12    of you, but it's your performance that merits that kind of  
13    judgment, but, Mr. Martin, I appreciate those thoughts. I  
14    know you and your people have done a fine job in reviewing  
15    the South Texas, Units 1 and 2, and I commend, Mr. Stello,  
16    you and your staff that have also been involved so heavily  
17    in this Houston Light and Power Company important program.

18            Well, if I could summarize then, it's my  
19    understanding that the staff has concluded that Houston  
20    Lighting and Power Company and South Texas Project, Unit 2  
21    does satisfy the requirements for issuance of a full power  
22    license.

23            Unless there are additional questions or  
24    comments, I'd ask my fellow Commissioners if they are  
25    prepared to vote at this time. If so, all those in favor

1 of authorizing the staff, after making the appropriate  
2 findings, to grant Houston Lighting and Power Company a  
3 full power operating license for South Texas Project, Unit  
4 2, please signify by saying aye.

5 (Chorus of ayes.)

6 CHAIRMAN ZECH: Those opposed?

7 (No response.)

8 The vote is five to zero in favor. We stand  
9 adjourned.

10 (Whereupon, at 3:25 p.m., the meeting was  
11 adjourned.)

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CERTIFICATE OF TRANSCRIBER

This is to certify that the attached events of a meeting  
of the United States Nuclear Regulatory Commission entitled:

TITLE OF MEETING: DISCUSSION/POSSIBLE VOTE ON FULL POWER  
OPERATING LICENSE FOR SOUTH TEXAS, UNIT 2  
PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: MARCH 28, 1989

were transcribed by me. I further certify that said transcription  
is accurate and complete, to the best of my ability, and that the  
transcript is a true and accurate record of the foregoing events.

Phyllis Young

Reporter's name: PHYLLIS YOUNG

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3/28/89

SCHEDULING NOTES

LE: DISCUSSION/POSSIBLE VOTE ON FULL POWER OPERATING LICENSE  
FOR SOUTH TEXAS, UNIT 2

SCHEDULED: 2:00 P.M., TUESDAY, MARCH 28, 1989 (OPEN)

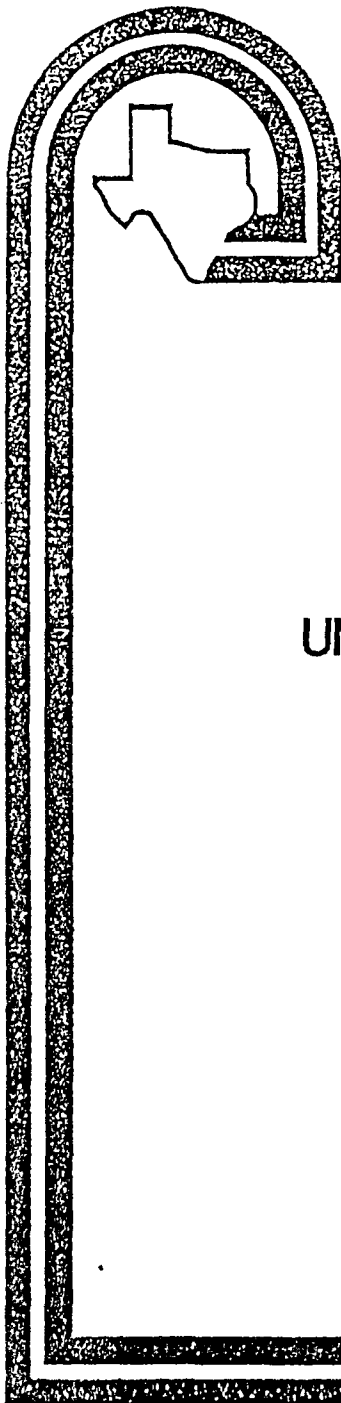
DURATION: APPROX 1-1/2 HRS

PARTICIPANTS: HOUSTON LIGHTING AND POWER COMPANY (LICENSEE) 30 MINS

- DON D. JORDAN  
CHIEF EXECUTIVE OFFICER
- JEROME H. GOLDBERG  
GROUP VICE PRESIDENT, NUCLEAR
- GERALD VAUGHN  
VICE PRESIDENT, NUCLEAR OPERATIONS
- WARREN H. KINSEY, PLANT MANAGER

NRC 20 MINS

- T. MURLEY, DIRECTOR, NRR
- G. DICK, PROJECT MANAGER
- R. MARTIN, ADMINISTRATOR, REGION IV



UNIT 2 FULL POWER COMMISSIONERS BRIEFING

MARCH 28, 1989

**SOUTH TEXAS  
PROJECT**

**SOUTH TEXAS PROJECT**  
**PROFESSIONALISM**

- **Seek High Performance Standards**
- **Give Attention to Detail**
- **Admit, Be Eager to Correct and Learn from Mistakes**
- **Emphasize Integrity**
- **Face Facts Squarely and Deal with their Implications**
- **Be Fit for Duty**
- **Think Safety, Quality, and Productivity**

## **SOUTH TEXAS PROJECT**

### **PROFESSIONALISM**

(Continuation)

- **Take Initiative and be Highly Reliable**
- **Comply with Regulations and Procedures**
- **Strive for Self-Improvement to be a Seasoned Expert**
- **Have Confidence, Take Pride and Accept Responsibility in All You Do**
- **Respect Other Individuals and Support the Team**
- **Set a Good Example for Others**
- **Present a Business-Like Appearance**



## **STP UNIT 2 PRECRITICAL TESTING EVENT SUMMARY**

- o LEAKAGE PAST SEALS ON REACTOR PRESSURE VESSEL  
INSPECTION COVERS LOCATED IN THE REFUELING POOL**
- o ADJUSTMENTS TO THE STEAM DRIVEN AUXILIARY  
FEEDWATER PUMP TURBINE GOVERNOR VALVE**
- o HYDRAULIC TRANSIENTS IN THE STEAM GENERATOR  
BLOWDOWN PIPING**

**STP UNIT 2**  
**CORRECTIVE MAINTENANCE ACTIVITIES OUTSTANDING**

<b>PRIORITY ONE</b>	<b>0</b>
<b>PRIORITY TWO</b>	<b>4</b>

**PRIORITY THREE**

	<u><b>SAFETY</b></u>	<u><b>NON-SAFETY</b></u>
<b>OUT OF SERVICE</b>	<b>5</b>	<b>62</b>
<b>DEGRADED SERVICE</b>	<b>155</b>	<b>444</b>
<b>EQUIPMENT OPERATION</b>		
<b>NOT AFFECTED</b>	<b>97</b>	<b>150</b>
<hr/>		
<b>TOTAL</b>	<b>297</b>	<b>656</b>

### SHIFT COMPLEMENT CHART

<u>Position</u>	<u>No. of Shifts</u>	<u>One Unit</u>	<u>Two Units</u>
Shift Supervisor (Licensed SRO)	5	1	2
Unit Supervisor (Licensed SRO)	5	1	2
Reactor Plant Operator (Licensed)	5	3	6
Plant Operator (Unlicensed)	5	6	11
Administrative Aide	5	1	2
Shift Technical Advisor	-	1	1

COMMISSION BRIEFING  
ON  
SOUTH TEXAS PROJECT, UNIT 2  
FULL-POWER LICENSE

MARCH 28, 1989

## OUTLINE

- ° BACKGROUND
- ° PLANT DESIGN
- ° LICENSING MILESTONES
- ° EXEMPTIONS
- ° RECENT ISSUES IDENTIFIED AND CORRECTED
- ° CONSTRUCTION
- ° OPERATION
- ° SALP
- ° STAFF CONCLUSION

## BACKGROUND

- ° OWNERS

- HOUSTON LIGHTING & POWER COMPANY (HL&P)
- CITY PUBLIC SERVICE BOARD OF SAN ANTONIO
- CENTRAL POWER AND LIGHT
- CITY OF AUSTIN, TEXAS

- ° OPERATOR

- HL&P

- ° LOCATION

- 2 UNIT SITE IN MATAGORDA COUNTY, TEXAS
- 89 MILES SOUTHWEST OF HOUSTON
- 12 MILES FROM BAY CITY

- ° UNIT 1 - COMMERCIAL, AUGUST 1988

## PLANT DESIGN

### ° GENERAL

- WESTINGHOUSE PWR, RESAR 41
- ARCHITECT ENGINEER  
BROWN & ROOT UNTIL 1981  
BECHTEL, HOUSTON AFTER 1981
- GENERAL CONTRACTOR  
BROWN & ROOT UNTIL 1981  
EBASCO AFTER 1981

PLANT DESIGN (CONTINUED)

- ° NSSS CHARACTERISTICS
  - ONLY RESAR-41 DESIGN IN U.S.
  - FOUR-LOOP, THREE TRAIN SYSTEM
  - FOURTEEN FOOT CORE
  - RATED POWER - 3800 MWT, 1250 MWE
- ° CONTAINMENT CHARACTERISTICS
  - STEEL-LINED, REINFORCED  
POST-TENSIONED CONCRETE



STP-2 LICENSING MILESTONES

CONSTRUCTION PERMIT ISSUED	DECEMBER 1975
ASLB DECISION	AUGUST 1986
ISSUE LOW POWER LICENSE	DECEMBER 1988
FUEL LOAD	DECEMBER 1988
INITIAL CRITICALITY	MARCH 1989
SCHEDULE FULL POWER LICENSE	MARCH 1989

### EXEMPTIONS

- ° 10 CFR PART 50, APPENDIX J AIR LOCK TESTING
- ° CRITICALITY MONITORING SYSTEM,  
10 CFR 70.24
- ° DECOMMISSIONING PLANNING RULE,  
10 CFR 50.33(K) AND 10 CFR 50.75

RECENT ISSUES IDENTIFIED AND CORRECTED

- ° PRESSURIZER SURGE LINE THERMAL  
STRATIFICATION
  - SURGE LINE MEETS CODES
- ° NONCONFORMING MATERIALS (BULLETIN 88-05)
  - FOUND ACCEPTABLE
- ° MOLDED CASE CIRCUIT BREAKERS
- ° BOTTOM-MOUNTED INSTRUMENT THIMBLE TUBES

### CONSTRUCTION

- ° CONSTRUCTION PERMIT ISSUED DECEMBER 1975
- ° WORK STOPPED UNDER SHOW CAUSE ORDER  
APRIL 1980
- ° BECHTEL REPLACES BROWN AND ROOT AS  
ARCHITECT ENGINEER SEPTEMBER 1981
- ° OVER 18,600 MRC INSPECTOR STAFF HOURS ON  
CONSTRUCTION AND INVESTIGATION

### OPERATOR STAFFING

- 5 SHIFTS
- 5 OPERATORS PER SHIFT

### OPERATIONAL EXPERIENCE

- UNIT 1 STARTUP AND OPERATION
  - ABOVE AVERAGE PERFORMANCE
  - CRITICAL SELF ASSESSMENT
  - PROMPT CORRECTIVE ACTIONS
  - WILLINGNESS TO LEARN FROM ERRORS
- UNIT 1 OPERATORS ASSIGNED TO UNIT 2

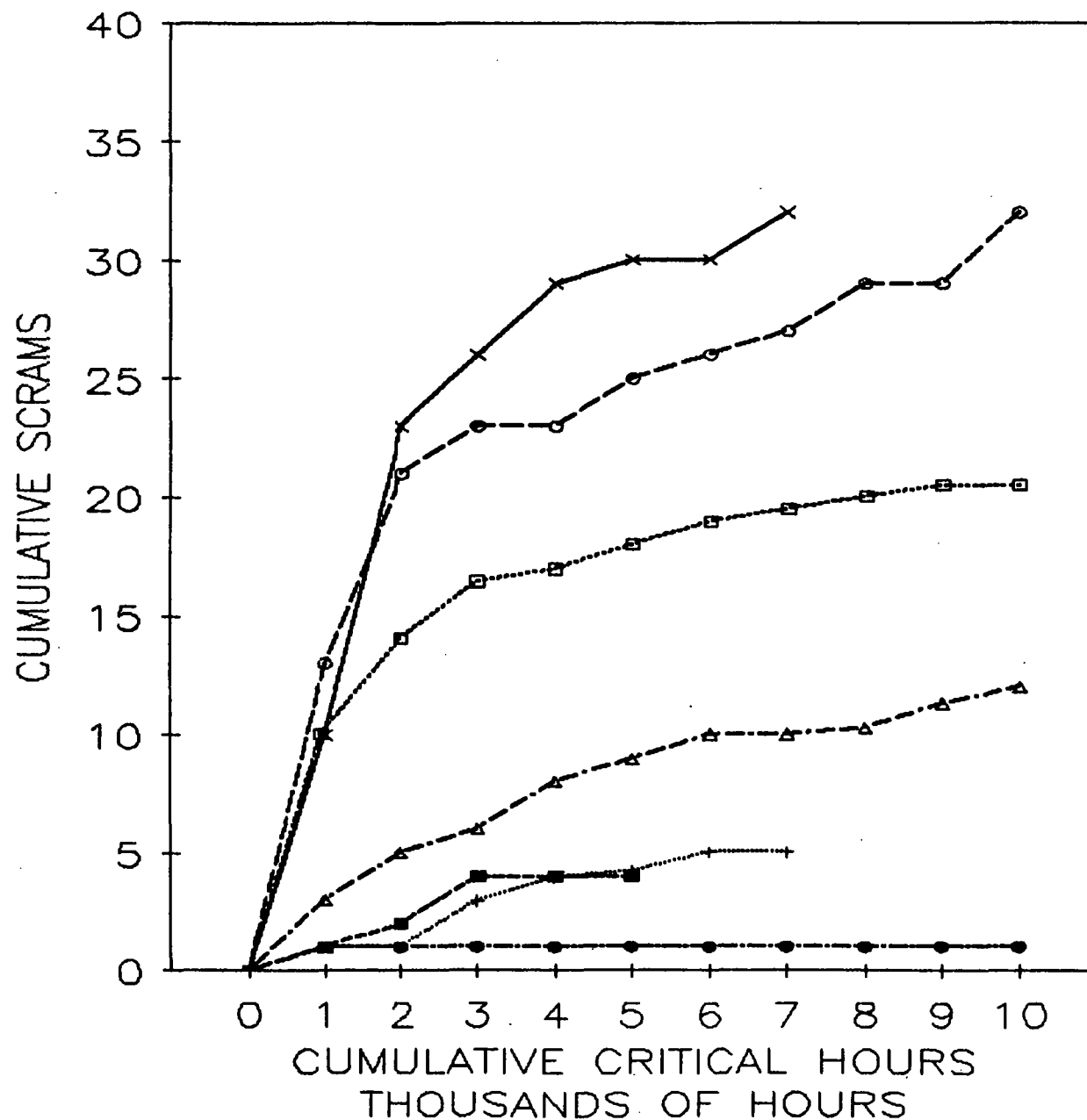
## READINESS FOR OPERATION

- INSPECTIONS
  - NOVEMBER 1988 EOP INSPECTION
  - NOVEMBER 1988 OPERATIONAL  
READINESS INSPECTION
  - MARCH 1989 OPERATIONAL READINESS  
INSPECTION
- FINDINGS
  - OVERALL COMPLIANCE WITH REQUIREMENTS
  - MINOR PROBLEMS WITH EQUIPMENT LABELS  
AND PROCEDURES (BEING CORRECTED)

### LOW POWER OPERATIONS

- INITIAL FUEL LOAD PROCEEDED SMOOTHLY
- DEMONSTRATED RAPID REFUELING CAPABILITY
- CRITICALITY ACCOMPLISHED WITHOUT PROBLEMS
- LOW POWER TESTING SUCCESSFULLY COMPLETED

# COMPOSITE UNPLANNED REACTOR SCRAMS



## LEGEND

- x UPPER BOUND
- o VOGTLE 1
- LINE 2  
BEAVER VALLEY 2  
SHEARON HARRIS
- △ LINE 3  
BYRON 2  
CLINTON 1  
BRAIDWOOD 2  
NINE MILE PT. 2  
BRAIDWOOD 1
- + LOWER BOUND
- PALO VERDE 3
- SOUTH TEXAS 1

## ESF ACTUATIONS

AVERAGE - 4.36

SOUTH TEXAS - 5.83

## TS VIOLATIONS

AVERAGE - 3.67

SOUTH TEXAS - 5.83



SALP RATINGS

1/1/88 To 12/31/88

PLANT OPERATIONS	2
RADIOLOGICAL CONTROLS	2
MAINTENANCE/SURVEILLANCE	2
EMERGENCY PREPAREDNESS	2
SECURITY	2
ENGINEERING/TECHNICAL SUPPORT	2
SAFETY ASSESSMENT/QUALITY	
VERIFICATION	1
CONSTRUCTION COMPLETION	NOT RATED

STAFF CONCLUSIONS

THE STAFF CONCLUDES THAT THE PLANT  
MEETS THE REGULATIONS AND WITH  
COMMISSION CONCURRENCE WE WILL PROCEED  
TO ISSUE THE FULL-POWER LICENSE TO THE  
SOUTH TEXAS PROJECT, UNIT 2