

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

Title: Discussion/Possible Vote on Full Power License
for South Texas Nuclear Project, Unit 1
(Public Meeting)

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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DISCUSSION/POSSIBLE VOTE ON FULL POWER LICENSE FOR
SOUTH TEXAS NUCLEAR PROJECT, UNIT 1

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PUBLIC MEETING

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Nuclear Regulatory Commission
Room 1130
1717 H Street, N.W.
Washington, D.C.
March 21, 1988

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, Chairman
THOMAS M. ROBERTS, Commissioner
FREDERICK M. BERNTHAL, Commissioner
KENNETH ROGERS, Commissioner
KENNETH M. CARR, Commissioner

1

2 Staff and presenters seated at table:

3

4 S. CHILK - SECY

5 W. KINSEY

6 G. VAUGHN

7 J. GOLDBERG

8 D. JORDAN

9 J. CALVO

10 L. CALLAN

11 J. TAYLOR

12 N. KADAMBI

13 W. PARLER - OGC

14

15 Audience Speakers:

16

17 H. CISNEROS

18 R. CORREIA

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1 P R O C E E D I N G S

2 CHAIRMAN ZECH: Good afternoon, ladies and
3 gentlemen. Today we will hear from the Houston Lighting
4 and Power Company and the NRC Staff concerning the
5 readiness of South Texas Project Unit 1 to receive a full
6 power license and possibly vote to authorize the Director
7 of the Office of Nuclear Reactor Regulation after making
8 the appropriate findings to issue a full power operating
9 license for South Texas Project Unit 1.

10 I understand that copies of the slides to be used
11 during today's presentation are available in the back of
12 the room. Do any of my fellow Commissioners have opening
13 comments to make?

14 [No response.]

15 CHAIRMAN ZECH: If not, Mr. Jordan, you may
16 begin.

17 MR. JORDAN: Thank you, Mr. Chairman, members of
18 the Commission. I'm Don Jordan, Chairman of the Board of
19 Directors and Chief Executive Officer of Houston Power and
20 Lighting Company, Project Manager of the South Texas
21 Project.

22 With your permission, I'd like to first introduce
23 some of the people who are here today. Representing the
24 co-owners are Mrs. Lila Cockerill, Chairman of the Board
25 of Trustees of the City Public Service Board of San

1 Antonio, and Mr. Arthur Van Rosenberg, General Manager of
2 the City Public Service Board.

3 Also in attendance is the Mayor of San Antonio,
4 Mr. Henry Cisneros and City Councilman Bob Thompson and
5 and Weir LaBatt; representing Central Power and Light
6 Company is Mr. Tom Shockley who is President of that
7 company.

8 As perhaps you know, Houston Lighting and Power
9 Company is negotiating to acquire --

10 CHAIRMAN ZECH: Before you go ahead, let me
11 welcome your fellow Texans that are with us here today.

12 MR. JORDAN: Thank you very much, Mr. Chairman.
13 As perhaps you know, Houston Power and Lighting Company is
14 negotiating to acquire the City of Austin's 16 percent
15 share in South Texas, and those negotiations are nearing
16 completion.

17 Any agreement that would be reached there to
18 transfer interest would of course be subject to approval
19 by the NRC and by the Texas Public Utility Commission.

20 The key members of our nuclear organization with
21 me today are Jerry Goldberg, our Nuclear Group Vice
22 President who will give you an overview of the South Texas
23 Project, who will give our nuclear management -- review
24 our nuclear management and review the basis for our
25 confidence that we are ready to proceed to the ascent of

1 full power.

2 Mr. Gerald Vaughn, our Vice President of Nuclear
3 Operations will be available to answer questions
4 concerning staffing, training, and our operations
5 philosophy.

6 Mr. Warren Kinsey, our Plant Manager, will
7 describe the plant organization and our operating
8 experience during low power and testing operations.

9 Also representing Houston Lighting and Power
10 Company along with those who will have an active part in
11 the program includes Dr. Ed Bishop, President Meritus of
12 the University of Houston, a member of our Board of
13 Directors, and a member of the Nuclear Committee of our
14 Board.

15 I'm honored, Mr. Chairman, and delighted to
16 appear before you today as the Commission considers
17 authorizing full power operations for Unit 1 of the South
18 Texas Project.

19 STP as much as any project, reflects the
20 tremendous change in the nuclear industry over the past
21 decade or so. There have been many bumps in the road.
22 We've worked long and hard to reach this moment. We have
23 learned a lot along the way.

24 As you know, construction at South Texas was
25 initiated late in 1975. In 1980 the Nuclear Regulatory

1 Commission issued a Show Cause Order based in part on
2 concerns regarding the implementation of our construction
3 quality assurance program. That order had several
4 beneficial effects.

5 First it provided a time-out which you don't
6 ordinarily get in the middle of constructing a project
7 like this; time to think about the long-term direction of
8 our nuclear program and whether we were fully prepared to
9 meet the challenge.

10 Second, it caused us to tighten our quality
11 programs to reflect the Commission's tougher standards in
12 the post-Three Mile Island era and to raise our own
13 expectations for safe and reliable performance.

14 Finally we also took the opportunity to reinspect
15 and to test essentially all the construction work then
16 completed using teams of blue-ribbon experts to verify the
17 adequacy of our construction.

18 Perhaps most dramatically and painfully, we
19 reached the decision in 1981 that the project could not be
20 completed successfully on anything resembling a reasonable
21 schedule without a change of architect engineer; a then
22 unprecedented step in the history of the commercial
23 nuclear power industry.

24 We selected Bechtel. Our contract provided that
25 after a period of review and necessary modification,

1 Bechtel, from a contractual standpoint at least would
2 then own the engineering work, in effect. Then we had the
3 equivalent of a midterm design assessment by a third party
4 with a substantial stake in the outcome.

5 Houston Lighting and Power Company emerged from
6 the 1980-1982 period a stronger project manager with a
7 clear vision of the commitment and the resources necessary
8 to meet the test of this demanding technology.

9 As the Atomic Safety and Licensing Board found
10 based on hearings in 1981 and 1982, the project had really
11 turned the corner.

12 In short, Mr. Chairman and members, we had a
13 unique opportunity to assess the progress, the problems
14 and the outlook for the South Texas Project coincident
15 with the new regulatory requirements which followed in the
16 aftermath of TMI and we took advantage of that
17 opportunity.

18 The turnaround in the design and construction of
19 STP was not a miracle. It was a product of intense
20 effort, dedication, and involvement by our management, our
21 employees, and our contractors.

22 At the Commission meeting only a few months ago,
23 you spoke, Chairman Zech, of the need for leadership by
24 example at the highest corporate level. During our period
25 of entrenchment, we reintensified upper management

1 involvement and visibility. We searched for and found a
2 seasoned professional in Jerry Goldberg who brought to STP
3 and our company the discipline required for a successful
4 program. Jerry in turn took the best of our staff and
5 added highly qualified people in critical areas.

6 I might add parenthetically that South Texas has
7 been an item on the agenda of virtually every Board of
8 Directors' meetings of Houston Lighting and Power Company
9 for the past seven years.

10 In addition, the Board has a special Nuclear
11 Committee headed by former NRC Chairman, Dr. Joseph
12 Hendrie. The NRC Executive Director for Operations and
13 the Regional Administrator have met with our Board and had
14 the opportunity to candidly convey their impressions on
15 matters of importance to the NRC.

16 While this is a moment of pride for us, we
17 approached plant operations with a good deal of humility.

18 As you noted in another Commission meeting, Mr.
19 Chairman, the operating license vested in the licensee,
20 the trust of the government and the American people.

21 I personally conveyed this message to our
22 employees. I've also emphasized the points which all of
23 the members of the Commission have stressed, and to which
24 I fully subscribed concerning the need for unremitting
25 attention to detail, fitness for duty, discipline and

1 formality in the conduct of operations, and the absolute
2 necessity for personnel as well as organizational
3 integrity and accountability.

4 I've made a videotape of about four minutes
5 covering many of the points which I've just outlined, and
6 it has been shown to the STP operating group. I have a
7 copy here ready to show if you care to see it perhaps at
8 the end of this meeting today.

9 I was especially proud when I read the conclusion
10 of the NRC Staff's readiness report, that our people
11 exhibited a sound training background and a mature
12 professional attitude toward plant operations and
13 operational safety.

14 We intend to justify that confidence. I told our
15 employees that excellence will be rewarded with
16 opportunities for further career development.

17 I and my senior management recognize and accept
18 full responsibility for this plant. Leadership by example
19 from the top down has become even more critical. We
20 intend to provide that leadership.

21 As I told our managers at the South Texas Project
22 site shortly after the plant went critical, our Board and
23 top management will stay involved.

24 Jerry Goldberg who will speak next reports
25 directly to me. He and Mr. Kinsey will discuss our

1 operations philosophy, training and staffing, and the team
2 effort which is necessary to meet our goal of being
3 recognized as one of the country's best nuclear
4 operations.

5 Thank you, Mr. Chairman, for allowing me to make
6 these comments and Mr. Goldberg will now proceed if
7 that's --

8 CHAIRMAN ZECH: Thank you very much. You may
9 proceed.

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

13 My purpose this morning is to outline for you the
14 reasons why I believe that the Unit 1 in the South Texas
15 Project is ready to begin its ascension to full power.

16 My conclusions are based on self-assessment of
17 our readiness which has been documented and submitted to
18 the Commission. I will summarize the high points of that
19 self-assessment.

20 First, the plant meets regulatory requirements
21 relating to design, construction, and engineering. This
22 was demonstrated during both the pre-critical and low
23 power testing periods. The additional assurance regarding
24 design and construction is derived from the safe team
25 program which provides the means for STP employees to

1 identify any concerns that they may have in regard to
2 nuclear safety or quality. The safe team program has in
3 effect provided thousands of additional pairs of eyes to
4 help assure that work was done properly.

5 A recently issued NRC Staff report on the safety
6 significance of various allegations relating to the South
7 Texas Project generally confirms the effectiveness of our
8 programs.

9 We encountered two significant design related
10 problems during pre-critical testing involving the
11 component cooling water system and the auxillary feedwater
12 system which are discussed in our prepared self-assessment
13 report. These have been satisfactorily resolved and there
14 are no significant outstanding testing deficiencies
15 against the plant.

16 I will return to the component cooling water
17 system and auxillary feedwater system problems to discuss
18 some of the important lessons we learned from that
19 experience.

20 South Texas also meets regulatory criteria
21 governing personnel and training as well as procedures and
22 technical specifications. We have a total of 49 licensed
23 senior reactor operators and four licensed reactor
24 operators, all of whom have been trained on a
25 plant-specific simulator --

1 CHAIRMAN ZECH: Say those numbers again, please.

2 MR. GOLDBERG: 49 licensed senior reactor
3 operators, four licensed reactor operators.

4 CHAIRMAN ZECH: All right.

5 MR. GOLDBERG: All of whom have been trained on a
6 plant-specific simulator which many of you have seen
7 during your visits to the site.

8 The pass rate for our licensed personnel was 86
9 percent. I think it would probably be more meaningful to
10 point out that 14 members of the staff obtained their
11 initial licenses while working at other nuclear
12 facilities, and that each shift will have at least one
13 senior reactor operator with experience at another large
14 pressurized water reactor as well as a senior reactor
15 operator licensed shift technical advisor.

16 All plant personnel are subject to a stringent
17 fitness for duty program with strong emphasis on random
18 drug testing. The high points of that program are shown
19 on this slide.

20 [Slide.]

21 MR. GOLDBERG: Our policy is simple: The user of
22 controlled substances identified through random testing
23 will be immediately discharged.

24 As you might recall from your visit to the site,
25 Chairman Zech, we planned to provide further educational

1 opportunities to qualified and motivated personnel. The
2 initial phase of the college degree program for nuclear
3 employees is underway. The initial phase of the college
4 degree program -- excuse me. Any employee can gain entry
5 to this program, but we have given first priority to
6 operations personnel.

7 The first class is scheduled to begin in the fall
8 of this year. We will strongly encourage senior reactor
9 operators to obtain college degrees. We believe this
10 program will provide the opportunity for plant operators
11 and other non-degreed employees to enjoy challenging
12 careers as well as assist us in attracting and retaining
13 good people.

14 Our Vice President of Operations, Mr. Gerald
15 Vaughn, is responsible for this program. He joins Houston
16 Power and Lighting Company after 22 years with the Duke
17 Power Company, the last four of which were as general
18 manager of nuclear stations.

19 Procedures governing operations, maintenance, and
20 surveillance tests have been prepared.

21 As with all new units, procedure development
22 involve shakedown in procedures, some of which was
23 accomplished on the simulator.

24 I would also like to mention a few additional
25 indicators of our readiness to proceed with further

1 operations: In security, the process of correcting some
2 early hardware problems as well as other aspects of the
3 program substantially delayed issuance of the operating
4 license.

5 But in the first few months of operation, we
6 continued to identify and report an unacceptable number of
7 security events and problems to the NRC. These matters
8 were recently the subject of a civil penalty.

9 With further management, attention, and training,
10 the incidents of security problems has declined sharply.
11 The improvement over the past five months was noted by the
12 NRC in the letter transmitting the civil penalty notice,
13 and in systematic assessment of licensee performance
14 report issued on March 11th.

15 We are confident now that the security program is
16 working effectively. Operational quality assurance
17 activities have also confirmed our judgment on readiness.
18 Dozens of operational surveillances and audits have been
19 conducted since issuance of the operating license. These
20 are listed in the appendix to our self-assessment report.
21 There were no findings of serious safety consequence.

22 The status of our maintenance program, which will
23 be discussed by Mr. Kinsey, is also a positive indicator.

24 The NRC Staff readiness review was quite
25 positive. We were pleased by the favorable comments on

1 our simulator training program, maintenance program, the
2 quality of our surveillance test procedures, and the
3 conduct of surveillance activities including the
4 involvement of our QA organization.

5 I was also particularly pleased to read in the
6 Staff report that our operators reflected, in their words
7 a mature, professional attitude toward plant operations
8 and safety, and that there was evidence that they had been
9 indoctrinated in the philosophy of verbatim compliance.

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

13 [Slide.]

14 MR. GOLDBERG: This slide highlights some of the
15 elements of our policy on professionalism. I would like
16 to point out a few which I particularly emphasize:
17 Attention to detail, learning from mistakes, personnel
18 integrity and candor, the need to face facts squarely and
19 deal with their implications; and above all, not to be
20 satisfied with mere compliance and to strive to meet
21 higher standards.

22 The NRC Staff's operational readiness inspection
23 identified five areas of concern which you will find
24 identified in our self-assessment report. Mr. Kinsey will
25 discuss these matters in greater detail as well as other

1 notable events which have been the subject of corrective
2 action.

3 We believe that all of these matters have been
4 resolved, although some will require continuing close
5 observation by management.

6 Having outlined some of the positive indicators,
7 I would add that we are not fully satisfied with our
8 performance. The best training cannot fully compensate
9 for limitations on practical experience.

10 Houston Lighting and Power Company is keenly
11 aware that it is a first-time utility, and the few events
12 during low power testing underscored the real meaning of
13 this race.

14 I mentioned our design-related problems with the
15 component cooling water system and auxillary feedwater
16 systems.

17 The component cooling water system matter was
18 really our first unusual and complex problem calling for
19 coordinated action across departmental lines. Our initial
20 response was somewhat disappointing. We did not mobilize
21 our resources, we did not identify responsibilities as
22 quickly as I would like. I prepared a memorandum after
23 that event analyzing the problems it illustrated and
24 established guidelines to assure coordination between
25 departments, immediate designation of a responsible

1 engineer to be in charge of the investigation, repairs,
2 and related actions.

3 The event in general highlighted the need for
4 earlier and more direct management involvement where the
5 problems are unusual, complex, or require a high degree of
6 coordination.

7 What was encouraging, however, was the fact that
8 HL&P engineers finally took charge of the situation and
9 directed a highly complex root-cause investigation and
10 repair effort.

11 When the auxillary feedwater system problem
12 surfaced sometime later, there was a little difficulty in
13 coordinating between departments or in identifying the
14 person responsible for resolving it.

15 However, our action did not reflect the type of
16 systematic patient search for the root cause which is
17 essential to solving problems. I saw too much trial and
18 error type responses and not enough disciplined deductive
19 reasoning. As a result, we have substantially expanded
20 training in root cause analysis, and this will require
21 continued monitoring and observation by our management at
22 all levels.

23 Lessons learned from the responses to these
24 events have to improved coordination to resolving problems
25 among our operations, maintenance, engineering, and

1 quality assurance departments. Both events have thus been
2 converted to assets. The seasoning gained will assist us
3 in solving other tough problems should they occur.
4 They've also been excellent illustrations of the
5 importance in teamwork in such situations.

6 The difference between knowledge and experience
7 was also evident in the operational events I mentioned
8 earlier and which will be discussed by Mr. Kinsey.

9 We've taken a number of steps to improve the
10 overall performance of the operations staff which include
11 the following: First, we've introduced additional
12 simulator training involving more real life situations
13 such as operations with equipment out of service for
14 maintenance, not just abnormal conditions.

15 Second, we've assigned to each shift a shift
16 advisor. He is a senior individual with shift supervisor
17 experience at a previous operating power reactor, and he
18 will be available during power ascension testing to
19 counsel the shift supervisor on those activities most
20 important to attaining quality performance in operations.
21 These are in addition to our shift technical advisors.

22 Third, we've made a number of significant
23 organizational changes to strengthened plant management.
24 We've added two strong plant superintendents, one for each
25 unit. They report to the plant manager and we believe

1 this will improve his control over both units.

2 We've also strengthen the operations support
3 organization by consolidating the engineering,
4 construction, facility services support functions under a
5 seasoned individual. This will further improve the
6 interface with the plant operations staff.

7 The recent ASLB report describes many of the
8 problems I have mentioned as contributors to the rather
9 long period between the issuance of the operating license
10 and our request for full power authorization.

11 But we have profitted from the pre-critical and
12 low power testing experience, learning from our mistakes,
13 identifying the root cause of problems, upgrading certain
14 training facilities, and making some beneficial personnel
15 and organizational changes. Mr. Kinsey will discuss other
16 steps we have taken.

17 As a result, although we remain a first time
18 utility, we are stronger today than when we first received
19 our operating license. We intend to proceed in a
20 deliberate way performing a self-assessment at 50 percent
21 power and taking the time necessary to learn by
22 experience, and moving ahead of the pace consistent with
23 the development of a mature and fully professional
24 organization. Thank you.

25 CHAIRMAN ZECH: All right. Thank you very much.

1 MR. GOLDBERG: If there are no other questions,
2 I'd like to ask Mr. Kinsey if he would --

3 CHAIRMAN ZECH: Please proceed.

4 MR. KINSEY: Thank you. Mr. Chairman, Members of
5 the Commission, I am Warren Kinsey, Plant Manager of the
6 South Texas Project Electric Generation Station. I will
7 cover three principal subjects: An overview of operating
8 problems encountered during low power testing including
9 those items of special concern identified by the NRC, our
10 response to these problems, and the status of our
11 maintenance program.

12 First, a word on the status of the plant. We
13 reached initial criticality on March 8 at 5:08 a.m. Low
14 power tests have been successfully completed. Subject to
15 your authorization, we are ready to proceed with the power
16 ascension program which includes a self-assessment of
17 performance at the 50 percent power plateau.

18 There were four principal operating problems
19 during pre-critical testing.

20 [Slide.]

21 MR. KINSEY: The details in each event are
22 discussed in our prepared self-assessment. I will touch
23 briefly on the highlights of each event here.

24 First, the high head safety injection valve
25 mispositioning event, which ultimately resulted in a civil

1 penalty. The mispositioning occurred when a preparation
2 for a mode change in going to Mode 5 to Mode 4, the valves
3 in question were closed in error. This change was not
4 noted by the operator, and the valves remained closed over
5 several shifts after the plant went to Mode 4.

6 This and a related event during the NRC
7 operations readiness inspection pointed out deficiencies
8 in operator awareness of the status of plant safety
9 systems.

10 A related cause was a failure to properly match
11 the system operating and surveillance procedures involved
12 in a mode change.

13 Those procedures have since been revised and
14 other similar procedures have been reviewed for common
15 weaknesses.

16 These events also underscored the need for
17 additional operator training with special emphasis on mode
18 change and other evolutions. Retraining has been
19 initiated as a part of ongoing training and
20 requalification activities.

21 Second. The event involving lifting of the
22 pressurizer pressure, PORV valve, was as a consequence of
23 starting a reactor coolant pump with a water temperature
24 difference in excess of technical specification limits
25 between the reactor coolant system cold leg and steam

1 generator secondary side.

2 Procedures in training have been modified to
3 provide more specific guidance on the measurement of these
4 temperatures.

5 Third. The main feedwater hydraulic transients,
6 or waterhammer events, involved deficiencies in procedures
7 for filling steam generators which have since been
8 corrected and tested to assure their adequacy.

9 Fourth. Procedural deficiencies contributed to
10 the inadequacies and the drill requiring remote shutdown
11 of the plant. The procedures were revised to provide more
12 specific guidance to the operators.

13 The experience also pointed out the need for
14 additional integrated team training of plant operating
15 personnel. After further training, drills were run to
16 assure that each member of the plant operations
17 organization understood their function.

18 The NRC Staff's operational readiness inspection
19 report identified five concerns requiring resolution prior
20 to proceeding beyond 50 percent power. They are shown on
21 this slide.

22 [Slide.]

23 MR. KINSEY: I have described our corrective
24 action in Item 1 in connection with the valve
25 mispositioning event. I have also described the steps we

1 have taken to correct Item 3 with respect to remote
2 shutdown of the plant.

3 The last item on agastat relays is being resolved
4 by replacing these time delay relays on a schedule
5 acceptable to the NRC Staff.

6 The station problem reports in Item 2 are used to
7 document, evaluate, and report abnormal conditions or
8 events.

9 The NRC Staff found that while many of the
10 problems identified in the station problem reports were
11 being effectively evaluated in a timely way, our backlog
12 was excessive. As a result of further review,
13 prioritization and management attention, this problem has
14 been resolved.

15 In connection with Item 4, although the Staff
16 found that our surveillance program -- or surveillance
17 procedures were generally well written and user friendly,
18 they identified several instances where changes in
19 technical specifications were not correctly reflected in
20 the procedures.

21 In response, we have completed a re-review to
22 verify that correct technical specification requirements
23 have been appropriately translated into the surveillance
24 procedures, and we have improved our system of
25 accountability for that process. All five items of

1 concern identified by the Staff have now been resolved.

2 I believe that we have responded to these
3 operational events in a way which reflects Mr. Goldberg's
4 philosophy that a mistake is too valuable to waste. This
5 applies not only to our mistakes, but those made by others
6 as well.

7 We review industry experience carefully including
8 such things as MPOE information, NRC bulletins and
9 notices, and vendor bulletins.

10 MPOE rated our use of industry operating
11 experience as well above the average for near-term
12 operating plants and rivaling that of many older operating
13 units.

14 Regarding maintenance. I believe South Texas is
15 in good shape for its first operating cycle. We have an
16 extensive preventive maintenance program involving over
17 10,000 activities for Unit 1 and common equipment. Our
18 objective is to devote the majority of our maintenance
19 effort to preventive maintenance.

20 We were pleased that the NRC readiness report
21 found that our preventive maintenance program was thorough
22 and comprehensive, and that preventive maintenance
23 activities were well identified and scheduled.

24 The performance of corrective maintenance is
25 based on a classification process. First, items are

1 classified as to priority. Priority one is for those
2 activities urgently required to maintain safe plant
3 conditions in compliance with regulatory requirements.

4 Priority two is for those matters which are
5 critical to keep the plant in operation or at its
6 authorize power level. There are no current Priority one
7 or Priority two items in our backlog.

8 The third priority includes activities for which
9 there is planning flexibility.

10 [Slide.]

11 MR. KINSEY: This slide shows the breakdown of
12 our Priority three backlog further classified as either
13 safety or non-safety related. Each item is also
14 classified as to its effect on plant operations.

15 We established the order in which these items
16 will be handled, taking into account their effect on plant
17 operations, importance to safety, available resources, and
18 the current status of the plant.

19 Scheduling is performed by our work control
20 centers staffed with representatives from all of neutral
21 plant operation departments, and our construction support
22 organization.

23 Priorities are further refined by management in
24 our plan of the daily meetings that occur at 9 a.m. each
25 weekday and on weekends as required.

1 Our present backlog as shown is approximately
2 1,450 items. Those in that category, operation not
3 effected or about 275, do not effect plant operations in
4 anyway. The balance, about 1,180, is divided between
5 items which are out of service or have some degraded
6 condition; as for example, a packing leak on a valve.

7 As you can see, we have about 280 safety related
8 and 1,176 non-safety related activities. The total
9 backlog represents about five and a quarter weeks of work
10 based on our current resources.

11 We also have a predictive maintenance program
12 employing a group of engineers and technicians who are
13 responsible for monitoring equipment vibration, pump
14 performance, heat exchanger performance, and other
15 parameters to facilitate early diagnosis of problems. We
16 expect to see benefits in terms of both safety and
17 reliability as a result of this program.

18 In the two weeks since initial criticality, South
19 Texas has completed its low power physics testing program.
20 The plant is now in Mode 3 at normal operating pressure
21 and temperature. We are completing some maintenance work
22 and expect to take the plant critical this evening.

23 Overall, we are pleased with the operation of the
24 plant and staff since initial criticality. The testing
25 went very smoothly. Thank you.

1 CHAIRMAN ZECH: Thank you very much. Does that
2 complete your briefing?

3 MR. GOLDBERG: Yes, sir.

4 CHAIRMAN ZECH: All right. Questions from my
5 fellow Commissioners? Commissioner Roberts?

6 COMMISSIONER ROBERTS: No.

7 CHAIRMAN ZECH: Commissioner Bernthal?

8 COMMISSIONER BERNTHAL: Well, it has been almost
9 a year since I had the opportunity to visit your plant. I
10 thought I was coming down shortly before power ascension,
11 it turned out not to be the case.

12 One of the comments that you made -- I don't
13 recall exactly what the positive action was that you took
14 at the time, but you mentioned that you have something
15 like 59 SROs and only four ROs. Is that what you said?

16 MR. KINSEY: Yes, sir.

17 MR. JORDAN: 49 and 4.

18 COMMISSIONER BERNTHAL: 49, sorry. Did that
19 happen by accident or design? I guess I know the answer,
20 but I'd like for you to explain that. That's an unusual
21 ratio to say the least.

22 MR. KINSEY: Commissioner, we purposely tried to
23 qualify and license as many candidates as we could at the
24 SRO level realizing the benefit of the higher level of
25 information and intelligence that those people would have

1 to accumulate in a training process, and also because it
2 allowed us to be able to plan for the staffing of Unit 2.

3 Currently we have in the licensing process 50
4 candidates for operation of Unit 2 primarily. Of course
5 we will be blending Unit 1 and Unit 2 personnel to have a
6 baseline of experience on Unit 2. And the ratio of ROs is
7 much higher in this second group than it was in the
8 original group.

9 COMMISSIONER BERNTHAL: I see. Well in any case,
10 that's a commendable policy and I want to urge you to
11 continue it to the extent that you can with Unit 2, and I
12 would also comment, and I suspect at least one other
13 member at the table may comment on your associated policy
14 toward urging people to get degrees. As you know, there
15 are pros and cons to this matter, but I'm glad that you've
16 taken the bull by the horns so to speak and decided that
17 you are going pursue a policy of having college degrees in
18 as many of your operators as you can.

19 I also wanted to follow-up on an item that I
20 recall had given you some difficulty as of a year or so
21 ago that did not come up today and that was the question
22 of site security and plant security. I assume that those
23 difficulties have been addressed, they don't seem to be
24 assuming very much visibility here today, but maybe you
25 could comment just a little on that for me.

1 MR. GOLDBERG: I'd like to address that,
2 Commissioner. We certainly had a significant number of
3 problems just before licensing and that in fact delayed
4 licensing, the better part of about two months.

5 I think the core weakness to our difficulties was
6 a weak training program. We certainly did get that
7 finally under control, but we had a continuation of
8 difficulties after we received the operating license
9 through the early fall. And I think we really turned the
10 corner probably in late October, and I think I would
11 certainly welcome any comment from the Staff, but it's our
12 feeling that we've got this thing under real control now.

13 COMMISSIONER BERNTHAL: Good. I don't expect to
14 go into great detail here, but maybe Staff could also
15 verify that your plant security is now what we expect it
16 should be.

17 Your plant design is a rather different one as
18 they all are in this country I guess unfortunately. Yours
19 is different in the sense as I recall that you have three
20 completely independent safety trains which is not common
21 in this country, it is on some designs in other countries,
22 but I also recall that your plant or certain elements of
23 the reactor itself has some similarity to a Belgian design
24 where there have been some difficulties with the
25 instrument tubes.

1 Would you like to comment a little bit on what
2 you have learned from that Belgian experience and whether
3 you might expect a similar problem at your plant and what
4 you intend to do about it if you do see a problem lying
5 ahead there?

6 MR. GOLDBERG: Yes, I'd like to respond,
7 Commissioner. I believe the plant you're referring to is
8 Tihange.

9 COMMISSIONER BERNTHAL: That's right.

10 MR. GOLDBERG: The Tihange plant and the South
11 Texas plant have both been fitted out with special flow
12 limiting devices that were designed by Westinghouse and
13 tested by Westinghouse to eliminate a flow induced
14 vibration problem of the thimble guide tubes.

15 Apparently in the case of Tihange, they had a
16 very undesirable experience. They apparently sustained
17 considerable wear in a number of tubes, and in one case,
18 they actually had a through-wall failure.

19 The Staff needless to say brought this matter to
20 our attention and we undertook to review very carefully
21 the design of the flow limiting device as well as trying
22 to understand any differences that might exist between the
23 Tihange installation and the South Texas installation.

24 While we can't prove this thing in an absolute
25 sense, there is a considerable amount of circumstantial

1 evidence that suggest that when Tihange fit their flow
2 limiting devices onto their installation, they did this
3 during one of their refueling outages, and the
4 installation was done underwater.

5 It turns out that there is a rather important
6 match up between the bottom of this flow limiting device
7 and a support plate. And there also is a fillet weld in
8 that area and there seems to be strong evidence that they
9 encountered some interference between their flow limiting
10 devices and the fillet weld so much so that at the last
11 minute, they had to do a field modification to their flow
12 limiting devices in an attempt to transfer an internal
13 surface to clear the well.

14 Now we suspect that they were not able to do that
15 successfully, and we further suspect that when they
16 reinstalled those devices, they were not able to see
17 clearly with the underwater camera that they were still
18 having an interference difficulty.

19 The South Texas installation on the other hand
20 was done with the plant dry, and we were able to actually
21 position technicians right on the support plate and with
22 feeler gauges in -- you know, verify that we had a tight
23 fit between these flow limiting devices and the support
24 plate.

25 To further confirm that we hopefully would see a

1 different experience, we undertook to do a baseline eddy
2 current examination of our thimble guide tubes after we
3 experienced approximately the equivalent of eight weeks
4 for pump operation. And the Tihange failure occurred at
5 about the 16 week mark.

6 We were not able to detect any wear on any of our
7 thimbles. We have planned another inspection
8 approximately 12 weeks after the start of the new cycle,
9 and I believe that will come due about the time we
10 complete our 50 percent power plateau.

11 COMMISSIONER BERNTHAL: Very good. I appreciate
12 that and Staff may wish to comment further on that point.

13 One other question and I'll let my colleagues
14 have a crack here. Why should I not be concerned that a
15 steam generator is out of plumb, if you can answer that
16 quickly, as I understand it is?

17 MR. GOLDBERG: In the absence of any other
18 information, you have every reason to be concerned. This
19 problem was first uncovered shortly after Bechtel came on
20 the job following the change of contractors.

21 When this problem was uncovered, we undertook to
22 thoroughly inspect the installation of all nuclear steam
23 supply system equipment; that included the steam
24 generators, pressurizer, the reactor vessel.

25 There were a number of anomalies that were

1 discovered, a thorough technical evaluation was performed
2 by both Bechtel and Westinghouse as to assuring that the
3 equipment as installed would in fact carry out its
4 function correctly, that it could fully withstand all the
5 operational stresses and forces for which it was designed.

6 Now had that review indicated that the
7 installation required correction, it certainly would have
8 been corrected. A full detailed report of the entire
9 matter was furnished to the NRC in 1983. There is
10 certainly no question in our mind that the installation
11 even though it wasn't a correct installation in the true
12 sense, it was evaluated and determined to be fully in
13 compliance with the operating requirements.

14 COMMISSIONER BERNTHAL: Okay. I appreciate that.
15 That's all for now, Mr. Chairman.

16 CHAIRMAN ZECH: Commissioner Carr?

17 COMMISSIONER CARR: Yes. Can you tell me what
18 your operations and maintenance personnel turnover rate
19 is?

20 MR. KINSEY: Commissioner, as a matter of fact,
21 Mr. Vaughn and I were just looking at the total turnover
22 in operations. For this year right now it's less than 2
23 percent and that's for a staff of 700 people.

24 In the operations organization, I've lost one
25 person, one licensed operator since we licensed last

1 month -- or last year, and then I lost I believe two RPOs
2 or auxiliary operators in the entire 1987 time period.

3 In the maintenance area, I would estimate that
4 the maintenance personnel, that it's less than 5 percent
5 for turnover.

6 COMMISSIONER CARR: Fine. And I understood you
7 to say you had a random drug test program.

8 MR. GOLDBERG: That is correct, Commissioner.

9 COMMISSIONER CARR: Do you have any statistics on
10 what you are finding random as opposed to pre-employment
11 and those kinds of data that you could share with us?

12 MR. GOLDBERG: We have some statistics which
13 unfortunately I think combine the entire baseline which
14 would include new hire's as well the persons who were
15 already aBoard. That's running about 3 percent, just
16 under 3 percent.

17 In the case of the random test, that's running
18 under 1 percent.

19 COMMISSIONER CARR: Thank you.

20 CHAIRMAN ZECH: Commissioner Rogers.

21 COMMISSIONER ROGERS: What do you see as your
22 maintenance backlog in time? About how much does that
23 represent in work? How many months of backlog is that?

24 MR. KINSEY: Commissioner, right now the way I
25 would describe that would be to say that we have about

1 five and a quarter weeks of backlog with our current
2 resources. Of course we have new items coming in every
3 day and we wouldn't obviously work them off in that amount
4 of time, our goal would be to drive that down below a
5 thousand and as low as we can get.

6 We see that the -- we've turned the corner in the
7 maintenance area after we took the plant critical and
8 we're seeing a downward trend in the backlog right now.

9 COMMISSIONER ROGERS: You said that your
10 objective is to devote the majority of your maintenance
11 time to preventive maintenance. What does that mean, 51
12 percent? I mean what --

13 MR. KINSEY: Our goal that we're shooting for is
14 approximately 60 percent preventive maintenance to 40
15 percent corrective maintenance and higher if we can get it
16 there.

17 COMMISSIONER ROGERS: By when do you expect to
18 get there?

19 MR. KINSEY: I would expect that for the site
20 realizing we've got Unit 2 coming on towards the end of
21 this year, and our resources will be somewhat directed
22 towards that, it will be in the 89 -- late '89 timeframe.

23 COMMISSIONER ROGERS: That's all.

24 CHAIRMAN ZECH: Let me just say, I, too, commend
25 you for your degree program. I think that's a sensible

1 thing to do from many standpoints, and I think it will
2 benefit your company as well as the safety. It will
3 benefit your company in the future perhaps by developing
4 these people that can go into other positions of
5 responsibility. But also it gives them an added strength
6 I believe during the course of performance of their
7 duties.

8 Commissioner Roberts.

9 COMMISSIONER ROBERTS: Where are they going to go
10 to school?

11 MR. GOLDBERG: I wonder if I could qualify Mr.
12 Vaughn who is following this program very closely.

13 MR. VAUGHN: This is a program we worked out
14 similar to what other utilities have done with the
15 University of Maryland. It's about a five year program --

16 COMMISSIONER ROBERTS: Okay.

17 MR. VAUGHN: -- it's computer based --

18 COMMISSIONER ROBERTS: Thank you.

19 MR. VAUGHN: Yes, sir.

20 CHAIRMAN ZECH: Also, I think your fitness for
21 duty program is an excellent one from all I've heard, and
22 I commend you for your ability to put in place a random
23 testing program.

24 Your 50 percent hold point I think is sensible
25 and a very good cautious way to proceed. I know the Staff

1 will be working very closely with you on that.

2 Your emphasis on professionalism, and I saw your
3 slide from the time I was out there -- I think you've
4 changed a couple of articles, but not too much I guess --
5 but that emphasis on professionalism and especially as it
6 would apply to your analysis across the Board of root
7 causes and other problems as you get going I think would
8 be very -- should stand you in good stead.

9 I think, too, today your assessment of your
10 problems and your rather candid assessment of some of the
11 problems you've had is refreshing. I would say that if
12 you get a license to go to commercial power operation, the
13 biggest challenge you have is to recognize the difference
14 between construction and operations. I know you have been
15 critical for a short period of time, you've some
16 experience to date, but I would emphasize again the
17 challenge that every new licensee has that starts
18 operating a plant and especially if you haven't been
19 experienced as your company is not, your first plant.

20 So when you go into operations from construction,
21 it's like giving birth to a baby, all of sudden it's alive
22 and it's with you and it's going to be there forever and
23 it's a lot different than just a rather inert plant that
24 you've been building for so long.

25 So I would say your efforts towards

1 professionalism and the emphasis you've placed on your
2 operators will stand you in good stead for that, but
3 there's nothing like real experience. So your 50 percent
4 hold point is excellent. I think you should be cautious
5 and careful in recognizing that it is a first experience
6 for you, and do it slow and easy.

7 With that I think, unless my fellow Commissioners
8 have other comments.

9 COMMISSIONER ROBERTS: I've got one.

10 CHAIRMAN ZECH: Yes.

11 COMMISSIONER ROBERTS: Mr. Jordan introduced the
12 distinguished Mayor of San Antonio. Is the Mayor here in
13 support of a full power license?

14 MR. JORDAN: Yes, I think so.

15 MR. CISNEROS: We are here in full support --

16 CHAIRMAN ZECH: Would you step up to the
17 microphone, please, Mr. Mayor, and identify yourself,
18 please, for our reporter. Thank you very much.

19 MR. CISNEROS: My name is Henry Cisneros, I'm the
20 Mayor of San Antonio. We are partners in the South Texas
21 Nuclear Project and have been since the outset, a 28
22 percent partner.

23 Mayor Lila Cockrell, my predecessor, is now
24 Chairman of the City Public Service Board which is a fully
25 owned subsidiary of the City of San Antonio which is the

1 generator of power and distribution system owned by the
2 City of San Antonio. She is here also.

3 We are in full support of this. This has been a
4 long effort, investment in it of the City of San Antonio
5 ratepayers' money, passage of bond issues which we have
6 done consistently since 1973.

7 We have labored with Don Jordan and the group
8 through the change from Brown & Root to Bechtel as
9 engineer and then EBASCO as the constructor.

10 The last few years have been a totally different
11 story than the early years of the project. We are
12 impressed with the management turnaround, have monitored
13 very carefully the Commission's reviews of the project,
14 and I would say to you that we could not be stronger in
15 our hopes that you will act to see this project to
16 operation.

17 We have invested a long time and we're anxious to
18 begin receiving commercial power from this project.

19 CHAIRMAN ZECH: Thank you very much, Mr. Mayor.
20 Appreciate it.

21 COMMISSIONER ROGERS: Mr. Chairman.

22 CHAIRMAN ZECH: Yes, Commissioner Rogers.

23 COMMISSIONER ROGERS: Yes, just one other little
24 question. I've perceived that the thing that really makes
25 a power plant safe or not is involvement from the very top

1 all the way down to the very bottom of the organization.
2 And I'm just curious, Mr. Goldberg, where is your office
3 and how much time do you spend at the site?

4 MR. GOLDBERG: I have two offices, Mr.
5 Commissioner. One office is downtown and I'm generally
6 there a maximum of two days a week, it's usually just one
7 day a week, I spend the rest of my time on-site and it has
8 been that way I'd say for at least the last four years.

9 COMMISSIONER ROGERS: Thank you. When was your
10 Board of Directors out to visit the site last?

11 MR. JORDAN: I couldn't, Commissioner, give you
12 the exact date, but they've been down several times. As a
13 matter of fact, the Nuclear Committee of the Board goes
14 down on a regular basis to see the plant.

15 We don't have a single Director who hasn't been
16 down there, and as I said, they review the progress of
17 this plant every single month in the regular Board of
18 Directors' meetings.

19 COMMISSIONER ROGERS: Is there some kind of an
20 oversight committee of the Board that relates to this
21 project?

22 MR. JORDAN: Yes, there is. We call it the
23 Nuclear Committee. It consists of four outside directors,
24 there are no inside directors on that Board -- I mean on
25 that committee. It's chaired by a Dr. Joe Henry and

1 includes three other outside directors one of which is Dr.
2 Bishop who is here today.

3 They meet monthly in addition to the regular
4 Board meetings to receive reports and to review the
5 progress of the plant and do go down to the project quite
6 regularly.

7 COMMISSIONER ROGERS: Well, I think that's very
8 important.

9 CHAIRMAN ZECH: Let me just emphasize too since
10 it has just been brought up, the importance that all of us
11 place on management involvement. I have since changed
12 that term to "leadership involvement" because it
13 connotes more people than resources, you need both of
14 course, but it really is true if there's any key to
15 successful nuclear power operations, in my judgment, it's
16 leadership involvement. That means all of you here,
17 including the support of your Board, the support of your
18 community.

19 But it truly is a leadership challenge and it
20 means that you're interested in the details, you're
21 interested in all the aspects of this demanding
22 technology. So I'm glad that Commissioner Rogers has
23 brought up that point. It's one that we all feel very
24 strongly about.

25 All right. If there are not other questions from

1 my fellow Commissioners -- Commissioner Bernthal.

2 COMMISSIONER BERNTHAL: Let me make just one
3 comment. I guess it will be a year in June, is that
4 right, when I visited the plant, and I must say that at
5 that stage in your construction, which was largely
6 complete, the plant's physical condition, the housekeeping
7 of the plant was as probably as good as I have seen of any
8 plant in that stage of this construction progress and
9 development.

10 I hope and I trust that the maintenance policies
11 and procedures that you put in place that brought it to
12 that point continue and that you're also above average
13 today as you approach the Commission decision for full
14 power operation and I would appreciate hearing from the
15 Staff too whether that tradition has caught on and endured
16 there, but I wanted to compliment you on that point
17 because at least as of almost a year ago, your plant was
18 really in first-rate physical condition as you were trying
19 to prepare for operations then.

20 Thank you. That's all, Mr. Chairman.

21 CHAIRMAN ZECH: All right. Then if we may call
22 on the Staff, and thank you very much for your
23 presentation, gentlemen.

24 MR. JORDAN: Thank you very much, Mr. Chairman.

25 MR. TAYLOR: Good afternoon, Mr. Chairman. We're

1 here to present the results of the Staff review for the
2 full power license for South Texas.

3 With me today is Dr. Tom Murley, director of the
4 Office of Nuclear Reactor Regulation, Mr. Prasad Kadambi
5 who is the Project Manager, and I believe Mr. Jose Calvo
6 will join us at the table on my right, and also the
7 Regional Administrator, Bob Martin, is not here today
8 because of a death in the family over the weekend. Here
9 for the Region, Mr. Joe Callan on my right backed up by
10 the Branch Chief, Mr. Constable. And if he will stand,
11 and Mr. Dan Carpenter who is the Senior Resident at South
12 Texas.

13 I'll now ask Dr. Murley to begin the
14 presentation.

15 CHAIRMAN ZECH: All right. Thank you very much.
16 You may proceed.

17 MR. MURLEY: Thank you, Mr. Chairman. We're here
18 today to discuss with the Commission the background of our
19 activities at South Texas and the recent actions the Staff
20 has taken to arrive at our conclusion that the South Texas
21 Unit 1 plant has been constructed safely and can and will
22 be operated safely.

23 Mr. Kadambi is going to talk about the background
24 and the licensing issues, Mr. Callan is going to talk
25 about construction experience, readiness for operation;

1 and finally Mr. Calvo will talk about the review of the
2 inspection findings from the GAP allegations. Mr. Kadambi
3 will lead off.

4 CHAIRMAN ZECH: All right. Thank you very much.

5 MR. KADAMBI: Good afternoon, Mr. Chairman,
6 fellow Commissioners. May I have the next slide, please.

7 [Slide.]

8 MR. KADAMBI: This slide shows the outline of the
9 Staff presentation. The next slide, please.

10 [Slide.]

11 MR. KADAMBI: The background information is
12 largely -- has largely been covered by the licensee. I'd
13 like to proceed on to the next one, please.

14 [Slide.]

15 MR. KADAMBI: On this slide, I point out some of
16 the siting aspects. The South Texas Project is located in
17 a relatively sparsely populated region. The emergency
18 preparedness has been completely reviewed and approved
19 including FEMA review. Next slide, please.

20 [Slide.]

21 MR. KADAMBI: This slide shows some of the design
22 aspects of the plant. The nuclear steam supply system is
23 the only RESAR-41 plant in the U.S.

24 Some of the unique features at this plant are the
25 qualified display processing system which is a

1 microprocessor base system which provides safety grade
2 display and control.

3 The South Texas Project has taken advantage of
4 the broad scope rule in applying leak before break
5 methodology in the reactor coolant system and beyond.

6 The reactor coolant temperatures are measured by
7 resistance temperature detectors which directly sense the
8 liquid temperatures.

9 The thimble -- instrumentation thimble tube issue
10 which you heard about is also unique at South Texas and
11 the auxiliary feed water system has also some unique
12 aspects which I will cover a little bit later. Next
13 slide, please.

14 [Slide.]

15 MR. KADAMBI: This slide shows the major
16 milestones for the South Texas Project. Most of the
17 milestones have been achieved since 1986 with low power
18 license being issued on August 21st, 1987. Next slide,
19 please.

20 [Slide.]

21 MR. KADAMBI: Mr. Callan will now address the
22 construction overview.

23 MR. CALLAN: Thank you. I'm Joe Callan, the
24 Director of the Division of the Reactor Projects in Region
25 IV.

1 Much of this material on the slide has been
2 covered by the licensee. I think the most significant
3 regional perspective that I can add has been to note the
4 steadily improving performance of the licensee in the
5 construction area.

6 The turning of the corner I think of their
7 construction performance was in 1981, coincident with the
8 replacement of Brown & Root with Bechtel.

9 In particular, our inspectors have confirmed a
10 very strong, aggressive construction QA program that is
11 continuing on Unit 2, and as well as strong involved
12 management in the construction effort.

13 The most recent SALP report which was recently
14 issued confirms this positive trend in the construction
15 area.

16 I'd like to make one comment about the inspection
17 hours for Unit 1. That figure of 17,600 represents the
18 construction inspection effort. We listed separately the
19 5,000 manhours devoted to investigations. To put that in
20 perspective, the 17,000 figure, it's somewhat higher than
21 the numbers of inspection hours that were performed on
22 Braidwood II, Vogel, and Beaver Valley. Next slide,
23 please.

24 [Slide.]

25 MR. CALLAN: In addition to the routine

1 operations inspection program, two operational readiness
2 team inspections have been performed. One was performed
3 before the issuance of the low power license, and the
4 second more recently in January.

5 All of the significant findings from these team
6 inspections have been satisfactorily closed out. I think
7 it's significant to note that experienced resident
8 inspectors from other sites were utilized heavily on
9 these teams to provide the broadest possible operations
10 perspective. We also used large numbers of headquarters
11 inspectors.

12 Further, since January 1988, partly in response
13 to operational errors and concerns that I'll talk about in
14 a minute, the Region went to an augmented resident effort
15 at the site. We had three full-time residents at the site
16 and we augmented that team of three with an additional two
17 resident inspectors that we pulled from other sites in a
18 rotating basis. So we've maintained a level of four to
19 five resident inspectors in the operations area since
20 January.

21 As I said, the reason that we went to augmented
22 inspection coverage -- resident inspection coverage was
23 related to some operational errors. The errors that were
24 of concern occurred since the issuance of the low power
25 license, and two of these errors led to the issuance of a

1 civil penalty in the January timeframe.

2 The types of errors that have occurred can
3 generally be categorized into two types. The first being
4 the failure of the control room operators to maintain
5 tight control over safety system status to ensure
6 operability. This is especially true during mode changes.
7 There were a couple of instances where valves were out of
8 position as the plant changed mode; in one instance from
9 Mode 3 to Mode 4 -- I'm sorry, from Mode 4 to Mode 3.

10 It's the regional view that these errors can be
11 attributed partly to the difficulty in transitioning from,
12 as the Chairman said, from a construction mentality to an
13 operating mentality.

14 The second category of errors relates to the
15 failure to ensure that all tech-specs surveillance
16 requirements are properly reflected in station procedures.

17 Our inspection activities since these errors have
18 occurred have confirmed that HL&P's comprehensive
19 corrective action in response to these errors has been
20 effective.

21 Going down on the slide, we note that early on in
22 this most recent SALP period which began 1 January 1987,
23 HL&P had significant problems in the security area. In
24 fact, those concerns relative to security were a factor in
25 the issuance of the low power license. Since the issuance

1 of the low power license, we have noticed and noted strong
2 improvement in that area and have no significant concerns
3 relative to security. Next slide, please.

4 [Slide.]

5 MR. CALLAN: I'll turn it back over to Prasad at
6 this point.

7 MR. KADAMBI: Thank you, Joe. I shall now
8 describe some of the features of the proposed full power
9 license.

10 One of the characteristics of the low power
11 license -- major license condition was in the area of
12 physical security; this issue has been resolved.

13 The license carries four exemptions. The first
14 three of these are already incorporated into the low power
15 license, and two of them are standard parts of most of the
16 recent licenses which have come before the Commission.

17 The one on containment air lock provides relief
18 for testing when personnel entry occurs into the
19 containment.

20 The second one on the application of GDC-50 is
21 applied to the component cooling water system return line
22 from the fan coolers. The fan coolers are provided for
23 containment atmosphere cooling.

24 The exemption relates to the part of the
25 component cooling water line which is not needed after an

1 accident. This part of the line has to be isolated after
2 an accident. The Staff requires two valves to accomplish
3 this isolation. The South Texas Project currently has one
4 valve and will install the other at the first refueling
5 outage. The Staff finds this to be acceptable.

6 The exemption on the criticality monitoring
7 system is another standard exemption which has been a part
8 of recent licenses.

9 The last of the exemptions is related to the
10 updated FSAR and was requested by the licensee so they
11 could maintain a single FSAR document for both one Unit 1
12 and 2. Since Unit 2 they expect will receive a low power
13 license, they expect a fuel load in December of 1988. The
14 Staff has granted an exemption up to August of 1990 to
15 develop a common document for both units. Next slide,
16 please.

17 [Slide.]

18 MR. KADAMBI: I'd like to address some of the
19 component related issues which were dealt with by the
20 Staff and these parallel remarks of the licensee
21 essentially. I won't go into much detail on these other
22 than to say that on each issue the Staff has followed the
23 licensee's actions, and at this point the corrective
24 actions are complete.

25 I'd like to now --

1 MR. MURLEY: Are you done with this?

2 MR. KADAMBI: Yes, unless there's -- if there are
3 any questions.

4 MR. MURLEY: Okay. I would just mention that --
5 Commissioner Bernthal, you asked about the steam generator
6 being out of plumb and my staff has looked at that just
7 recently in the stress report, and they are satisfied that
8 the stresses are well within allowables there.

9 COMMISSIONER BERNTHAL: Just as a matter of
10 curiosity, how much out of plumb does "out of plumb" mean
11 in angle or feet?

12 MR. MURLEY: Well, as I -- perhaps I'll let Jose
13 get into that because he did look into it in his
14 investigation as a team assessment reporter.

15 MR. CALVO: Understand, if you're looking
16 perpendicular it's about 15 inches from the bottom that
17 was out of wack, where I guess if we're looking at the
18 angle, it was a very small 3, 4 degrees angle, but when
19 you're looking, it's about 15 inches.

20 COMMISSIONER BERNTHAL: Okay. Thanks.

21 MR. MURLEY: So that then leads into the review
22 work that Jose Calvo and his team did, and I'll let him
23 move into that.

24 CHAIRMAN ZECH: All right. You may proceed.

25 MR. CALVO: My name is Jose Calvo. I was the --

1 I'm the Project Director for all the Region IV plants
2 except Comanche Peak.

3 I was assigned as the manager to lead a team to
4 review the allegations by the Government Accountability
5 Project on the South Texas Project.

6 What I would like to do, I'd like to give you a
7 overall -- quick overall to tell you what we did, and give
8 you a summary of it, and then I will follow by the process
9 that we used to come up with the conclusions that we did.

10 The safety significance assessment team reviewed
11 all the GAPS allegations. The majority of the allegations
12 were found to be lacking in specificity. The allegations
13 were categorized according to discipline, equipment, and
14 common characteristics.

15 The allegations which were technically oriented
16 in potential safety significance were selected for further
17 review. Those allegations judged to have the highest
18 potential safety significance were selected for on-site
19 inspection.

20 The SSAT interviewed allegeders to obtain
21 additional information before and during the on-site
22 inspection of the South Texas Project facility.

23 The on-site inspection was conducted on January
24 the 18th to the 22nd, 1988. The inspection findings had
25 identified no substantive safety issues.

1 Some of the allegations were accepted here at
2 some point in the construction history of the South Texas
3 Project -- South Texas Project facility, but the team
4 determined that the South Texas Project quality assurance
5 program was successful in identifying the concerns and
6 applying appropriate corrective actions.

7 Considering the satisfactory findings, the
8 remaining allegations considered technically oriented by
9 the team were closed out because they were found to be
10 duplicated or related to the allegations being inspected
11 by the team, or because the subject matter conveyed by the
12 allegations involved the implementation of the quality
13 assurance criteria which was found acceptable by the team.

14 The bottom line is that the team reviewed all GAP
15 allegations, and has identified no safety issues which
16 will affect safe operation of the South Texas Project
17 facility.

18 If you will allow me, I'd like to go with the --
19 explain the process that we did to reach this conclusion.

20 COMMISSIONER BERNTHAL: Yes, and if don't mind, I
21 think it would be useful just for the public record here
22 to cite one or two of the outstanding items that you
23 perhaps spent a good deal of time on.

24 MR. CALVO: Yes, I intend to do this. Many
25 communications between the Nuclear Regulatory Commission

1 and the Government Accountability Project -- an agreement
2 was reached between the Office of the Secretary, Director
3 for Operations and GAP, the Government Accountability
4 Project, that will permit the NRC Staff to review GAP's
5 allegations.

6 The initial assessment of GAP's allegation
7 summaries indicated that the Staff could not establish the
8 safety significance before because of lack of specific
9 information.

10 In order to obtain this information, the team was
11 assembled, the safety significance assessment team or
12 SSAT, to review the GAP's allegation files at Washington,
13 D.C.

14 I was the team director and I had also with me
15 here the team leader, if I may present the team leader,
16 Rich Correia, will you please stand up. And next to him
17 are the two deputy team leaders, Pat Milano and
18 Ed Thomason. And behind the team leader is Paul Connor,
19 the project manager. Now the other members of the team
20 can stand up.

21 CHAIRMAN ZECH: Yes, the whole team stand up,
22 please, so we'll know. Okay. All right. Thank you very
23 much.

24 MR. CALVO: The team consisted of about --
25 approximately 15 people with experience in mechanical,

1 electrical, instrumentation, civil, structural and
2 metallurgical engineering; quality assurance, quality
3 control, inspection operations, construction, project
4 management, and related activities.

5 It collectively represented 350 years of
6 engineering and scientific experience of which 250 were in
7 the nuclear field.

8 The initial screening of GAP allegation records
9 at the GAP headquarters in Washington, D.C. reveal that a
10 large majority of the allegations were not specific enough
11 in identifying a particular component, a particular
12 system, or a particular area in the plant for which the
13 alleged had expressed concern.

14 The team reviewed approximately 700 allegations.
15 After further review, the team determined that 120 of
16 those allegations were repetitious; 240, they were
17 harassment, intimidation, and wrongdoings; and 140 were
18 considered by the team as non-safety related.

19 CHAIRMAN ZECH: But you reviewed all 700 --

20 MR. CALVO: All 700.

21 CHAIRMAN ZECH: All of them to determine what the
22 appropriate disposition might be?

23 MR. CALVO: That's correct.

24 CHAIRMAN ZECH: You evaluated that?

25 MR. CALVO: That's correct. As I go through --

1 CHAIRMAN ZECH: Each one of them?

2 MR. CALVO: Each one of them.

3 CHAIRMAN ZECH: Okay. Thank you.

4 MR. CALVO: Now the final review indicated that
5 of the original 700 allegations 213 remained as possible
6 candidates for further review. Samples of these
7 allegations were pipe joints not properly installed,
8 heating and ventilation and air conditioning duct work and
9 supports not installed per specifications; one was the
10 steam generator was out of plumb. It was not only one,
11 when we looked at it, we found out that two were out of
12 plumb.

13 20 percent of the valves were installed
14 backwards. Another one was the rachem cable splicer did
15 not meet safety standards, there was one about a crack in
16 the basement of the fuel handling building, which by the
17 way we could not find it.

18 COMMISSIONER BERNTHAL: These are all allegations
19 now.

20 MR. CALVO: Allegations, agreed.

21 COMMISSIONER BERNTHAL: Let's make that clear.

22 MR. CALVO: It was alleged that built items do
23 not agree with design configurations. The team reviewed
24 only 213 allegations in detail and placed them in
25 categories according to the discipline, the equipment, and

1 common characteristics.

2 CHAIRMAN ZECH: Were some of those ones that you
3 read us just a minute ago, I presume those are the ones
4 you couldn't track down or you couldn't find the
5 specific -- not enough specificity to find out exactly
6 what the problem was. Is that what you're telling us?

7 MR. CALVO: Yes. Out of the total 700
8 allegations, there was only about 16 allegations which
9 referred to some specific component in the plant.

10 CHAIRMAN ZECH: Well, some of those things you
11 read sound pretty general me to me. I'd have a hard time
12 finding some of that stuff.

13 MR. CALVO: Well, the steam generator out of
14 plumb, I think we have --

15 CHAIRMAN ZECH: Oh, yes, you can find that, but I
16 mean some of the others.

17 MR. CALVO: And the others are very general in
18 nature, so we have to develop a plan.

19 CHAIRMAN ZECH: But did you try to track that
20 down, and try to find out the specific things that were --

21 MR. CALVO: We tried to.

22 CHAIRMAN ZECH: All right.

23 MR. CALVO: We contacted the allegeders to obtain
24 additional information.

25 CHAIRMAN ZECH: All right.

1 MR. CALVO: We would review the 213 allegations
2 in detail and place them in categories according to
3 discipline, equipment, and common characteristics.

4 From this category, the team selected for inside
5 inspection those allegations that it was judged to be the
6 highest potential safety significance. Ten primary and 61
7 secondary allegations were selected for that purpose.

8 The 71 allegations selected for inside inspection
9 were representative of all the technical concerns conveyed
10 by the allegeders represented by GAP and bound the 213
11 allegations either specifically or in a generic basis.

12 The selected allegations encompassing areas such
13 as piping and mechanical components, valves, heating and
14 ventilation, welding, electrical cables, quality
15 assurance, quality control and so forth.

16 To compensate for the lack of specificity --
17 specific detail, the team developed a plan for inspecting
18 the allegations that provided for a broad, generic look
19 that will bound the generalized concerns conveyed by the
20 allegations. Also the team made arrangements to talk to
21 the allegeders to obtain additional specificity.

22 The 71 allegations selected for inspection
23 involved 19 allegeders; however, only ten allegeders could be
24 reached, and those ten were interviewed by the team.

25 With only a few exceptions, the additional

1 information provided by the allegeders continued to be
2 deficient on specific details.

3 The team, after the inspection plan was done, the
4 team was to decide during the week of January 18th to the
5 22nd and during that time, the interviews with the
6 allegeders continued.

7 CHAIRMAN ZECH: At the site.

8 MR. CALVO: At the site. And all the interviews
9 were done over the telephone, there was a couple of cases
10 where there was face to face contact with the allegeders.

11 The team, as a result of this inspection,
12 identified no substantive concern.

13 Also the team found out that several allegations
14 were substantiated at sometime during the -- in the
15 construction history of the plant; however, the team also
16 found out that the South Texas Project quality
17 assurance-quality control program was successful in
18 identifying them and applying proper corrective action.

19 To give you an idea of the allegations that it
20 was substantiated, samples of them are the polar crane and
21 the orbital bridge inside the containment track was out of
22 the alignment. It was substantiated, but we also found
23 out that it was properly corrected.

24 The steam generator out of plumb, as you heard it
25 today, yes, we found out that in 1983, Bechtel found out

1 that problem; we reviewed the communication between
2 Bechtel and Westinghouse, and we determined that, yes,
3 there was an audible that justified that it was out of
4 plumb.

5 We also brought the NRC Staff to look further
6 into this matter to see if there was any problems with
7 these things.

8 So these are the kind of things that we -- they
9 were true at the time that it happened, but they were
10 substantiated.

11 There was another one where concrete
12 reinforcement -- reinforcing bars while concrete was being
13 drilled. We found out that that was substantiated, but
14 they have a program in place that took care of all these
15 things.

16 As a result of the inspection, we found only one
17 deficiency -- the team found the deficiency. It had to do
18 with the recham cable splices. Okay.

19 Before the NRC Staff had requested the licensee
20 to do a 100 percent reinspection on all the recham
21 splices. I believe there are approximately about 2,300 of
22 them. They did it, and what we did, we were trying to
23 verify because we had an allegation about problems with
24 the splices, to see how well they did it. And while we
25 were doing it, we determined that one particular

1 allegation that we selected, it has not been re-inspected.

2 We did call the utility -- the utility was
3 working with us, and on their own initiative, they said
4 well, let's look at it to see if they got any others.

5 Well they re-looked at 2,300 and they found six
6 more that needed to be re-worked.

7 I sent to members of the team sometime to verify
8 not about the recham splices, to see how they were done,
9 because there was a problem with the recham splices, where
10 you have generated generic implications in other
11 disciplines: Civil, structural, mechanical. They spent
12 three or four days up there and determined, no. There was
13 a problem with the way the programs for selecting the
14 splices for inspection was done, so we feel that was a
15 unique case and there was no generic implications.

16 CHAIRMAN ZECH: Did they fix those that they had
17 problems with?

18 MR. CALVO: Yes, the problem was fixed. The six
19 ones were corrected and fixed and verified.

20 JUDGE KULHMAN: All right.

21 MR. CALVO: And we asked them to -- from now on
22 to revise the procedures so this won't happen into the
23 future. We had brought with us some recham cable splices.
24 They are available for the Commission examination later if
25 they wish to.

1 We also, out of the 71 that we took, we found 50
2 of them were unsubstantiated. Some of them say the
3 alleged problematic cooling system should have two valves
4 instead of one, we found out that one valve, that's all it
5 had and that's okay, not only in this plant, but in other
6 Westinghouse plants.

7 We found out that 20 percent of the valves
8 installed backwards, we couldn't find out. We looked at a
9 lot of valves. We looked at a lot of the hardware on that
10 plant. We not only looked at the paper, but we looked at
11 a lot of hardware, we walked down, we constantly looked at
12 the things.

13 Also we found out another one that was alleged
14 that we could not substantiate, the heating and
15 ventilation and air conditioning welds not cleaned before
16 caulking. We looked at a horrendous amount of welds in
17 Unit 2 and Unit No. 1 and we could not find out the
18 problem. We find out the weld was perfectly done.

19 By the way, this four and a half days that we
20 spent on the site, they were truly actually -- we were
21 working 17 hours a day and it was actually fairly
22 thorough. We could have stayed there longer had we found
23 some problems, but we didn't quite find the problems that
24 the allegations were trying to convey.

25 CHAIRMAN ZECH: You think you had sufficient

1 time?

2 MR. CALVO: I think we had -- had we find some
3 problems, truly I would have had sufficient time. But the
4 thing was going well, we were collecting information and
5 most of the things that we looked at, we found out that
6 the QA-QC program --

7 CHAIRMAN ZECH: So you think you did have
8 sufficient time?

9 MR. CALVO: For the work that we did, we have.
10 As a result of the broad, generic, and problematic look
11 given to the areas of concern by the team to compensate
12 for the lack of specificity, the team inspected many other
13 areas of hardware and QA-QC characteristics. The
14 allegations only pointed you in the direction; the team
15 went broader and wider to find out where the genetic
16 implications were.

17 Also the team reviewed the NRC Region IV
18 inspection reports in an independent manner, also reviewed
19 the Houston Lighting and Power safety report -- safety
20 investigation report. The team is a group that
21 investigated allegations for the utility -- not to agree
22 with them, to find out that it was -- because of the total
23 lack of specificity, we wanted to be sure that there was
24 something there that would give us a clue what the
25 allegeders were saying. We used that as inputs to give us

1 an insight in the allegations.

2 It was determined that this report will offer
3 additional insight on the allegations being reviewed by
4 the team.

5 Now considering the satisfactory inspection
6 findings and everything else that we have done, the team
7 determined that many of the allegations that was left,
8 there was about 70 -- 71 were inspected. The other 119 of
9 those, we found out that they were duplicated and they
10 related to the work, the review that the team was doing;
11 therefore, the team concluded that 119, 71 were inspected,
12 119 were duplicated or related; therefore, it only left
13 about 23 allegations remaining. Of those 23 allegations,
14 we found that four were duplicated and 19 we could not
15 bound them, by what the team did, we found out that the
16 subject matter conveyed by those allegations, it related
17 to QA criteria which had been reviewed by the team and
18 found acceptable --

19 CHAIRMAN ZECH: You couldn't bound them because
20 they weren't specific enough; is that correct?

21 MR. CALVO: That's right. It was not specific
22 enough, it could not be bounded. But again the criteria,
23 it was reviewed by the team in many cases and we found it
24 acceptable. So we're saying --

25 CHAIRMAN ZECH: The quality assurance-quality

1 control review you think covered or would have covered it?

2 MR. CALVO: That's correct. So based on that, we
3 concluded that those 19 allegations were not of immediate
4 safety concern and we will review for it when additional
5 information becomes available to the Staff.

6 The conclusion is that the SAT review of all
7 GAP's allegations has identified no substantative safety
8 issues that will delay in the NRC's consideration for a
9 full power license for South Texas Unit No. 1.

10 I must also say that the Office of the
11 Investigation is evaluating GAP's allegations concerning
12 harassment and intimidation, and any technical concern
13 expanding from these efforts will be further reviewed by
14 the NRC Staff for safety significance. Before I finish
15 this --

16 CHAIRMAN ZECH: Before you go off that, excuse
17 me. Did I understand you to say concerning the harassment
18 and intimidation, that is ongoing, that as of now though
19 you don't see any safety significant issues that would
20 delay restart; is that correct? Is that what you're
21 telling me?

22 MR. CALVO: Yes, that's what I'm going to tell
23 you.

24 CHAIRMAN ZECH: Well tell me about it.

25 MR. CALVO: Well, tell me about it. Okay. All

1 the GAP -- if we can put in there a B-10. Slide B-10,
2 please.

3 [Slide.]

4 MR. CALVO: This is the summary of all the
5 harassment and intimidation allegations. What the team
6 did, we looked at all these 240 as well as we looked at
7 all the others and we're trying to determine whether there
8 was any safety related matters, any technical oriented
9 matters where we feel that the team should look at.

10 We had 240 and of the 240 we found out that 95
11 involved the same area that the team has covered before:
12 Heating and ventilation, Quality assurance, so forth and
13 so on.

14 We found out that 145 of those have no safety
15 content. I'll give you for instance. Millions of feet of
16 cable was scraped due to incompetent engineering
17 measurements, that's a wrongdoing. 20,00 pounds of
18 stainless steel disappeared from plant, but they were
19 logged as received by Westinghouse.

20 MR. MURLEY: Jose, I think that's probably
21 enough. You get the flavor of the --

22 MR. CALVO: Okay. So the conclusion of these
23 things was that based on what the technical staff had
24 reviewed, every one of the the items being referred to OI,
25 and satisfied themselves that none had underlying safety

1 significance.

2 Second, the Staff observed that many of the
3 allegations simply had nothing to do with whether the
4 plant is designed and constructed safely; and three, there
5 was no trails or patterns helping identify that may be
6 indicative of management breakdown in ensuring the quality
7 of the South Texas Project installation.

8 And finally, it is the Staff's judgment that
9 there is adequate assurance that South Texas can be
10 operated with no undue risk to the public health and
11 safety. This judgment is based not only on what the
12 safety significant assessment review did show, but also on
13 the overall licensing and inspection programs performed by
14 the NRC Staff over the years.

15 Upon completion of the OI efforts -- dealing with
16 harassment and intimidation and wrongdoing, any technical
17 concern expanding from this effort will be further
18 reviewed by NRC Staff for safety significance.

19 That's all I have to say. I'm finished.

20 CHAIRMAN ZECH: All right.

21 MR. TAYLOR: Tom.

22 MR. MURLEY: On conclusion then, Mr. Chairman,
23 the Staff supports issuance of a full power license to the
24 South Texas Project Unit 1.

25 CHAIRMAN ZECH: All right.

1 MR. MURLEY: That concludes the Staff's
2 presentation.

3 CHAIRMAN ZECH: All right. Thank you very much.
4 Questions from my fellow Commissioners? Commissioner
5 Roberts?

6 COMMISSIONER ROBERTS: I want to hear you say it
7 again. Is it the opinion of the Staff that this plant can
8 go to full power without undue risk to public health and
9 safety?

10 MR. MURLEY: Yes, sir.

11 COMMISSIONER ROBERTS: Thank you.

12 CHAIRMAN ZECH: Commissioner Bernthal?

13 COMMISSIONER BERNTHAL: You may have addressed --
14 in fact you have addressed some of these issues already,
15 but in the executive summary of your operational readiness
16 report, you list five -- one, two, three, four, five items
17 in particular, I believe, that you indicated were
18 important for safe operation of the facility, asking that
19 those issues be followed up on. I won't go through the
20 whole list here, but perhaps you can on the record here go
21 through them briefly and assure us that each of those
22 items has been satisfied.

23 MR. TAYLOR: Yes, Mr. Callan from the Region
24 would address that, sir.

25 MR. CALLAN: Commissioner, I'm Joe Callan from

1 Region IV. All five have been closed out during
2 inspection activities that occurred two weeks ago.

3 Two of the items, the item relating to control of
4 safety system status and the item relating to inclusion of
5 tech-spec surveillance requirements in plant procedures,
6 as I mentioned earlier, were the subject of escalated
7 enforcement and received in-depth corrective action as a
8 result of that.

9 The other three items, the item pertaining to the
10 ability -- the demonstrated ability for remote shutdown,
11 the upgrading of commercial grade, agastat relays, and
12 review of the backlog of the problem reports have as I
13 said been closed out about two weeks ago. That report has
14 not been issued, however.

15 COMMISSIONER BERNTHAL: If I take two of these
16 items, they would seem to suggest that the licensee needs
17 to organize some of its efforts a little better.

18 One was the question of the tech-spec changes and
19 follow those in a more disciplined way, and the other as
20 you've just indicated was the resolution of problems that
21 were outstanding and overdue. I take it though that in
22 your judgment that process has been tightened up
23 adequately now.

24 MR. CALLAN: Yes, sir. There are two issues
25 here. One was the process itself in order to ensure that

1 the -- in other words the adequacy of the program, and the
2 second with implementation of the program, and we found
3 problems on both counts.

4 The correction of the specific issues that were
5 identified was relatively straightforward; the correction
6 or the enhancements to the programs, the processes, took a
7 little bit longer. And as I said, we were able to close
8 those out.

9 COMMISSIONER BERNTHAL: One other hardware item
10 that came up at some point here in the process was that of
11 certain threaded fasteners that were being used at the
12 plant, and the question being whether there were some --
13 what's the word, forgeries I guess, that did not really
14 meet the required ASME or ASTM codes. Could you enlighten
15 us a little bit on that issue and tell us how you resolved
16 that question?

17 MR. KADAMBI: That was one of the allegations
18 that was received --

19 MR. CALVO: I think if I may, I may refer that to
20 the team leader if you don't mind to answer that question.

21 COMMISSIONER BERNTHAL: Okay.

22 CHAIRMAN ZECH: Please come to the microphone and
23 identify yourself for the reporter.

24 MR. CORREIA: My name is Richard Correia. I was
25 the safety significance assessment team leader.

1 The concern was counterfeit or unqualified
2 fasteners at STP, it was one of the allegations that we
3 did review. We did find that as part of Bechtel's review
4 of issues at South Texas when they took over, this was one
5 of the items that they looked into. They did an extensive
6 review of all fasteners on site which initiated from a NRC
7 vendor inspection. They didn't stop at that, they looked
8 at all fasteners, made determinations that there were some
9 fasteners that did not meet specifications, some was a
10 matter of paperwork, other was actual hardware problems.

11 They discarded those that they could absolutely
12 not assure themselves were to specification; and the
13 others, it was a matter of paper corrections. They did
14 take care of those --

15 CHAIRMAN ZECH: Did they fix the ones that needed
16 fixing?

17 MR. CORREIA: Yes, they did.

18 CHAIRMAN ZECH: All right.

19 COMMISSIONER BERNTHAL: Okay. Thank you very
20 much.

21 CHAIRMAN ZECH: All right.

22 COMMISSIONER BERNTHAL: I would just make one
23 observation and that is it is my understanding that the
24 Staff expended something like 3,000 or 3,300 staff and
25 contractor hours into reviewing this raft of late

1 allegations for the South Texas plant. This was at a cost
2 of something in the neighborhood a quarter of a million
3 dollars to the government, so we certainly didn't treat
4 those allegation lightly. I know that you all have worked
5 very long, very hard on these issues, and we appreciate
6 that.

7 I simply wanted to state for the record that some
8 representations notwithstanding, there has been a great
9 deal of attention in time and effort spent to resolving
10 these questions. Thank you very much.

11 CHAIRMAN ZECH: All right. Commissioner Carr?

12 COMMISSIONER CARR: No.

13 CHAIRMAN ZECH: Commission Rogers?

14 COMMISSIONER ROGERS: No.

15 CHAIRMAN ZECH: Let me just ask, are there any
16 remaining prerequisites or any remaining findings that you
17 have to make then to authorize the plant to go to full
18 power?

19 MR. MURLEY: No, I don't believe so.

20 MR. TAYLOR: There are none, sir. We've checked
21 the Region as recently as a few hours ago.

22 CHAIRMAN ZECH: All right. Fine. Let me also
23 commend the Staff for an extraordinary effort in the very
24 difficult circumstances when we don't get allegations to
25 look at when they are so hard to come by. It's very

1 difficult to look into something that you can't determine
2 what the problem is. We feel responsible for looking into
3 allegations as you can see with the great effort that has
4 been made to do that.

5 We do feel we treat allegations seriously but we
6 need to know what they are in order to treat them
7 seriously.

8 So I commend the Staff for the effort that they
9 made under rather difficult circumstances.

10 In summarizing then, I believe that the licensee
11 has, as has the Staff, told us that they've concluded that
12 South Texas Project Unit 1 has satisfied the requirements
13 for issuance of a full power license; consequently unless
14 my fellow Commissioners have any other comments, are we
15 prepared to vote?

16 [A chorus of ayes.]

17 CHAIRMAN ZECH: If we are, those Commissioners in
18 favor of authorizing the Staff to issue a full power
19 license for South Texas Project Unit 1, please signify by
20 saying aye.

21 [A chorus of ayes.]

22 CHAIRMAN ZECH: Opposed? Opposed, no. The vote
23 is five to zero in favor. We stand adjourned.

24 [Whereupon, at 3:35 p.m. the meeting was
25 adjourned.]

1
2 REPORTER'S CERTIFICATE
3


4 This is to certify that the attached events of a
5 meeting of the U.S. Nuclear Regulatory Commission entitled:
6

7 TITLE OF MEETING: Briefing on Full Power Licensing of South
Texas Nuclear Project, Unit 1

8 PLACE OF MEETING: Washington, D.C.

9 DATE OF MEETING: March 21, 1988
10

11 were held as herein appears, and that this is the original
12 transcript thereof for the file of the Commission taken
13 stenographically by me, thereafter reduced to typewriting by
14 me or under the direction of the court reporting company, and
15 that the transcript is a true and accurate record of the
16 foregoing events.

17
18 

Mario Rodriguez
19
20
21

22 Ann Riley & Associates, Ltd.
23
24
25

HOUSTON LIGHTING & POWER COMPANY

FULL POWER COMMISSION BRIEFING

SOUTH TEXAS PROJECT

ELECTRIC GENERATING STATION

MARCH 21, 1988

FITNESS FOR DUTY

- Based on EEI & NUMARC Guidelines
- Ten key program elements
 - Written policy
 - Top management support
 - Policy communication
 - Behavior observation training
 - Implementation training
 - Union briefing
 - Contractor notification
 - Law enforcement liaison
 - Drug & Alcohol Testing
 - Employee assistance programs

SOUTH TEXAS PROJECT

PROFESSIONALISM "Doing things right"

- Insatiable Attention To Detail
- Dedicated To Learning From Mistakes
- Not Satisfied With Performance Because of Increasing Expectations
- High Level of Energy Expenditure
- Intellectual Curiosity
- Recognize Both Privately And Publicly, The Contribution Of Others
- High Degree Of Personal Integrity
- Accepts Critique And Uses The Information
- Faces Facts Squarely And Deals With Implications
- High Degree Of Candor
- Anticipates Problems
- Innovative In Solving Problems
- Exercises Initiative

Principal Operating Problems

- HHSI Valve Mispositioning
- Pressurizer PORV Lifting
- MFW Hydraulic Transients
- Remote Shutdown

Concerns in NRC Operational Readiness Inspection Report

1. Operator sensitivity to plant status mode change requirements
2. Timeliness of Station Problem Report (SPR) investigations
3. Problems in control room evacuation drill
4. Technical specification/surveillance procedure inadequacies
5. Use of commercial grade agastat relays

MAINTENANCE BACKLOG

	<u>SAFETY</u>	<u>NON-SAFETY</u>
OUT OF SERVICE	3	61
DEGRADED OPERATION	210	908
SYSTEM OPERATION NOT AFFECTED	67	207

COMMISSION BRIEFING
ON
FULL POWER LICENSING
OF
THE SOUTH TEXAS PROJECT, UNIT 1
MARCH, 1988

N. PRASAD KADAMBI
PROJECT MANAGER
(301) 492-1337

OUTLINE

- BACKGROUND
- SITING
- PLANT DESIGN
- LICENSING MILESTONES
- CONSTRUCTION EXPERIENCE
- READINESS FOR OPERATION
- THE OPERATING LICENSE
- PRE-CRITICALITY OPERATIONS
- REVIEW OF ALLEGATIONS FROM GAP
- STAFF CONCLUSION

BACKGROUND

- OWNERS

- HOUSTON LIGHTING & POWER COMPANY
- CENTRAL POWER
- CITY OF SAN ANTONIO
- CITY OF AUSTIN

- OPERATOR

- HOUSTON LIGHTING & POWER

- EXPERIENCE

- FIRST NUCLEAR PLANT FOR UTILITY
- SIGNIFICANT DIFFICULTIES DURING
CONSTRUCTION PHASE OVERCOME
SUCCESSFULLY

SITING

- LOCATION

- MATAGORDA COUNTY, 10 MILES INLAND FROM GULF OF MEXICO.
- PRIMARILY AGRICULTURAL AREA

- POPULATION

- 10-MILES: 2800
- 50-MILES: 300,000
- NO MAJOR CITY IN 50-MILE RADIUS.

- EMERGENCY PREPAREDNESS

- FULL-PARTICIPATION EXERCISE ON APRIL 8, 1987
- ONSITE AND OFFSITE PREPAREDNESS FOUND TO BE SATISFACTORY.

PLANT DESIGN

- VENDOR
 - WESTINGHOUSE REACTOR AND TURBINE
- ARCHITECT/ENGINEER
 - BROWN & ROOT UNTIL 1981
 - BECHTEL AFTER 1981
- CONSTRUCTOR
 - BROWN & ROOT UNTIL 1981
 - EBASCO AFTER 1981
- NSSS
 - ONLY RESAR-41 IN U.S.
 - FOUR-LOOP, THREE-TRAIN SYSTEMS
 - FOURTEEN FOOT CORE
 - 3800 MWT
- CONTAINMENT
 - CYLINDRICAL WITH HEMISPHERICAL TOP AND STEEL LINER
- UNIQUE FEATURES
 - QUALIFIED DISPLAY PROCESSING SYSTEM
 - LEAK-BEFORE-BREAK APPLICATION IN RCS AND BEYOND
 - RCS TEMPERATURES MEASURED BY RTDs IN MAIN COOLANT PIPING
 - BMI THIMBLE TUBE VIBRATION LIMITING DEVICE
 - AUXILIARY FEEDWATER SYSTEM

LICENSING MILESTONES

DECEMBER 1975	CP ISSUED
JULY 1978	FSAR DOCKETED
MARCH 1986	DRAFT ENVIRONMENTAL STATEMENT ISSUED
APRIL 1986	SAFETY EVALUATION ISSUED
JUNE 1986	ADVISORY COMMITTEE ON REACTOR SAFEGUARDS FULL-COMMITTEE MEETING
JUNE 1986	FINAL ENVIRONMENTAL STATEMENT
AUGUST 1986	ASLB DECISION ON SAFETY HEARINGS
DECEMBER 1986	MATERIALS LICENSE
APRIL 1987	EMERGENCY PREPAREDNESS GRADED EXERCISE
AUGUST 1987	LOW POWER LICENSE

CONSTRUCTION OVERVIEW

- CONSTRUCTION HISTORY
 - CONSTRUCTION PERMIT ISSUED DECEMBER 1975
 - WORK STOPPED UNDER SHOW CAUSE ORDER APRIL 1980
 - BECHTEL BECOMES A/E SEPTEMBER 1981
- APPROXIMATELY 32,500 NRC INSPECTOR MANHOURS ON CONSTRUCTION INSPECTIONS AND INVESTIGATION.
 - 17,600 MANHOURS FOR UNIT 1 INSPECTIONS (COMPLETED)
 - 10,000 MANHOURS FOR UNIT 2 INSPECTIONS (90% COMPLETE)
 - 5,000 MANHOURS FOR INVESTIGATIVE ACTIVITIES
- SPECIAL INSPECTIONS
 - SPECIAL INVESTIGATIVE INSPECTION LATE 1979
(LED TO STOP WORK ORDER 1980)
 - REGION I MOBILE NON-DESTRUCTIVE EXAMINATION TEAM
INSPECTION 1984 AND 1986
 - CONSTRUCTION APPRAISAL TEAM (CAT) INSPECTION IN 1985

OPERATIONAL READINESS

- INSPECTIONS

- ROUTINE INSPECTION PROGRAM
- JUNE 1987 TEAM INSPECTION
- JANUARY 1988 TEAM INSPECTION
- AUGMENTED INSPECTION (24-HOUR COVERAGE DURING FUEL LOAD AND CRITICALITY, ADDITIONAL RESIDENT INSPECTOR COVERAGE DURING START-UP TESTING)

- RESULTS

- STRONG OVERALL OPERATIONAL PROGRAMS
- SOME WEAKNESSES WERE IDENTIFIED IN THE IMPLEMENTATION OF OPERATIONAL PROGRAMS
 - HARDWARE PROBLEMS, AFW CCW
 - PERSONNEL ERRORS (CIVIL PENALTY FOR INADEQUATE CONTROL OF SAFETY SYSTEM STATUS)
 - RECENT OPERATOR PERFORMANCE REFLECTS INCREASED EMPHASIS ON CONTROL OF SYSTEM STATUS.
 - SECURITY PROGRAM INITIALLY IDENTIFIED AS WEAK RESULTING IN A DELAY IN THE ISSUANCE OF THE LOW POWER LICENSE. THE SECURITY PROGRAM HAS BEEN SUBSTANTIALLY UPGRADED AND IS NOW ACCEPTABLE.

- CONCLUSIONS

- IDENTIFIED HARDWARE PROBLEMS HAVE BEEN RESOLVED.
- OPERATOR PERFORMANCE HAS IMPROVED SUBSTANTIALLY.
- SECURITY PROBLEMS HAVE BEEN RESOLVED.

THE OPERATING LICENSE

- MAJOR LICENSE CONDITION FOR LOW POWER OPERATION WAS ON PHYSICAL SECURITY. THE ISSUE HAS BEEN RESOLVED.
- EXEMPTIONS GRANTED IN FOLLOWING AREAS
 - (A) CONTAINMENT AIR LOCK LEAK TESTING (10 CFR 50, APPENDIX J) PROVIDES RELIEF FOR THE TESTING OF CONTAINMENT AIR LOCKS AT TIMES WHEN CONTAINMENT INTEGRITY IS NOT REQUIRED.
 - (B) SCHEDULAR EXEMPTION ON APPLICATION OF GDC-57 RELATED TO THE COMPONENT COOLING WATER SYSTEM RETURN LINE FROM FAN COOLERS.
 - (C) CRITICALITY ALARM SYSTEM (10 CFR 70.24) THIS EXEMPTION CONTINUES THAT WHICH WAS PREVIOUSLY GRANTED PURSUANT TO 10 CFR 70.24. PROVIDES RELIEF FOR THE INSPECTION AND STORAGE OF UNIRRADIATED FUEL ASSEMBLIES.
 - (D) SCHEDULAR EXEMPTION REGARDING SUBMITTAL OF THE UPDATED FSAR SO THAT A COMMON DOCUMENT CAN BE USED FOR BOTH UNITS.

PRE-CRITICALITY OPERATIONS

- MAJOR COMPONENT RELATED CONCERNS ADDRESSED DURING PRE-CRITICALITY PERIOD WERE
 - (A) COMPONENT COOLING WATER (CCW) HEAT EXCHANGER TUBE DAMAGE
 - (B) AUXILIARY FEEDWATER (AFW) PIPING SYSTEMS
 - (C) IN-CORE INSTRUMENTATION THIMBLE TUBES
- CCW TUBES REPAIRED TO CORRECT EXCESSIVE FLOW INDUCED VIBRATION. TUBES STIFFENED AND PLUGGED
- PIPING AND VALVES REPAIRED IN AFW SYSTEM TO SOLVE WATER HAMMER PROBLEMS. TESTING PERFORMED TO CONFIRM RESOLUTION.
- EDDY CURRENT TESTS SHOW SATISFACTORY PERFORMANCE OF THIMBLE TUBES. TESTS WILL BE PERFORMED AFTER 12 WEEKS OF OPERATION FOR CONFIRMATION. ISOLATION VALVES AND LEAK DETECTION WILL BE INSTALLED DURING FIRST REFUELING OUTAGE.

REVIEW OF ALLEGATIONS FROM THE GOVERNMENT
ACCOUNTABILITY PROJECT (GAP)

- A SAFETY SIGNIFICANCE ASSESSMENT TEAM ADDRESSED ALL ISSUES INVOLVED IN ALLEGATION INFORMATION FROM GAP.

- RESULTS OF THE SCREENING AND REVIEW PROCESS

-	TOTAL NUMBER OF ALLEGATIONS FROM GAP	700
-	ALLEGATIONS SCREENED FOR FOLLOWUP	213
-	ALLEGATIONS SELECTED FOR INSPECTION	71
	(A) SUBSTANTIATED BUT PROBLEM CORRECTED	21
	(B) UNSUBSTANTIATED	50
-	DUPLICATED AND RELATED ALLEGATIONS	119
-	LACKING SPECIFICITY BUT ENVELOPED BY QA/QC REVIEW	23
		<hr/> 213

- CONCLUSION

(A) ALLEGATIONS DO NOT SHOW ANY SAFETY SIGNIFICANT PROBLEMS AT SOUTH TEXAS, UNIT 1 WHICH WOULD AFFECT SAFE OPERATIONS

(B) ALTHOUGH SOME OF THE ALLEGATIONS WERE SUBSTANTIATED, THE LICENSEE'S QUALITY ASSURANCE AND CONTROL PROGRAMS HAVE DEMONSTRATED THE CAPABILITY TO CAPTURE THE ISSUES AND IMPLEMENT CORRECTIVE ACTIONS.

(C) ANY INFORMATION FROM ON-GOING INVESTIGATIONS WILL BE FOLLOWED-UP FURTHER AS NEEDED.

STAFF CONCLUSION

THE STAFF SUPPORTS ISSUANCE OF A FULL POWER LICENSE
TO THE SOUTH TEXAS PROJECT, UNIT 1.