

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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PERIODIC BRIEFING ON THE STATUS OF
BROWNS FERRY UNIT 2

- - - -

PUBLIC MEETING

Nuclear Regulatory Commission
One White Flint North
Rockville, Maryland

Wednesday, September 26, 1990

The Commission met in open session,
pursuant to notice, at 2:00 p.m., Kenneth M. Carr,
Chairman, presiding.

COMMISSIONERS PRESENT:

KENNETH M. CARR, Chairman of the Commission
KENNETH C. ROGERS, Commissioner
JAMES R. CURTISS, Commissioner
FORREST J. REMICK, Commissioner

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STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

SAMUEL J. CHILK, Secretary

WILLIAM C. PARLER, General Counsel

JAMES TAYLOR, Executive Director for Operations

DR. THOMAS MURLEY, Director, NRR

STEWART EBNETER, Region II

SUZANNE BLACK, NRR, TVA

THIERRY ROSS, NRR, PD32

BRUCE WILSON, Region II

OLIVER D. KINGSLEY, JR., Senior Vice President,
Nuclear Power, TVA

OSWALD ZERINGUE, Site Director, Browns Ferry

LEWIS MYERS, Plant Manager, Browns Ferry

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

2:00 p.m.

CHAIRMAN CARR: Good afternoon, ladies and gentlemen.

The purpose of today's meeting is for the Tennessee Valley Authority and the NRC staff to brief the Commission on the status of Browns Ferry Unit 2 restart preparations after a long shutdown.

The Commission was last briefed on the status of Browns Ferry Unit 2 by TVA and the NRC staff on July 19th, 1989.

Copies of the slide presentation should be available at the entrance to the meeting room. A related staff paper presented to the Commission for information in April this year, SECY-90-148, is already publicly available.

Do my fellow Commissioners have any opening comments?

We will first hear from the licensee, the Tennessee Valley Authority.

Mr. Kingsley, I would like to welcome you and your colleagues here today. Please proceed.

MR. KINGSLEY: Thank you very much and good afternoon.

With me is the Browns Ferry management

1 team. On my left is Ike Zeringue, who you met last
2 July. He's the site director. On my right is Lew
3 Myers. He is our plant manager.

4 Our purpose in meeting with you at this
5 time is to update you concerning progress that we have
6 made since July of 1989 when we last met with you, and
7 brief you on where we are today in the recovery work
8 for Unit 2.

9 Based on the plant status report we will
10 provide, I believe you will be satisfied that for the
11 first time there is a clear path to restart of Browns
12 Ferry Unit 2 and that we can operate the plant safely
13 once allowed to restart.

14 (Slide) I'd like now to have slide 2.

15 I would like to start today's meeting by
16 reviewing the changes that have taken place since our
17 last briefing. I will then discuss the Brown's Ferry
18 site organization and the new people we have hired to
19 provide increased management talent and experience to
20 restart and operate Browns Ferry Unit 2.

21 Ike Zeringue will provide a status of the
22 Unit 2 plant schedule and the impact which several
23 issues have had on restart. We will also discuss how
24 we are handling the remaining work.

25 Finally, Lew Myers will discuss the

1 important operational readiness aspects for Unit 2
2 fuel load and restart related to our operational
3 philosophy, surveillance program, operator experience
4 and training, and the power ascension test program to
5 assure a controlled, safe return to full power
6 operation.

7 (Slide) Slide 3, please.

8 As you may recall from my comments in July
9 1989, I discussed some of the things we had
10 accomplished at Browns Ferry since I came aboard and
11 how we were in the process of correcting problems to
12 support resumption of Unit 2 operations. For example,
13 we instituted an operations improvement plan,
14 activated the maintenance improvement program,
15 established a system engineer ownership of plant
16 systems and completed two phases of our operational
17 readiness review, to name a few of the more
18 significant efforts we have undertaken to resolve
19 major issues at Browns Ferry. There were many more
20 activities reported to you at that meeting.

21 In the last 14 months, we have had several
22 successes. However, some schedule issues have been
23 identified which have impacted restart. We told you
24 last July that we had essentially finished our
25 discovery phase and had moved into the implementation

1 phase of the work process. However, the system return
2 to service program has identified significant
3 additional work. This extended the schedule, but at
4 the same time has increased our confidence that this
5 program will properly prepare the plant for operation.

6 Last year, resolution of electrical issues
7 was tied to completion of ampacity-related
8 modifications. Since that time, we have addressed
9 cable installation concerns that have been raised at
10 our Watts Bar plant. This effort has added
11 considerably to the work required to restart the
12 plant. Ike will describe the impact of these and
13 other issues in more detail later in our presentation.

14 So, we are not there yet, but we are
15 getting there. I see the ever-increasing commitment
16 to learn from our experience and I am convinced we
17 have made significant progress since we last met with
18 you in July.

19 I want to shift to some good news which
20 demonstrates to you that our decisions and corrective
21 actions have allowed us to make this progress. With
22 the reactor defueled, there has been a significant
23 improvement in the work we could accomplish. We have
24 now developed a Unit 2 integrated start-up schedule
25 which includes the remaining work to be done. We now

1 have a well-defined punch list for the site. With the
2 implementation of the system return to service program
3 mentioned earlier, we have developed a systematic
4 method to ensure required system operability.

5 We have had a significant change in the
6 safety consciousness of the people at Browns Ferry.
7 Each time we solve a problem, we gain more confidence.
8 Our objective has been to identify and solve problems
9 consistent with emphasis on our readiness to load fuel
10 and operate Unit 2 in a safe and efficient manner.

11 In the last year we have improved our
12 licensing performance. We're doing a better job
13 involving top management and key issues, effectively
14 and efficiently tracking commitments and assuring
15 regular and frequent contacts with NRC management and
16 the site residents. But we need to do better. So I
17 am continuing to emphasize our regulatory performance
18 as one of our top goals. The staff has reviewed our
19 Appendix R program, seismic improvements and the
20 environmental qualification program and have found
21 them to satisfactorily meet regulatory requirements.

22 The work to return systems to service is
23 gaining momentum. We have seen improvement in doing
24 work right the first time without error. We're
25 bringing the entire physical plant condition to an

1 improved state of readiness to permit fuel load and
2 initial heat-up of Unit 2.

3 The common thread that weaves throughout
4 everything we are doing at the site is having the
5 right people in place. The important thing about the
6 site organization is that we now have the right team
7 with proven experience at Browns Ferry. I could not
8 have said this when we met with you last. I see a
9 commitment by this organization to reach the standards
10 we have established in our corporate objectives and I
11 see the willingness to learn not only from our
12 mistakes at Browns Ferry but the lessons learned of
13 others.

14 (Slide) I would like now to review with
15 you improvements we have made in the organization and
16 the management over the last year and a half at Browns
17 Ferry. I'd like now to shift to slide 4.

18 The shaded boxes in the site organization
19 chart are positions where we have been able to add
20 experienced people to supplement the existing staff at
21 Browns Ferry. In addition, the number of direct
22 reports to key site management who have been changed
23 is also shown. You'll notice that with the little
24 numbers there of 3/5, 2-3, what have you.

25 The ability to hire people with good

1 experience and a proven track record is demonstrated
2 by three of the managers we have hired since July
3 1989: Lew Myers, the plant manager; Bret McKinney, our
4 technical support manager; and Max Herrell, our
5 operations manager.

6 Prior to joining TVA, Lew had successful
7 assignments in the plant management organizations at
8 the Waterford and Saint Lucie plants where he held SRO
9 licenses, with a total 21 years nuclear power plant
10 experience.

11 Bret McKinney came to us from the Wolf
12 Creek where he held management positions, and I might
13 add two of those in the plant organization and also
14 was SRO licensed, with 16 years nuclear power plant
15 experience.

16 Max Herrell came to us from Rancho Seco
17 plant management where he was SRO certified. He was
18 also an SRO at Salem and SRO certified at Wolf Creek,
19 where he has a total of 20 years nuclear experience.

20 All of these managers, along with many
21 more hired, successfully held management positions at
22 other plants.

23 When we were here last year, I told you I
24 was going to make several organizational changes. We
25 have been able to reduce the number of direct reports

1 to the site director and the plant manager by
2 streamlining the organization. As you may recall, I
3 wanted to establish a separate position for a plant
4 operations manager, i.e. a number two man in the
5 plant. This we have done.

6 With the site director position, we
7 combined two direct reporting functions under a single
8 manager. The site programs and site support manager
9 position was put in place to relieve the site director
10 position of the heavy administrative burden it had
11 before. Not only do we have a better staff as a
12 result of these changes, we now have a staff that is
13 capable of operating the plant.

14 This concludes what I have to say. I'd
15 like now to turn to Ike Zeringue and let him talk more
16 specifically about the work that remains to be done
17 prior to restart.

18 Ike?

19 MR. ZERINGUE: Good afternoon, Mr.
20 Chairman, members of the Commission.

21 As Oliver said, I'm the site director at
22 Browns Ferry, responsible for restart and operation of
23 Unit 2.

24 (Slide) Slide 5, please.

25 Today I'd like to discuss the schedule-

1 related problems we've had at Browns Ferry, what we've
2 done to fix the problems, and the results.

3 The discussion will be in three parts.
4 I'll discuss schedule issues, the current status and
5 the Unit 2 return to service schedule.

6 (Slide) Slide 6, please.

7 Four schedule issues impacted our restart
8 date. The first was development of work estimates
9 based on conceptual design rather than the actual
10 design itself. I'll use a cable issue to try to
11 explain the point.

12 When we laid out our restart schedule, we
13 assumed a certain percentage of the cable would be
14 installed in conduit. We assumed a certain percentage
15 would be installed in tray. With the conceptual
16 design, we knew the end devices that were impacted and
17 we knew the termination points, but we really didn't
18 know the field routing of the cable, so we had to make
19 estimates based on what knowledge we had at that time.
20 As it turned out, the percentages that we had assumed
21 were incorrect. Much more tray was run in conduit
22 than in cable trays themselves, which will result in
23 us having to install the conduit, conduit hangers and
24 pull the cable through. So, it significantly added to
25 the work effort.

1 The next issue was emergent work. The
2 SPAE/SPOC process, which is our system return to
3 service process, resulted in our identifying
4 additional work on a system basis. I'll discuss that
5 in further detail a little bit later.

6 Cable issues had an impact. When we were
7 here in July, an issue was raised with regard to the
8 cable problems, the pull-by problems at Watts Bar. As
9 a result of that, we tested approximately 600
10 conductors at Browns Ferry. This did indeed impact
11 our work activities. It pulled a lot of electricians
12 off existing work as we went into the testing phase.
13 We had to walk down the conduits, we had to signal
14 trace the cables, determinate, high pot, reterminate
15 and perform functional testing to verify
16 reinstallation.

17 The other cable issue we had dealt with
18 qualification of cables. We had what we refer to as
19 our black snake problem. We had a number,
20 approximately 200 or so cables installed in a plant
21 with no jacket markings. Since there weren't any
22 jacket markings, we weren't able to verify the qualifi-
23 cation in that cable. We didn't know where it came
24 from. We had to replace it. Some we were able to
25 qualify by taking samples of the jacket material,

1 running tests and verifying the qualification of that
2 material. The large, large majority, however, was
3 replaced.

4 The next issue dealt with our assumptions
5 with regard to the percentage of required rework. In
6 the 790214 area, we made an assumption with regard to
7 how many hangers would have to be reworked or
8 replaced. We did sampling analysis prior to laying
9 out the schedule. We ran a number of stress problems
10 to see what the results would be. Then based on that
11 failure rate, we laid out the schedule. Those sample
12 analyses showed that we would have approximately 40
13 percent failure rate. When we were done with all the
14 stress analyses, the actual failure rate was
15 approximately 75 percent. So, that effectively
16 doubled our work effort in the hanger regime.

17 (Slide) Slide 7, please.

18 Now I'd like to back up and talk about our
19 system return to service process. It's really done in
20 two parts and I'll talk about the system plant
21 acceptance evaluation part first.

22 It's really a systematic method to assure
23 that the design basis has been established and
24 configuration verified. We list on the slide the
25 number of attributes, drawing discrepancies, ECN

1 closure, essential calculation verification, closure
2 of quality issues, critical drawing restoration,
3 program, special program closures. This process, in
4 effect, is the method by which the project engineer
5 certifies to the facility that the system from a
6 design perspective is ready to support operation.

7 (Slide) The second phase of that we call
8 our system preoperability checklist. SPOC is a
9 systematic method to ensure that the maintenance
10 testing is complete and configuration control is
11 established. It's the plant's way of ensuring that the
12 system is indeed ready to support operation. Again,
13 we list on the slide a number of the attributes of the
14 process, the testing, the maintenance, the licensing,
15 procedures, system configuration and walkdowns. We do
16 detailed walkdowns of each system as part of this
17 process, utilizing people from Operations,
18 Maintenance, Tech Support and the NRC residents
19 participate in this process.

20 This is really the keystone to our system
21 return to service process. Our recovery of this
22 facility is very detailed.

23 The process works. As we've gone through
24 the process, we've identified a number of items that
25 we had to fix, both from a design perspective and from

1 a field perspective through the walkdown process.
2 That has added a fair amount of work to the schedule.

3 (Slide) Now, moving again to the larger
4 issues, with regard to productivity -- we're back on
5 slide 6. With regard to productivity, we made certain
6 assumptions when we laid out the schedule. We assumed
7 that we'd be working at rates consistent with normal
8 industry averages, unit rates for hanger installation,
9 for cable pulls, those kinds of things. It took us a
10 protracted period of time to achieve those unit rates.
11 Since we were slow in achieving those unit rates, our
12 schedule moved out.

13 Now, we've increased the productivity from
14 30 to 50 percent. That's really a pretty dramatic
15 increase for us. We got there, but it took us an
16 extended period of time to do that and that did in
17 fact impact our schedule.

18 CHAIRMAN CARR: That's 30 to 50 percent of
19 what?

20 MR. ZERINGUE: Related work. It's an
21 industrial engineering measure of work activities
22 within the field.

23 MR. KINGSLEY: We measure work in two
24 fashions. We measure direct work, which is tied with
25 a craft being out and, say, installing a hanger

1 itself. Then we measure total related work which
2 could be a job briefing, could be that individual
3 waiting for a QC to come do an inspection. It could
4 be suiting out or going in the radiation controlled
5 area, that type thing. What Ike is talking about is
6 the total related work was only 30 percent. It's now
7 up to 50. The direct work in some cases was down in
8 the order of nine to ten percent when we started doing
9 this. That is up almost double since then.

10 CHAIRMAN CARR: Now, that's hours involved
11 in the total job?

12 MR. KINGSLEY: Yes, right.

13 CHAIRMAN CARR: Okay.

14 MR. ZERINGUE: The fourth schedule issue had
15 to do with the manner in which we actually scheduled.
16 I'll use the term "scheduled for success." Again,
17 I'll use an example -- a cable pull as an example.

18 We had to replace the cable to the RHR
19 pump. It's a very, very long run of cable. It was
20 installed in four inch conduit. We elected to use the
21 existing conduit and attempt to pull the new cable
22 through the existing conduit. We had concerns with
23 this, the concern being the pull tension required. We
24 thought there would be a possibility, a strong
25 possibility that we may exceed the pull tension.

1 However, we elected to try to run it through the
2 conduit. Our estimates on using the existing hardware
3 show that the activity would be completed in about 6,000
4 manhours. Replacement, we estimate, is somewhere in
5 the vicinity of 50,000 manhours.

6 As we pulled the cable, we did, in fact,
7 exceed the pull tension. So, we had to pull back the
8 cable, remove the old conduit, install new conduit and
9 then repull. The actual duration of the activity was
10 in excess of 60,000 manhours. Those kinds of success
11 assumptions did, in fact, impact what we were doing.

12 COMMISSIONER REMICK: That was for pulling
13 cable to the RHR?

14 MR. ZERINGUE: Yes, sir.

15 COMMISSIONER REMICK: Thirty man years of
16 effort?

17 MR. KINGSLEY: No. Explain it, Ike.

18 MR. ZERINGUE: It's a very, very long
19 cable run down to the RHR pumps. The entire effort--
20 this includes the design effort to route seismically
21 qualified conduit, design seismic hangers for the
22 conduit and then install that and pull the cable.

23 (Slide) I'd like to discuss now the
24 current status with regard to the issues we just went
25 over.

1 We talked about utilization of conceptual
2 design for estimates early on. That's behind us now.
3 The design is well over 99 percent complete and well
4 over 95 percent of the work plans for field
5 installation are complete. We now know the
6 commodities that we have to deal with. Those have
7 been factored into our schedule so we'd know what we
8 have to do. So, the first issue of conceptual versus
9 actual is behind us.

10 With regard to emergent work, the cable
11 issues that we discussed, that's behind us. The
12 failure rates, we know what they are now. There
13 aren't any assumptions based on that. In fact, a
14 great majority of the hanger work that had the major
15 impact is done. And the continuing source of emergent
16 work from our SPAE/SPOC process has, in fact, been
17 factored into our schedule. So, in essence, with
18 regard to emergent work, two major issues, actual
19 versus conceptual, is done. The breakage rates are
20 known and we factored in the results of our SPAE/SPOC
21 process.

22 COMMISSIONER REMICK: Just a question.
23 Using the RHR as just an example, when you replaced
24 the old cable, did you find that it was damaged or did
25 you know that it was damaged in advance or were you

1 uncertain?

2 MR. KINGSLEY: It was replaced for
3 ampacity reasons. It was not replaced for damage.

4 COMMISSIONER REMICK: For capacity?

5 MR. KINGSLEY: Right. Ampacity.

6 COMMISSIONER REMICK: I see. Okay.

7 Did you find when you replaced cables like
8 this that they were damaged from too much pulling
9 tension when they were installed? Did you find much
10 of that?

11 MR. ZERINGUE: No, sir. When we did our
12 high-pot testing to evaluate the pull-by damage, we
13 identified no pull-by damage associated with our
14 insulation practices. We did note, however, a
15 manufacturing defect in one of the cables. We sent
16 that to the University of Connecticut for analysis.
17 We had a cable with a puncture in it. We did identify
18 that. We found cable that was damaged because of a
19 missing bushing on junction box. As a result of that,
20 we inspected some 330 or 331 junction boxes to try to
21 identify any further damage to isolate this issue.

22 COMMISSIONER ROGERS: What kind of margin
23 do you have now of ampacity now that you've replaced
24 this cable?

25 MR. ZERINGUE: Jim Hudson, our chief

1 engineer, is here.

2 MR. KINGSLEY: Jim, do you want to answer
3 that?

4 COMMISSIONER ROGERS: Would you go from 2?

5 MR. KINGSLEY: Stand up here at the
6 microphone.

7 MR. HUDSON: I'm Jim Hudson, Chief
8 Electrical Engineer.

9 In the ampacity evaluation, it was
10 primarily focusing on the as installed configuration.
11 With regard to allowable margin we have remaining, it
12 looked at the operating loads and the margin we have
13 remaining is very small in the trays for future
14 additions. So, we're looking at them very closely as
15 we do modifications of those trays.

16 COMMISSIONER ROGERS: Okay.

17 MR. KINGSLEY: What about with the, say,
18 repulling the cable to the RHR. I think that's what
19 Commissioner Rogers really asked you.

20 MR. HUDSON: With regard to the RHR cable?

21 COMMISSIONER ROGERS: Yes. What was your
22 margin before you decided to add ampacity and what is
23 it now that you've pulled new cable?

24 MR. HUDSON: Well, this cable went back
25 into a conduit configuration. So we establish

1 approximately 25 to 35 percent margin over the
2 operating current of the load. The failure itself,
3 I'm not sure what the actual results showed on the
4 cable prior to its replacement. But we now have 25 to
5 35 percent margin on the operating current of the
6 load.

7 MR. ZERINGUE: Okay. We initiated some
8 productivity enhancements. I'll step through some of
9 the things that we have done.

10 We placed additional field supervision in
11 the field with a modifications area. We added the
12 number of field engineers in the field to better
13 support the craft, trying to get a ratio of one field
14 engineer per crew to help resolve any issues the craft
15 may have with regard to installation. We added
16 additional planning support for the superintendents.
17 We streamlined a number of the processes and
18 procedures and we've introduced milestone coordinators
19 to coordinate those activities necessary to lead us to
20 and to complete a particular milestone, like
21 integrated leak rate testing, hydro dry well closure,
22 those kinds of things.

23 The next few slides show you some of the
24 results of our productivity enhancements.

25 (Slide) You can see in the hanger area,

1 slide 10, before July of last year when we spoke with
2 you, we'd only installed 148 hangers. Since then
3 we've installed almost 2,000. We have 266 remaining.

4 (Slide) The next slide shows our progress
5 in the cable installation area. Again, you can see
6 the upward trends with regard to work activities
7 completed.

8 Now, this is all well and good, but I
9 think what is most important as we accomplished these
10 increasing trends in productivity for these hardware
11 items, we've reduced the rejection rate by a factor of
12 four. We're very proud of that.

13 CHAIRMAN CARR: But the units on that
14 cable is what, thousands of feet or --

15 MR. ZERINGUE: Feet.

16 CHAIRMAN CARR: Feet.

17 COMMISSIONER ROGERS: Thousands of feet.

18 MR. ZERINGUE: The units are feet.

19 (Slide) The ECN/DCN closure, again you
20 can see the increase.

21 (Slide) Now, the next slide shows a
22 reduction in our maintenance work order backlog. We
23 had approximately 7,500 maintenance items backlogged
24 in July. We've reduced that number now down to
25 approximately 2,500. Of those, 500 are awaiting

1 tests. The work is complete. Now, this is a strong
2 reduction from our perspective in that as we go
3 through the walkdown processes in our SPAE/SPOC
4 process, we identify quite a number of items. Yet as
5 we're bringing in a lot of additional work, we're
6 still bringing the maintenance backlog down. We're
7 very proud of that. Our goal at restart is to have
8 this number below 600. When I say below 600, those
9 are what we refer to as true backlog items.

10 COMMISSIONER ROGERS: Now, this slide ends
11 the beginning of August.

12 MR. ZERINGUE: I believe that's the end of
13 August.

14 COMMISSIONER ROGERS: End of August
15 rather. Excuse me. Where is it now? Where are you
16 today?

17 MR. ZERINGUE: We're about 130, Lew, below
18 that now?

19 MR. MYERS: Backlog?

20 MR. ZERINGUE: Yes.

21 MR. MYERS: We're at about 1940 left.

22 MR. ZERINGUE: That's right. We have to
23 add to that 1940 the 500 or so that are awaiting post-
24 modification testing.

25 COMMISSIONER ROGERS: Well, is that 500 in

1 these numbers?

2 MR. ZERINGUE: Yes, sir.

3 COMMISSIONER ROGERS: Well, what does that
4 mean, that you've got 2,300 then total? Is that what
5 you're saying?

6 MR. MYERS: We have 1940 work items to
7 complete. We have some P&T testing that prevents us
8 from closing out our testing, prevents us from closing
9 out the activity. So, if you look at actual work,
10 there's about 1940 work orders to work yet.

11 CHAIRMAN CARR: Does that include
12 preventive maintenance as well or is this all
13 corrective?

14 MR. ZERINGUE: This is all corrective
15 maintenance.

16 CHAIRMAN CARR: Okay.

17 MR. ZERINGUE: Our preventive maintenance
18 backlog has shown more drastic reductions than this.

19 CHAIRMAN CARR: Okay.

20 MR. ZERINGUE: (Slide) With regard to
21 current schedule status, I'd like to go over the
22 contingency measures, the margin we factored into the
23 schedule. We've added 50 percent when we assumed
24 duration of the work in a large bore hanger area.
25 Small bore, we're almost done. We have some 20 or so

1 left.

2 In the electrical area, we've added 30
3 percent to the cable and conduit work. We've
4 increased the assumed duration by 30 percent. We've
5 only assumed an 80 percent utilization of craft. That
6 gives us 20 percent in reserve to support the
7 schedule. They'll actually be there working, but
8 we've assumed that there were only 80 working when we
9 laid out the schedule.

10 CHAIRMAN CARR: Eighty percent of the
11 available craft?

12 MR. ZERINGUE: Yes, sir.

13 CHAIRMAN CARR: Okay.

14 MR. ZERINGUE: We assume 12 days lost
15 production due to the holidays. We know for a fact
16 that during the holiday season we're not as productive
17 as we need to be. We've included 12 days of lost time
18 to accommodate that. We've added 30 days of
19 contingency. As we go through the process, we'll be
20 identifying additional items. So, we've added simply
21 30 days.

22 CHAIRMAN CARR: Now, all those additions
23 are to what I would call an optimistic schedule? I
24 mean you say you added 50 percent duration or 30
25 percent duration or 12 days to this? You took the

1 schedule that was an all success schedule and added
2 these on top?

3 MR. ZERINGUE: We added -- yes. Let me
4 try to explain the duration increases. We've added 50
5 percent to the unit rates we have been able to
6 achieve. So this is truly a margin add.

7 CHAIRMAN CARR: All right.

8 COMMISSIONER REMICK: Now, my question.
9 When did you -- you added it to what, to your estimate
10 of September 1 or July 1?

11 MR. ZERINGUE: We have in our project
12 schedule all of the work activities discreetly
13 identified and logically tied. To those in a hanger
14 area, an electrical area, we simply increase the time
15 span by 50 percent and by 30 percent for each of those
16 discreet items in our project 2 schedule. It's a
17 computerized schedule.

18 COMMISSIONER REMICK: Okay. But at some
19 point in time, you had a schedule and then you revised
20 it, is that right, with these changes, these
21 assumptions or addition of days and so forth?

22 MR. ZERINGUE: That's correct.

23 COMMISSIONER REMICK: When did you do
24 that? Is that --

25 MR. ZERINGUE: We did that --

1 COMMISSIONER REMICK: Is that a recent --

2 MR. ZERINGUE: Yes.

3 CHAIRMAN CARR: Yesterday.

4 MR. ZERINGUE: No, sir. We did that last
5 week. That was close.

6 COMMISSIONER REMICK: Okay. All right.
7 So, it's a recent estimate.

8 MR. ZERINGUE: Yes.

9 MR. KINGSLEY: I brought an independent
10 team in to take an in-depth look at the schedule and
11 this is a result of some of the looking at that.

12 COMMISSIONER REMICK: Okay.

13 CHAIRMAN CARR: Now, I'm getting ahead of
14 you, but does this amount of time account for the
15 bracket in the next slide?

16 MR. ZERINGUE: Yes.

17 CHAIRMAN CARR: Okay. That's what the
18 margin is between those two dates then?

19 MR. ZERINGUE: No, sir. The margin --

20 CHAIRMAN CARR: The margin's in the first
21 date?

22 MR. ZERINGUE: That's correct.

23 CHAIRMAN CARR: Okay.

24 MR. ZERINGUE: (Slide) So, we'll go to
25 the next slide, slide 15.

1 Those assumptions that we just discussed
2 result in a fuel load window between January 25th and
3 February 14th and a criticality window between March
4 21st and April 10th.

5 COMMISSIONER ROGERS: Okay. Just to be
6 clear on that, that January 25th date then includes
7 these margins that you've just stated?

8 MR. ZERINGUE: Yes, sir.

9 CHAIRMAN CARR: And so the next 19 days is
10 additional in the window?

11 MR. ZERINGUE: Yes, sir.

12 CHAIRMAN CARR: Okay.

13 MR. ZERINGUE: We've looked at the
14 schedule very hard and, as I said, we've made a number
15 of assumptions. We think this is a very achievable
16 schedule.

17 Now, I also want to make clear that we
18 will not be driven by schedule. We will take whatever
19 time is necessary to ensure that the quality of the
20 work meets the standards we've set.

21 CHAIRMAN CARR: Okay.

22 MR. ZERINGUE: (Slide) The last issue I'd
23 like to talk about is the TMI action items. There
24 were 109 items applicable to Unit 2. One hundred and
25 five have been completed. Two remain to be completed

1 before restart. Those are noble gas and
2 iodine/particulate monitors, and the post-accident
3 sampling system.

4 The remaining two items are partially
5 complete, the safety parameter display system and our
6 detailed control room design review.

7 COMMISSIONER REMICK: The review or the
8 modifications as a result of the review?

9 MR. ZERINGUE: The review is complete.
10 We've partially implemented the modifications.

11 COMMISSIONER REMICK: Why has that taken
12 so long since you've been shut down?

13 MR. KINGSLEY: Let me answer that.

14 COMMISSIONER REMICK: Sure.

15 MR. KINGSLEY: For a long period of time,
16 there had been a plan that Browns Ferry would restart
17 in a very short period of time. It did complete the
18 detailed control room design review. When I came
19 aboard, we were in the process of dealing with staff
20 about running a number of the significant human
21 engineering deficiencies, commonly called HEDS,
22 through our restart criteria. We did that. After I
23 sat down and around Christmas time of this last year
24 when it became obvious to me that our schedule for
25 success was not working, we went back and added a

1 number of items. We added the SPDS, which we had
2 never planned on. We started working on that about a
3 year earlier than that. I got a team in place to do
4 that.

5 So, the answer is that we'd never planned
6 to do some of this work. So, we really bellied up and
7 added about six or eight of the TMI action items,
8 including these partials, at that time. That's why
9 we're where we are today.

10 CHAIRMAN CARR: You scheduled it so
11 optimistically that you couldn't get your work done?

12 MR. KINGSLEY: Yes, sir.

13 CHAIRMAN CARR: Okay.

14 MR. KINGSLEY: That's exactly right.

15 COMMISSIONER REMICK: You indicated the
16 SPDS you had never planned to do?

17 MR. KINGSLEY: Not until I came to TVA. I
18 got a special team of people that had worked for me at
19 Grand Gulf, Rick Rogers, who used to work for NRC.
20 He'd helped me put that in over there. He came with
21 me about six months after that and we started a
22 special team to put that in. We bought the computer
23 from SAIC and we've made a lot of progress in that.
24 In fact, we have a lot of hookups that are already in
25 place. It will be the final system. It just doesn't

1 have quite all the redundancy that a fully qualified
2 safety parameter display system will have.

3 COMMISSIONER REMICK: I was under the
4 impression --

5 CHAIRMAN CARR: I think that they had not
6 planned to put it in before start-up.

7 MR. KINGSLEY: Oh. That's right. Oh, I'm
8 sorry. I'm misleading you. I apologize.

9 CHAIRMAN CARR: It just never fit the
10 timing until they admitted they couldn't get where
11 they were going.

12 MR. KINGSLEY: That mistake first
13 refueling outage, which would be sometime down the
14 road.

15 COMMISSIONER REMICK: Okay.

16 COMMISSIONER ROGERS: If I could just go
17 back for a second. Before you revised your schedule
18 to take into account contingencies and other
19 margins, when would you have been planning fuel load?

20 MR. ZERINGUE: October 13th.

21 COMMISSIONER ROGERS: October 13th was
22 your earlier date?

23 MR. ZERINGUE: Yes, sir.

24 COMMISSIONER ROGERS: So you've moved that
25 back to January 25th?

1 MR. ZERINGUE: Yes, sir.

2 COMMISSIONER ROGERS: Okay.

3 MR. ZERINGUE: Lew Myers, our plant
4 manager, will discuss operational readiness.

5 MR. MYERS: Good afternoon. I'm Lew
6 Myers, plant manager.

7 (Slide) I'd like to discuss the operating
8 philosophy of Browns Ferry. I would also like to
9 include some of the standards that we use to convey
10 this philosophy throughout our organization.

11 First philosophy. We believe that our
12 operating philosophy is rooted in both accountability
13 and professionalism. To generate this philosophy, we
14 must have a quality plant, a quality staff and a
15 quality working environment. We want to develop an
16 attitude that when a problem surfaces, a member of the
17 site management team jumps up and says, "I've got the
18 problem and I'm going to solve it."

19 We also want our employees to have both a
20 positive and a professional attitude. When a problem
21 arises, I expect the employee to stand up and identify
22 the problem to his supervision without fear of
23 reprisal. Our employees know that they can take the
24 time to do things right. If a task they are
25 performing is unclear, we want them to stop and get

1 their questions resolved prior to continuing.

2 (Slide) Next slide.

3 When we investigate personnel areas, we
4 use the INPO Human Performance Enhancement System. We
5 want to make sure that we know why a person made an
6 error. As you can see from this chart, we have
7 reduced the number of errors in our plant
8 organization.

9 Another top priority at Browns Ferry is
10 material condition and housekeeping. A good material
11 condition and housekeeping is essential for a quality
12 plant. I have demanded a high level of management
13 involvement and frequent inspections throughout the
14 plant. We are presently developing a new program that
15 divides the plant into 32 areas. Each area will be
16 posted with a person's name. That person will have
17 the responsibility of ensuring that problems are both
18 identified and resolved in his area.

19 Next, standards, things that we have done
20 to ensure this philosophy has been implemented.
21 During the past year, we have hired some additional
22 quality managers to supplement our management team.
23 Please note that I use the word "supplement." Our
24 managers have proven track records and I am very
25 satisfied with their performance to date. We hold our

1 managers accountable. We put them in charge and
2 emphasize accountability to them. In turn, this is
3 emphasized throughout their organization.
4 Additionally, each manager establishes performance
5 standards for their respective areas.

6 For example, we have recently revised our
7 operator code of conduct. All operators and managers,
8 including Mr. Kingsley, have signed this document.
9 This standard identifies what we believe to be the
10 philosophy necessary to be a professional operator.

11 (Slide) Next slide, please.

12 To assure these standards are implemented,
13 we monitor for results. We do this with our quality
14 assurance organization, our independent safety
15 engineering group and finally our managers in the
16 field. Additionally, key performance items are
17 monitored and trended by each department. These items
18 are used to prepare a monthly report that ensures that
19 we meet expected standards.

20 We have made good progress. We are not
21 defensive, but are proactive and self-critical. We
22 have lowered a threshold for the incident
23 investigations and we determine root causes. We want
24 our people to get to the bottom of problems and near
25 misses. Having an incident investigation threshold

1 that deals with near misses will help prevent problems
2 from ever occurring. When a problem does occur, we
3 get the people involved in the problem to help
4 determine both the root cause and the need corrective
5 actions.

6 We have a positive disciplinary policy
7 that I thoroughly support. However, I have little
8 tolerance for personnel errors as a result of
9 inattention to detail or carelessness. We are not
10 going to tolerate people that do not perform to high
11 standards. I have had to take some strong personnel
12 actions.

13 I'm encouraged. While not yet a
14 consistent high performer, we are prepared to restart
15 Browns Ferry. I will continue to strive to have my
16 organization become a high performer. It's a matter
17 of both personal and professional pride.

18 (Slide) Next I'd like to discuss our
19 surveillance program. As your staff reported in
20 Inspection Report 89-43, and in our most recent SALP
21 report, the surveillance program has been a problem at
22 Browns Ferry. In general, our surveillance program
23 just evolved over the plant life. Based on that
24 inspection, we decided that strong management
25 attention was needed. We formed several management

1 review teams to identify the problem.

2 We found that we had problems in three
3 principal areas, technical content, programmatic
4 issues and procedure implementation. In order to
5 solve these problems, we had to address each area
6 specifically.

7 First, technical content. In order to
8 strengthen the technical content of our procedures, we
9 improved the verification process. We now require
10 strong engineering involvement in the preparation of all
11 surveillance procedures. To date, we have revised
12 over 750 surveillance procedures. Additionally, we
13 strengthened our validation process to ensure that the
14 responsible writer or engineer monitors the procedure
15 during the first implementation. After this person
16 monitors the performance, he or she then makes the
17 needed corrections.

18 We have reviewed all of our surveillance
19 procedures to ensure that proper compensatory measures
20 are being taken and the required technical
21 specification frequencies are not exceeded.

22 Quality assurance has also performed a 100
23 percent audit of rewritten procedures to verify
24 compliance with technical specifications.

25 Next we address the programmatic issues.

1 We prepared administrative procedures that documented
2 the frequency of all surveillance testing and the
3 standards to be used when performing a test. We have
4 trained our people on these standards.

5 We put into place a computerized
6 surveillance scheduling and tracking program that
7 ensures surveillances are conducted within the
8 required intervals.

9 Finally, implementation. We have to make
10 sure that our people use procedures properly. We have
11 defined our expectations. We tell the person
12 performing the procedure that he or she is the owner.
13 We want them to take the time to do things right and
14 to stop if they find a problem with a procedure. We
15 tell the writer of the procedure that he or she is
16 responsible for the quality of the procedure. They
17 are responsible for reviewing all documents necessary
18 to prepare or revise a procedure. When a plant
19 problem that is procedure related is found, we hold
20 the writer and the reviewer accountable.

21 As a standard of professionalism, we have
22 to make our employees sensitive to procedure
23 adherence. My staff and I continually reinforce this
24 standard at staff meetings and at meetings with the
25 union representatives.

1 I am confident that the program will
2 support the restart effort. What remains now is to
3 monitor the implementation. I will not ask for
4 permission to start up without a quality surveillance
5 program.

6 (Slide) Next I want to address the
7 readiness of our plant staff. Specifically I will
8 talk about the licensed operators and their readiness
9 to safely operate Browns Ferry. The organization, the
10 experience level, our training program and finally the
11 professionalism of our operating staff are all
12 essential considerations in my confidence to restart
13 Unit 2.

14 First, the organization. Our operations
15 department has 26 senior reactor operators and 42
16 reactor operators assigned to a six shift rotation. I
17 feel that we are adequately staffed to meet all
18 contingencies. Our licensed personnel average over
19 seven years of nuclear plant operating experience.
20 This excludes the five operators licensed earlier this
21 year. We have to ensure that this experience level is
22 balanced on each shift.

23 Since we have been shut down for five
24 years, we have taken actions to supplement the
25 existing experience levels. I want to make sure that

1 each of these operators are familiar with the actual
2 plant operating conditions. All of our shift
3 operation supervisors have participated as an INPO
4 peer evaluator at operating facilities. Our shift
5 supervisors, assistant shift supervisors, and unit
6 operators will complete one week of hot license
7 experience at Monticello prior to restart.

8 Our operators have been trained on a
9 simulator for each of the planned power ascension
10 tests. Additionally, during power ascension, training
11 time is scheduled for each operator to perform
12 critical manipulations. For example, I have scheduled
13 time for each operator to have hands-on control rod
14 manipulations during low power physics testing.

15 Finally, our non-licensed operators. All
16 of our non-licensed operators have been sent to
17 Sequoyah for one week of training. I want them to
18 have recent experience in rad waste processing,
19 systems using live steam and plant control systems.

20 (Slide) Next, our operator training
21 program. In 1985, we had a large number of failures
22 in our requalification exams. The training program
23 was judged to be unsatisfactory. Once again, we
24 determined that strong management attention was
25 necessary.

1 As a result, the following actions were
2 taken. We installed an on-site simulator. We
3 increased the licensed operator training staff. All
4 operators who were holding a license at that time were
5 either sent through both the classroom and the
6 simulator portions of a hot license training program.
7 We expanded the requalification training for licensed
8 and non-licensed personnel from four to eight weeks
9 per year. This includes five weeks of simulator
10 training.

11 This upgraded program has weeded out poor
12 performers. At the present time, less than half of
13 the licensed operators who were here in 1985 are still
14 in operations. The results and the benefits of these
15 actions are now being realized, as demonstrated by our
16 most recent performance. In January of this year, 22
17 operators took the NRC requalification exam. One
18 hundred percent passed. In March, ten took the
19 initial licensed operator exam. One hundred percent
20 passed. I consider this program to be solid.
21 Additionally, the NRC recently determined that our
22 training program is fully satisfactory.

23 COMMISSIONER REMICK: I have a question.
24 Did you say your operators spend five weeks on the
25 simulator, full five 40 hours weeks or 200 hours?

1 That's quite a bit more than what INPO recommends.

2 MR. MYERS: Yes.

3 Finally, professionalism. The final
4 measure of a competent, licensed operator is his
5 demonstration of professionalism. We consider the an
6 operator's professionalism is demonstrated daily by
7 their attitude, their actions, their attire and their
8 sensitivity to operating details. We have taken steps
9 to ensure that our operators maintain an ownership
10 attitude toward the plant. I have personally
11 conducted several meetings where I dwell on reactivity
12 controls, ESF actuations, surveillance requirements,
13 procedure adherence, and a professional attitude as
14 established by our code of conduct.

15 We have completely revised our conduct of
16 shift operations procedure that establishes strict
17 standards for the code. We clearly spell out our
18 standards of operation. By standards I mean plant
19 communications, standards for procedure adherence,
20 standards for testing and standards for routine shift
21 operating duties.

22 I want you to know that we have a solid
23 group of managers within the plant staff group. The
24 management has a good balance of experience both from
25 within and outside of TVA.

1 In addition to our other initiatives, our
2 management team is focusing on scram reduction and
3 secondary plant reliability. We are reviewing all
4 previous scram reduction activities. This review has
5 resulted in a large preventive maintenance effort on
6 our main turbine, our main generator, our feed pumps
7 and our control valves.

8 I consider our operators ready to operate
9 Browns Ferry. We have a strong plant management team.
10 Shortly, all the systems will be turned over. I will
11 be accountable for setting priorities and a good
12 leadership role.

13 (Slide) My final area is the power
14 ascension program. The content of our program is the
15 result of TVA experience and other industry experience
16 such as Peach Bottom and Pilgrim and the NRC
17 regulatory guide for a near term operating license
18 plant start-up. The program consists of 32 tests and
19 closely resembles that of an NTOL plant. The power
20 ascension program would demonstrate the functionality
21 of our systems. Your staff and mine have had numerous
22 discussions regarding the scope of the power ascension
23 and I am pleased to learn that the NRC staff has
24 recently concluded that our power ascension program is
25 acceptable.

1 To assure controlled return to full power
2 operations, we have integrated seven management
3 assessment hold points in our test sequence. Your
4 staff has selected four of the seven as NRC points.

5 The vendor will be of great value. We
6 have arranged for GE to provide both technical and
7 management personnel throughout the duration of this
8 program. I will use these people as a good monitoring
9 tool. We have formed a management assessment
10 committee comprised of experienced plant personnel and
11 General Electric management to assist Ike and me in
12 performing a thorough, comprehensive assessment of the
13 plant's readiness to proceed to the next plateau.

14 I have just described my perspective of
15 the key areas needed for operational readiness. In
16 closing, I want again to state that we will be ready.
17 We have a quality plant, we have a quality staff and
18 we have a quality working environment.

19 Mr. Kingsley will now provide the closing
20 remarks.

21 MR. KINGSLEY: We've got one matter we
22 need to clarify on the simulator training. Ike is
23 going to talk about that.

24 MR. ZERINGUE: Generally, our simulator
25 training is four hours classroom, four hours on the

1 simulator. We're providing additional on simulator
2 time with regard to the training we're doing for the
3 power ascension program. We're doing special start-up
4 simulator training.

5 MR. KINGSLEY: In conclusion, I'd like to
6 say that we believe there are no significant, there
7 are some, technical and programmatic issues remaining
8 to be resolved for Browns Ferry Unit 2 for restart.
9 We do have work to be done. We have to do that in a
10 systematic fashion. As you have heard, we think we
11 have a handle on completion of this remaining work.
12 There will be assessments by a senior TVA management
13 team and the independent operational readiness review
14 team that I talked about who have already completed
15 two reviews on the Browns Ferry plant prior to our
16 coming back and requesting permission to restart.

17 I feel that our power ascension test
18 program will ensure a careful and deliberate process
19 to reach full power. We'll be conservative in this
20 restart. We'll be cautious and if any problems arise,
21 we won't hesitate to stop what we're doing and
22 reassess and reevaluate before proceeding.

23 Finally, I'd like to say one other thing.
24 The NRC staff deserves to be commended for their
25 commitment to the safe restart of Browns Ferry, for

1 their handling of a very large workload, and for their
2 professional conduct on the job and dealing with the
3 Tennessee Valley Authority.

4 Now we'd be happy to field any questions,
5 Mr. Chairman, that you might have.

6 CHAIRMAN CARR: Thank you.

7 Commissioner Remick?

8 COMMISSIONER REMICK: One thing that
9 struck me, Mr. Kingsley, that you said and Mr. Myers
10 said was -- you said, "We have the right people in
11 place," and Mr. Myers then says that the philosophy is
12 that management should stand up and say, "I have a
13 problem and I'm going to solve it," something to that
14 effect.

15 But when I read the most recent SALP
16 report and your response, there were lots of comments
17 in there that additional management attention needed
18 to be directed to problems, whether they were
19 maintenance, training and so forth. Although that
20 covers the period I guess roughly the year before this
21 past July, there seems to be somewhat of an
22 inconsistency. Now, is there a dramatic change since
23 that time that the staff made these comments?

24 MR. KINGSLEY: No, I don't think there's a
25 dramatic change, Forrest, at all. You take in the

1 maintenance area. We did have some areas to improve.
2 We haven't done a proper job in scheduling. We've had
3 a large maintenance backlog, as you've seen. We've
4 had to work that out. We've had problems with the
5 preventive maintenance program, but we are working
6 that out.

7 I look at the SALP and I think it is an
8 accurate report on the plant. We take that very
9 seriously. We have a detailed action plan on every
10 item that's in there. We made a commitment to the NRC
11 to resolve that. It's the only way I feel that we can
12 get better. So, I don't think that there is a
13 disparity between what you see in the SALP report and
14 where we are.

15 COMMISSIONER REMICK: The current
16 management team that you described to us, was that in
17 effect during that SALP period?

18 MR. KINGSLEY: Not that whole time at all,
19 no, sir. No way. We were able to bring in the
20 operations manager. The technical support manager
21 came in in the fall of this last year, some of them
22 even later than that, and we've seen some big
23 improvement in what this management team was able to
24 do.

25 COMMISSIONER REMICK: Okay. You also

1 referred to that there's been an improved safety
2 consciousness. Is there anything that you look at, is
3 there anything particular that you feel was effective
4 in raising that consciousness within the organization?

5 MR. KINGSLEY: You want to take it?

6 MR. ZERINGUE: Yes. Several items. We
7 talked about a number of them last time when we were
8 here with regard to how we view ourselves. We talked
9 about -- Lew mentioned an incident investigation
10 program. That's very crucial to us. If something
11 happens, people at Browns Ferry now understand that
12 it's incumbent upon us to understand clearly why it
13 happened so it won't happen again. We spent a lot of
14 time talking to the individuals themselves, explaining
15 to them that we need to take the time to do the job
16 right.

17 That might sound like rhetoric, but it's
18 really not. That's what we believe. If we stop when
19 we don't understand something and get that cleared up,
20 that's going to save us time. That's going to save us
21 errors. So, we're not trying to push people beyond
22 their capability. We need to understand why something
23 happened so we can prevent it from happening. That's
24 a very key item.

25 This is a very simple philosophy, but

1 because it's simple I think it works. The other is,
2 if you're not sure, stop. Get it cleared up. If we
3 can do just those two little simple things, we'll be
4 well on our way.

5 COMMISSIONER REMICK: Some of your old
6 plant people, older from being there before, did you
7 have any specific difficulty with trying to get them
8 to think that way?

9 MR. ZERINGUE: Absolutely. Yes, we had a
10 tough time with it. We certainly had a tough time
11 with it. I think at this point they're seeing results
12 though. We had to force this occur. But as people
13 saw that yes, indeed, this does help, then the buy-in
14 increased and we still need to continue to increase
15 that buy-in.

16 COMMISSIONER REMICK: Okay. You made a
17 statement and I'd just like to make sure I understood,
18 that when you were talking about the system pre-op
19 checklist you indicated that the NRC residents
20 participated.

21 MR. ZERINGUE: Yes, sir.

22 COMMISSIONER REMICK: The word
23 "participated" surprised me a little bit and I wonder
24 what you meant by participated.

25 MR. ZERINGUE: We have walkdowns of the

1 systems as part of the process. The NRC residents
2 participate in those walkdowns of the system.

3 COMMISSIONER REMICK: As observers? When
4 you say participated, I'm not quite sure how to draw
5 the line.

6 MR. ZERINGUE: They observed the process
7 and at times they're critical of the process. We
8 receive quite a bit of input from the residents with
9 regard to the quality of the walkdowns that we're
10 doing.

11 MR. MYERS: Let me say something.

12 COMMISSIONER REMICK: Yes, sure.

13 MR. MYERS: Each one of the system
14 engineers have been instructed that any time they're
15 doing something with their particular system that the
16 NRC might be concerned about, to notify them. That
17 gives them the opportunity to look at what we're
18 doing. We've developed a matrix of people to do
19 walkdowns with for each system that has management
20 involvement, that has operations involvement,
21 maintenance involvement and the system engineer
22 involvement. Whenever we're doing something that the
23 NRC might be interested in, we notify them and we tell
24 them what we're doing.

25 COMMISSIONER REMICK: I assume they're

1 doing this as observers.

2 MR. ZERINGUE: Participate was a bad word.
3 Really, it's a critical observation of the process.

4 MR. KINGSLEY: It's not in cahoots with or
5 something like that.

6 COMMISSIONER REMICK: Thank you. All
7 right.

8 You mentioned the STA. What's your
9 philosophy, TVA or Browns Ferry, on STA? Do you use
10 them as a second SRO on shift or as the separate stand
11 alone STA? If the latter, do you license them or
12 encourage them to be licensed?

13 MR. KINGSLEY: Forrest, they were in a
14 separate organization when I came to TVA. They were
15 in the technical support group. We have moved them to
16 the operations group. They now functionally report to
17 operations. They're functioning with those shifts.
18 We're in the process of licensing these people now.
19 We do have some of those people licensed. We don't
20 have all of them, but we've made, I think, a big
21 improvement there. They're an integral -- much more
22 an integral part of the team than they were.

23 COMMISSIONER REMICK: But they are a
24 separate member? They aren't the second SRO?

25 MR. KINGSLEY: No, they're a separate

1 member entirely and we intend to keep them there. We
2 have a senior shift operating supervisor. We have an
3 assistant shift operating supervisor, both licensed
4 SROs, and then we have the STA. We've also added
5 another senior reactor operator who supervises our
6 auxiliary unit operators out in the field. That was a
7 lessons learned from other places and at the Sequoyah
8 plant where we were not controlling those people to
9 the fashion I thought we should. So, we've added that
10 also in our organization.

11 COMMISSIONER REMICK: I see. Okay.

12 Some time ago, the ACRS expressed some
13 concern during power ascension programs, concern over
14 operating for lengthy periods of time at relatively
15 low power and concerns that you're operating in a
16 condition where systems were not necessarily designed
17 for. Do you have any concerns on your power ascension
18 program about staying too long at low power levels and
19 so forth? Have you given any thought to that?

20 MR. MYERS: Yes. We developed our program
21 based on looking at Pilgrim and other similar plants.
22 The plateaus we picked to operate at we feel are
23 similar to the -- about the same plateaus they operate
24 at. So, we should be able to operate there pretty
25 reliably. In fact, usually around the 60 percent mark

1 or 70 percent mark you're probably most reliable and
2 you can lose a feed pump or something and not even
3 have a problem.

4 MR. KINGSLEY: I'm not aware of those
5 specific concerns. We'll go back and check that. We
6 did send a team to the Pilgrim plant to look at their
7 entire test program and do some lessons learned.
8 We've also had people that have learned from Peach
9 Bottom also and their test program. But we'll look
10 specifically at that --

11 COMMISSIONER REMICK: Okay.

12 MR. KINGSLEY: -- because we're not aware
13 of that specific concern.

14 COMMISSIONER REMICK: Yes. I don't think
15 it was around the 60 or 70 percent, but down at lower
16 power levels, if you have extended periods of question
17 or you have things throttled back so far and so forth
18 that they aren't an optimum position.

19 MR. ZERINGUE: Our test plateaus are well
20 above that.

21 COMMISSIONER REMICK: I see. Okay.

22 One last question, just to provide you the
23 opportunity, if you wish. Do you wish to address
24 anything to the Commission on the Commission's
25 proposed modification to its fitness for duty rule?

1 MR. KINGSLEY: Well, we feel very strongly
2 that it is management's right if someone preliminarily
3 tests positive that we should be able to take those
4 people off. We feel like it would be very serious
5 consequences if we were to have any type event with
6 that person particularly in license duties or in any
7 other responsible -- doing safety-related work. We
8 hope you people support that. We'll be filing some
9 official responses within the next two weeks on that.

10 COMMISSIONER REMICK: Okay. Thank you.

11 Thank you, Mr. Chairman.

12 CHAIRMAN CARR: Commissioner Curtiss?

13 COMMISSIONER CURTISS: In view of the
14 condition of my voice here, I just have one question.
15 Could you address the steps that you've taken since
16 you were here last on the question of employee
17 harassment and intimidation, what procedures you've
18 established and how successful you think you've been in
19 wrestling that problem down?

20 MR. KINGSLEY: We'd be happy to. We've
21 done a number of things since we were here last.
22 We've significantly improved the communications at all
23 of our sites. We now have a very good procedure where
24 the Office of Inspector General investigates any case
25 either brought by our employee concerns or through a

1 Department of Labor case so we get a good, independent
2 outside review of that so that we can take action.

3 We also now take cases which we call
4 management and personnel, i.e. they have not gotten to
5 the I&H situation and we require immediately that the
6 Vice President responsible for that functional area
7 get involved in that, senior human resources
8 management and top site management involved, and we
9 have prevented a number of cases.

10 Now, to use the Browns Ferry plant as an
11 example, we're averaging anywhere from eight to nine
12 concerns down there per month total brought to our
13 employee concerns program. We have only had four -- I
14 take that back. It's six cases brought either through
15 our employee concerns program which were elevated up
16 to the Inspector General involving intimidation and
17 harassment. All six of those were found to not exist.
18 We did have one case of co-worker sexual harassment.

19 With respect to the Department of Labor
20 situation at Browns Ferry, we've had a total of 16
21 cases at that site over the entire period since
22 Section 210 has been in effect. Seven of these cases
23 have been totally resolved. All of those were in
24 favor of TVA. And the other nine we've had six of
25 those investigated at the wage and hour level. All of

1 those have been in favor of TVA. We have one that
2 went up to the Secretary of Labor. It's in favor of
3 TVA. And we have two others that are currently being
4 investigated.

5 So, we feel like we've done a very good
6 job. We are also seeing a down turn in the number of
7 Department of Labor cases filed from 1990 to 1989 from
8 an overall standpoint.

9 The traffic is higher, Commissioner
10 Curtiss, at our Watts Bar plant. We still have
11 additional work. As you know, I now have an
12 independent counselor working directly for me. The
13 employee concern staff works for me. We have started
14 another training program, very fundamental, for some
15 200 key managers at our Watts Bar plant and I think
16 we'll see some very good results. We have another
17 briefing with the Board and the combined group there
18 next week reviewing that entire situation. So, I
19 think we're making progress.

20 COMMISSIONER CURTISS: Thank you.

21 CHAIRMAN CARR: Commissioner Rogers?

22 COMMISSIONER ROGERS: Yes.

23 Mr. Myers, you mentioned that your
24 operator code of conduct was modified. Can you
25 indicate what the changes were that were made and what

1 do you think was their significance?

2 MR. MYERS: If you look at the actual
3 codes, it's the same code. We went back and got the
4 code improved. It wasn't hanging at the right places.
5 I didn't find that people knew the code. At the last
6 two licensing banquets that we've had, I've gone over
7 the code with the operators. So, we framed it, we
8 made it larger and we made each operator sign it and
9 then we signed onto it.

10 COMMISSIONER ROGERS: But the content --

11 MR. MYERS: The content is basically the
12 same as it was.

13 MR. ZERINGUE: We essentially had a code
14 that was hanging in the closet.

15 MR. MYERS: That's right.

16 COMMISSIONER ROGERS: So, you brought it
17 out and got people on board.

18 MR. MYERS: Yes.

19 COMMISSIONER ROGERS: You have had a large
20 number of management position changes. I wonder what
21 your comment is with respect to institutional memory.
22 When you make that many changes in significant
23 positions whether there is some danger of losing the
24 experience that you've had over the years from people
25 who are no longer in key positions and replaced by

1 people from coming outside the organization? I just
2 wonder what your thoughts are on that question of
3 institutional memory.

4 MR. MYERS: From my perspective, looking
5 at the organizations and my plant staff, in every
6 organization that I have, I have a very good balance
7 of previous experienced people and people from
8 outside, looking at that situation right now. Ike was
9 talking awhile ago about the turning over systems and
10 the attitudes. My perspective is you can feel
11 everyday more of an ownership role of the plant and
12 the team beginning to take shape. So, I feel
13 confident with the management staff and the experience
14 level we have in our crafts at the present time. Good
15 balance.

16 COMMISSIONER ROGERS: Well, it cuts both
17 ways. Sometimes there's some memories you'd just as
18 soon forget.

19 MR. MYERS: That's right.

20 COMMISSIONER ROGERS: Good. Thank you.

21 That's all.

22 CHAIRMAN CARR: Listening to your pitch of
23 what's left to do, I guess I -- what do you think the
24 controlling path is to getting back up?

25 MR. KINGSLEY: I think there are two

1 critical areas. One is what we commonly call paper
2 closure. That involves all of the correct closure
3 within the engineering organization, which is a huge
4 effort. We're resolving all past design changes on
5 Browns Ferry. We're having to correct a large number
6 of drawings. We're having to make sure that the
7 calculations are correct. We loaded fuel into that
8 plant with what's called UVAs. That's unverified
9 assumptions, and all these have to be addressed and
10 put to bed.

11 So, there's a very large amount of work
12 within the engineering organization. We have about
13 250 TVA people and a very large Bechtel staff working
14 on that, updating drawings, what have you. We still
15 have paper within the modifications organization.
16 That has to be pushed out, resolved and that all flows
17 and ties together.

18 On top of that, we still have a good deal
19 of testing to do, what we call post-modification
20 testing and what led us to put very large
21 contingencies within the schedule. We do find
22 breakage within that and that is a risk to be managed.
23 That's part of the thing. We're bringing in some
24 additional, I believe approximately 20, start-up
25 engineers in total there to work on that. We have to

1 integrate this. We've not done the best job in that
2 area. We're still learning how to run an entire
3 operation of this type where you schedule every
4 maintenance that you've got to do that day. It also
5 has to be tied to the correct system. You have to
6 schedule all the testing on each system and how that
7 does.

8 We've made some improvement. We're
9 progressing slowly to where I would like for us to be
10 such that we can do that. So, this entire management
11 of this post modification testing is still a risk.

12 CHAIRMAN CARR: Okay. Any other
13 questions?

14 Thank you very much.

15 MR. KINGSLEY: Thank you.

16 CHAIRMAN CARR: And we might mention one
17 thing. I noticed in the list of commitments you made
18 in the back of your Enclosure 2 to your SALP response
19 a very impressive list of commitments.

20 MR. KINGSLEY: Yes, sir. We take that
21 very seriously and we will do that.

22 CHAIRMAN CARR: I hope you've got a good
23 tracking system for all those.

24 MR. KINGSLEY: We do. We have a system,
25 what we call a project chart, something Mr. Ebnetter

1 brought in here. We have all that listed and we meet
2 with the staff and that is in there as a commitment.
3 That's in a -- in fact, I have that piece of paper
4 with me today --

5 CHAIRMAN CARR: Me too.

6 MR. KINGSLEY: -- that has that number.

7 CHAIRMAN CARR: Okay. I'll keep watching
8 it.

9 MR. KINGSLEY: Well, I see it's getting
10 the right attention. Thank you.

11 CHAIRMAN CARR: Okay.

12 All right. Mr. Taylor, please proceed.

13 MR. TAYLOR: Good afternoon. With me at
14 the table from the Office of NRR, Tom Murley, Suzanne
15 Black and Thierry Ross in between is the project
16 manager. To my left, Stew Ebnetter and Bruce Wilson
17 from Region II. Bruce is the Branch Chief with
18 responsibility for Browns Ferry.

19 Through the long recovery, the staff has
20 been critical of schedules at Browns Ferry. However,
21 in recent times with the management changes, the staff
22 has increased confidence in their ability to both get
23 work done and presumably to be able to project the
24 schedules. Nonetheless, we'll be watching as the work
25 proceeds.

1 There is still work to do before
2 scheduling a potential restart meeting with the
3 Commission. We'll keep the Commission advised of that
4 as the time goes on. There's still work to do and
5 you'll hear more about that from the staff as the
6 Company has also covered part of it.

7 I'll now ask Tom to start this.

8 DOCTOR MURLEY: Our activities, of course,
9 track very closely with TVA's and they have, as you've
10 heard, just recently reevaluated their schedule. We
11 will do an operational readiness assessment team
12 inspection at the site. It will probably be in
13 February, according to current schedule. I will meet
14 with the ACRS full committee also probably in
15 February. We're going to issue the next supplement of
16 the SER toward the end of October. So, that will be
17 in about a month. Then, of course, we'll come back to
18 the Commission for criticality and according to the
19 current schedule that will be in March or April.

20 There are a number of licensing activities
21 and licensing actions and Thierry Ross is going to
22 talk about those.

23 MR. ROSS: Thank you, Doctor Murley.

24 (Slide) Can we have slide 3, please?

25 We last reported to the Commission in SECY

1 paper 90-148, April of this year, a number of the
2 restart activities that the staff had identified
3 earlier that were to be resolved to support restart at
4 Browns Ferry Unit 2. The staff is prepared, as Doctor
5 Murley mentioned, later next month to come out with a
6 supplement to NUREG-1232 that will address those
7 restart issues.

8 To date, the staff has resolved from a
9 technical basis all those issues with TVA and at this
10 point in time it's a question of TVA actually
11 implementing those programs or completing the
12 implementation of those programs and for Region II to
13 confirm and verify that implementation.

14 For example, one of those items that we
15 put down on the slide for entrance was fire
16 protection, in which Browns Ferry to date fully
17 complies with Appendix R with only five exemptions.
18 As exemptions go, five is a relatively low number for
19 any plant and it's particularly a low number for a
20 plant of this vintage.

21 The staff also has to address some 16
22 restart technical specification amendments prior to
23 restart. We feel confident we can support that.

24 As TVA mentioned earlier, all TMI action
25 items will be implemented prior to restart except for

1 two. Detailed control room design review that the
2 staff is still evaluating is scheduled to be completed
3 from a mod's point of view at the next cycle 6
4 refueling outage. The safety parameter display
5 system, the staff is awaiting TVA's submittal with
6 their final design description. In the meantime prior
7 to restart, TVA plans to implement an interim system.
8 The staff will inspect and evaluate as an acceptable
9 tool for the operators.

10 COMMISSIONER REMICK: Question. On the 16
11 technical specifications, you said you thought the
12 staff would support them.

13 MR. ROSS: Right.

14 COMMISSIONER REMICK: I'm not sure what
15 you mean by support. Do you support the modifications
16 proposed or do you mean you have the staff to support
17 the time schedule?

18 MR. ROSS: More of the latter. We have 16
19 amendments to date. We're anticipating that no new
20 technical specification amendment requests will be
21 identified prior to restart. Considering the time
22 period that we were working to up to a week ago, it
23 would have been a very significant challenge for the
24 staff to accomplish 16 amendments. Now, with the
25 approximately 90 day slip, discussions we had with our

1 reviewers, we have sufficient staff, the priorities
2 have been appropriately identified and it would appear
3 that the staff can support the restart date assuming
4 that something unforeseen doesn't happen in supporting
5 the staff and doing our reviews from TVA.

6 COMMISSIONER REMICK: Thank you.

7 CHAIRMAN CARR: Give me a couple of
8 examples of those Appendix R exemptions so I'll get a
9 warm feeling.

10 MR. ROSS: All right. There are five
11 exemptions that were approved by the staff earlier in
12 1988. An SER was issued on October 21st of '88. One
13 of those exemptions has to do that there is no
14 automatic fixed fire suppression in the control room.
15 This is a pretty standard exemption for all plants in
16 that fire sprinklers, for example, or Halon actuation
17 systems are just not appropriate in a control room
18 environment.

19 As a counter balance, the staff has
20 approved continuous detection. There's also the
21 compensatory measure that the control room is manned
22 24 hours a day.

23 CHAIRMAN CARR: I guess my curiosity is if
24 it's one of those things that's a standard exemption,
25 why don't we change the requirement rather than keep

1 exempting everybody. Are those the kinds of things
2 we're talking about?

3 MR. ROSS: One other exemption that's
4 similar to that that would be appropriate to BWRs in
5 that the rule could be interpreted that alternative
6 shutdown capability must maintain reactor coolant
7 inventory above the core. For BWRs in certain
8 scenarios, which means blowing down the reactor vessel
9 to actuate LPSI, there is a possibility that the core
10 becomes momentarily uncovered.

11 CHAIRMAN CARR: Okay.

12 MR. ROSS: An exemption for BWRs is fairly
13 standard in this situation.

14 CHAIRMAN CARR: All right. Now, talk to
15 me a little bit about seismic issues.

16 MR. ROSS: As far as seismic issues go,
17 the staff has resolved the major program areas
18 proposed by TVA in their nuclear performance plan. We
19 have written off the bulk of those in the past
20 supplement to NUREG-1232. We plan to write off the
21 rest of those programs in the upcoming supplement.

22 At this stage in the game, this is
23 probably our more vulnerable area of reconciling some
24 technical issues in that a past inspection identified
25 some 14 inspection open items that the staff is

1 relatively confident can be resolved. We are
2 reviewing the closure packages and the work that TVA
3 has done, the analyses they've performed and we're
4 still in that process of getting information and
5 discussing those issues with TVA.

6 From an implementation standpoint, I think
7 as Mr. Kingsley indicated, there is some work
8 activities involved. All the pipe supports
9 modifications have not as yet been totally completed
10 at the plant. I believe Region II plans a follow-up
11 inspection that have been going on to this date to
12 continue to track those activities.

13 CHAIRMAN CARR: But as of now we don't
14 have any major concerns?

15 MR. ROSS: Correct.

16 CHAIRMAN CARR: We think they'll come in
17 all right?

18 MR. ROSS: Correct.

19 CHAIRMAN CARR: Okay.

20 MR. ROSS: (Slide) Going on, slide 4,
21 please.

22 Looking at generic issues, all those
23 generic issues, bulletins, generic letters, USIs,
24 unresolved safety issues, GSIs, have been or will be
25 implemented prior to restart that the staff has

1 determined necessary to support restart of the plant.
2 For those items that will be complete after restart,
3 an appropriate schedule has been approved by the
4 staff.

5 Some of the post-restart generic issues
6 include, and these are the major items, station
7 blackout. The staff anticipates issuing an SER on
8 station blackout about the end of the year.

9 Hardened wetwell vent. TVA has
10 volunteered to implement the hardened wetwell vent at
11 Unit 2. Their schedule shows the next refueling
12 outage after restart.

13 The IPE, individual plant examinations per
14 Generic Letter 88-20. The present schedule for that
15 is September of '92, at which time the staff will
16 conduct its reviews, the utility will implement
17 whatever modifications they deem necessary from that
18 effort.

19 Any questions?

20 (Slide) Next slide, please, and I'd like
21 to turn it over to Mr. Ebnetter of Region II.

22 MR. EBNETER: Good afternoon.

23 First I'd like to clarify something for
24 Commissioner Remick. We do not participate in TVA
25 inspections. We do performance-based inspections

1 which means we observe them and we document those.

2 COMMISSIONER REMICK: Thank you.

3 MR. EBNETER: The second comments start
4 with -- I would like to address the Chairman. We do
5 look at that commitment list very closely also.

6 CHAIRMAN CARR: Yes. It was just the
7 length and the breadth of it that surprised me, I
8 guess.

9 MR. EBNETER: Well, we'll hold them to it.

10 With regard to the inspection program, we
11 have developed an inspection program that is
12 consistent with the TVA recovery and restart schedule.
13 We have been able to maintain that schedule maybe
14 perhaps because they've had so many scheduled slips.
15 But we have been able to keep up with their
16 activities.

17 The resident staff presently is at five
18 and we have that supplemented with team inspections
19 from Headquarters and the Region.

20 We have conducted 56 inspections since
21 July of 1989 and those inspections include the large
22 team inspections for the maintenance team, requal
23 examinations, vertical slice reviews. The ones we
24 have to do yet are the operational readiness one which
25 Doctor Murley commented on, and that will probably be

1 done next February. We still have employees concern
2 inspection and a major one focusing on the system
3 turnover process that TVA dwelled on.

4 We think the present TVA schedule, as
5 revised, is viable. It looks quite realistic assuming
6 there are no major problems and assuming that their
7 productivity estimates pan out. So, we think that's a
8 viable schedule.

9 There has been good improvement in the
10 management stability. We think they now have a stable
11 management team and that was a major problem as far as
12 I'm concerned with meeting schedules. I did spend
13 some time in the control room last Friday and talked
14 with the control room staff. I must say morale was
15 probably the highest I have seen it at Browns Ferry,
16 which is a good sign. They seem to be well qualified
17 and understood the EOIs in the control room.

18 That's all I wanted to comment on. I am
19 optimistic about the schedule and what they're doing
20 and I'd like Bruce Wilson now to discuss with you the
21 details of our inspection program.

22 Bruce?

23 MR. WILSON: Thank you. Good afternoon.

24 The master inspection plan was developed
25 with three purposes in mind, to verify completion of

1 the commitments in the Browns Ferry nuclear
2 performance plan, volume 3. Examples include major
3 programmatic areas such as maintenance, quality
4 assurance, environmental qualification and design
5 baseline verification program.

6 The second purpose was to ensure that
7 routine operational programs are properly implemented.
8 These included radiological controls, security,
9 emergency preparedness and configuration management.
10 Basically, this was the manual chapter 25.15 program
11 for operating reactors.

12 The third purpose was to ensure all
13 engineering and technical issues have been adequately
14 resolved. Although many of these areas overlapped
15 with volume 3 commitments, these areas included the
16 electrical issues such as ampacity, cable pulling,
17 cable separation and the Watts Bar identified cable
18 problems. Also, ATWS reg guide 1.97 and fire
19 protection issues.

20 In addition to the master inspection plan,
21 we are using a 94-300 type letter to track the various
22 phases of the program completion and to track the open
23 items in the remaining inspection programs prior to
24 restart. In the last year or so, we've closed over
25 300 open items and have roughly 100 remaining before

1 restart.

2 Since the Browns Ferry SALP report was
3 issued on June 14th of this year, the region is
4 preparing to initiate quarterly plant performance
5 review meetings in order to more closely align our
6 inspection program with the normal manual chapter
7 25.15 program.

8 (Slide) Slide 6, please.

9 The major inspection areas remaining.
10 Doctor Murley and Mr. Ebnetter have already mentioned
11 the operational readiness team inspection. This will
12 be conducted out of NRR.

13 We will continue to look at the
14 surveillance program, as TVA had mentioned previously.
15 This was primarily a result of programmatic breakdown
16 that they had over the past two years or so in the
17 surveillance area. We issued a severity level III
18 violation with no civil penalty last year. Primarily,
19 mitigation of the civil penalty was based on their
20 corrective actions they had taken by the time the
21 enforcement action became finalized. We still are
22 awaiting close-out of the surveillance area based on
23 once they have implemented and started using some of
24 these new complex surveillances after fuel load.

25 In addition, we will look at the employee

1 concerns program. The employee concerns program,
2 there are basically two. There's the employee
3 concerns program and the employee concerns special
4 program. The special program was up until February
5 1st, 1986, and this is the one that we still have some
6 open items to look at, primarily because TVA still has
7 approximately 59 what they call "corrective action
8 tracking documents" they must resolve prior to start-
9 up, and we will look at that area.

10 And finally, the major area we have to
11 look at is system turnover, the SPOC or SPAE process.
12 We have five residents on-site looking at this,
13 augmented by one additional resident inspector, and it
14 is a verification of the licensee's process and we do
15 not do any consulting or other work with regard to
16 that.

17 (Slide) Next area, please. Next slide,
18 please.

19 In terms of problem areas, as we see it,
20 between now and the scheduled restart date, from an
21 inspection point of view is system turnover is the
22 first area. As of September 21st, TVA had turned over
23 25 systems to operations with seven exceptions and 27
24 deferrals. This means that all of the work has not
25 been fully completed on these systems, although in

1 terms of exceptions all work has to be done prior to
2 them declaring the systems operable. We think this is
3 manageable, but at this point with many complex
4 systems remaining it is an area we will continue to
5 look at.

6 CHAIRMAN CARR: Twenty-five of how many?

7 MR. WILSON: Exceptions?

8 CHAIRMAN CARR: No, no. Twenty-five of
9 how many systems?

10 MR. EBNETER: Eighty.

11 MR. WILSON: Eighty systems.

12 CHAIRMAN CARR: Eighty.

13 MR. WILSON: In the second area, as TVA
14 had already mentioned -- I won't go into any detail--
15 was their scope of remaining bulk work, such as the
16 hanger mods and the number of feet of cable they have
17 to install yet.

18 And in the third problem area, there's
19 paper work closure, such as Mr. Kingsley mentioned,
20 drawing deficiencies and engineering calculations.

21 Are there any questions?

22 CHAIRMAN CARR: Commissioner Remick?

23 COMMISSIONER REMICK: In the fact in the
24 most recent SALP report, there were several areas
25 where they had category 3. How do you go about

1 integrating or do you integrate those areas into your
2 operational readiness assessment team inspection? Do
3 you particularly look at those? My question, I guess,
4 is do you in any way integrate the SALP findings with
5 what you do on the ORAT?

6 MR. WILSON: Absolutely. One prime
7 example would be in the maintenance surveillance area.
8 One of the reasons that they received a SALP category
9 3 in maintenance surveillance was because of the
10 programmatic breakdown in surveillances, and we
11 absolutely intend to look at that both on the ORAT and
12 in the resident's follow-up on the corrective actions
13 to the surveillance program.

14 COMMISSIONER REMICK: Okay. I assume you
15 heard my question earlier about the fact that there
16 were in the SALP reports a lot of references to needed
17 attention by management, additional attention, and the
18 comments about a good management team, the right team
19 in place and so forth. Do you feel that the current
20 management team is paying the proper management
21 attention to areas like maintenance, quality assurance
22 and so forth where weaknesses have shown in the past?

23 MR. WILSON: I personally believe they
24 have, yes. I think, as Mr. Kingsley said, there's
25 been a large turnover of management personnel in this

1 particular time period, particularly considering that
2 this SALP period ended in March of this year. And if
3 you look at the turnover of personnel that they have
4 had in that particular time period, that accounts for
5 a large percentage of their people.

6 A lot of the comments in the SALP were
7 based on recommendation or were recommendations that
8 we said we felt that continued management attention to
9 this area was necessary in order to achieve program
10 improvements, which as we felt that the management
11 attention was there, but it had to continue at a high
12 level.

13 MR. EBNETER: Well, let me comment myself.

14 COMMISSIONER REMICK: Yes.

15 MR. EBNETER: Mr. Kingsley has been
16 spending much more time at the site also, which is a
17 major contributor to this. He also assigned Nick
18 Kazanas, who is another vice president, who had been
19 head of the quality assurance organization to the
20 site, as a special manager to oversee some of the
21 modification process. So there was much more senior
22 management attention at the site now, direct
23 involvement.

24 COMMISSIONER REMICK: That always draws a
25 lot --

1 MR. EBNETER: Yes.

2 COMMISSIONER REMICK: -- more attention at
3 the lower levels.

4 A question I should have asked TVA, but
5 perhaps you can comment on it. I think in the SALP
6 report it refers to modifications to security system
7 being underway and finished, I think, by '92. Is
8 there anything in the open session that you can tell
9 me the type of modifications, why that's necessary?
10 Were there deficiencies there or is this just a
11 modernization or upgrading or what?

12 MR. WILSON: Both. I know one involves
13 the protected area fence and access controls, and the
14 second involves computer systems that TVA is
15 purchasing to upgrade the overall quality of their
16 system. I think the details they would be much better
17 qualified to talk to you about.

18 COMMISSIONER REMICK: The area fence, now,
19 there was a fence there before. What would this be?
20 Is this an upgrade, increasing the height, enlarging
21 the area?

22 MR. KINGSLEY: Would you like us to answer
23 that?

24 COMMISSIONER REMICK: Yes, please, if you
25 will. Yes.

1 MR. KINGSLEY: Ike will answer.

2 MR. ZERINGUE: Ike Zeringue. We moved the
3 fence in to reduce the protected area. We've done--
4 basically, the improvements were to allow us to
5 increase the reliability and modernize the system, E
6 fields, additional cameras, those kinds of things,
7 essentially a basic upgrade.

8 COMMISSIONER REMICK: Was this TVA
9 initiated, or is this the result of deficiencies being
10 found on inspection or --

11 MR. ZERINGUE: This is the first phase of
12 our improvement. It has been TVA initiated. As
13 identified in the SALP, we have had hardware failures
14 and it's necessary that we upgrade the reliability of
15 that equipment.

16 COMMISSIONER REMICK: Okay. Thank you
17 very much.

18 MR. EBNETER: I should comment. That's
19 TVA-wide, by the way. They are upgrading all of the
20 sites.

21 COMMISSIONER REMICK: I see. Okay.

22 That's all, Mr. Chairman.

23 CHAIRMAN CARR: Commissioner Curtiss?

24 COMMISSIONER CURTISS: Just one question.

25 CHAIRMAN CARR: Last one more question?

1 COMMISSIONER CURTISS: One last question
2 before my voice goes.

3 On the operator readiness program the
4 licensee has outlined, are you comfortable with the
5 program that they've set forth and in particular the
6 focus on getting hot license experience so that when
7 the time comes these operators who have been out of
8 the loop for a long time now will be ready to operate
9 the plant?

10 MR. WILSON: Yes, I feel confident in it.
11 I was involved in the requalification exams in 1985
12 when the problem with licensed operators first
13 surfaced and I think they've made great strides in
14 upgrading the quality of their licensed personnel
15 since then. They have, as I said, a large additional
16 amount of simulator training. They have sent their
17 people off to Monticello for observation. They are
18 going to use experienced people during the restart.
19 And we, as part of NRC's operational readiness
20 assessment, will be observing their crews on the
21 simulator.

22 The only problem we have right now is that
23 the simulator, I believe, there is an exception to
24 upgrading according to Part 55.

25 MR. ROSS: Exemption.

1 MR. WILSON: An exemption.

2 CHAIRMAN CARR: Commissioner Rogers?

3 COMMISSIONER ROGERS: Just on that, what
4 does that entail?

5 MR. ROSS: Exemption request?

6 COMMISSIONER ROGERS: Yes.

7 MR. ROSS: I believe the --

8 COMMISSIONER ROGERS: What is the
9 shortcoming on the simulator?

10 MR. ROSS: Recognize that the simulator at
11 Browns Ferry is probably one of the oldest simulators
12 in the country. They have requested an exemption from
13 the rule requirement to fully upgrade the simulator,
14 and I believe that comes due sometime in March of '91.
15 They could make that date with a number of exceptions
16 that would be legitimate within the rule.

17 They have planned a more comprehensive
18 upgrade of their simulator, which will take them more
19 to the end of the year, around the December time
20 frame. So rather than going through the regulatory
21 exercise of having their simulator pedigreed with a
22 whole laundry list of exceptions, they've requested
23 the staff to give them a temporary exemption until the
24 end of the year where they can come forward with a
25 clean product.

1 COMMISSIONER ROGERS: Expecting to replace
2 the simulator, or just --

3 MR. ROSS: No. I believe they're just
4 modification upgrades.

5 COMMISSIONER ROGERS: Software or hardware
6 or both?

7 MR. ROSS: Both.

8 MR. KINGSLEY: Oliver Kingsley.

9 We're making extensive modifications. All
10 the software is being essentially changed. We're
11 putting in new computers, much better computers. It
12 will handle a much larger spectrum of accidents.

13 In addition to that, there's a lot of
14 hardware changes we're having to make. We will save
15 the original boards, and that's about it. So it's
16 very extensive and it will take a little longer to do
17 the job correctly.

18 Once again, we're a little behind from the
19 standpoint of letting the original order and it's
20 taken a lot of programming time. But we will come in
21 in the fall of this next year on that.

22 COMMISSIONER ROGERS: That will be in
23 place then, or --

24 MR. KINGSLEY: Yes. That's the fall of
25 1991. All the testing and everything, we'll do that,

1 and it will be in the November time frame that we'll
2 have that fully in place.

3 COMMISSIONER ROGERS: Thank you.

4 Just with regard to going back to the SALP
5 category. One of the weaknesses in which there was a
6 category 3 rating was inconsistencies in quality and
7 timeliness of submittals and responses to the NRC.
8 Could you just comment on where you see that now?

9 MR. ROSS: Well, I might be able to
10 comment on both those areas. Particularly, TVA had a
11 very difficult problem I think in the past in meeting
12 a lot of their scheduling commitments with respect to
13 the NRC on supporting submittals, either requests for
14 additional information or follow-up activities
15 associated with ongoing reviews, and chronically had
16 to reschedule in a sequence of events. For example,
17 if it came due in March, they'd ask for 30 more days.
18 Well, 30 days later they'd ask for 30 more. Rather
19 than sort of biting the bullet up front and saying we
20 need 90 days, you'd get three requests for 30 day
21 extensions.

22 Since that time frame -- and I think a lot
23 of it has to do with the new management team on-site,
24 the support the licensing organization has been
25 getting -- since the summer of this year, they have

1 consistently made all their commitment dates for
2 submittals. I can only think of one particular
3 exception where they negotiated a new date with the
4 staff on that. So the improvement with meeting
5 established time tables for submittals so that the
6 staff can support their restart schedule has been very
7 good.

8 CHAIRMAN CARR: I assume when you come
9 back with the next briefing you'll tell us what the
10 staff intends to do as far as inspection coverage for
11 fuel loads, start-up, that kind of thing?

12 MR. EBNETER: Yes, sir. We do plan 24
13 hour round-the-clock coverage during those and we have
14 a plan laid out. We can address it at the next
15 meeting.

16 CHAIRMAN CARR: Okay. The impression I
17 got from TVA was that they and you have agreed on
18 those things that are going to be deferred past start-
19 up and we don't have any disagreement with their list
20 of things that aren't going to get done before start-
21 up?

22 MR. EBNETER: I think in general I've
23 consistently told -- and I think Mr. Kingsley
24 mentioned that, that there are -- I expect them to
25 meet all their commitments.

1 Now, there are a few -- one area I'm aware
2 of. We are still discussing the extent, perhaps, of
3 some of the tests like the shut-down from outside the
4 control room and exactly what we expect in that area,
5 because that's listed in the reg guide.

6 But in general, no, we're in pretty much
7 agreement on what's expected and we plan to hold them
8 to those.

9 CHAIRMAN CARR: Any other questions?

10 Well, I'd like to thank the Tennessee
11 Valley Authority and the staff for their very
12 informative briefing.

13 I would remind TVA the Browns Ferry units
14 are currently the only category 3 plants, and I'm sure
15 you know that as well as we do. That shut-down you've
16 had, of course, is a significant loss of generating
17 capacity and I know you'd like to get that back on the
18 line. I applaud your goal of getting it back on the
19 line safely. Schedule is not the driving factor.
20 Doing the work right is the driving factor. You have
21 demonstrated ability to recover and correct problems
22 at Sequoyah, so I see no reason if you've got the right
23 management team in a place you can't get it done at
24 Browns Ferry. So we'll be following your work with
25 close interest.

1 And I thank the staff and I take note of
2 the compliment that TVA has paid the staff on
3 supporting the TVA work. I know you have, and I know
4 it's been a tough row and I think you've hoed it well.
5 Thank you very much.

6 If there are no further questions, we
7 stand adjourned.

8 (Whereupon, at 3:47 p.m., the above-
9 entitled matter was adjourned.)

CERTIFICATE OF TRANSCRIBER

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

TITLE OF MEETING: PERIODIC BRIEFING ON THE STATUS OF
BROWNS FERRY UNIT 2

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: SEPTEMBER 26, 1990

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



Reporter's name: Peter Lynch

NEAL R. GROSS
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WASHINGTON, D.C. 20005

TVA

BROWNS FERRY NUCLEAR PLANT

UNIT 2

NRC COMMISSION MEETING

SEPTEMBER 26, 1990

AGENDA

- I. INTRODUCTION O. D. KINGSLEY
- II. BACKGROUND O. D. KINGSLEY
- III. SITE ORGANIZATION O. D. KINGSLEY
- IV. SCHEDULE STATUS O. J. ZERINGUE
- V. OPERATIONAL READINESS . . L. W. MYERS
- VI. CLOSING REMARKS O. D. KINGSLEY

II. BACKGROUND

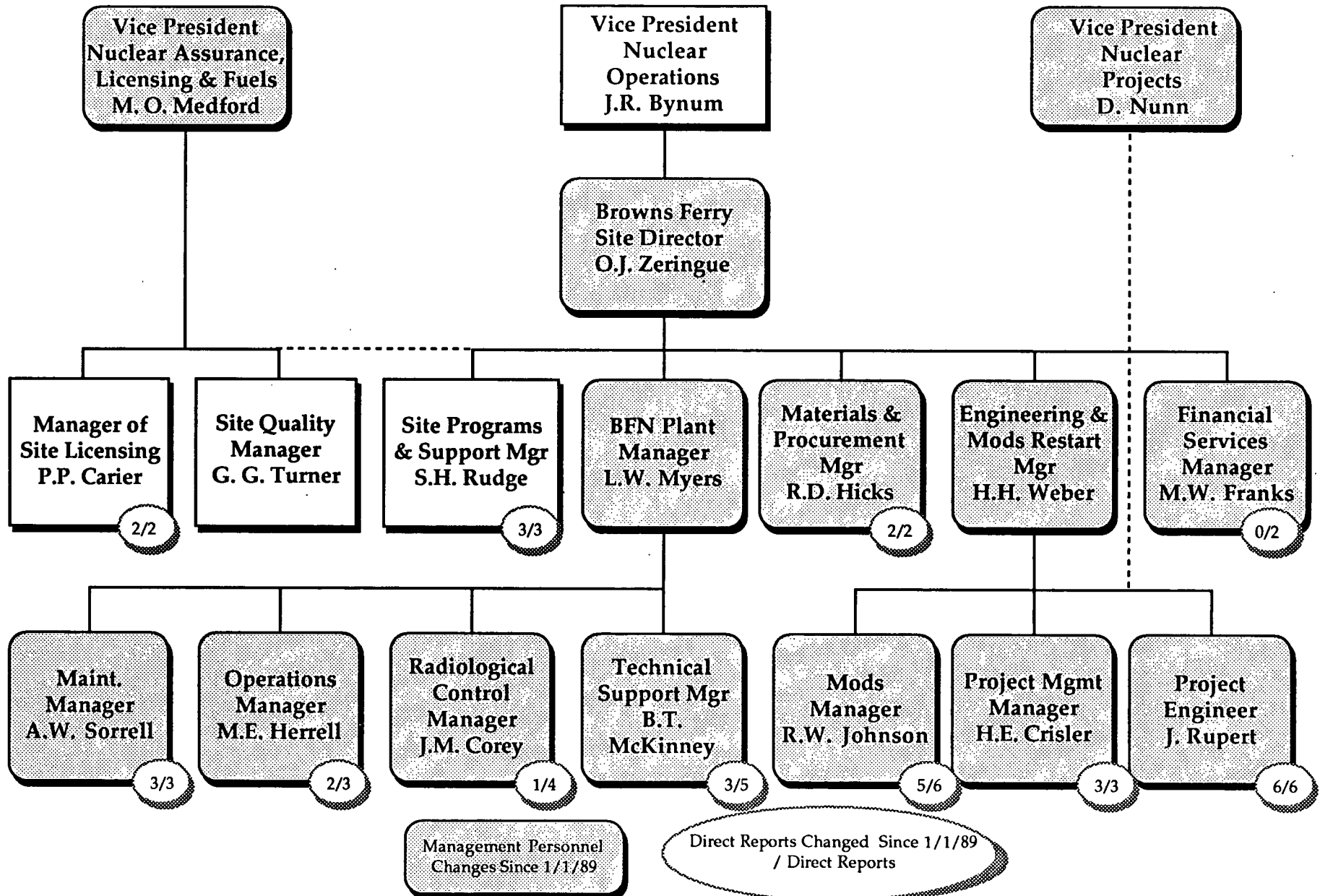
SCHEDULE IMPACT

- Fuel in the Vessel
- Emergent Work/New Discovery
- Additional Cable Testing

ACCOMPLISHMENTS

- Defueling Unit 2
- Productivity Improvements
- Better Safety Conscience
- Better Licensing Performance
- Better Material Condition
of the Plant

BROWNS FERRY NUCLEAR PLANT SUMMARY LEVEL ORGANIZATION CHART



IV. SCHEDULE STATUS

- Schedule Issues
- Current Status
- Unit 2 Return-to-Service Schedule

IV. SCHEDULE STATUS

SCHEDULE ISSUES

- Conceptual Versus Actual Design
- Emergent Work
 - SPAE/SPOC
 - Cable Issues
 - Breakage Rate
- Productivity
- Scheduled for Success

IV. SCHEDULE STATUS

SYSTEM PLANT ACCEPTANCE EVALUATION (SPAE)

- Systematic Method to Establish Configuration Control
- Addresses:
 - Drawing Discrepancies
 - ECN/DCN Closure of Change Document
 - Essential Calculations
 - Conditions Adverse to Quality
 - Restart Test Program
 - Primary and Critical Drawing Restoration
 - NPP Special Program Review (e.g., EQ)

IV. SCHEDULE STATUS

SYSTEM PREOPERABILITY CHECKLIST (SPOC)

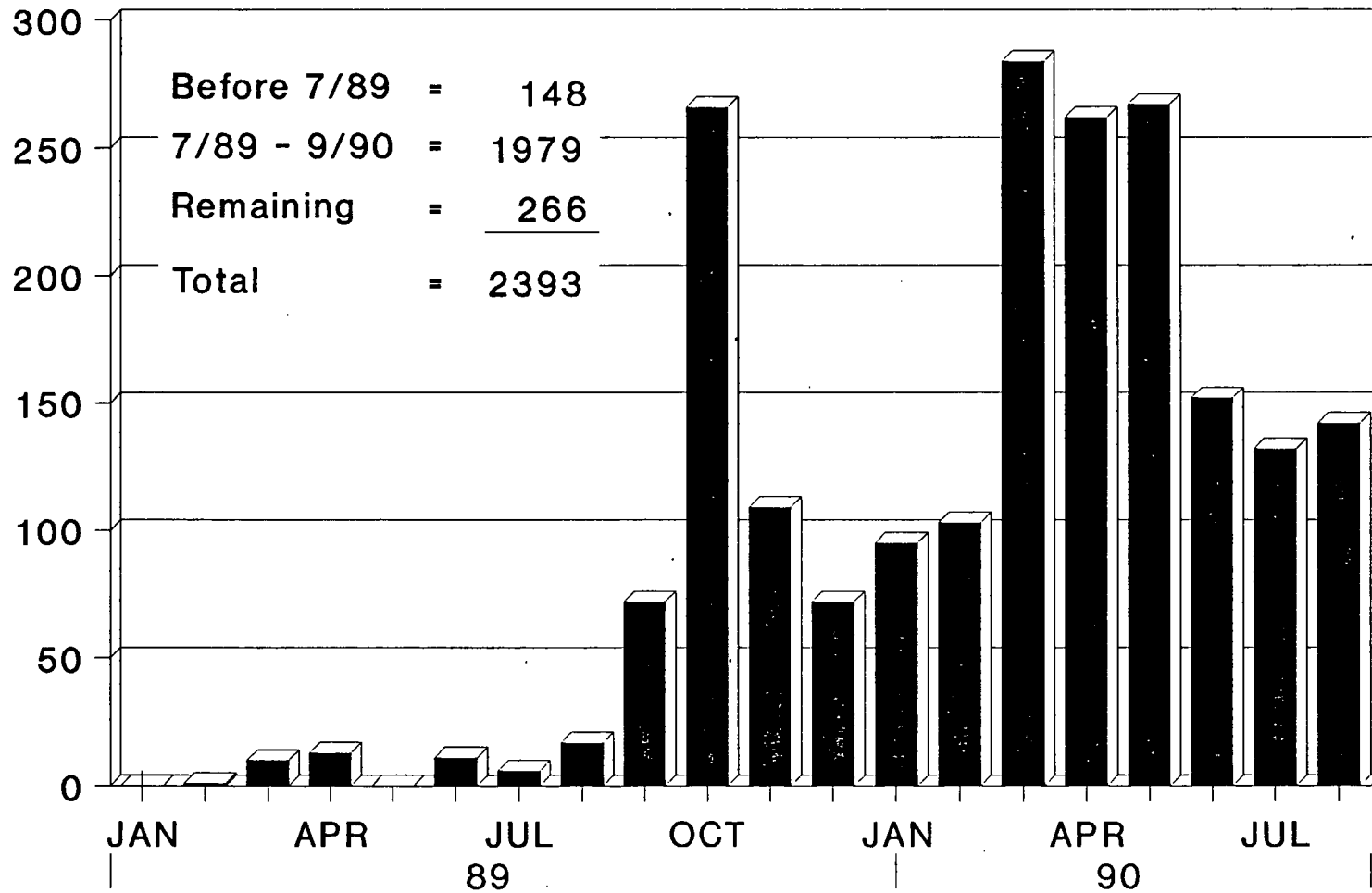
- Systematic Method
- Ensures Completion of Items Related to
 - Testing
 - Modifications
 - Maintenance
 - Licensing (Including NRC Commitments)
 - Procedures
 - Design Completion
 - System Configuration
 - Walkdowns
- Engineering - SPAE Checklist

IV. SCHEDULE STATUS

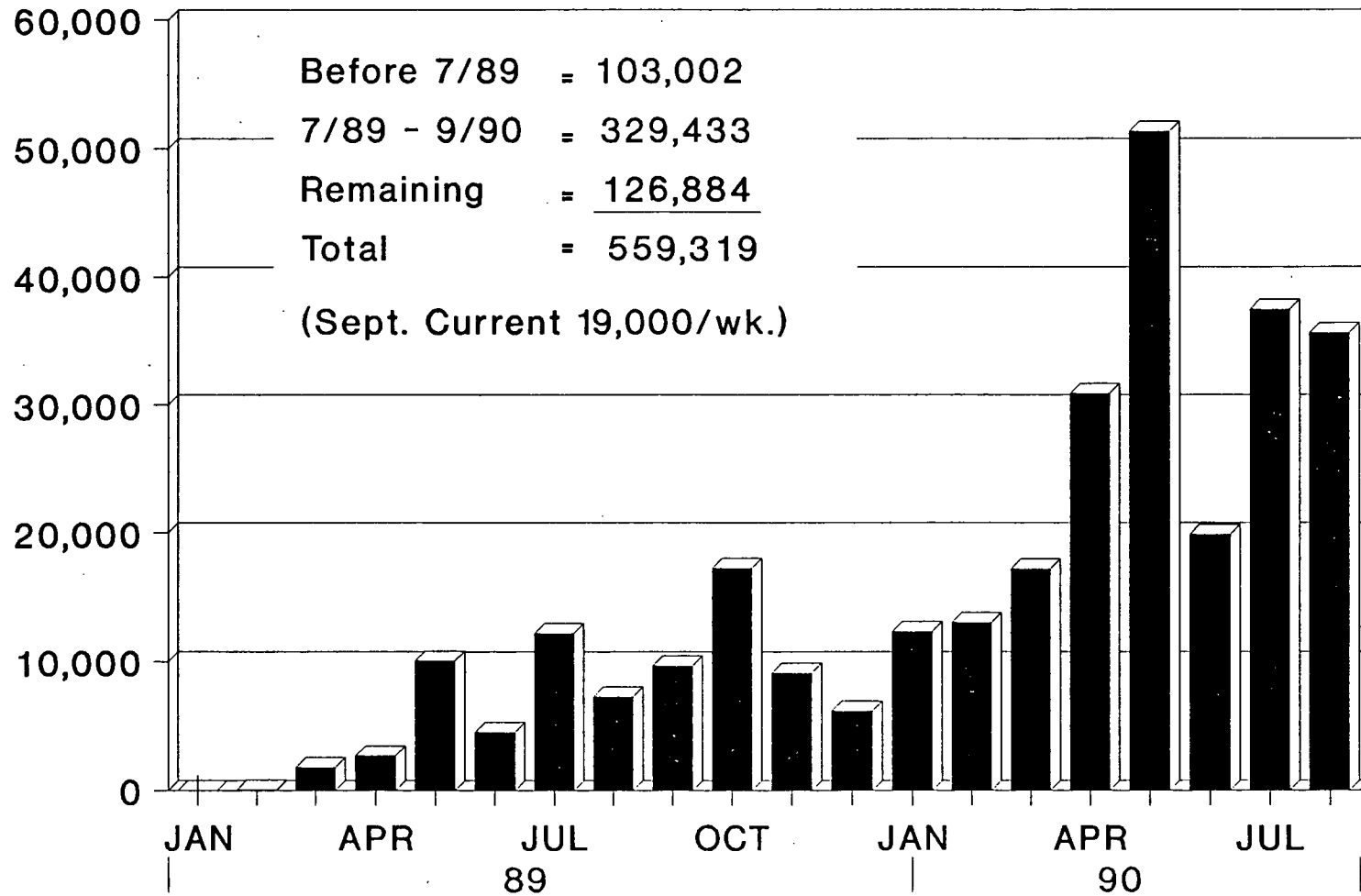
CURRENT STATUS

- Actual Design Now Available
- Reduced Level of Emergent Work
- Productivity Enhancements
- Contingency Measures

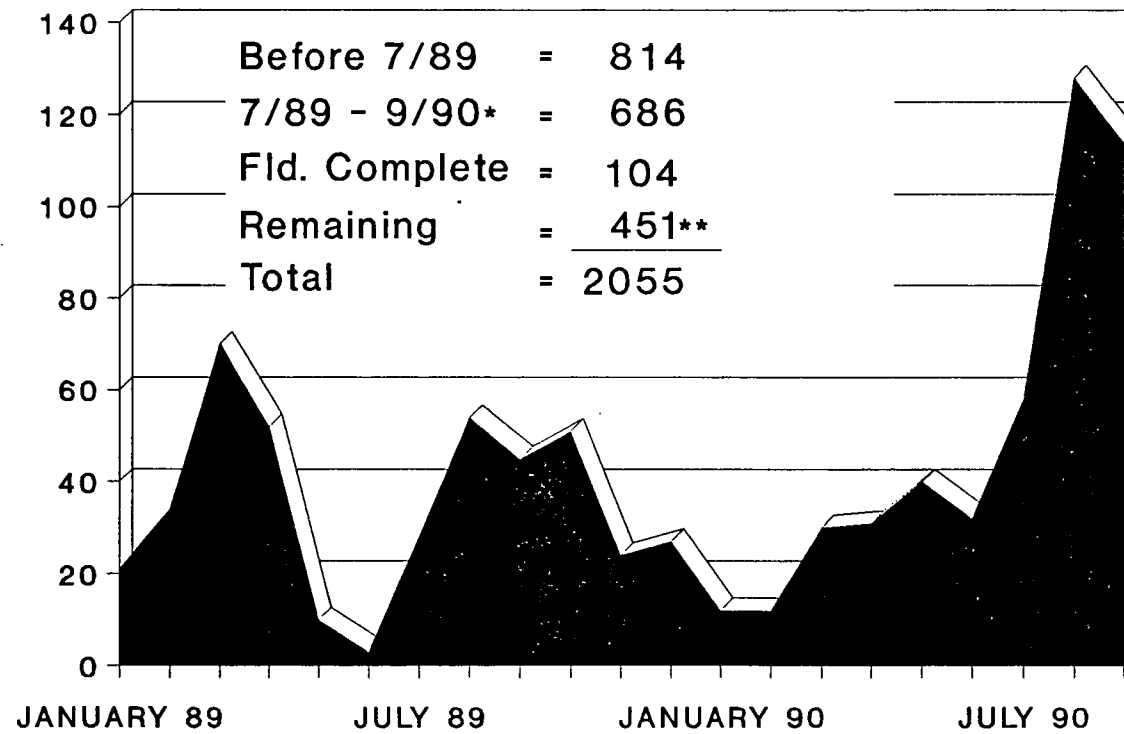
HANGER MODS - LARGE BORE



CABLE



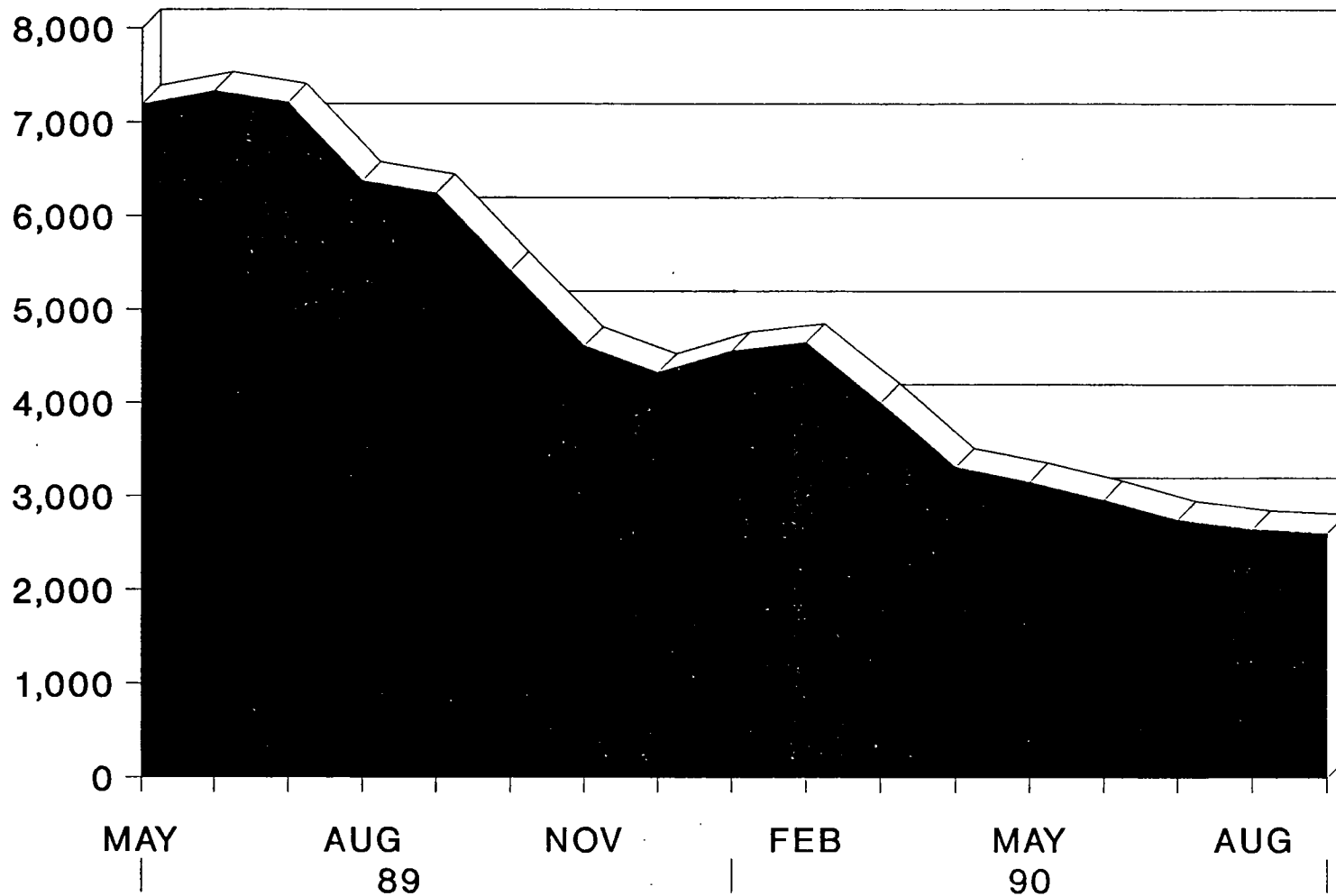
ECNS/DCNS DESIGN CLOSED



*9/90 Total through 9/19

**396 of the 451 Involve Actual Field Work

MAINTENANCE WORK ORDER BACKLOG



*511 Awaiting Testing

IV. SCHEDULE STATUS

CONTINGENCY MEASURES

- Margin Factored Into Current Schedule
 - Added 50% Duration to Large Bore Hanger Work
 - Added 30% Duration to Cable/Conduit Work
 - Assumed Only 80% Craft Utilization
 - Assumed 12 Days Lost Production Due to Holidays
 - Added 30 Days Contingency

IV. SCHEDULE STATUS

UNIT 2 RETURN-TO-SERVICE SCHEDULE

← Window →

- Fuel Load January 25 to February 14, 1991
- Pull Rods March 21 to April 10, 1991

IV. SCHEDULE STATUS

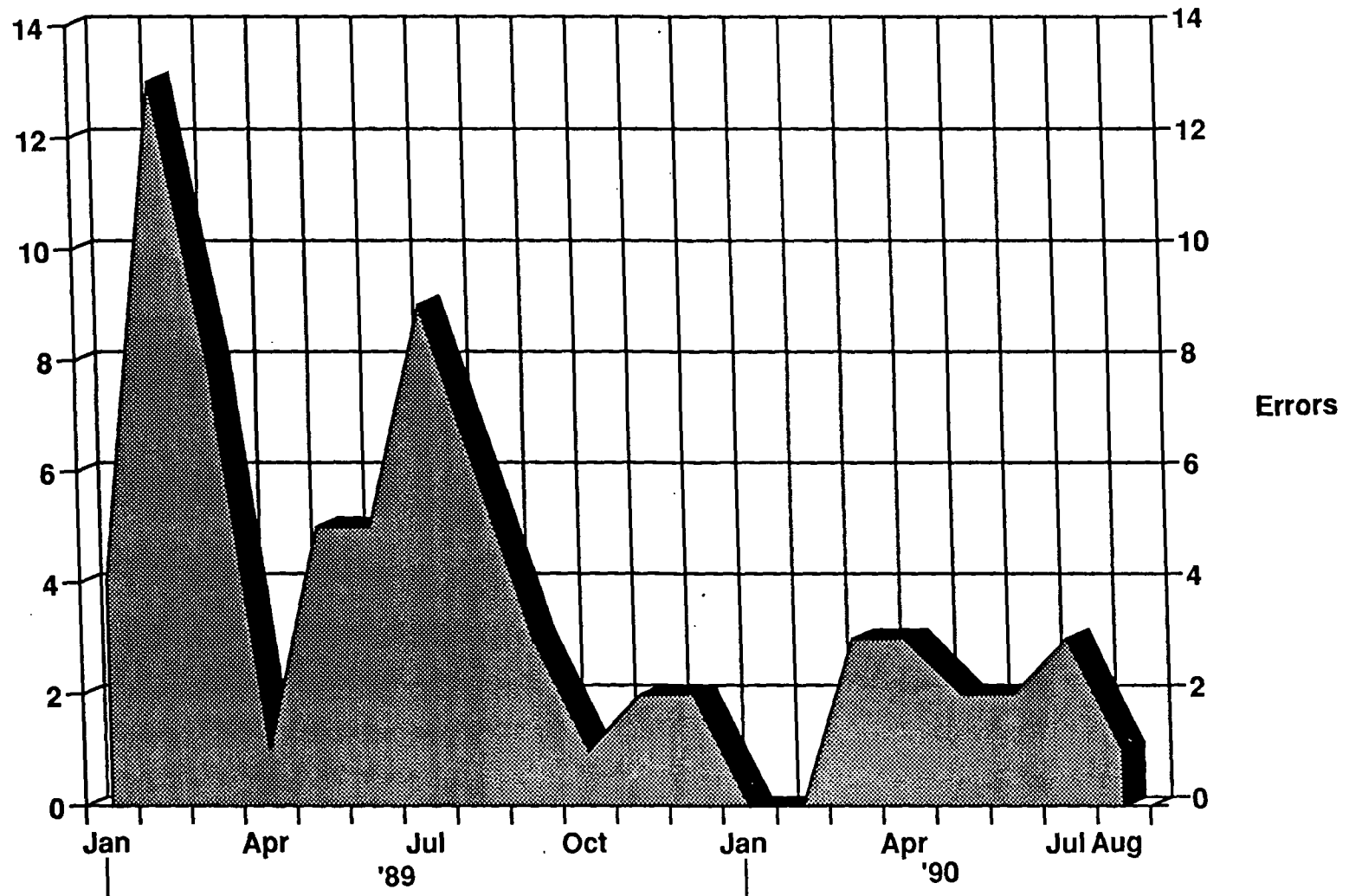
TMI ACTION ITEMS

- 109 Items Applicable to Unit 2
- 105 Items Have Been Completed
- 2 Items Remain to Be Completed Before Restart
 - Noble Gas, Iodine/Particulate Monitors
 - Post-Accident Sampling
- 2 Items To Be Partially Completed This Outage
 - Detailed Control Room Design Review
 - Safety Parameter Display System

V. OPERATIONAL READINESS

- OPERATIONAL PHILOSOPHY
- OPERATIONAL STANDARDS

V. Operational Readiness Personnel Errors - Plant Organizations



V. OPERATIONAL READINESS

MONITORING

- Line Management
- QA
- Independent Safety Engineering Group

V. OPERATIONAL READINESS

SURVEILLANCE PROGRAM

- Technical Problems
- Programmatic Problems
- Implementation Problems

V. OPERATIONAL READINESS

OPERATOR EXPERIENCE

- Average Over 7 Years of Experience
- Participation in INPO Peer Evaluations
- Startup Training on Simulator
- One Week of Hot License Experience at Monticello
- Performance of Critical Manipulations During Power Ascension

V. OPERATIONAL READINESS

OPERATOR TRAINING

- Requalification Training Expanded
From 4 to 8 Weeks
- Results
 - 100% Operators Passed NRC's
Requalification Exams in 1/90
 - 100% Candidates Passed NRC's Initial
License Exams on 3/90

V. OPERATIONAL READINESS POWER ASCENSION PROGRAM

- Peach Bottom, Pilgrim, and NTOL
- GE Involvement
- Management Assessment

**BROWNS FERRY, UNIT 2
RESTART STATUS**

September 26, 1990

Thomas Murley, Director, NRR

Stewart Ebner, Regional Administrator, RII

Contact: T. Ross

Phone: 492-1313

RESTART MILESTONES

- **Issue NUREG-1232, Supplement 2**
- **Amend Technical Specifications**
- **Operational Readiness Assessment Team**
- **ACRS Full Committee Meeting**
- **Commission Meeting on Restart**
- **NRC letter to TVA approving restart**

LICENSING ACTIONS

- o Status of Actions for Restart (SECY 90-148)**
 - All issues resolved (NUREG-1232)**
 - Fire Protection meets Appendix R with only five exemptions granted**
- o Sixteen Technical Specifications Amendments**
- o All TMI Action Items implemented, except:**
 - Detailed Control Room Design Review**
 - Safety Parameter Display System**

LICENSING ACTIONS (CONT'D)

o BULLETINS, GENERIC LETTERS, & GENERIC ISSUES

- All required actions resolved for restart**
- Schedules for remaining issues acceptable**
- Examples of post restart generic issues:**

Station Blackout (10 CFR 50.63)

Hardened Wetwell Vent (GL 89-16)

Individual Plant Examination (GL 88-20)

INSPECTION PROGRAM

o Master Inspection Plan

- Verify TVA completes Nuclear Performance Plan**
- Programs Implemented for safe plant operations**
- Engineering and technical issues resolved**

INSPECTION PROGRAM (CONT'D)

o Major Inspection Areas Remaining

- Operational Readiness**
- Surveillance Program**
- Employee Concerns Program**
- System Turnover**

PROBLEM AREAS

- o System Turn Over Impacted by Schedule**
- o Scope of Remaining Bulk Work**
 - Hangers/Supports**
 - Electrical cables**
- o Paperwork Closure**
 - Drawing deficiencies**
 - Engineering calculations**