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NUCLEAR REGULATORY COMMISSION

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PERIODIC BRIEFING ON THE STATUS OF
BROWNS FERRY UNIT 2

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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

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 informatio 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

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

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

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

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

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

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

Finally, Lew Myers will discuss the

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

(Slide) Slide 3, please.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The ability to hire people with good

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

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

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

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

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

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

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

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

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

Ike?

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

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

(Slide) Slide 5, please.

Today I'd like to discuss the schedule-

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

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

(Slide) Slide 6, please.

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

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

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

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

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

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

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

(Slide) Slide 7, please.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

MR. KINGSLEY: Yes, right.

CHAIRMAN CARR: Okay.

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

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

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

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

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

MR. ZERINGUE: Yes, sir.

COMMISSIONER REMICK: Thirty man years of effort?

MR. KINGSLEY: No. Explain it, Ike.

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

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

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

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

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

uncertain?

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

COMMISSIONER REMICK: For capacity?

MR. KINGSLEY: Right. Ampacity.

COMMISSIONER REMICK: I see. Okay.

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

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

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

MR. ZERINGUE: Jim Hudson, our chief

engineer, is here.

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

COMMISSIONER ROGERS: Would you go from 2?

MR. KINGSLEY: Stand up here at the microphone.

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

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

COMMISSIONER ROGERS: Okay.

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

MR. HUDSON: With regard to the RHR cable?

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

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

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

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

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

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

(Slide) You can see in the hanger area,

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

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

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

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

MR. ZERINGUE: Feet.

CHAIRMAN CARR: Feet.

COMMISSIONER ROGERS: Thousands of feet.

MR. ZERINGUE: The units are feet.

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

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

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

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

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

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

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

MR. MYERS: Backlog?

MR. ZERINGUE: Yes.

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

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

COMMISSIONER ROGERS: Well, is that 500 in

these numbers?

MR. ZERINGUE: Yes, sir.

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

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

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

MR. ZERINGUE: This is all corrective maintenance.

CHAIRMAN CARR: Okay.

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

CHAIRMAN CARR: Okay.

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

left.

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

CHAIRMAN CARR: Eighty percent of the available craft?

MR. ZERINGUE: Yes, sir.

CHAIRMAN CARR: Okay.

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

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

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

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

CHAIRMAN CARR: All right.

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

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

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

MR. ZERINGUE: That's correct.

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

MR. ZERINGUE: We did that --

COMMISSIONER REMICK: Is that a recent --

MR. ZERINGUE: Yes.

CHAIRMAN CARR: Yesterday.

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

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

MR. ZERINGUE: Yes.

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

COMMISSIONER REMICK: Okay.

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

MR. ZERINGUE: Yes.

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

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

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

MR. ZERINGUE: That's correct.

CHAIRMAN CARR: Okay.

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

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

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

MR. ZERINGUE: Yes, sir.

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

MR. ZERINGUE: Yes, sir.

CHAIRMAN CARR: Okay.

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

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

CHAIRMAN CARR: Okay.

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

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

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

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

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

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

MR. KINGSLEY: Let me answer that.

COMMISSIONER REMICK: Sure.

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

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

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

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

MR. KINGSLEY: Yes, sir.

CHAIRMAN CARR: Okay.

MR. KINGSLEY: That's exactly right.

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

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

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

COMMISSIONER REMICK: I was under the impression --

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

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

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

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

COMMISSIONER REMICK: Okay.

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

MR. ZERINGUE: October 13th.

COMMISSIONER ROGERS: October 13th was your earlier date?

MR. ZERINGUE: Yes, sir.

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

MR. ZERINGUE: Yes, sir.

COMMISSIONER ROGERS: Okay.

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

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

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

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

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

their questions resolved prior to continuing.

(Slide) Next slide.

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

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

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

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

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

(Slide) Next slide, please.

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

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

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

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

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

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

review teams to identify the problem.

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

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

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

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

Next we address the programmatic issues.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

MR. MYERS: Yes.

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

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

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

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

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

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

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

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

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

Mr. Kingsley will now provide the closing remarks.

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

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

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

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

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

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

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

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

CHAIRMAN CARR: Thank you.

Commissioner Remick?

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

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

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

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

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

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

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

COMMISSIONER REMICK: Okay. You also

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

MR. KINGSLEY: You want to take it?

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

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

This is a very simple philosophy, but

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

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

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

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

MR. ZERINGUE: Yes, sir.

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

MR. ZERINGUE: We have walkdowns of the

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

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

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

MR. MYERS: Let me say something.

COMMISSIONER REMICK: Yes, sure.

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

COMMISSIONER REMICK: I assume they're

doing this as observers.

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

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

COMMISSIONER REMICK: Thank you. All right.

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

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

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

MR. KINGSLEY: No, they're a separate

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

COMMISSIONER REMICK: I see. Okay.

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

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

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

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

COMMISSIONER REMICK: Okay.

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

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

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

COMMISSIONER REMICK: I see. Okay.

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

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

COMMISSIONER REMICK: Okay. Thank you.

Thank you, Mr. Chairman.

CHAIRMAN CARR: Commissioner Curtiss?

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

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

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

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

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

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

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

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

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

COMMISSIONER CURTISS: Thank you.

CHAIRMAN CARR: Commissioner Rogers?

COMMISSIONER ROGERS: Yes.

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

do you think was their significance?

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

COMMISSIONER ROGERS: But the content --

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

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

MR. MYERS: That's right.

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

MR. MYERS: Yes.

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

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

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

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

MR. MYERS: That's right.

COMMISSIONER ROGERS: Good. Thank you. That's all.

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

MR. KINGSLEY: I think there are two

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

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

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

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

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

CHAIRMAN CARR: Okay. Any other questions?

Thank you very much.

MR. KINGSLEY: Thank you.

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

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

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

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

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

CHAIRMAN CARR: Me too.

MR. KINGSLEY: -- that has that number.

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

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

CHAIRMAN CARR: Okay.

All right. Mr. Taylor, please proceed.

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

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

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

I'll now ask Tom to start this.

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

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

MR. ROSS: Thank you, Doctor Murley.

(Slide) Can we have slide 3, please?

We last reported to the Commission in SECY

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

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

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

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

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

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

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

MR. ROSS: Right.

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

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

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

COMMISSIONER REMICK: Thank you.

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

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

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

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

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

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

CHAIRMAN CARR: Okay.

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

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

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

At this stage in the game, this is probably our more vulnerable area of r ciling some technical issues in that a past inspec identified some 14 inspection open items that the staff is

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

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

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

MR. ROSS: Correct.

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

MR. ROSS: Correct.

CHAIRMAN CARR: Okay.

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

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

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

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

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

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

Any questions?

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

MR. EBNETER: Good afternoon.

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

which means we observe them and we document those.

COMMISSIONER REMICK: Thank you.

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

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

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

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

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

We have conducted 36 inspections since July of 1989 and those inspections include the large team inspections for the maintenance team, requal examinations, vertical slice reviews. The ones we have to do yet are the operational readiness one which Doctor Murley commented on, and that will probably be

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

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

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

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

Bruce?

MR. WILSON: Thank you. Good afternoon.

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

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

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

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

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

restart.

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

(Slide) Slide 6, please.

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

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

In addition, we will look at the employee

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

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

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

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

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

CHAIRMAN CARR: Twenty-five of how many?

MR. WILSON: Exceptions?

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

MR. EBNETER: Eighty.

MR. WILSON: Eighty systems.

CHAIRMAN CARR: Eighty.

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

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

Are there any questions?

CHAIRMAN CARR: Commissioner Remick?

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

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

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

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

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

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

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

MR. EBNETER: Well, let me comment myself.

COMMISSIONER REMICK: Yes.

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

COMMISSIONER REMICK: That always draws a lot --

MR. EBNETER: Yes.

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

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

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

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

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

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

MR. KINGSLEY: Ike will answer.

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

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

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

COMMISSIONER REMICK: Okay. Thank you very much.

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

COMMISSIONER REMICK: I see. Okay.

That's all, Mr. Chairman.

CHAIRMAN CARR: Commissioner Curtiss?

COMMISSIONER CURTISS: Just one question.

CHAIRMAN CARR: Last one more question?

COMMISSIONER CURTISS: One last question before my voice goes.

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

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

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

MR. ROSS: Exemption.

MR. WILSON: An exemption.

CHAIRMAN CARR: Commissioner Rogers?

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

MR. ROSS: Exemption request?

COMMISSIONER ROGERS: Yes.

MR. ROSS: I believe the --

COMMISSIONER ROGERS: What is the shortcoming on the simulator?

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

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

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

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

COMMISSIONER ROGERS: Software or hardware or both?

MR. ROSS: Both.

MR. KINGSLEY: Oliver Kingsley.

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

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

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

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

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

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

COMMISSIONER ROGERS: Thank you.

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

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

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

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

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

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

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

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

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

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

CHAIRMAN CARR: Any other questions?

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

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

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

If there are no further questions, we stand adjourned.

(Whereupon, at 3:47 p.m., the above-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.

Carol Lynch

Reporter's name: Peter Lynch

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

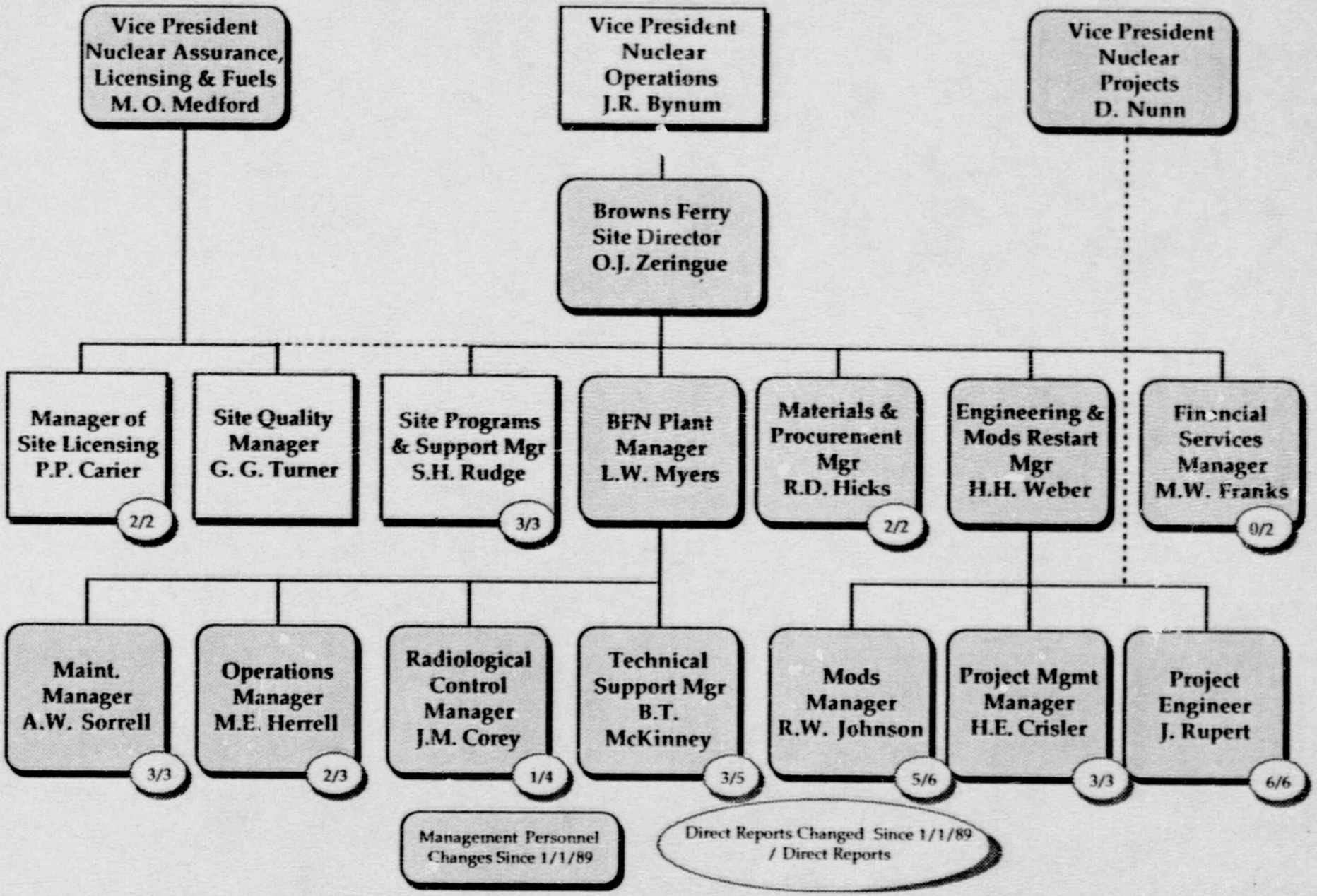
SCHEDULE IMPACT

- 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)

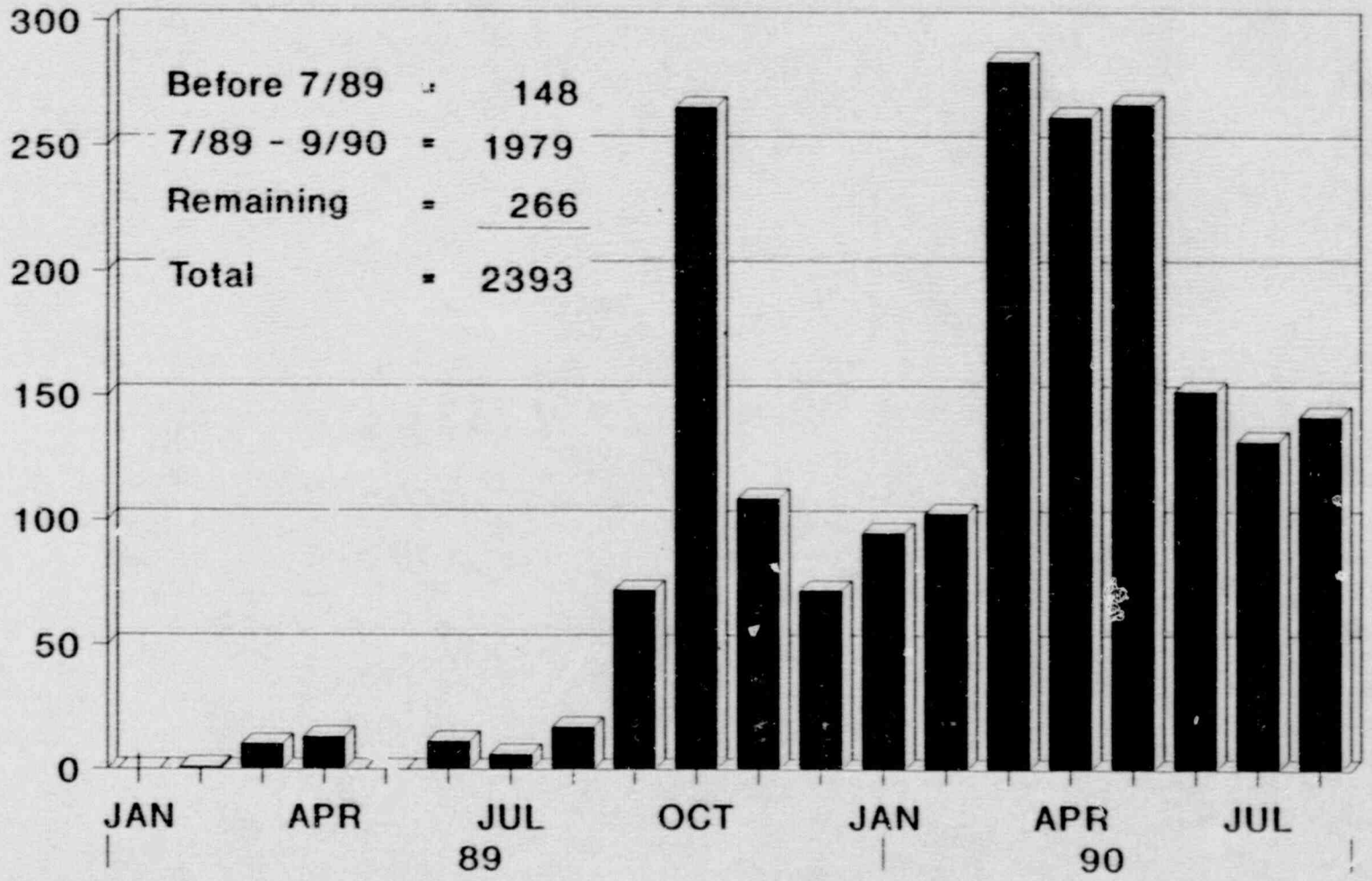
- Systematic Method
- Ensures Completion of Items Related to
  - Testing
  - Modifications
  - Maintenance
  - Licensing (Including NRC Commitments)
  - Procedures
  - Design Completion
  - System Configuration
  - Walkdowns
- Engineering - SPAE Checklist

IV. SCHEDULE STATUS

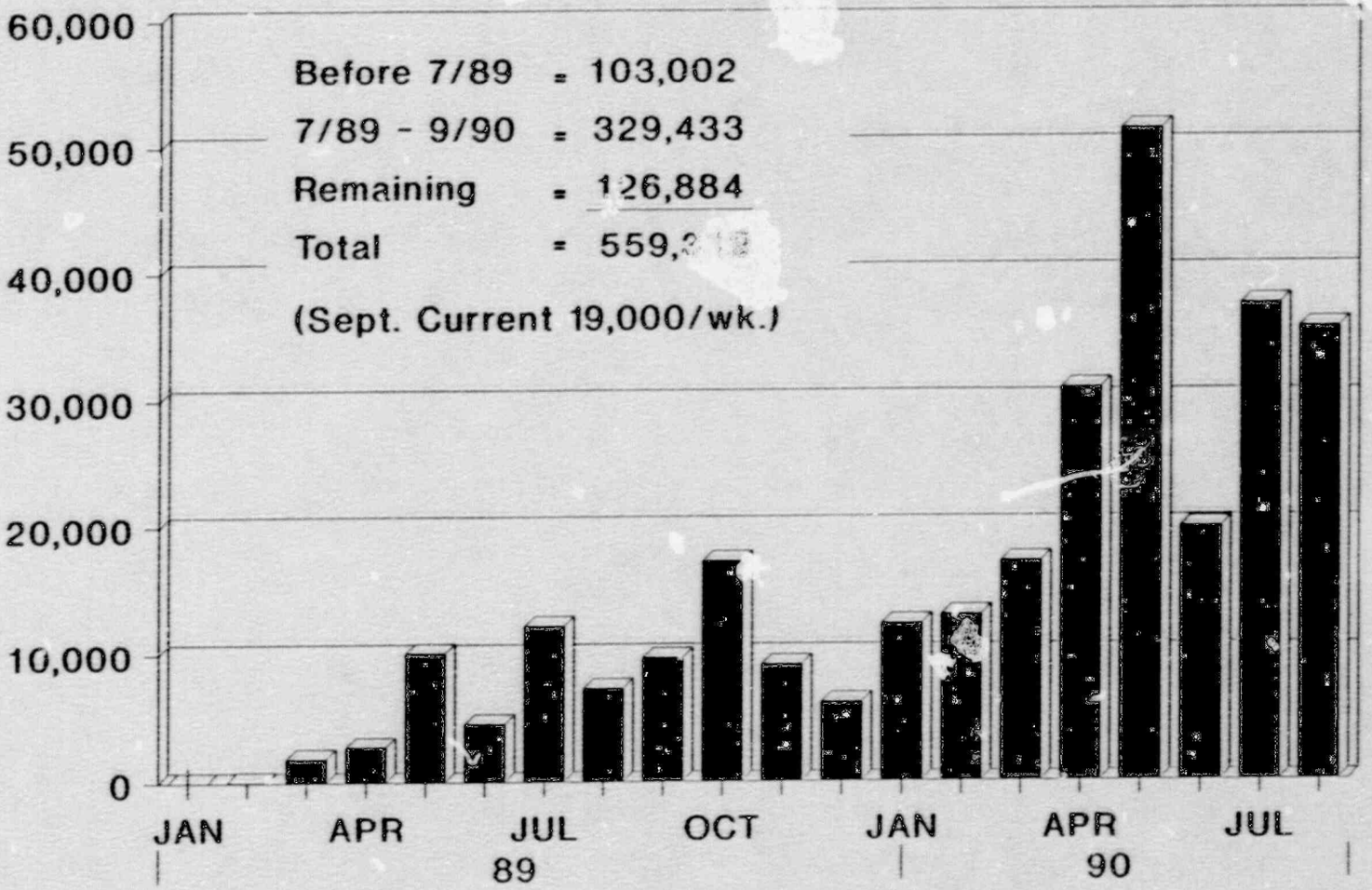
CURRENT STATUS

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

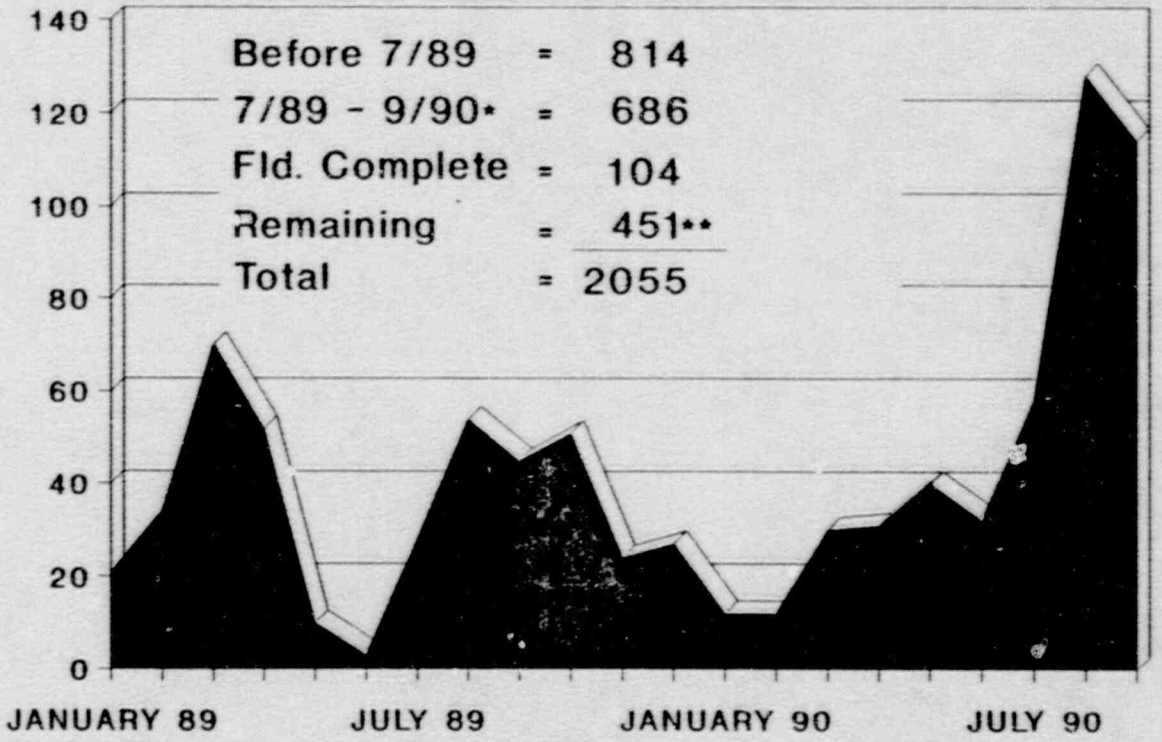
HANGER MODS - LARGE BORE



CABLE


60,000
50,000
40,000
30,000
20,000
10,000
0
Before 7/89 = 103,002
7/89 - 9/90 = 329,433
Remaining = 126,884
Total = 559,319
(Sept. Current 19,000/wk.)
JAN
APR
JUL
89
OCT
JAN
APR
90
JUL

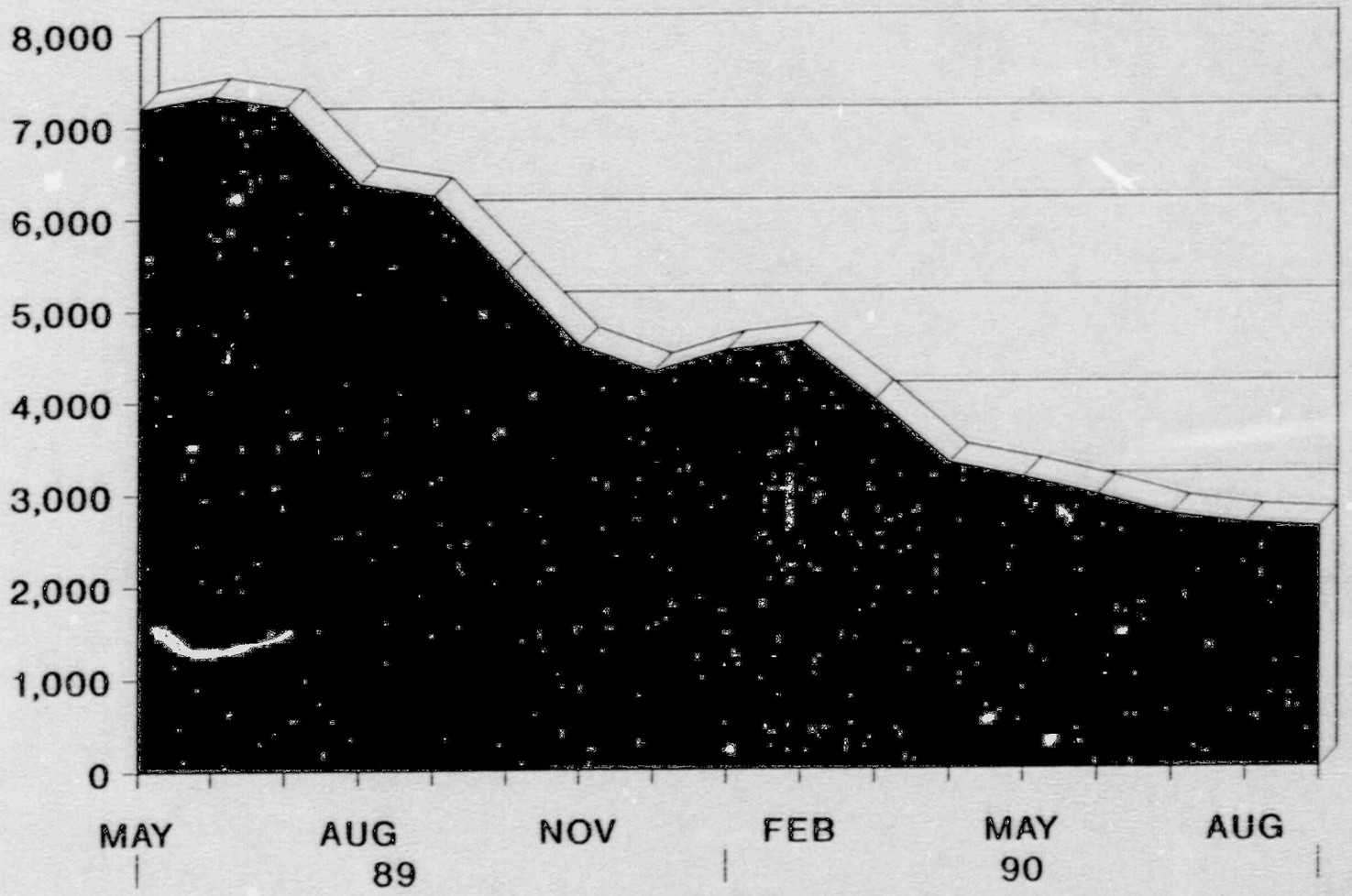
ECNS/DCNS DESIGN CLOSED



*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

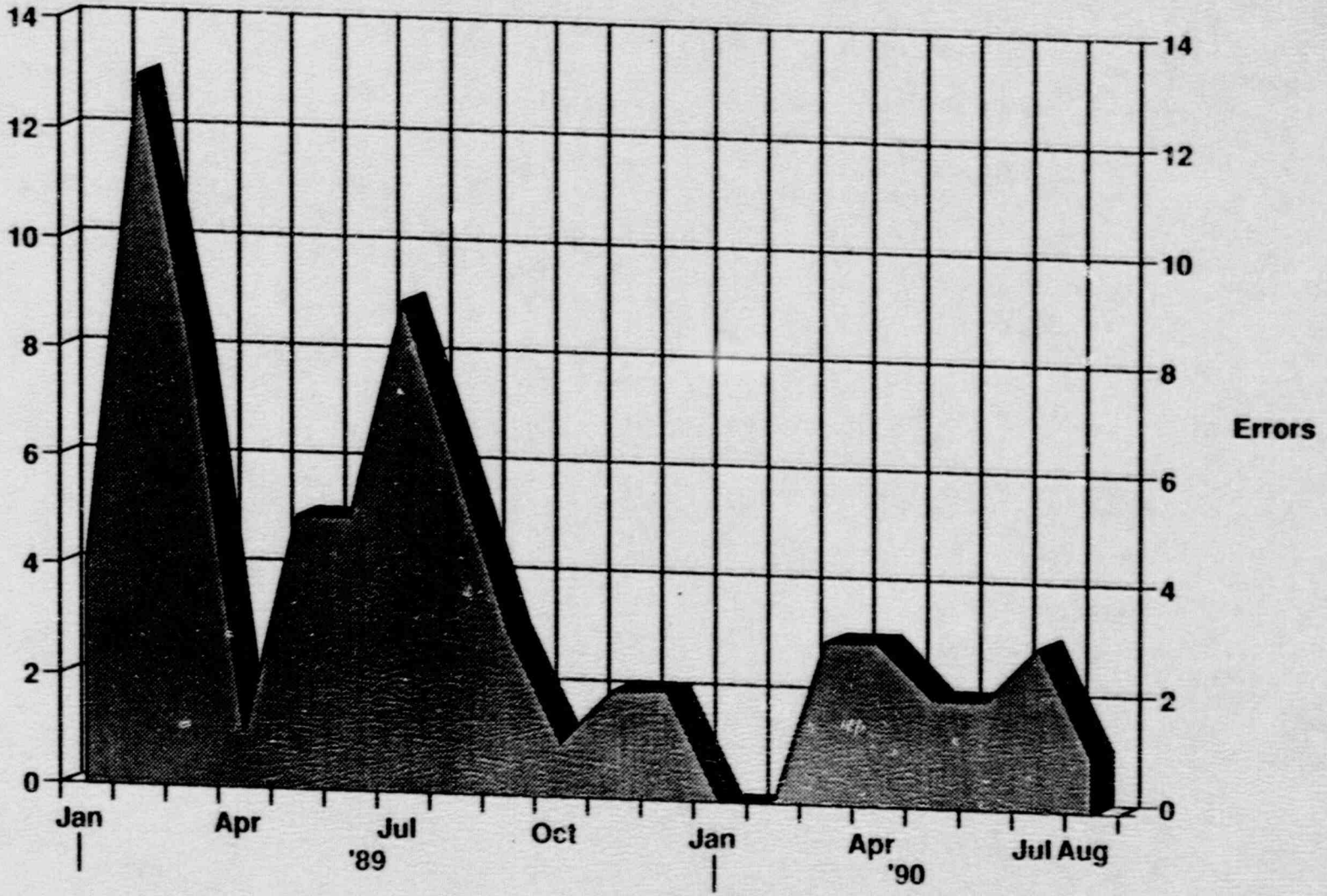
TMI ACTION ITEMS

- 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 Ebneter, 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

- Master Inspection Plan
  - Verify TVA completes Nuclear Performance Plan
  - Programs implemented for safe plant operations
  - Engineering and technical issues resolved

INSPECTION PROGRAM (CONT'D)

- Major Inspection Areas Remaining
  - Operational Readiness
  - Surveillance Program
  - Employee Concerns Program
  - System Turnover

PROBLEM AREAS

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

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Attached are copies of a Commission meeting transcript and related meeting document(s). They are being forwarded for entry on the Daily Accession List and placement in the Public Document Room. No other distribution is requested or required.

Meeting Title: Periodic Brief on the Status of Browns Ferry a

Meeting Date: 9/26/90 Open X Closed ____

Item Description*:	Copies Advanced to PDR	DCS Copy
1. TRANSCRIPT w/ viewgraphs	1	1
2.	___	___
3.	___	___
4.	___	___
5.	___	___
6.	___	___

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