TRANSMITTAL TO: X Document Control Desk, 016 Phillips

ADVANCED COPY TO: _____ The Public Document Room

DATE: 12/12/9_____

FROM: SECY Correspo nce & Records Branch

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: Brief on the Status of Seguoyah-1

Meeting Date: 8/4/88 Open X Closed _____

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

* PDR is advanced one copy of each document, two of each SECY paper. C&R Branch files the original transcript, with attachments, without SECY papers.

17000

A/86

DF02

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Title: BRIEFING ON THE STATUS OF SEQUOYAH-1

Location: ONE WHITE FLINT NORTH, ROCKVILLE, MARYLAND

Date: THURSDAY, AUGUST 4, 1988

Pages: 1-54

Ann Riley & Associates
Court Reporters
1625 I Street, N.W., Suite 921
Washington, D.C. 20006
(202) 293-3950

DISCLAIMER

This is an unofficial transcript of a meeting of the United States Nuclear Regulatory Commission held on 8-4-88 in the Commission's office at One White Flint North, Rockville, Maryland. The meeting was open to public attendance and observation. This transcript has not been reviewed, corrected or edited, and it may contain inaccuracies.

The transcript is intended solely for general informational purposes. As provided by 10 CFR 9.103, it is not part of the formal or informal record of decision of the matters discussed. Expressions of opinion in this transcript do not necessarily reflect final determination or beliefs. No pleading or other paper may be filed with the Commission in any proceeding as the result of, or addressed to, any statement or argument contained herein, except as the Commission may authorize.

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

***

BRIEFING ON THE STATUS OF SEQUOYAH-1

***

PUBLIC MEETING

***

Nuclear Regulatory Commission

One White Flint North

Rockville, Maryland

THURSDAY, AUGUST 4, 1988

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

COMMISSIONERS PRESENT:

LANDO W. ZECH, Chairman of the Commission

THOMAS M. ROBERTS, Member of the Commission

KENNETH CARR, Member of the Commission

KENNETH ROGERS, Member of the Commission

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

S. CHILK

S. WHITE

S. SMITH

J. PARTLOW

K. JENISON

W. PARLER

J. BYNUM

V. STELLO

G. TAYLOR

S. RICHARDSON

CHAIRMAN ZECH: Good afternoon, ladies and gentlemen. This afternoon the Tennessee Valley Authority and the NRC's Office of Special Projects will brief the Commission concerning the current status of Sequoyah Unit 1 which I understand is approaching readiness for restart and power operation.

On March 22 of this year, the Commission authorized TVA to restart Sequoyah Unit 2. On June 21st, we were briefed by the TVA concerning its planned reorganization which I understand became effective on July 1st. At that meeting, we were also briefed by the TVA authorities concerning the initial operating performance at Sequoyah Unit 2 since restart and also on the status of Sequoyah 1.

Mr. White, I'd like to welcome you and your other colleagues here today. I understand that copies of the slides to be used during the presentation are available as you enter the room. Do any of my fellow Commissioners have any opening comments? If not, Mr. White, you may proceed.

MR. WHITE: Thank you. Chairman Zech and Commissioners, we're pleased to be here today to report to you the progress we've made on Unit 1. First slide.

[Slide.]

These are the items that we'll be covering today. Next slide.

[Slide.]

The purpose of course is to give you and we will be

discussing our assessment of the readiness of Sequoyah Unit 1 for restart. Before we do that I'd like to kind of briefly set the stage by refreshing your memory on some key points from the past. Slide?

[Slide.]

We all know that in 1985 all of the TVA plants were shut down. It's well known now that the cause of that -- the basic causes were lack of leadership, fragmented organization. It resulted in symptoms which ranged from everything from low standards of performance to thousands of employee concerns.

I first briefed you in March of 1986 on the problems and you recall that I indicated to you at that time the problems were extensive. We had an enormous amount on our plate. The problems were of enormous magnitude. We addressed at that time our get-well plans. If you recall, we documented in a corporate nuclear performance plan and in site-specific nuclear performance plans in detail the things that we knew we had to do to fix TVA and to get each of the plants on line.

Those plans were provided to you in March of 1986 but they still remain the blue print and the road map that we follow today in our recovery efforts. In March of 1987 then we briefed you on the progress on a number of wide-ranging programs from technical programs to fitness for duty programs to employee concern programs.

In March of 1988 we had made sufficient progress on

all of our programs to seek permission to start up our first plant which you granted. You will recall that on the start-up of Unit 2, we had a very smooth start up of Unit 2, later followed by five trips.

During the June meeting that you mentioned, Mr. Chairman, I did brief you on the additional actions that we were taking to improve our operations. We restarted Unit 2 on 19 June and I'm pleased to report to you that the plant is running well. Next slide?

[Slide.]

We're here today to talk to you about Sequoyah Unit 1. These are the major points that you're going to hear today. These are the major topics. You're going to hear our self-evaluation including information from several independent reviews.

With regard to lessons learned, I gave you a small overview in June and you recall one of the things that we did was to take top-level managers and for three hours a day for three weeks put them in a room with the War Room logs, where they learned and wrote down the good decisions, bad decisions that we made, the good things that have happened and the bad things that have happened during the approach to power and the power operations Unit 2.

At that time, I also told you of our steam generator work. In fact, I believe I mentioned the probe, the new

enhanced probe that we were using and I also briefed you on the work control center and showed you some schematics and described how we were using those with our operators in pre-shift turnover and Chairman Zech, you had a suggestion when we showed you those and we took that to heart and we've done, I think, I think you'll be pleased with the direction that we're going with that.

You'll hear some more today, specifics about lessons learned. With regard to material condition, you'll hear how we're doing with work requests, how we're doing with modifications to Unit 1 and we'll give you additional information on our upgrade of the balance of plan that program which I also briefed you about in June.

In addition to the operation staffing, we'll also describe to you how we're controlling work. Finally, we'll give you a brief on the schedule itself. I think it's important first though to get the basics. Next slide?

[Slide.]

The common thread -- and let me just talk about people because I think people are very important to our effort. They're key to our effort. The common thread that weaves through everything we do is the philosophy that I am trying to instill into our nuclear program. Some of the major points of that philosophy are shown on this slide.

[Slide.]

It takes a long time to change a culture. One of the two major factors in how long it takes to change a culture is how willing the people are to accept change. I would tell you that I'm frankly very pleased with the progress we've made, with the cultural changes at Sequoyah in only 27 months and particularly in the last 12 months.

I wouldn't try to deceive you. We haven't changed everyone. We never will change everyone. We never will change the attitude of all of our people. The important thing is in all the key management positions I now have people at Sequoyah who have what I call the right philosophy. They're using the right philosophy. What I see is that philosophy permeating down into lower levels of the organization.

So, I'm pleased with the progress we've made. We're not there yet, but we're getting there. The attitudes of the people remain good. I see the ever-increasing commitment to reach the standards that I've set and they're high standards. People are really trying to meet them. I see the willingness of our people to learn from not only our mistakes but the mistakes of others.

I still see very much a change in our attitude to a very self-critical and I think that's a healthy self-critical attitude. So, I think we've built a good management team both at the headquarters as well as at Sequoyah and I have with me at the table two members of that team.

On my left, Joe Bynum. Joe has 16 years of commercial experience. He has a bachelor's degree and a master's degree in nuclear engineering. He was at TVA from 1972 to 1982 and in that period of time he held various operational jobs. He left TVA in 1982 and went to Palo Verde where he was the plant manager for all three units at Palo Verde and during the interval of time he was there, all three of those plants were licensed and I believe started up before Joe left.

Recently -- he returned to TVA early this year and I recently promoted him to Vice President for nuclear power production. On my right is Mr. Steve Smith who I hired as a TVA employee in July of 1987. Mr. Smith has 23 years of commercial and Navy nuclear experience. Most recently, you'll recall him as assistant plant manager during the Davis-Besse recovery where he had the responsibility for the maintenance program and I believe he briefed you at the time on that program and by the way that program got very high marks from the NRC.

I'm very pleased to have Mr. Smith as a member of my team. He's been the plant manager at Sequoyah since November of last year. So with those very brief introductory remarks, I'll turn it over to Mr. Bynum. Joe?

MR. BYNUM: This afternoon I'd like to discuss the three key elements we have used in verifying our management

assessment. The Sequoyah Unit 1 is ready for restart.

[Slide.]

MR. BYNUM: The three key elements are independent reviews, lessons learned from Unit 2, and the organizational readiness. With regard to independent reviews, I'd like to discuss three specific reviews that are in addition to the routine NRC inspections, QA audits, monitoring functions.

Our Nuclear Managers Review Group and Infinite Safety Engineering Group, who conduct special reviews and investigations, and the Nuclear Safety Review Board reviews. The three that I'll discuss this afternoon are the operational readiness review, INPO plant evaluations, and the American Nuclear Insurance semi-annual inspection.

With regard to the operational readiness review, this was an eight-man team, primarily consisting of independent contractors. Seven members were members of the Unit 2 team which I briefed the Commission on prior to Unit 2 restart.

All members had greater than 20 years of experience in the nuclear industry, from the military, NSSS vendor, and commercial nuclear. The review took approximately two months. During this two months --

MR. WHITE: Let me interrupt you just a second, Joe. Let me remind the Commissioners, the team, you recall when they did this for Unit 2, and they did the same thing for Unit 1. Selected the people based -- personally selected them, based on

my knowledge of their standards. Personally instructed them to be tough, to measure us to the highest standards, to absolute standards, not to minimum industry or other standards, but to absolute, what they call absolute standards. The highest standards. And to be very critical. They went in with those kinds of instructions which is the same as we did with Unit 2 successfully.

I'm sorry. Go ahead.

MR. BYNUM: I as I said, the review took approximately two months and included areas such as operations, maintenance, radiation control, chemistry. Basically all the activities that directly relate to the day to day operation of the plant.

A draft report will be issued approximately the middle of this month. And although a written report has not been issued, I have reviewed the overall observations and have discussed these observations with several of the ORR team members. And I conclude the following.

The Unit 2 report raised several significant issues which were subsequently resolved. In contrast, the Unit 1 report does not raise any significant issues. Although there are improvements to be made in some areas, there are no issues which I believe would impact the startup of Unit 1.

INPO. You may recall again, prior to the startup of Unit 2, that INPO performed a special assist visit. This last

month, INPO performed a full plant evaluation, including a simulator evaluation of two of our operating crews.

Draft report from the INPO review should arrive later this month. Again, I have reviewed the INPO field notes and a plant debriefing, and from those, I conclude that although INPO had a number of concerns and strengths, these concerns and strengths are consistent with those normally found in operating plants. And again, the INPO concerns should not adversely impact Unit 1 startup.

With regard to the American Nuclear Insurers, they performed a December 1987 semi-annual inspection which resulted in 16 recommendations. Some of these recommendations were discussed with the Commissioners prior to the Unit 2 restart.

Subsequent to the December '87 visit, there were three follow-up visits and, again, a semi-annual inspection last month. In these follow-up visits and the semi-annual inspection, 13 of the 16 original recommendations have been closed and the other three are on track to be closed.

No new recommendations have been made since December of 1987. In summary, we've been thoroughly looked at by qualified independent reviewers. Based on their assessments and similar assessments for Unit 2, we have improved in virtually every area.

Further improvement is still needed and based on the results of these reviews we will continue to upgrade our

performance in both Unit 1 and Unit 2.

MR. WHITE: Remember that these independent reviews, although important, are only a tool, one of the tools that I use and really to measure the validity of my own assessments which I'll describe later, but they are tools that we use, but they're not the only tools.

MR. BYNUM: I'd now like to discuss lessons learned, applied to Unit 1.

[Slide.]

MR. BYNUM: There are three basics aspects to translating lessons learned from Unit 1. Hardware, programmatic, and people and attitudes. Admiral White has already discussed the people aspects. How that we ensure that attitudes continue to improve through our management involvement and our walking spaces.

I'll now address the aspects of hardware and programs. As you all recognize, you can fix a lot of hardware and only treat the symptom. Therefore, you'll see in many cases the hardware improvements directly relate to programmatic issues.

[Slide.]

MR. BYNUM: On this slide I've listed just a few of the hardware issues which we have translated directly into Unit 1 from Unit 2. Again, there are many, many additional hardware lessons learned. These are just a few.

I'd like to discuss, too, in particular, which the Commissioners should be familiar with based on past meetings. First is the steam generator tube plugging. As we discussed with you in June, we have advanced the state-of-the-art in eddy current detectors for short radius bend U-tubes. Using this detector, we went in and tested all Row 1 and Row 2 tubes in all four steam generators in Unit 1.

As a result of those detailed inspections, we plugged approximately 50 additional tubes, all in Row 1. Some of these, in fact, had through-wall indications. With regard to secondary site maintenance, we took advantage of the problems encountered during Unit 2 power operation.

We specifically did additional work on many of the secondary systems including steam dump system, heater drain system, main turban steam seal system, and in fact, as late as this past week, we were performing specific maintenance on the condensate booster points based on recent problems with them in Unit 2.

In addition to the hardware work, we are striving very hard to upgrade our attitudes about what, in fact, are acceptable conditions for secondary site hardware. That is an important lesson learned.

MR. WHITE: What I am trying to instill is what is what is acceptable in the secondary side of the same standards as in the primary. I view them both the same and that's the

emphasis.

MR. BYNUM: Again, I have listed only a few of the lessons learned from a programmatic sense. As in the case of hardware, there are many, many more programmatic issues.

[Slide.]

MR. BYNUM: In this case, I'd like to discuss two in particular which, again, the Commissioners should be familiar with. First is the work control. We actually implemented work control group on Unit 1 before it was implemented on Unit 2. We did this to facilitate an effective system return to service plan.

At our last meeting we showed you our system prints which are used to status outstanding work on a particular system. As a result of comments made during that meeting, we are implementing area walkdowns by each shift, by the Assistant Shift Operations Supervisor and the auxiliary unit operator responsible for that area.

Mr. Smith will discuss --

MR. WHITE: Those are the things that came as a result of your comments.

MR. BYNUM: Mr. Smith will discuss the details of the working -- the working details of the work control group in a few minutes.

With regard to incident investigation and root cause, we have a dedicated staff trained in human performance

evaluation and other root cause techniques such as MORT. And this staff evaluates specific events including but not limited to reactor trips and ESF actuations.

The American Nuclear Insurers specifically reviewed this area in their last semi-annual inspection, had many favorable comments on it.

In conclusion, we have learned from my experiences on Unit 2 both good and bad and we'll continue to critically assess thermal problems, programmatic issues, and people and performance issues, and apply those lessons learned, not only a specific sense, but in a very broad sense.

I'd now like to discuss the organization structure and staffing levels.

[Slide.]

MR. BYNUM: This slide shows the nuclear power organization down through the site level. I won't go into the slide in detail, it is a typical site organization, two basic objectives. Those two objectives are to allow the plant manager to focus on the day to day activities necessary for the safe operation of the units, but also to provide him with the necessary support for these activities. Then there's a slide on the site directors organization --

COMMISSIONER ROBERTS: Excuse me. Could you back to that last slide. Are all those people permanent TVA employees?

MR. BYNUM: At this time at Sequoyah, those are all

permanent TVA employees.

CHAIRMAN ZECH: And all those billets are built, is that correct?

MR. BYNUM: I think all but one of those positions is permanently filled. One of the support positions is currently vacant.

[Slide.]

MR. BYNUM: Site directors organization, the next slide, goes into a little bit more breakdown to show you what in fact is under the site -- again, a fairly typical organization who take those ancillary functions and focus them under management outside the plant managers organization.

I'd now like to go the plant managers organization. Again, a typical plant managers organization for multi-unit plants.

[Slide.]

MR. BYNUM: You see the typical maintenance organization, typical operations organization. I'd like to point out in the plant support group we do have a unique situation and we do have a dedicated fire protection group, a five-member, full-time fire brigade, trained firefighters.

In this group is also the plant assessment group, which I discussed, that have the unit performance evaluation, training, and the MORT training to assist different plant events.

The work control group, as I said, this is a dedicated group, strictly dedicated for work control and coordinating various work activities, both during unit operation and forced and scheduled outages.

In a technical support group, you see this is where we have our system engineers. We've broken our system engineers down into NSSS systems, balance of plant systems, and electrical and heating ventilation systems.

With regard to the staffing levels, this next chart shows the TVA staffing levels on-site.

[Slide.]

MR. BYNUM: These are permanent TVA employees located on-site at Sequoyah. If you look at the site director under the direct reports, what I have included there is that is the organization, on the first chart, if you take all of the organizations to the left of the plant manager, they are what I have designated as direct reports. There are approximately 352 in that group.

Quality assurance, approximately 120. I'd like to point out, nuclear engineering, 351. These are the design engineering people, the people that are responsible for the technical aspects of the plant. These are the technical owners of the plant, 351. And I might add that in addition to that, they are supported by approximately a 1,200 person corporate engineering staff.

Nuclear construction of 713, those are basically where we keep our hourly trades and labor people. We use them for modifications and in maintenance overflow work. Under the plant manager, again, approximately 400 people in maintenance, 200 in operations.

The 40 people under work control, again, those are 40 people dedicated to coordinating work activities. 123 in technical support and that includes the systems engineers of which there are about 60, for a total of 2,568 on-site people.

Based on my experience at other multi-unit plants and industry surveys, the organizational structure and the staffing levels are comparable to other multi-unit plants of the 1,000 megawatt variety.

[Slide.]

MR. BYNUM: In conclusion, we have a solid organizational structure in place and we have sufficient staffing to start up and run the second unit and ensure that all the regulatory requirements and commitments are met. We have incorporated the lessons learned from Unit 2 and the programs are in place to continue to apply these lessons learned.

Our independent reviews indicate that the program, implementation of these programs is satisfactory for restart of the unit. While the reviews did point out the need for improvement in some areas, we are continually striving to asses

ourselves and improve. The bottom line, of course, we expect Unit 1 startup to be improved over the successful startup of Unit 2.

CHAIRMAN ZECH: Thank you very much.

MR. SMITH: Mr. Chairman, good afternoon. My name is Steve Smith and I would like to discuss the present status of Sequoyah Unit 1, both from a material conditions and operations organization readiness standpoint.

[Slide.]

MR. SMITH: As you can see from this slide, Sequoyah continues to make progress in the closure of work requests. This chart shows the total number of work requests for support of both Unit 1 and Unit 2 generated since 1986, January of 1986. As you can see, from January 1988 through July 31st, we have continued to accomplish more work than the work generated. This also has helped us in the reduction of backlog and although I don't show it on this chart, I would like to briefly discuss the management of backlog of work orders at Sequoyah.

During our presentation here in March, we discussed the backlog of work requests at Sequoyah. At that time, we stated that with the means of work control we had at that time, our backlog would be about 2,200 work orders per year. That means we would have an ongoing number of about 2,200 pieces of work to do.

Due to the improvements that we have made through

establishing the work control group in the system with which we control work, we now believe we can control the backlog at about 1,200 work orders per year or about six weeks worth of work given our present approved staffing levels.

[Slide.]

MR. SMITH: Currently we have 951 re-start work requests remaining for Unit 1. That is about four weeks worth of work even with the projected incoming number of work orders. Those 951 are what we have to complete before entry into Mode 4. As you recall in March when we presented our readiness, at the time we entered Mode 4, Unit 2, Sequoyah, we had approximately 1,600 backlog work orders. It is significant to note that in this case with Unit 1, when we enter Mode 4, there will be about 300 backlog work orders, none of those will have any effect on the equipment necessary to enter Mode 4 at the plant.

[Slide.]

MR. SMITH: The area of modifications to hangers, we had approximately 1,600 hanger modifications. As of this morning, there were 55 remaining to complete prior to entry into Mode 4.

[Slide.]

MR. SMITH: RayChem modifications, there were about 525. As of this morning, there were 13. Those 13 are not delayed by lack of ability to do the work with the materials or

anything, it is just that the equipment that those splices affect are in service right now and with our system restoration schedule, they will be removed and the RayChem replaced prior to Mode 4.

[Slide.]

MR. SMITH: In the area of hardware modifications, ECN's and DCN's, those might be replacements of valves with a different type valve, installation of a new transmitter, a new indicator, that sort of thing. There were about 333 total to do and as of this morning, I believe there were 34 remaining to do.

[Slide.]

MR. SMITH: In the area of operations staffing, the operations organization is currently organized into six groups. Those six groups are there to allow for ongoing re-qual, special training, annual leave and time off for personnel. This is the recommended number of sections for an operations organization. Each position in that organization which consists of one shift operating supervisor, one shift technical advisor, two assistant shift operating supervisors, four licensed control room operators and 12 auxiliary operators, each of those positions are filled. In addition, we have approximately 30 additional operating personnel that have been added to the shift to allow for the large number of valve alignments that we have to do for Unit 1 system restoration to

get it ready to start up. We feel that we have adequately staffed the shift to meet all contingencies in the restoration systems to service.

CHAIRMAN ZECH: How many shifts?

MR. SMITH: Six.

CHAIRMAN ZECH: The total number of people?

MR. SMITH: Total number of people, 102 auxiliary operators in the plant and 24 licensed control room operators. There are 12 SRO level assistant shift operating supervisors; 6 STA's and 6 shift operating supervisors. That is the total, almost 200 people.

CHAIRMAN ZECH: Thank you.

MR. SMITH: We will place senior licensed management personnel on shift during start-up and transients on Unit 1 as we did on Unit 2. Our Unit 1 operator training will include management lessons learned from Unit 2 of those hardware and event type things that we experienced on Unit 2. There will be hands-on operator experience for Unit 1 personnel on Unit 2 at power prior to entry into Mode 2, to make sure everybody is rotated onto the operating unit and is involved with any of the evolutions on the operating unit so they will take that experience with them to Unit 1 for its re-start.

We will conduct Unit 1 start-up training on the simulator. That training will include feedwater system transients at low power and we will use again the three man

team concept of maintaining steam generator levels and placing the turbine generator into operation.

CHAIRMAN ZECH: Will you go through all your start-up procedures on the simulator?

MR. SMITH: We will go through -- yes, sir. I will verify that. We will go through all the applicable start-up procedures. There are others that we wouldn't necessarily use. We will go through every one that we had difficulty with. We will go through the events that we experienced.

CHAIRMAN ZECH: You will have all your shifts on that kind of training?

MR. SMITH: All the shifts that will start up Unit 1: yes, sir.

CHAIRMAN ZECH: Thank you. Good.

MR. SMITH: They will continue with the normal re-qual training. They are in the fourth week of the six weeks schedule for the year.

We have also reviewed all the operator qualifications and experience on Unit 1 and assured that each shift has a balance of experience within the shifts so that one shift isn't overloaded with experience and the other shift has none at all.

[lide.]

MR. SMITH: You have heard briefly some discussion about the work control group. The work control group came about as lessons learned mostly from Unit 2 start-up and in an

effort to better control the interface of work activities in the plant. When I first arrived at Sequoyah, we began a plan of the day meeting and in that meeting, we brought all disciplines and all the organizations that affected work in progress in the plant together once a day to discuss our schedule and impacts to the schedule.

I feel that meeting worked very well to communicate among people our needs and our priorities. We really didn't do anything to communicate to the shift Supervisor, the shift people, the maintenance people, the impact that the work was having in the plant and what the aggregate accumulation of work activities that had been performed, what its impact was in the plant.

With the work control center and the way that we monitor work activities in the plant, by placing those activities on system diagrams and reviewing those system diagrams with each shift with the shift operating supervisor and the maintenance management personnel, and each of the assistant shift operating supervisors, we built a picture of what the material conditions looked like in each unit and what the overall effect is to the unit and the operating unit.

The work control group builds that picture. That is one of their fundamental duties and responsibilities.

As you can see, the work control group consists of basically four sections. There is the periodic test

coordinator, the two unit work control sections, and the work control and outage shift managers. The periodic test coordinator is responsible for assuring that all the surveillance activities which are performed to support our technical specifications operability are conducted on time.

Up until January when we implemented this periodic test coordinator position, we were averaging approximately too late or missed surveillances per month. Since we have implemented this position, we no longer have that problem. We have not had one late or missed surveillance since implementing the position.

I feel this was definitely a major improvement in the way that we do our scheduling business with surveillances.

In the two work control sections, the work control supervisor is a licensed SRO at Sequoyah and he will be required to maintain his license current at Sequoyah. He supervises a group of approximately 15 people and those individuals perform several very important functions. They prioritize all work requests for both units. That means not only do they prioritize its importance within the units, but they weigh it off against the two units to see which has the most priority.

We use that system to make sure that we are not diverting our attention to just meeting a schedule on Unit 1 re-start but that we are paying very close attention to the

material conditions in Unit 2 and that we are maintaining Unit 2 equipment at a level where the operators do not have concerns about their ability to safely or effectively operate the unit.

Another of the key responsibilities --

MR. WHITE: That is a very important point by the way because a few weeks ago, I saw us with the emphasis on Unit 1, what I felt was slacking off on what we should be doing on Unit 2. I conduct an inspection one day a week in Unit 2, get the flashlight and go out there and look. I found a lot of things in Unit 2 that I felt should get higher priority. What Steve just mentioned is very important in balancing those priorities.

MR. SMITH: The other very important function that this group performs is to evaluate the operational impact of work going into the field. They prepare for each work request an impact evaluation sheet which uses an index so that the shift operating supervisor who must approve that work going into the field can scan that sheet and see the points that he needs to consider important and pay special attention to, such as taking a component out of service, which would give him a one-out-of-one trip logic should he take that particular component out of service while he has it out of service.

Those things are identified to him up front. He doesn't have to waste a great deal of time reviewing a very large, thick work package, if you will. Again, these are prepared by SRO-level individuals. This reducing the amount of

time that the shift operating supervisor has to spend reviewing paperwork in the control room allows him to spend more time on his principal responsibilities of monitoring the two units, monitoring his crew's performance in the two units.

The last primary function of the work control group is to consolidate work activities. When we first initiated this effort and went through approximately 2000 work orders for both units, we discovered that we had work requests and modifications that conflicted with each other. For example, in one system we had a work request that did repairs to a Limitorque operator on a valve, we had another work request that again removed the Limitorque operator so maintenance could be performed on the valve, and we had a modification that removed the Limitorque operator and the valve from service completely and replaced it all together.

In being able to review those and weigh them off against each other and see the effect, we have managed to consolidate a great deal of work activities and save a great deal of management and planning and scheduling time in that reduction effort.

Next slide, please.

[Slide.]

The Unit 2, Cycle 3 refueling outage is currently scheduled to start in early January of 1989, and it will last approximately 60 days. As you can see, the currently scheduled

work activities are considerably less than those activities which we accomplished during the second quarter of this year. This was while Unit 2 was at power or being started up and Unit 1 was being prepared for restart. We feel that we have more than adequate resource, both manpower and financially, to assure that we can conduct the refueling outage on Unit 2 with no impact whatsoever to the safe and continued operation of Unit 1.

Next slide.

[Slide.]

In conclusion, I would like to state that I believe we have shown here that the work activities for restart of Unit 1 are on schedule. We have a two-unit operational organization in place and functioning, and it has performed very well. We have made significant operating program improvements based on the lessons we have learned from Unit 2 restart. From a personal, programmatic and material standpoint, I believe that the Unit 1 restart will be significantly improved over Unit 2.

Thank you.

CHAIRMAN ZECH: Thank you very much.

MR. WHITE: Mr. Chairman, for my brief concluding remarks I would first like to discuss the Unit 1 schedule.

Slide.

[Slide.]

The heatup we actually have scheduled and believe

will occur about 7 September, but I am going to discuss that further in a moment. About two weeks, then, for hot operations before criticality. TVA and the NRC Staff have agreed on the hold points at Mode 4, Mode 2, and 30 percent and 75 percent power.

Next slide.

[Slide.]

I, too, am confident that we are ready to take the step from one-unit to two-unit operation. Based on what you have heard, and I hope your staff will agree, there are no technical or programmatic issues remaining to be resolved. We have some work to be done, but as you have heard, we are either meeting or beating our work schedules. I think it is significant for TVA that a schedule which I set in March for the startup of this unit, that we are still on track for that. I think that's important.

When I believe that we are ready for the startup, I will go to the Staff and ask for permission to start up, but let me assure you, Chairman Zech and Commissioners, that I will not ask for that permission unless and until I am satisfied. During the heatup period, I will closely observe the operators and the equipment, and very frankly, the long pole in the tent is not the completion of the work orders, and the long pole in the tent is not the completion of the modifications. The long pole in the tent is when I am satisfied from my personal

observations the operators and the equipment and the cleanliness and the preservation in that plant are up to the standard required for the startup.

In the restart -- by the way, I will, obviously, be in the plant as I have been in Unit 2. I will do the same in Unit 1, so it will be my personal observations. In the restart, I will watch closely, and in this restart, as I have always done in any restart, we will be deliberate, we will be conservative, we will be cautious, and believe me, if any problems arise, I won't hesitate for one second to stop what we are doing and reassess and reevaluate before proceeding.

So I think that, as I say, the 7 September date is really contingent on when I am satisfied even though the work will be done by that time.

Finally, I would like to say one other thing, and it refers to your staff, the NRC Staff. Your staff has been hard, they have been tough, and they have been professional. I think that they deserve to be commended for the amount of work they have done because this has not been easy, not only for TVA but for your staff, because believe me, there has just been a whale of a lot going on for a long time, and your staff, in my opinion, has done a very good job.

We are ready to answer any questions.

CHAIRMAN ZECH: Thank you very much.

Any questions from my fellow commissioners? Mr.

Roberts? Mr. Carr?

COMMISSIONER CARR: You are only talking Sequoyah 2, but I guess you are still working Brown's Ferry at the same time, and you feel like you have got plenty of assets to do all the jobs you have on your plate down there?

MR. WHITE: That is a good question and it has a complex answer. The basic answer is yes, when I make some changes that I'm in the process of doing now in terms of some changes that I'm making. The difficulty doesn't exist at Brown's Ferry; the difficulty is, frankly, what I am capable of doing and my corporate staff, because, you know, on our plate now is Sequoyah 2 because I want that to continue operating well, Sequoyah 1. We are doing a lot of planning for the outage of Sequoyah Unit 2, so that is there, plus the Brown's Ferry, and, of course, we are starting to do some of the work necessary in Watt's Barr. So it is, frankly, more my capability to stretch than it is the resources at Brown's Ferry.

COMMISSIONER CARR: Are you getting all the corporate support you need? I guess you have got a corporation down there. Are you getting the board of directors support that you need?

MR. WHITE: Well, let me answer that -- the best way to answer that is in general, yes. There are certainly some specific areas which are of concern to me. They are under

active discussion between me and the Board at the present time.

COMMISSIONER CARR: We were assured, I think, in the reorganization brief that there wouldn't be any impact, so if there is one, I am sure we would appreciate knowing what it is and how it is affecting you.

That's all I have.

CHAIRMAN ZECH: Thank you very much.

Commissioner Rogers.

COMMISSIONER ROGERS: As I recall, when Unit 2 was restarted or permission was given to restart, there were some items that were to be taken care of at the end of the first outage; is that correct?

MR. BYNUM: Yes.

COMMISSIONER ROGERS: Now, are any of those same items on the open list for Unit 1 that you don't expect to have taken care of before you plan to restart Unit 1?

MR. WHITE: If I understand your question, the answer is yes. For example, in the hanger work, in Unit 2, there were certain hangers that were required for re-start and then a number, in fact most of them are required after re-start, the same situation exists on Unit 1. There are some pre-re-start and some post-re-start work. The answer is yes, if that is the thrust of your question.

COMMISSIONER ROGERS: Why is that? Shouldn't we expect you really to have everything done that you know about,

that you plan to take care of in the first outage of Unit 2, but on Unit 1, the same types of items that have to be corrected?

MR. WHITE: I don't think so, Commissioner Rogers. The sheer magnitude of what we have done and what we have to do just -- we have to prioritize. We have to prioritize. We have to do -- if the plant is in safe and reliable condition to operate -- I also have a responsibility to provide power to the ratepayers. The first one is the safety and liability clearly but as a result of that, I have to prioritize and in some cases, the work goes into a subsequent outage.

COMMISSIONER ROGERS: Could you be as explicit as possible about what those items are that you expect to do at the end of the first outage of Unit 1 if you re-start?

MR. WHITE: My guess is it would be significantly less on Unit 1 than on Unit 2 on the first outage because we do have quite a bit of work on Unit 2 for the first outage. We have corrected a lot of those things already on Unit 1 but not all. We will be happy to furnish you that detailed information.

COMMISSIONER ROGERS: If you could say a little bit more about what you have done to try to avoid the recurrence of the five trips that occurred on Unit 2 after what you said was a good re-start but then during the early stages of operation, not the initial but certainly in the early stages, were a

succession of trips, how would you characterize those and what have you done to avoid repetition of the problems that led to those?

MR. WHITE: Certainly there are a number of things. One would be the attention we have paid to balance-of-plant. We have certainly upgraded the balance-of-plant in Unit 2 and at the same time done that in Unit 1. The things that we found troublesome in Unit 2, we have already corrected in Unit 1. There will be other things which I can't predict obviously.

Certainly we recognize the sensitivity of the Westinghouse four loop to those kind of trips. Balance-of-plant is part of it. A lot of it is training. Adding the additional operator inside the horseshoe. As Mr. Smith indicated earlier, actually working through the specifics of those kind of trips in the simulator with all the sections.

MR. SMITH: Three of those five trips specifically related to the method that we operated the feedwater portion, the secondary portion of the plant during low power transients, placing the turbine generator in service. We developed the three man method which was also a recommendation coming from the Westinghouse Owners Group's trip reduction program, so there is a third individual there who acts as both a coach and a middleman in the performance of those transients.

We used that method, trained on that method for the re-start of Unit 2 subsequent to the trips and it worked very

well. We controlled the plant at low power because of some feed pump governor problems for about five days using that method. It worked very, very well.

We feel that if we used this method, trained on this method and of course were cautious and we don't rush into things, that we can significantly reduce if not eliminate -- I won't say eliminate, you will never totally eliminate things like this because of the chance of component breakage, but personnel error and personnel interface to the machine now works very well.

One of the first two trips was caused by the improper performance of a procedure. We have had a very strenuous procedure upgrade program. The individual read the procedure and the procedure had been revised and field validated to make sure it worked and he decided that procedure wouldn't work and he took a step outside the procedure. That won't happen again for that individual or for those individuals in his group performing similar procedures.

MR. WHITE: Or others who have heard of the results of that, I would hope, would be less apt to violate procedures.

MR. BYNUM: The other thing with regard to the methodology that we tested on the simulator and we used subsequently to start up, we have also explicitly proceduralized that methodology, whereas before, there was really more leeway for the operator to decide what power levels

and in some cases what sequences, how much steam dumps could be opened when we synchronize the turbine, things like that are much, much more specifically proceduralized and outlined to follow the methodology that we developed. That procedure obviously applies to both units.

MR. SMITH: Underlying all that is the most significant thing and that is attitude. We got pretty cocky with Unit 2 start-up, everything went so well, the plant came right up to power. We weren't scared enough. We won't have that affliction with Unit 1 re-start. We will be very cautious. We will be very, very concerned about each step that we take and what it means.

MR. WHITE: Commissioner Rogers, you are asking a very good question. I would not want to leave this room and have you think White said they aren't going to make any mistakes down there, everything is going to be okay. Obviously, we are going to learn and do the best we can. I've been in the business long enough to know that you can't make that absolute kind of statement. We certainly are trying to do everything that we can think of to cause this to be a better start-up than Unit 2 and to get that plant on line and keep it there smoothly.

MR. SMITH: One of the items shown in our material of lessons learned, we have put together a task force consisting of design engineering, systems engineering, our operations

staff, to do a composite review of the feedwater controls, steam generator interactions and plant trips. There are several Westinghouse Owner Group investigations that have indicated that certain modifications to the trip set points on low/low steam generator level at low power, some improvement in electronic feedwater controls virtually do eliminate the man/machine interface problem for control of plant and feedwater system at low level.

We are pursuing that. Our 1989 fiscal budget supplies funds to get the engineering work done and some hardware fixes during Unit 2 Cycle 3 outage.

CHAIRMAN ZECH: Did you say Unit 1 operators have been trained on Unit 2? Do you have them trained on both units? Are they licensed for both units?

MR. SMITH: Yes, sir. They are licensed for both units. What we are doing right now through the month of August and prior to Mode 2 on Unit 1 is to make sure they get on shift, hands-on operating experience on Unit 2 at power. As you will recall, when we first entered Mode 4 and 3 on Unit 3, we had some difficulties with the operators understanding that the plant was now different from the three years of shutdown. They weren't sensitive to the nuances of operations. What we are making sure of is that the Unit 1 operators become sensitized to the expanded scope of attention for an unit operator.

CHAIRMAN ZECH: I certainly agree with your emphasis on people. We all know the difficulty with changing cultures and changing attitudes, but that emphasis is also extremely important. When I was down there prior to your restart of Unit 2, even though it was a brief visit, it did seem to me that there was a change in cultural attitude, at least that was my perception from my previous visits to both Sequoyah and Brown's Ferry sites.

And I encourage you to continue that effort. It doesn't change overnight. You don't always change it completely, but the curve certainly would appear to be in the right direction and I know how hard that is and I encourage you to continue that effort.

It refers to management involvement and I certainly agree with that, and I've used that term. I've recently changed it to leadership involvement because I think it connotes people more than necessarily resources. But that kind of involvement is definitely a key to excellence of operation and of safety in my judgment.

So those are things that I think you're working on apparently and I commend you to continue in those particular areas. And also to get that attitude down through your chain, not only at the top levels of leadership, but it's a challenge for your Vice President, for your plant manager, to continue to work on leadership involvement of your middle level management

people, too.

Walking the spaces is part of that, insofar as I'm concerned, and your emphasis on that I think is also right on. You mentioned balance of plant. I think, again, I'd appreciate that very much and I think that we all know that balance of plant can give us as many problems as the other part of our plant and sometimes it has not received, at least in my judgment, the attention that it should have and I appreciate your trying to emphasize that important part of your plant.

Reorganization, Commissioner Carr mentioned, and I would just like to emphasize, too, we're very mindful in the Commission that part of your success in attempting to turn around TVA is a support that is necessary in the nuclear organization from the TVA Board.

You know the Commission's personal interest in that particular relationship and so we want that to continue. We would hope that -- we've already received a commitment from the Chairman and the Board of their intent to continue support for the nuclear organization.

This Commission feels that is extremely important. If you see that's not there, we would certainly believe you have the obligation to tell us about it. We think that that commitment and that support for the nuclear role at TVA is critical and we will be mindful and watching for that kind of support.

starting up a unit and getting ready, those last few weeks are very uncertain. But we will be monitoring that and get back to the Commission when we feel comfortable that we're ready to suggest it is okay.

And with that, let me, with a brief introduction, turn to Mr. Partlow to give a brief overview and let the Commission get into any area you wish to.

MR. PARTLOW: Thank you. Good afternoon. This is the staff's brief on the status of Sequoyah Unit 1, readiness for return to operation after a shutdown of some three years.

With me today are Steve Richardson, Director of the TVA Project Division, and Mr. Ken Jenison, our Senior Resident Inspector of the Sequoyah site.

[Slide.]

MR. PARTLOW: This slide only shows the TVA schedule for the restart of the unit, I won't get into that. But let me do say at this point that the staff believes that the TVA's schedule for the startup of Sequoyah 1 is realistic and that it is safely achievable.

Later in this brief, we're going to be talking about our final resolution of technical issues, about the final kinds of inspections that we want to conduct at that plant, but given that, given that there are still issues to work on and inspections to conduct and absent anything unknown at this point, we believe the schedule is realistic and safely

Unless my fellow colleagues have any other comments, thank you very much for your presentation and ask the staff to come forward. Thank you very much.

Before we begin with the staff's presentation, let me just, on behalf of the Commission and the agency, congratulate you, Mr. Stello, on our receipt yesterday of the Presidential Distinguished Rank Award, presented to you personally by President Reagan.

It's my pleasure to be there and we recognize that as the highest award for a Federal government senior executive service official, and certainly believe it was well deserved and well earned and we congratulate you on that high award.

MR. STELLO: Thank you, Mr. Chairman.

CHAIRMAN ZECH: And you may proceed.

MR. STELLO: What we wanted to do today is to describe for you the remaining work that we see the staff has, in reasonably general terms. We are prepared to go into any detail you'd like us to. And to commit to the Commission that we would communicate later to the Commission and we feel that that work is reasonably complete and we'd be prepared, if the Commission would be at that point in time, to authorize the restart of Unit 1.

And our expectation and belief is that the schedule that you've heard here today is one that is achievable. We're watching very carefully. As you well know, when you're

achievable.

[Slide.]

MR. PARTLOW: TVA has discussed with you the restart of Sequoyah Unit 2, its five trips and so forth. We did meet with TVA management in June following that, and we understood their corrective actions which you have heard and improving secondary systems, maintenance and procedures, and training and so forth.

And since mid-June then, the plant has operated at varying power levels between 50 and 100 percent power. My own impression and the impressions of the staff has been that that period of operations at Unit 2 has been stable, has been unremarkable, and has been satisfactory.

Ken Jenison, I think, is our staff member who has been the closest to Sequoyah. He went to the Sequoyah site in early 1985, a few months before the units were shut down, and he has been there and has seen Sequoyah nearly every day for the past three years.

So we've asked him to come here and to provide for the Commission his own perspective on the nature of operations at Sequoyah. Ken?

We have watched the daily operation since June and we have seen a steady improvement in the activities and coordination in the control room. We've seen a steady improvement in the activities in the work control center and

the outage control center. We have seen a learning process on the part of the management that's was newly installed November or so, 1987 on. The management makes solid, good, conservative decisions as a rule. The Plant Manager seems to make good, tough decisions based on safety rather than cost or schedule. The Site Director and the Outage Manager are very talented managers on site to coordinate the work that needs to be done. The real improvements on site started to occur about November of 1987 when those three individuals showed up. I have confidence in the plant operations review committee now to make safety evaluations and to take conservative, safe actions if they find a condition that they don't think is safe.

CHAIRMAN ZECH: Do they keep you informed on activities in your area of responsibility? Are you welcome to their meetings and so forth?

MR. JENISON: Yes, sir. Yes, sir, I am. The independent safety engineering group we monitor routinely. That group has been strengthened and reviews site programs and has taken on several initiatives since the end of last year. The NMRG, the off-site safety review committee, appears to be more aggressive and more knowledgeable about what is going on on the site. There seems to be more communications between the on-site and the off-site -- I made a mistake, it's NSRB, excuse me -- on-site and off-site safety review committees.

Nearly all of the levels of management on the site

have been replaced over the last year in the operations and maintenance area with few exceptions. People seem to be involved, interested --

CHAIRMAN ZECH: Do you see a change in attitude since you first came?

MR. JENISON: Since I first came?

CHAIRMAN ZECH: Yes.

MR. JENISON: Yes, sir. Big change. There has been an equal change since the end of last year.

CHAIRMAN ZECH: Can you give us any examples of that, any concrete -- it is kind of hard to define attitude. Have you thought about it enough to give us any examples?

MR. JENISON: I think the simplest example was about two weeks ago they were blowing ice in the ice condenser and the Plant Manager wanted to complete the job. He was pressing to get the job closed. An M-5 level manager, a first line supervisor, said that he made three days up on his schedule and he wanted to continue to blow ice to make sure that he had enough ice in all the baskets. Okay, so the Plant Manager turned to him and said if we can continue to do that, we'll do that. Just add the extra margin that we may need. He already had satisfied himself that he met the weighing requirements for the annual weighing requirement at that particular time but they continued to blow ice and they lanced the flow holes for another three days.

CHAIRMAN ZECH: So they were ahead of schedule.

MR. JENISON: In that particular area.

CHAIRMAN ZECH: They want to stay ahead of schedule, is that what you are saying?

MR. JENISON: He was at schedule. He had made up three days and he wanted to use the three days to add extra margin to the weight of ice inside the ice condenser.

CHAIRMAN ZECH: And you think that might have been a different attitude than three years ago?

MR. JENISON: Three years ago they would have argued whether or not they needed to weigh at all.

CHAIRMAN ZECH: All right. Thank you.

COMMISSIONER ROGERS: I wonder if you could comment, if I could break in just for a second, on this question of the learning of experiences on Number 2, how that in your opinion affects the -- particularly say the operators in Number 1. We have heard from the TVA people. What is your view on that?

MR. JENISON: My personal opinion is that two things that have improved the life the senior reactor operators and the operators in the cortrol room were the outage control group, where they have gone to a system outage concept so that an operator knows that he will lose a particular system and all those aspects for a certain period of time, to get all the work done and then they bring the system back up rather than work on the system piecemeal. That is the first improvement in my

mind.

The next improvement I think that has made the life of the operator in the control room better is the Activities Control Center and it was described previously. What that has done is remove a major portion of the review and research work that the SRO had to do in the control room in order to determine what safety functions he was going to lose and what things he had to observe during a performance of a specific activity. What I mean by that is they have a very complicated electrical system on site and it is possible to remove a diesel generator on one train and a valve on another train and completely eliminate a safety function so you have to be very careful of that.

Those two activities in my mind have improved the lot of the operators significantly.

CHAIRMAN ZECH: You may continue. We interrupted you. Go ahead.

MR. JENISON: I'm done.

CHAIRMAN ZECH: Thank you.

MR. PARTLOW: Next slide, please.

[Slide.]

COMMISSIONER ROGERS: Technical issues, review matters left before restart -- Mr. White said that he understood there were no technical issues remaining to be resolved prior to restart.

MR. PARTLOW: That's right. At this point we on the staff know at this point know of no major technical issues that are likely to come up but there still is submittals to be received for TVA and reviews to be conducted by us.

The staff holds fairly frequent meetings with them so I think we generally know the nature of the submittals but we don't quite have them yet and we are going to be looking at those.

CHAIRMAN ZECH: When you get them, you need the time to review them too, so I hope you are going to -- you know, the schedule's important to TVA but I am sure they recognize that you need the time to review them carefully and cautiously and confidently.

MR. PARTLOW: Yes. We have made them aware of that, that we need that time and if they come in now on the schedule that we understand, we should be able to be consistent with the TVA schedule.

CHAIRMAN ZECH: Fine.

[Slide.]

MR. PARTLOW: But an example is the electrical design calculations. This was a major improvement program in electrical and mechanical and so forth, to go back and review and redo a whole lot of electrical design calculations to sort of reestablish the design basis of the plant.

That package is due in imminently for Sequoyah Unit

1. It covers the whole site electrical distribution system including emergency diesel generators. It gets into the design calculations of the capacity of the diesel generators --

COMMISSIONER ROBERTS: Is this similar to the problem in Unit 2?

MR. PARTLOW: It will be a review of the similar concerns that were raised at Unit 2, Commissioner. Yes, sir.

So we don't anticipate any problems in that package in this regard in terms of the diesel generator capacity for two unit operations but we need to get the package and go through it for ourselves.

The second item on the list, fire protection, that is not a technical issue. We conducted our inspection of fire protection, Appendix R, at Unit 1 just this last week. It was a satisfactory inspection. We did find that they still need to complete some matters that they have been working on, some sprinkler head locations, some emergency lighting and so forth, but I guess the important thing here is that we had earlier in March found some Appendix R problems at Unit 2 and here on this inspection at Unit 1 we did find that they had successfully transferred those lessons learned over to Unit 1.

Finally, there have been a number of bulletins issued this year that the responses are soon coming in from TVA -- not that any of these bulletins are going to hold up start up but I want to understand and TVA I'm sure wants to understand what is

being done short term versus long term on these bulletins. A very recent one on the thinning of thimble tubes at Westinghouse reactors just came out, but it is something that needs to be looked at while there's the opportunity to look at it.

There are several other bulletins in that regard that we are waiting to receive, several tech spec changes that still need to be processed. There is an exemption request on the testing of a valve that is being processed. Again, I anticipate no major problems but I don't want to leave you with the impression that nothing will possibly come up.

CHAIRMAN ZECH: There is still work to do.

MR. PARTLOW: Yes.

CHAIRMAN ZECH: Right.

MR. PARTLOW: Next chart, please.

[Slide.]

MR. PARTLOW: The inspections that we have conducted recently and will be conducting in the futur- -- in June and July we did a containment spray system evaluation. This was a team inspection that was very focused upon one relatively small system, the containment spray system. The intent here was to really shake out one [illegible] ask the question, okay, they have all these improv[illegible]ograms, they did all this work on Unit 2 that we looked [illegible]er exhaustively. Let's take a little snapshot in Unit 1 to see if that's been done there.

Through this team inspection we examined maintenance and surveillance and design calculations and drawing control and QA and the whole thing on the system. We even took the employee concerns that had been raised concerning this system and pulled the thread on those to see if they had been adequately addressed.

It was a satisfactory inspection. It did again tell us that the programs that had been implemented and promised at Unit 2 also had been implemented at Unit 1. We found some things. We found some missing electrical calculations. We found some minor as-built deficiencies in walking down the system. We found some -- where they could do better protecting open equipment while it was being maintained or modified and so forth, but it was a satisfactory inspection.

COMMISSIONER CARR: That was a mini-vertical slice?

MR. PARTLOW: Yes, sir.

COMMISSIONER CARR: Okay.

MR. PARTLOW: Maximum vertical slice on the mini-system.

Fire protection we have already discussed. And what do we intend to do between now and the time of startup at Sequoyah? Unless something comes up, we're basically finished with our major programmatic technical team inspections.

I do want to still take a look at the maintenance status at the plant later this month, not the programs so much,

but again the backlog, the kind of things that TVA talked to the Commission about. Is it well prioritized, is it well scrubbed down for those things that can be done or should be done prior to startup.

Prior to the plant's mode change, permission for mode change, prior to the staff's readiness to recommend to the Commission that the plant is ready to start up, we will do a restart readiness team inspection.

The primary emphasis will be upon the readiness of Unit 1 to operate and also upon the readiness of Sequoyah to be a two-unit operating site. There will be a team inspection looking at maintenance, modifications, the work of the committees, how the QA program and the corrective action system is operating and so forth.

Then as the -- just prior to the plant's beginning heat-up and throughout the approach to criticality and so forth, we will be doing an augmented site inspection coverage program of periods of backshift coverage, perhaps in 24 hour coverage, and so forth, throughout the process of a heat-up, approach to criticality, and power ascension.

One of the things that I will ask our people to do during these observations that are going to be going on over the next week is to be very careful to note that -- to observe that the operators, that the managers, are now back into the mode of using our technical specifications, of using our

limited conditions for operations, and our action statement, recognizing them and it requires a mode change in your mind as you go back to operations. Recognize them, interpreting them narrowly and conservatively and acting upon them.

So I'll be asking our observers to be especially cognizant of that as they do their work. That completes the staff's presentation. We'd be happy to try and answer questions.

CHAIRMAN ZECH: Thank you, everyone.

MR. STELLO: One final comment, as I said before, our intent would be to prepare a summary report and provide it to the Commission before we would feel comfortable allowing a restart of the plant. So we do plan to provide you with a report that documents the completion of the items that you've heard this afternoon.

CHAIRMAN ZECH: Thank you very much. Questions, comments. Commissioner Roberts?

COMMISSIONER ROBERTS: No.

CHAIRMAN ZECH: Commissioner Carr, Commissioner Rogers?

[No response.]

CHAIRMAN ZECH: Well, let me just say, make one comment, and I think we've covered the Sequoyah 1 situation very well. Mr. Smith mentioned that perhaps there was a little bit of over-confidence during the restart of Sequoyah Unit 2.

I know exactly what he means. It's a natural tendency when things start out rather smoothly to -- everybody feels pretty good about it. That's something that has to be watched and so I would say to our resident and to our special projects people in your oversight and to the TVA people, too, that confidence is fine, but over-confidence is not fine.

And so I hope you'll all be mindful of that and I think that's what Mr. Smith was saying and I appreciate that and I agree with him. Confidence but not over-confidence. That's what we're looking for. And a cautious prudent approach to all of the activities is also important.

Mr. Partlow, I agree with you. You do have work to do obviously. I appreciate the fact that you believe you're reasonably on schedule. I would just say, just make sure that you do take the time you need to review the remaining issues and I think that TVA, from what we've heard today, wants to do the same thing.

I would just like to thank both TVA and the staff for the briefing. It's my understanding, Mr. Stello, that what you've said is that the Commission, at least at this time and barring any unforeseen events, would believe that it will not be necessary for the licensee to come back before the Commission prior to restart decision or Sequoyah Unit 1. Is that what you're saying, your intention at the moment?

MR. STELLO: It is my belief that that would not be

necessary, barring something unusual. If things go badly, I think it might be appropriate to have them come up here and you shake your finger at them a little bit if things don't go well.

CHAIRMAN ZECH: It's my understanding that my fellow Commissioners would agree with that at the moment, but we would reserve the right to change our mind between now and the time it comes. On the other hand though, no matter what, we would request that the staff provide a paper to the Commission with your recommendation for restart, when you are satisfied that all the prerequisites for restart are completed.

We will expect that as a minimum. We'll reserve the right to call the licensee back to the table if we believe, between now and then, it should be necessary and we'd ask --

MR. STELLO: We will give you that recommendation. If we think that's necessary, we won't hesitate. But at the moment, I don't believe that's necessary.

CHAIRMAN ZECH: All right. We will be continually mindful of it. I know Mr. Partlow will, too, as we move ahead. All right. Are there any other comments?

[No response.]

CHAIRMAN ZECH: If not, thank you very much. We stand adjourned.

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

CERTIFICATE OF TRANSCRIBER

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

TITLE OF MEETING: BRIEFING ON THE STATUS OF SEQUOYAH-1

PLACE OF MEETING: Washington, D.C.

DATE OF MEETING: THURSDAY, AUGUST 4, 1988

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.

Suzanne Young

Ann Riley & Associates, Ltd.

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

157B Lookout Place

AUG 17 1988

U.S. Nuclear Regulatory Commission
Attention: Office of the Secretary
Mail Code 16H-3
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852

Dear Sir:

TRANSCRIPT CHANGES REGARDING MEETING BETWEEN TVA AND THE NRC HELD ON AUGUST 4, 1988

Please add the enclosed corrected transcript to the record of the meeting between NRC and TVA on August 4, 1988, entitled, "Briefing on the Status of Sequoyah-1."

Very truly yours,

TENNESSEE VALLEY AUTHORITY

R. Gridley, Manager
Nuclear Licensing and
Regulatory Affairs

Enclosure
cc (Enclosure):
Mr. S. D. Richardson, Director
TVA Projects Division
U.S. Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852

CHANGES ON TRANSCRIPT REGARDING

BRIEFING ON THE STATUS OF SEQUOYAH-1

HELD THURSDAY, AUGUST 4, 1988

PAGE	LINE	DESCRIPTION OF CHANGE
4	8	Insert "and a" after "leadership"
5	20	Insert "and the" after "decisions"
5	21	Change "have" to "had"
5	22	Change "have" to "had"
6	10	Insert "and" after "requests"
9	13	Change "Insurance" to "Insurers"
9	25	Insert "I" before "selected"
10	4	Change "they" to "I"
13	15	Change "turban" to "turbine"
13	23	Change "what" to "that what"
13	24	Delete "what is"
13	24	Change "of" to "are"
26	8	Insert "during" after "inspection"
31	3	Change "Brown's" to "Browns"
31	14	Change "Brown's" to "Browns"
31	16	Change "Watt's Barr" to "Watts Bar"
31	17	Change "Brown's" to "Browns"
[illegible]	9	Change "liability" to "reliability"
38	7	Change "Brown's" to "Browns"

TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT
UNIT 1
NRC COMMISSION MEETING
AUGUST 4, 1988

AGENDA

→ OPENING REMARKS

MANAGEMENT ASSESSMENT OF READINESS

PLANT READINESS

CONCLUSIONS

PURPOSE

- ASSESSMENT OF READINESS OF SEQUOYAH UNIT 1

BACKGROUND

- 1985 - ALL OPERATING PLANTS WERE SHUTDOWN
- MARCH 1986 - BRIEFED NRC ON PROBLEMS AND NUCLEAR PROGRAM GET-WELL PLANS
- MARCH 1987 - STATUS OF IMPLEMENTATION OF PLANS
- MARCH 1988 - REQUESTED RESTART OF SEQUOYAH UNIT 2
- JUNE 1988 - UPDATE ON STATUS OF SEQUOYAH UNITS AND NEW ORGANIZATION

SEQUOYAH UNIT 1

- SELF EVALUATION
- LESSONS LEARNED
- MATERIAL CONDITION
- OPERATIONS STAFFING
- SCHEDULE

OPERATING PHILOSOPHY

- SAFETY AND QUALITY COME FIRST
- HIGH STANDARDS OF EXCELLENCE
- MANAGEMENT INVOLVEMENT
- FORMALITY AND DISCIPLINE
- WALKING SPACES
- PROFESSIONALISM AT ALL LEVELS

AGENDA

OPENING REMARKS

→ MANAGEMENT ASSESSMENT OF READINESS

PLANT READINESS

CONCLUSIONS

SEQUOYAH UNIT 1

INDEPENDENT REVIEWS PRIOR TO RESTART

OPERATIONAL READINESS REVIEW	MAY 16 - JULY 22, 1988
INPO - PLANT EVALUATION	JULY 11 - 22, 1988
ANI - SEMIANNUAL INSPECTION	JULY 5 - 8, 1988

UNIT 2 LESSONS LEARNED

APPLIED TO UNIT 1

- HARDWARE
- PROGRAMMATIC
- PEOPLE

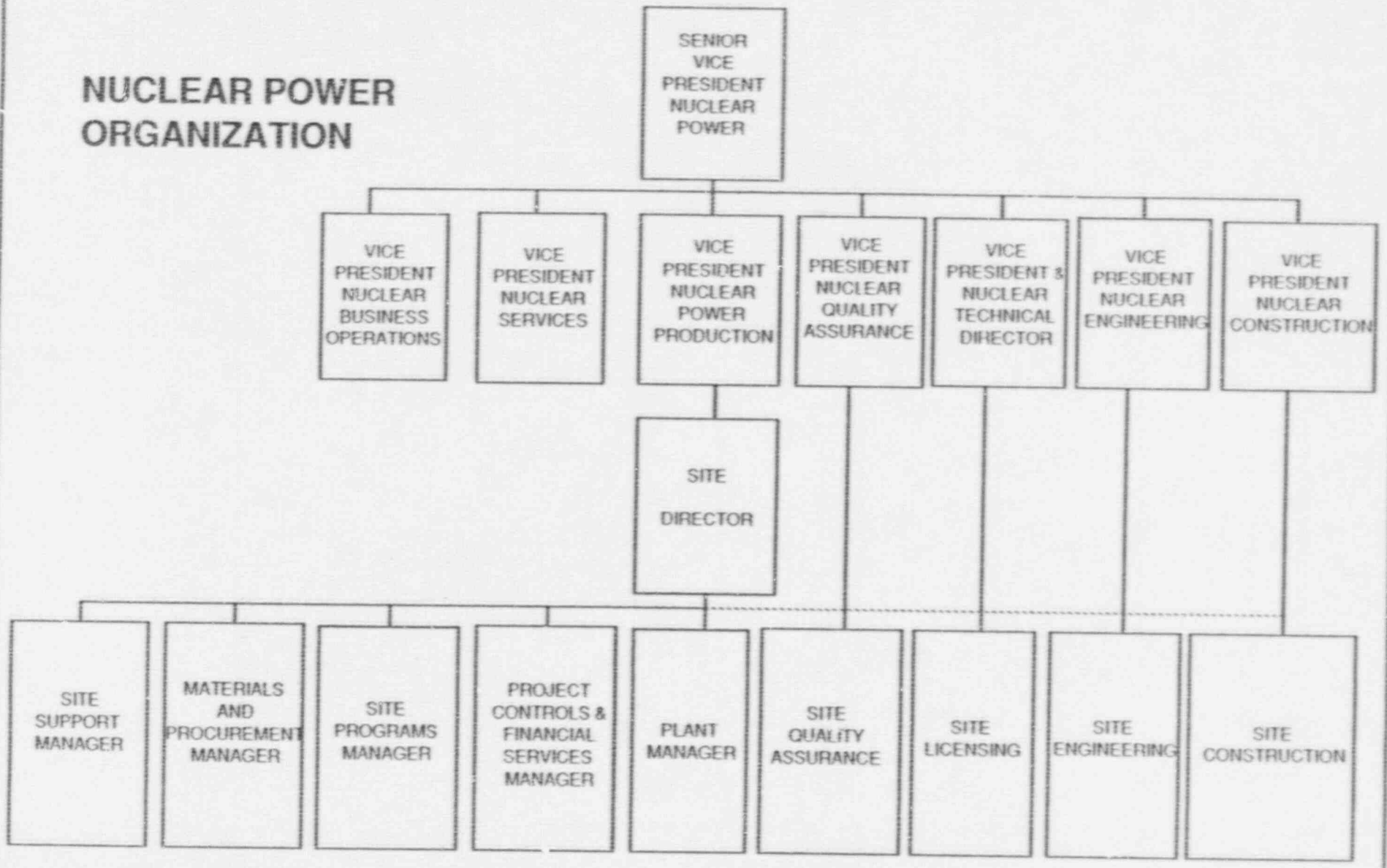
LESSONS LEARNED - HARDWARE

- STEAM GENERATOR TUBE PLUGGING
- PRESSURIZER SAFETY VALVES
- MAIN FEEDWATER PUMP CONTROL SYSTEM
- ICE CONDENSER
- SECONDARY SIDE MAINTENANCE
- ERCW CHECK VALVES
- APPENDIX R SPRINKLERS
- CONTROL ROOM WORK REQUESTS

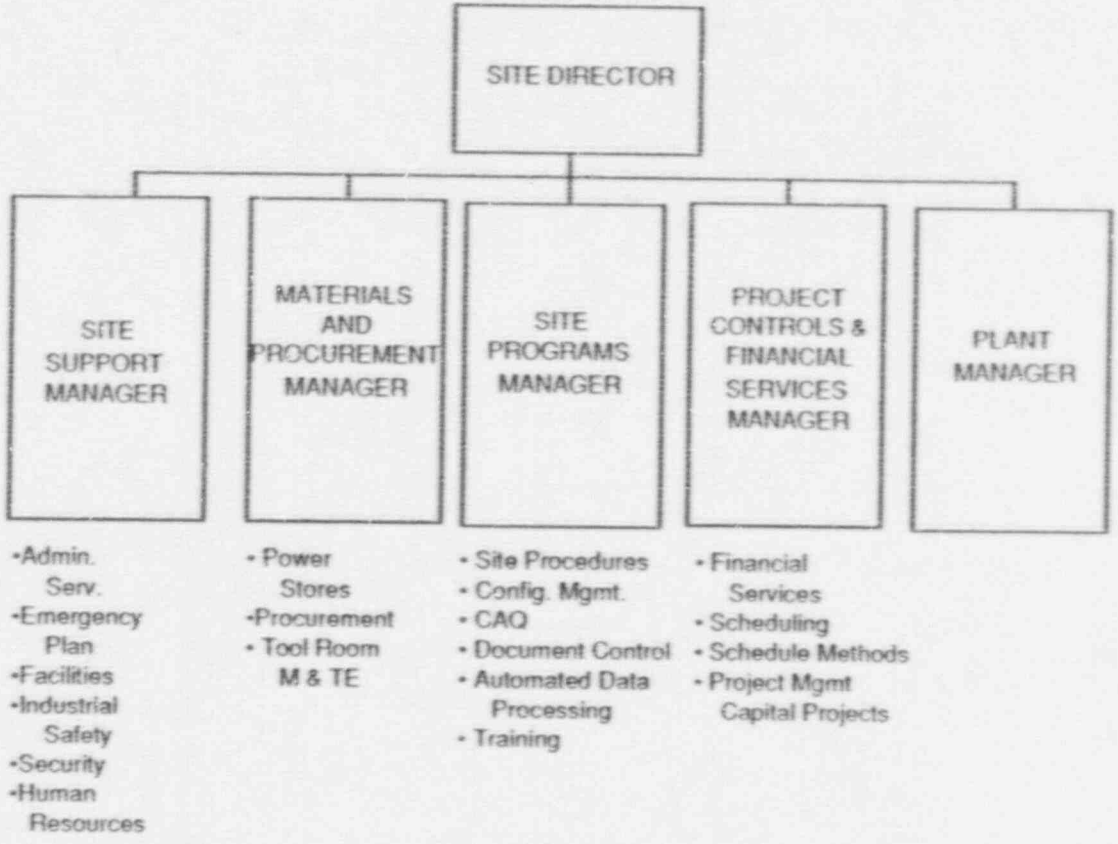
LESSONS LEARNED - PROGRAMMATIC

- CONDUCT OF OPERATIONS
- SYSTEM VALVE ALIGNMENT
- WORK CONTROL
- OPERABILITY LOOKBACKS - SECONDARY SIDE
- INCIDENT INVESTIGATION - ROOT CAUSE
- IMPROVED STARTUP PROCEDURES AND TRAINING

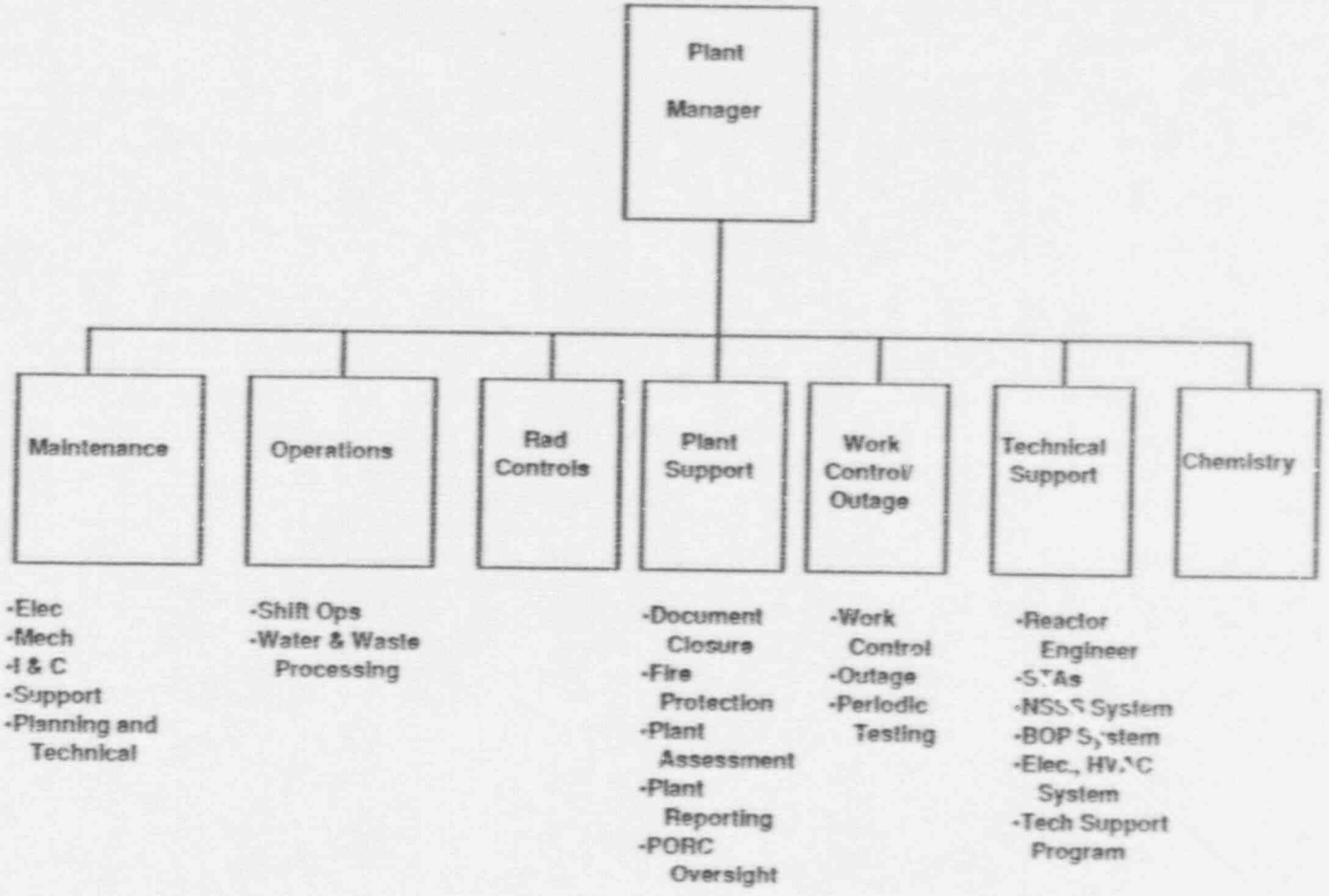
NUCLEAR POWER ORGANIZATION



SITE DIRECTOR 'S ORGANIZATION



PLANT MANAGER'S ORGANIZATION



STAFFING LEVELS

SITE DIRECTOR OFFSITE SUPPORT

Direct Reports	352
Quality Assurance	120
Licensing	31
Nuclear Engineering	351
Nuclear Construction	713
	1567

PLANT MANAGER

Maintenance	397
Operations	223
Radiological Controls	91
Plant Support	80
Work Control Outage	39
Technical Support	123
Chemistry	48
	1001
Site Total	2568

CONCLUSIONS

- SOLID ORGANIZATIONAL STRUCTURE IN PLACE
- SUFFICIENT STAFFING TO STARTUP AND RUN SECOND UNIT
- LESSONS LEARNED INCORPORATED FROM UNIT 2
- INDEPENDENT REVIEWS INDICATE PROGRAMS AND IMPLEMENTATION SATISFACTORY TO RESTART UNIT 1

- WE EXPECT UNIT 1 STARTUP TO BE IMPROVED OVER THE SUCCESSFUL STARTUP OF UNIT 2

AGENDA

OPENING REMARKS

MANAGEMENT ASSESSMENT OF READINESS

→ PLANT READINESS

CONCLUSIONS

PLANT READINESS

- PLANT MATERIAL CONDITION
- OPERATIONS/WORK CONTROL GROUP
- UNIT 2 OUTAGE IMPACT

WORK REQUEST PERFORMANCE
UNITS 1 & 2

1986	SUBMITTED	19,842
	COMPLETED	19,001
1987	SUBMITTED	20,043
	COMPLETED	20,362
1988 THRU JULY 31	SUBMITTED	9,679
	COMPLETED	[illegible],490

WORK REQUEST PERFORMANCE
UNIT 1

- 951 RESTART WORK REQUESTS REMAIN

UNIT 1 MODIFICATIONS
HANGERS

TOTAL IDENTIFIED REQUIRED FOR RESTART	1613
TOTAL COMPLETE	1549
TOTAL REMAINING	64

UNIT 1 MODIFICATIONS
RAYCHEM SPLICES

TOTAL IDENTIFIED REQUIRED FOR RESTART	527
TOTAL COMPLETE	514
TOTAL REMAINING	13

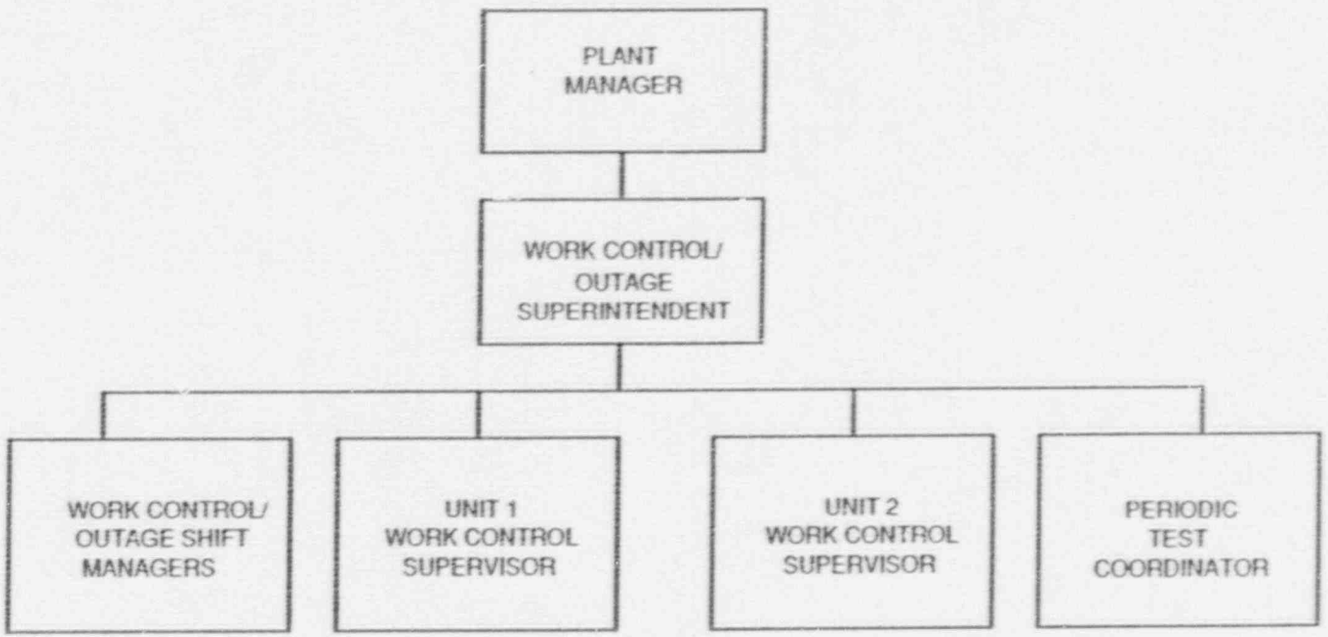
UNIT 1 MODIFICATIONS
ECN's/DCN's

TOTAL UNIT 1 MODIFICATIONS IDENTIFIED	333
TOTAL UNIT 1 RESTART MODIFICATIONS REMAINING	47

OPERATIONS STAFFING

- OPERATING ORGANIZATION IN 6 GROUPS
- TRAINING FOR CONTROL ROOM PERSONNEL
- EXPERIENCE AND QUALIFICATIONS OF LICENSED PERSONNEL
- WORK CONTROL

SEQUOYAH NUCLEAR PLANT
WORK CONTROL/OUTAGE GROUP



SEQUOYAH WORK ACTIVITIES

	ACTIVITIES COMPLETED 2nd QTR '88	PLANNED ACTIVITIES UNIT 2 CYCLE 3 OUTAGE
WORK REQUESTS	3907	1000
MODIFICATIONS	58	52
PREVENTIVE MAINTENANCE	2027	200
SURVEILLANCE INSTRUCTIONS	1992	350

CONCLUSIONS

- ALL WORK ACTIVITIES ARE ON SCHEDULE
- TWO UNIT ORGANIZATION IN PLACE
- SIGNIFICANT OPERATING PROGRAM IMPROVEMENTS HAVE BEEN MADE
- FROM A PERSONNEL, PROGRAMMATIC, AND MATERIAL STANDPOINT WE EXPECT UNIT 1 RESTART TO BE SIGNIFICALLY IMPROVED OVER UNIT 2

AGENDA

OPENING REMARKS

MANAGEMENT ASSESSMENT OF READINESS

PLANT READINESS

→ CONCLUSIONS

SEQUOYAH UNIT 1 SCHEDULE

- BEGIN HEATUP IN SEPTEMBER
- CRITICALITY ~ 2 WEEKS AFTER HEATUP BEGINS
- TVA/NRC AGREED UPON HOLD POINTS

CONCLUSIONS

- UNIT 2 LESSONS LEARNED HAVE BEEN IDENTIFIED AND UTILIZED ON UNIT 1
- TWO-UNIT OPERATIONAL READINESS HAS BEEN ASSESSED
- PROGRAMS TO ENSURE CONTINUING IMPROVEMENT AND SELF- ASSESSMENT ARE WORKING
- READINESS FOR UNIT 1 RESTART

COMMISSION BRIEFING

OFFICE OF SPECIAL PROJECTS

AUGUST 4, 1988

SEQUOYAH UNIT 1 STARTUP STATUS

JAMES G. PARTLOW, DIRECTOR
OFFICE OF SPECIAL PROJECTS

TVA SCHEDULE FOR SEQUOYAH UNIT 1 RESTART

- NON-NUCLEAR HEATUP (MODE 4)
  EARLY SEPTEMBER 1988

- CRITICALITY (MODE 2)
  OCTOBER 1988

UNIT 2 OPERATING EXPERIENCE

- CRITICALITY 5/13/88
- 5 REACTOR TRIPS (5/19 - 6/9)
- OPERATIONS IMPROVEMENTS SINCE 6/13/88 MANAGEMENT MEETING
- STEADY POWER OPERATIONS SINCE 6/19/88

SIGNIFICANT RESTART TECHNICAL ISSUES

- o ELECTRICAL DESIGN CALCULATIONS
- o FIRE PROTECTION
- o RESOLUTION OF RECENT BULLETINS

MAJOR UNIT 1 RESTART INSPECTIONS

- o CONTAINMENT SPRAY SYSTEM EVALUATION
  (6/20 - 7/8/88)

- o FIRE PROTECTION
  (7/25-29/88)

- o MAINTENANCE
  LATE AUGUST 1988

- o RESTART READINESS
  LATE AUGUST 1988

- o AUGMENTED STARTUP COVERAGE