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D I S C L A I M E R

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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BRIEFING ON SEQUOYAH RESTART

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PUBLIC MEETING

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Nuclear Regulatory Commission

Room 1130

1717 H Street, Northwest

Washington, D.C.

Friday, March 4, 1988

The Commission met in open session, pursuant to notice, at 9:35 o'clock, a.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

FREDERICK M. BERNTHAL, Member of the Commission

KENNETH CARR, Member of the Commission

KENNETH ROGERS, Member of the Commission

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

M. RUNYON

S. WHITE

T. JENKINS

M. BLACKBURN

N. KAZANAS

J. HOSMER

S. SMITH

J. BYNUM

B. RALEIGH

C. DEAN

W. WATERS

V. STELLO

S. EBNETER

J. AXELRAD

F. McCOY

S. RICHARDSON

AUDIENCE SPEAKERS

A. MARINOS

B. HERRMANN

B. PIERSON

PROCEEDINGS

CHAIRMAN ZECH: Good morning, ladies and gentlemen.

Both units at the Sequoyah site were voluntarily shut down by the Tennessee Valley Authority in August of 1985 because of questions about environmental qualifications of electrical equipment.

Additional questions and numerous concerns were subsequently raised about the overall adequacy of TVA's nuclear program. Sequoyah has remained shut down since that time pending resolution of these questions, and completion of necessary corrective actions.

The purpose of today's meeting is for the Tennessee Valley Authority and the NRC Staff to brief the Commission concerning the readiness of the Sequoyah Unit 2 for restart. This is an information briefing only. There will be no vote today. The earliest that a public vote will be taken by the Commission would be some time late next week, and I emphasize that is the earliest.

I understand that copies of slides are available at the back of the room.

Do any of my fellow Commissioners have opening comments to make before we begin?

If not, Mr. Runyon, please begin, sir.

MR. RUNYON: Thank you very much. Good morning. I am pleased to be here today with my colleagues on the TVA

Board, and with Admiral Steven White, our Manager of Nuclear Power.

Before Admiral White makes TVA's detailed presentation regarding the restart of Sequoyah, I'd like to share my views concerning TVA's nuclear program.

One of my first actions as TVA chairman has been to visit each of TVA's nuclear sites and offices to meet the people there and hear what they have to say. People know that you are concerned and involved when they see you walking the floor.

I have been at Sequoyah once a week for the past four weeks, and I have been there during all three shifts. I was sworn in just a little over five weeks ago. My fellow board members visit these facilities regularly, and I know that members of this Commission have also visited our nuclear plants.

Although I am still studying TVA's nuclear operations, I am favorably impressed by what I have seen so far. Unit 2 at Sequoyah looks to be in good shape and the employees there have a very positive attitude towards safety and quality.

I am new to TVA, but I am not new to the manufacturing and production plants. I spent 44 rewarding and successful years in the automotive industry, most of them at plant sites.

You can tell about any plant by walking the floor, talking to employees, paying attention to housekeeping details, and examining the plant's maintenance program. The best facilities are always well maintained, have very positive preventive and predictive maintenance programs. Proper housekeeping is an important part of any plant's overall environment, and it is also indicative of the emphasis that employees and management place on quality and safety in operation.

High quality plant environments are absolutely essential in any industry, and particularly in the nuclear industry, and I have found that kind of plant environment at Sequoyah Unit 2.

There are, of course, differences between automotive plants and nuclear plants, and we all recognize that, but certainly procedural and regulatory requirements are more extensive in a nuclear plant, and should be in order to protect public safety. Public safety is the most important test a nuclear plant has to pass.

From what I have seen and been told, and from what I know of the massive efforts put forth by both NRC and TVA, I believe that Sequoyah Unit 2 is ready to start. I wouldn't be here today if I thought otherwise.

There has been significant progress in the nuclear program at TVA, and we are proud of our accomplishments. We

trust they will earn your blessings.

In the future, we want to do more than meet standards. We want to set standards for quality, safety, and efficiency in nuclear operations. We know we have got a long way to go, but we are confident that we can reach that goal. We have already come a long way. We will be taking a giant step towards that goal through participative management, which I believe can lead to improvements throughout TVA. This is a bottom-up style of management that requires people at the top to make a greater effort to listen to employees.

I understand that many of TVA's past difficulties were due to management problems, and to a lack of trust and communication between management and the employees.

A participative style of management will help address these difficulties. This approach recognizes that employees are the real experts in making the process work. In a participative system, the manager makes sure the responsibility for doing the job is clearly defined, and reaches down to the employee doing the work.

The manager also listens to the concerns and suggestions of employees. These often include how the job can be done more efficiently or safely; or how other improvements can be made. I recognize that other factors will go into make such a system work in the nuclear context. Not the least of those factors is an attitude of strict compliance with

regulatory requirements, including the commitments TVA has made to NRC.

If we are to make long-term improvements in TVA, we will have to improve the way people and programs are being managed. Many of the management changes that have been started by Admiral White, such as the enhanced employee concerns program, are changes in the right direction. Admiral White has been in charge of TVA's nuclear program for more than two years. His skill and diligent efforts have brought us up to the potential restart of Sequoyah Unit 2.

My wish is that Admiral White would stay through the complete restart effort, including Sequoyah and Browns Ferry. We are in the process of searching for several key managers for our nuclear program. Let me assure you that we are committed to strong leadership and a highly qualified management team for TVA's nuclear program.

Well, let me tell you that we are having trouble recruiting the talent we need with the pay limitations that we face, and we are working to remove those barriers. We will choose a successor who will be acceptable to the board and Mr. White, and who will be capable of continuing, as well as strengthening, our nuclear program.

In conclusion, let me assure you that as a board, my colleagues and I are absolutely committed to the improvements in our nuclear program made by Steve White, and to abiding by

the regulations of the NRC.

We are also totally committed to maintaining open and honest communication with the NRC and its Staff.

On a personal note, I have made a commitment to TVA to be a leader and a learner at the same time. In this role, I have had the opportunity to learn a great deal about nuclear engineering and management, but there is a lot of learning left to do. I want to know more about the nuclear power industry. I plan to participate in INPO's training program for electric utility CEOs, and I expect to learn a lot from that.

I also plan to undertake a study tour of nuclear plants that you or members of your staff think would be instructive for me to visit.

As a result of all this, I will be a more knowledgeable member of the board and a more effective leader in bringing TVA's nuclear power program back into full operation. TVA has been making tremendous progress in its nuclear recovery efforts. My colleagues on the board, who began these efforts, deserve the credit for bringing TVA to today's meeting. Together, we look forward to a healthy exchange of views, and hope that you will agree that Sequoyah is ready to resume safe and reliable operation.

Thank you very much. And now I would like to turn our presentation over to Mr. White, with your permission.

CHAIRMAN ZECH: Yes, sir. Thank you very much, and

we appreciate that.

Mr. White, you may proceed.

MR. WHITE: I'm pleased to be here today. It was two years ago this month that I first came before you to discuss how we were going to fix our problems at TVA. At that time, I knew the road would be rough. You know, none of us was aware f the true dimensions of the problem. Clearly there was no way that we could have predicted that it would take two years to get to the point that I could say that we were ready to resume operations. A lot has happened in those two years, and that's what I intend to discuss with you today.

While our specific case today involves the restart of Sequoyah Nuclear Plant Unit 2, we all recognize that the issues are much broader. As you may recall from my comments in March 1986 and again in March 1987, we face the challenge of changing a culture. TVA's nuclear problems were evidenced in many elements of the program, which by definition indicate that the central issue was management.

Although TVA's problems in management were manifest at all levels, they were most prominent at the top. It was clear that there was a lack of confidence and respect in management. There was no teamwork to resolve problems. There was no real sense of direction, and the organization was diffused, splintered, and layered.

These management problems had to be resolved before

any real progress could be made in solving the literally thousands of specific issues. My plan to resolve these basic problems was embodied in our corporate nuclear performance plan, which was submitted to you in March 1986. This was and continues to be my blueprint to change the TVA culture. I feel confident that we have made substantial progress, and that we are now in a position to resume operation.

After our presentation today, I hope that you will all agree with me.

By no means -- by no means am I saying today that in all the broad areas of management requiring cultural change, we have yet reached the level of excellence that I intend to reach in the longer run. We still have a way to go. What I am saying is that we have made tremendous progress, and we have achieved a level sufficient to assure safe operation of our first plant.

We will also provide you today with a presentation specifically addressing Sequoyah Unit 2 and why we feel that that plant technically, operationally, and in all other respects is ready to obtain your authorization to restart.

One theme I hope to be able to convey to you today is that our corrective actions not only have been effective, but they are permanent. I have purposely avoided applying the so-called quick fix or Band-Aid approach. Rather I have maintained the constant goal of institutionalizing our changes.

For example, in rewriting our procedures, which, as you know, were a mess, we have spent over $12 million at Sequoyah alone so far, and we are still not through. You will see many other indications which will further bear out the fact that we are driving for permanent solutions.

In the same context, you have just heard Mr. Runyon express his conviction that he and his fellow Board members will insist on the permanence of what we are doing. In the short time that I have known Mr. Runyon, I feel confident that he has every intention and the ability to see that his word to you will be carried out.

Finally, before we start the presentation, I would like to say to you that I am enthusiastic -- I am enthusiastic over the prospect and the results so far of revitalizing TVA's nuclear program, and I am still very optimistic that it can be done.

The Board of Directors has provided me with the authority to do the job. As you know, this authority is spelled out in detail in the Memorandum of Understanding which is part of th corporate nuclear performance plan which you have approved.

And I might add that without their full support and the authority given to me, I could not have achieved our present level of performance, nor could I assure continued progress toward the goals I have set.

That concludes my introductory remarks, and I would like to now proceed with the presentation.

CHAIRMAN ZECH: All right. Proceed. Thank you.

[Slide.]

MR. WHITE: Briefly here is what we will cover today. Let me first reacquaint you very briefly with TVA.

We have nine plants consisting of Westinghouse and B&W PWRs and GE BWRs. They are widely separated in two states over 100 miles apart, and although, for example, my headquarters and most of the nuclear corporate organization is in Chattanooga, the Division of Nuclear Construction and the Division of Nuclear Engineering is in Knoxville, over 100 miles away.

Slide.

[Slide.]

I'm just going to let you read this. I think it's important to review quickly your concerns of 1985 that eventually resulted in my coming to TVA to set up a management team. These are the things that you found and which caused the shutdown of five licensed plants and the inability to license two others, clearly a problem rooted in weak top management and organization. In my opinion, the other things on this slide are merely symptoms of that management organization weakness.

As I said earlier, despite this list, no one really knew the true dimensions of the problems which faced us. No

one really understood the enormous magnitude of the problem.

Slide.

[Slide.]

Although we are here to discuss the Sequoyah plant startup, because of the nature of the problem, the nuclear corporate fixes are inseparable from the fixes at the plants. In other words, both had to be fixed. I recognized early on that the corporate had to be changed before we would be ready to ask for permission to start up any plant.

As you recall, the nuclear performance plan identifies the corporate nuclear performance plan, identifies the root causes of the problems in the management of TVA's nuclear program, and describes TVA's plans for correcting those problems.

TVA has also submitted a specific nuclear performance plan for Sequoyah. Taken together, these plans provide a complete account of the actions which TVA is taking to improve its nuclear program. These plans, which have been approved by the NRC, resolve all the concerns raised by the 50.54(f) letter of September 1985.

Slide.

[Slide.]

These are the objectives I established in 1986, early in 1986, to correct the root cause of TVA's problems. You have seen these objectives before. They have not changed. And I

would like to briefly update you on where we stand.

[Slide.]

With reference to the organizatien, we brought all nuclear management matters under one control. We removed non-nuclear matters. We provided clear, simple lines of responsibility and authority, along with consistency across the entire nuclear program. We also strengthened the weak areas, such as quality assurance, engineering, licensing, training, and safety.

We also cut out a lot of layering. For example, today there are only four layers of management between me and the shift supervisor at the Sequoyah Plant. We've cut out a great deal of layering.

The Policy Organization Manual contains the Office of Nuclear Power statements on policy. In other words, it promulgates my philosophy. It gives organizational descriptions and responsibilities. It provides organizational charts. And, perhaps most importantly, it provides formal interface agreements between the various parts of the organization.

The Position Descriptions. We've rewritten about 1,800, all of the management position descriptions, to establish accountability, to eliminate duplication of responsibilities, to assign missing functions, to provide centralized control, to provide a basis for employee

evaluation, and, again, perhaps most importantly, those also define interface responsibilities.

[Slide.]

Here is the Corporate Organization. With a couple of very minor changes, it is the same chart that I showed you two years ago. We have had a stable structure.

[Slide.]

With reference to the Management Team. Since I've come to TVA, we've hired as TVA employees, 48 senior managers. Those 48 managers have a combined total of more than 1,000 years, more than 1,000 years, of nuclear experience. In addition, in the mid-level managers, those with an average of 10 years of service, we have hired in as TVA employees, 487 additional experienced managers.

We'll discuss the second bullet later in the presentation.

[Slide.]

Let me just hit a few things on this slide. The hierarchy of documents refers to a system we have instituted of policies, directives, standards, procedures, and instructions. So, it goes from the top to the bottom, a disciplined way of doing business.

With regard to the tracking systems, we have established a formal tracking system to keep track of commitments to the NRC and to verify closure. There was

literally a countless number of such systems two years ago. I think well over 50. It was a crazy situation where everyone almost literally had their own tracking system for commitments. We now have one system to track our commitments to you.

With regard to the conditions adverse to quality, we formerly had a hodgepodge of over one-half dozen systems, different systems, to provide problem identification. No one really knew what there was or what the status was. We put all of those into one system. We put them all into one basket where we could look at them, evaluate them, and prioritize them for completion. Of course, when we did that, we created an immense backlog, a huge backlog, to work off.

Configuration management you are all familiar with, and we have taken the steps to ensure that plant changes can't be done without a complete evaluation of the impact.

But of equal importance to me is the last bullet, Central Control of Changes. That, in effect, is configuration management for policies, position descriptions, and organizations. No longer can an individual in the system, uniquely at his site or his organization, change responsibilities, change position descriptions, or change the organization without adequate review.

[Slide.]

With regard to Technical Integrity, TVA's efforts to ensure technical adequacy of Sequoyah are, I believe,

unprecedented and the most comprehensive ever achieved in this country for an operating plant. The major elements include design baseline and verification program, environmental qualification, design calculation review, restart test program. These programs are the ones that reestablished the Sequoyah design basis. We have implemented state-of-the-art design control methods for making design changes at Sequoyah, utilizing standalone modification packages.

Additionally, new design control methods will maintain the design basis to ensure the continued adequacy of Sequoyah. When we get Sequoyah on line, and we look to start the next plant, we are not going to turn our back on Sequoyah.

Of course, basic to the thrust of the technical integrity is that we have given the responsibility for technical ownership of the plants to the Division of Nuclear Engineering.

[Slide.]

If I were to use one word as a key word on this slide, I would say it would be teamwork. Communications with Employees. We do that in many fashions, starting with my weekly staff meetings, the other staff meetings which report to the lower levels on what occurs in my weekly staff meetings. We have skip level meetings. I have made it a practice to have luncheon meetings with craftsmen, engineers, secretaries, and a broad spectrum of personnel, and I've found those very valuable

and many of my managers are now doing the same.

We have roundtable discussions as part of our management training. And we use many written vehicles, including a monthly Upfront Magazine, which is mailed to the homes of our people. Nuclear dispatches, which are fast-track flyers from me to all of our people. Site and division dispatches and newsletters, as well as poster campaigns to reinforce my philosophy.

But, again, the most important bullet to me on this slide is the last bullet. It is a basic philosophy of mine. I found out long ago that if you wanted to know what was going on you had to walk your ship. If you wanted to know where your problems were, you went and talked to the sailor repairing the pump. He could tell you what the problems are and he could probably tell you how they could be fixed and the best way to fix them. It is no different at TVA.

This, perhaps, has been one of the hardest philosophies for me to instill at TVA. But we have made tremendous progress. For example, about six months ago, as a result of an NRC inspection, your staff was informed by the operators in the plant in the control room -- and this was about six months ago -- that they saw more of Mr. White in the control room than they did of the plant manager. And I can tell you that's no longer true today. But we still have a ways to go, and I won't let up on those efforts because they are

extremely important.

Throughout these five objectives you've heard me use the words interface, communications, and teamwork. During my first report to you in March 1986, I told you of the difficulties I found in coordinating between the corporate organization and the sites, as well as between corporate divisions. And I gave you specific examples of those difficulties.

We have taken in these five goals and objectives a number of actions to solve that problem. For example, from my staff meetings, management training, roundtable discussions, the new organization itself, the policy and organization manual, the new position descriptions, and the new management talent infusion are only some examples of how we have attacked this problem of interface, communications, and teamwork.

And I am not yet satisfied, but I recognize that this is the type of problem that is never permanently fixed. A leader must continue to work at this day in and day out. It is never permanently solved. And I would say that anyone who has attended my staff meetings would tell you that I am constantly after these problems of interfaces, communications, and teamwork. Slide.

[Slide.]

Now I would like to have you briefed on the Employee Concerns Program. This is one of the tools we are using to

make our management more effective. Employees are the best source of information that we can get on technical and safety problems which might exist.

Ms. Jenkins will make the presentation, and let me tell you a little bit about Ms. Jenkins. She has a bachelor's degree in physics and another in math, and a master's in nuclear physics. She's been with TVA for 15 years.

Interesting, perhaps, I recruited her from the non-nuclear part of TVA, and first assigned her a number of duties, including a central focal point for my efforts to stamp out harassment and intimidation. When she did a good job there, I promoted her and assigned her as the head of the Employee Concerns Program. And, because she had displayed her management talents, I said to her, you take the new job, but you take all your old jobs with you. So, she then had two jobs.

Two weeks ago I put her in charge -- and this is a promotion -- she's now head of Nuclear Personnel. And, as the pattern I've set in the past, I said, you get the new job and along with that you get to take the employee concerns, the harassment and intimidation job, and all your prior jobs. So, she's now fulfilling all of those functions. Ms. Jenkins.

MS. JENKINS: Thank you. In the NRC staff safety evaluation on the Corporate Nuclear Performance Plan, they outlined three conditions which must be met prior to approving

the restart of Sequoyah. What I am going to cover is how we demonstrate meeting those three conditions.

[Slide.]

The first one was that the Employee Concerns Program was working. That program really entailed two efforts, one to deal with the employee concerns that had been generated by required interviews with more than 5,000 employees, which also generated more than 5,000 employee concerns during the year of 1985. Coincident with the program to deal with the backlog of concerns, we started an Employee Concerns Program that is ongoing and is now more than two years old.

The program works by mail-ins, walk-ins from employees, and exit interviews. We know the process itself is working for more than half a dozen major internal and external audits, which culminated in the staff safety evaluation stating that the program itself was acceptable, September 30, 1987.

We have continued to have a declining number of concerns. When the program first started, in its first seven months, we were averaging more than 40 concerns a month. The last three months in 1987, we were averaging three concerns a month.

I want to emphasize our goal is not to drive that number to zero, because that program should now, and always, remain a safety valve so that employees always have an alternate path, if needed, to report a problem. And, in fact,

in January of 1988 we recorded 44 concerns. It dropped back to four for February.

Line management. The right people to do it are now handling more concerns than they ever were. Specifically at Sequoyah, for every one concern that was recorded in the formal program and investigated there, two employees took their problems and our recommendation back to their line manager to get resolution. In 1987, for every one employee who brought us the concern to formally investigate, nine employees took their problems back to line management.

And I know they are fixed there, because I track those as well as the formal ones. In the two year period for Sequoyah 446 problems were taken back to the line to be solved. There are only 73 of them open today. And I talk directly with the employee to find out if they are, in fact, satisfied with the resolution.

The program itself is action oriented. It gets results. In the two years we've had 87 percent of the recommendations generated by the investigations accepted by the line and implemented without change.

The second condition was that we should demonstrate that our employees are encouraged to report safety and quality concerns. We get every employee coming and going. They are given an orientation session, whether they come in to the corporate office or through their general employee training at

one of the plant sites, and they are acquainted with the program itself, in addition to the bulletin boards and other official media.

We do exit interviews with every employee who leaves the Office of Nuclear Power. We also do exit interviews with any employee transferring between two of our sites. In the two years we have had more than 11,000 employee contacts. We have generated only 850 concerns in that two year period.

The Condition Adverse to Quality Process you'll hear more about later and the details of how it works. From my perspective, what I've seen it do is raise the consciousness level of our employees, so that they understand their obligation to report employee concerns in the proper channel. Its a formal, but very simple, process to use to identify problems.

At Sequoyah, 70 percent of those condition adverse to quality reports come from non-QA employees. Messages or the employee's obligation are continuously sent, and Mr. White covered a number of the media which we use to do that.

[Slide.]

The last condition was to demonstrate that there is not a climate of intimidation and harassment. A year ago I addressed this same subject, and I told you then we had identified three root causes for why a perception existed that a climate of intimidation and harassment existed at TVA. Those

root causes were an inappropriate management culture -- and, as you've heard, characterized by little or no communications between management and employees, insufficient management skills, and improper disciplinary policies.

Specifically, there were automatic penalties for procedural violations that did not take into account the employee's willingness to come forward and report the problem. The policies were punitive, and they were certainly perceived to not be applied equitably to all crafts, managers, and engineers.

Last year I listed seven or eight specific actions that we had taken to start chipping away at those root causes. A year later I can tell you we've taken broad actions to eliminate the root causes. The first two here, communications and walking spaces, you'll hear a theme throughout today, to eliminate the improper management culture that existed before.

Disciplinary actions has two facets. One, those guilty or believed to be guilty of intimidation and harassment were disciplined, regardless of the age of the case. And we continue to discipline managers and employees found guilty of intimidation and harassment in the workplace.

But our disciplinary action and our disciplinary guidelines are corrective in nature, and they do take into account the employees reporting the problem themselves. It's structured to encourage them to tell us about violations.

Lastly, and most importantly and maybe most far-reaching, is a comprehensive management training program, which you'll hear about.

In summary, I'm convinced we have met and have demonstrated those three conditions. Thank you.

[Slide.]

MR. WHITE: Our next discussion is Management Training. Let me tell you a little bit about Ms. Blackburn. She has a bachelor's degree in personnel management, and a master's degree in organizational psychology. She's been a TVA employee for nine years.

TVA had hired a contractor to do management training. But I wanted a long-term program. I did not want a bandaid fix. I recognize that management training is a continuing program, and TVA should know best now to training TVA. So, I searched throughout TVA to find someone who was intelligent, innovative, and willing to work very hard and start off running. I recruited Ms. Blackburn from a non-nuclear part of TVA. And I will tell you that this lady has stepped up to bat and has really met the challenge that I put on her shoulders in about March of last year. Go ahead.

MS. BLACKBURN: Thank you, Mr. White. You've heard management training and management effectiveness referred to several times during the presentation. I believe management training and development is a part of the long-term fix, and I

believe it's an area where we've made tremendous progress in the last year.

We outlined in Volume I a Management Training and Development Plan. We have implemented our management training plan and we've begun the process of identifying managerial skills and the individual development planning for the future in the organization. Next slide, please.

[Slide.]

There are three factors that I believe have contributed to what is a successful and, I believe, an impactful program of management training and development. The first one, Emphasis and Involvement by Top Management, you've heard that emphasis today in the presentation. The emphasis really is on line management, training, and developing employees as an everyday day-do-day process.

There are a couple ways that training is formally taking place outside of the classroom. Developmental assignments, coaching and counseling, and then also seeing that the training in the classroom is transferred back to the job.

In terms of management involvement, it's very visible as a part of the training programs in the classroom itself. We have video tapes and written messages from Mr. White outlining expectations, roles for supervision. The five objectives that he spoke about earlier in his presentation are integrated into the content of the training.

In addition, Mr. White referred to the roundtables. This is an opportunity for a senior manager, up to and including Mr. White, to sit down at the end of a training session and discuss questions, problems, concerns, and philosophies.

Systematic and Required, the second factor, I believe, has moved us into an impactful program. It used to be piecemeal and a deluded effort. We now have a core required for each level of manager. We schedule on a 90 day schedule, where a line manager actually integrates the training into the work schedule for that 90 days. We then track that at the very senior level to make sure that we're meeting our commitments within each division or site for their training. This is another way we send the message of the emphasis of line management on continuous learning and training on the job.

Second is Quality and Quantity. There is no doubt that we have a lot of work to do in the area of management training, but we were committed to quality, rather than just manufacturing training. We took in post-training system design guidelines, and we applied them to the training wherever it was possible. That means we established our needs, we certified our instructors, our objectives, our performance base.

In addition, we adopted a philosophy of continuous evaluation. We have evaluated in several different ways. There were three goals that we evaluated against.

Professionalism of instructors, relevance of the training to the participants, and then actual change back on the job.

We did our first follow-up evaluation in December, and I can say that we're meeting all three of those objectives, including beginning to see increased competence on the job as a result of training.

MR. WHITE: Let me interrupt for one second to say that I don't want to leave the Commission with the impression that everyone in the organization now understands the importance of management training. You know, I face the problems that you would expect, where there are many pressures on managers to do many things.

We do keep very close track and I have to issue periodic orders to the people that they must go to class, because other things come up, other priorities compete. Ms. Blackburn tells me that when one of the organizations is starting to slack off a little bit, and then I take care of that problem. But we can see that it's a problem that will be never-ending, like many others.

MS. BLACKBURN: It's a balancing act for managers.

[Slide.]

The next slide shows you the quantity of training that we have done since the shutdown of the plant. The core curriculum, listed at the top of that slide, we began in May of 1987. That training represents over 65 managers a week, on the

average, in training, or over 8,300 person days of training since May when we began delivering the training. That's a tremendous effort towards management training.

The second part of the slide shows that we have identified, even beyond the core, some additional training needs and some individual development needs for managers. The first two bullets under Additional Training are courses we have delivered since May. The other electives represent OMP participation in TVA-offered corporate courses since January of 1986.

In summary, there's been a tremendous effort and emphasis put on management training. We outlined a comprehensive management training and development plan in Volume I. While there are still improvements and follow-ups to be made, we have implemented a major portion of what was outlined in Volume I.

As we reach our target for the core curriculum, we will keep expanding into follow-up training, and we will be bringing up additional programmatic efforts to increase managerial effectiveness. Thank you.

MR. WHITE: Let me just make one comment on this slide. These courses, the core courses, are three to six days each. So, there is a lot of training. But it is the beginning. You are how far through these courses?

MS. BLACKBURN: The first two courses are about half

way there.

MR. WHITE: Since last May. But the point is that there will be many managers who will have to repeat those courses. So we intend, before we go through the whole thing the first time, we will have a good feeling for what increases we need to have in terms of increased management training. From our feedback system we will determine what parts of the course need to be reemphasized or improved. And, as I say, it is a continuing program. Thank you.

Let's talk about quality assurance. Mr. Kazanas has a bachelor's degree in metallurgical engineering, and an MBA. He has 21 years of nuclear experience, including 15 years of QA experience. He is not a TVA employee. He is a contract manager on loan from GPU. At GPU he most recently, for about seven years, served as the corporate QA director responsible for TMI-One, TMI-Two, and Oyster Creek.

MR. KAZANAS: Thank you, Mr. White. Good morning. I am the Director of Nuclear Quality Assurance. I would like to summarize for you the improvements that we have made in quality assurance at TVA over the last two years. Next slide.

[Slide.]

TVA's nuclear commitments are contained in that plan and in the top of the QA plan. TVA's QA program is fully satisfied. And, in fact, we have exceeded our commitments.

Many changes have been made in QA at TVA. Foremost

among these changes are, number one, the QA organization has been totally restructured. Next slide.

[Slide.]

All QA activities have been centralized. Instead of having five independent programs, with five separate approaches, we now have an integrated QA program. In addition, the Director of Nuclear Quality Assurance now reports to the Manager of Nuclear Power. This organizational change in itself, along with others, has significantly increased the QA visibility.

MR. WHITE: What Mr. Kazanas is saying is that when the boss is interested, everyone's interested. And that's the way we've made QA.

MR. KAZANAS: Number two, TVA has added 25 new QA managers to the organization who bring in over 400 man years of QA experience. Many of them come from the outside and bring an added valuable industry perspective and added professionalism.

Number three, a new subgroup within QA, Engineering Assurance, has been created to provide the QA oversight of engineering activities. Engineering Assurance reports administratively to Engineering, but functionally and technically it reports to QA. Engineering Assurance extensively monitors TVA's engineering and technical activities. Next slide.

[Slide.]

Number four, TVA has implemented substantial QA training for its inspectors, monitors, and auditors. We are very proud of our QA training program. Some utilities have utilized our training modules as models for their own training programs. I would also like to add that our management review guides have been adopted by the Operations QA Subcommittee of the Energy Division of the American Society for Quality Control as models in our industry.

MR. WHITE: Those two things that he just mentioned tell you we've come a long way in two years, with other utilities who want to copy what we are doing. That in itself, I think, is significant.

MR. KAZANAS: We have conducted substantial QA training for many of our employees, both within and outside the QA organization. Some 89,000 QA training hours alone in 1987. And 22,000 training hours already in '88.

Number five. QA has increased its emphasis on performance-based quality verifications with the addition of QA technical experts and increased site presence. QA is looking at the how-tos now, in addition to compliance.

Number six. TVA has broadened its scope of its overview of a variety of plant activities that affect safety.

Number seven. A number of new QA programs and management initiatives have further strengthened our program. These include our level three oversight program, our upgraded

inspection planning program, the QA monitoring program, and our new corrective action program. I would like you to focus your attention particularly on our corrective action program. Next slide.

[Slide.]

TVA's corrective action program was initiated 11 months ago. It incorporates earlier unresolved QA deficiencies. In this program TVA ensures that all conditions that are considered to be adverse to quality, called CAQs, are prioritized, monitored, dispositioned, and verified.

We have employed an extremely low threshold for classifying any condition as a CAQ. We rely not only on our QA organization to initiate CAQs, but also identification from the entire organization. This is reflected by the statistic that approximately 69 percent of the CAQs come from the line organization.

The CAQ process involves the immediate prioritization of an identified condition adverse to quality so that operability issues, including issues of generic concern from one of the other plants to another, are reviewed in a timely manner. In the event a CAQ is of less significance, it is prioritized accordingly. CAQs are tracked in our monthly reports that are issued to Mr. White and the TVA line managers.

In the event a CAQ is not corrected within the timeframe specified in the CAQ program, a mandatory escalation

procedure is triggered. In a few instances, for example, this procedure has escalated a CAQ all the way up to Mr. White for his resolution.

We have issued over 2,000 CAQs related to Sequoyah since the initiation of this program. A large, but not surprising, number given our low threshold for initiation.

Today only a few CAQs remain that require resolution prior to Sequoyah Unit Two restart. And of the 1,100 CAQs that exist today, approximately one-third concern only Sequoyah Unit One. One-third are minor discrepancies. TVA is not satisfied with the existence of the remaining 400 or so CAQs. But we are continuing to systematically reduce this number.

In summary, TVA today has a well organized and thorough QA program.

MR. WHITE: We now want to shift gears to talk specifically --

CHAIRMAN ZECH: Let us interrupt just for a moment.

COMMISSIONER ROBERTS: Is Mr. Kazanas -- I hope I pronounced that properly -- is his successor on board?

MR. WHITE: His deputy is a TVA individual, and I like competition for positions. We are presently looking at hiring, as a TVA employee, an additional person. So, the two individuals compete to take over when Mr. Kazanas leaves.

COMMISSIONER ROBERTS: Okay. Thank you.

CHAIRMAN ZECH: All right. Let's proceed.

MR. WHITE: We're going to shift gears now and get into discussing Sequoyah. Let me just kind of set the stage by saying that we have gone through three phases at Sequoyah.

The first phase, in 1986, you will recall I established task forces. The task force at Sequoyah was primarily people from outside of TVA with extensive experience working to fix problem plants. The function of the task force was to dig out the problems, determine corrective actions needed, and to recommend courses of corrective action.

The second phase at Sequoyah started in January 1987. This was the phase of accomplishing corrective actions. During that phase we did a number of things, like move engineers to the site, putting program managers in charge of critical path programs, and so forth. Both we and your staff have briefed you before on the many, many programs and corrective actions we've completed to date in these first two phases.

We are here today to discuss the third phase. Understand that the second phase, that of corrective action, does have some overlap with the third phase. The third phase started about August of 1987. This phase was a phase to change the mentality from what I call the overhaul or the outage mentality to an operational mentality.

My experience -- and, believe me, I've had a lot in this area -- says that at the appropriate time you must take a distinct, definite, conscious step to change that mentality.

It involves a number of things. In our case, it involved change-out of certain line managers, including the plant manager. It involves a lot of training and teaching.

And let me emphasize the teaching part, because it's not only teaching to build an operational team. It's more than that. You know that when you convert from the overhaul to the operational mentality there will be mistakes made. One of the traps that people sometimes fall into is that the mistakes are usually small ones and they are sometimes disregarded. And I consider those small mistakes as danger flags. Because, if you don't pay attention to them, the big mistake will get you.

Therefore, what we've done as we've moved into this phase is taken every opportunity of any mistake, any error, no matter how small, of stopping what we're doing, getting our people together and talking about it, discussing the errors, getting other sections to understand what the errors were, and using it as a teaching mechanism. The plant manager has done this, and I have done it myself in large groups of people.

So, mistakes will be made, and we've made some, and we've used them as a learning experience. Now, in the ideal world you would hope that, if one part of the organization, one watch section, made a mistake, then all the other watch sections would immediately learn from it. Unfortunately, in the real world that isn't true. In the real world the other sections think to themselves, no matter what the manager says,

they think to themselves, that's the other section, we wouldn't make a dumb mistake like that.

So, sometimes you have to let each section make the mistake in order to train so that they recognize that they, too, are susceptible.

So, we are now in that third phase. As part of that, the operators must understand it is their plant. It is their plant. They own that plant. The support organizations must understand the change in their role. They still have technical ownership of the plant, in the case of engineering, and they must be responsive to the operators. Those, of course, are only a few of the things of this change in mentality, of which I speak.

Now, first, let's talk about that technical support. Mr. Hosmer will talk to that. Let me just tell you very briefly something about Mr. Hosmer. He has a master's degree in chemical engineering. This man already has 18 years of nuclear experience under his belt. I hired him last year. I recruited him from an architect-engineer firm where he had had 14 years experience and a proven track record of accomplishments at San Onofre One, Two, and Three, Palo Verde One, Two, and Three, South Texas, and Rancho Seco.

MR. HOSMER: Thank you, Mr. White. I'd like to spend the next few minutes discussing the technical support organization's readiness to support Sequoyah. Next slide,

please.

[Slide.]

I'd like to talk about three things. The major transition we have made as an organization in the last two to three years. The technical support team, what it looks like today. And, lastly, what we are currently doing to support plant operations. Next slide, please.

[Slide.]

With respect to the major transition we have made, there were three issues of concern brought up in the past. There were concerns about timeliness, accountability, and concerns of maintaining the design basis and concerns about design control.

With respect to timeliness, in the past we were an off-site available organization. Today we are an on-site, real time organization.

In the past, there were concerns about accountability. We were in Knoxville. We were an on-call service. Today we are on-site. We are a support team. And we have technical ownership of the plant. And let me define what I mean by that.

That means that any design disclosure documentation I issue is my responsibility to ensure it is in accordance with NRC regulations. In addition, it means that, if there are problems in the plant, the resolution of those problems should

be done in accordance with our commitments. That is my responsibility.

Concerning the design basis, there were concerns about it being weakly maintained since the operating license phase. It has been reestablished. Mr. White mentioned some of those programs. It has been reestablished today.

With respect to design control, in the past we were a staff-type organization that issued the design by individual drawings. Today we use the industry standard design change packages as our mechanism for issuing designs. Those packages include all the drawings, mechanical, civil, et cetera, needed for the design. And they are interface reviewed in my organization for Appendix R, et cetera. Next slide, please.

[Slide.]

Let me give you a glimpse of what we look like today. I have approximately 1,400 people who work for me. I have three responsibilities today. Daily support of Units One and Two. Unit One restart engineering. And modifications engineering.

With respect to daily support, approximately 400 of those 1,400 people are involved in daily support of Units One and Two. Approximately 700 people are involved in the Unit One restart engineering. And the balance of the people are working on modifications engineering. That is, engineering needed for the next refueling cycles and any NRC commitments that we have

made.

In the future, with both units running, we will be an on-site team that does daily support and modifications engineering.

Let me briefly tell you about my team. Not only am I part of the construction, operations, engineering team, I have a two-part team. I have TVA people on-site and a few TVA people in Knoxville that work for me, and I have access to two architect-engineers. Of that 1,400 member team, approximately 1,000 of them are either on-site or within a 10 minute driving distance. Next slide, please.

[Slide.]

To show you the daily plant support, the plant manager conducts a daily plant meeting, seven days a week and addresses what happens in the plant, what happened in the plant in the last 24 hours. I have five engineers that attend that meeting. I have an assistant senior project engineer that represents me in that meeting. He is also the same man that is on 24 hour call for a seven day period as well as the other site senior managers.

The plant manager forms the systems engineering group in his plant. I have provided ten design engineers as part of a joint maintenance engineering, systems engineering, design engineering team. They work for Mr. Smith but I have provided ten people to him, and they are my first point of contact for

problem solving in the field.

The plant operations review committee, I am currently an advisor to that committee. I currently pre-screen my people so they can make proper presentations to that committee. We have proposed a tech spec change to the Commission that will make me a full time permanent voting member.

I think attitudes are very important in my team and the rest of the teams. We are working hard to work on team. We are part of a team. We are in a support role yet we have the responsibility of retaining technical ownership.

In addition, in the nuclear ethics role, we work very hard. We work on not accepting the unacceptable, understanding root cause and trying to get better as an organization.

I have been with TVA nine months and I have seen two very positive trends that I would like to share with you. The first one is in the corrective action area. We have been able to characterize over 400 corrective actions needed for restart of Unit 2 and closed basically all of them today to be able to allow Unit 2 to restart.

In the design change area, I've seen two very important changes. One is timeliness. One is quality. In the timeliness area, we have cut the time needed to issue a design change by approximately 50 percent. I think we have done three things in the quality area that have enhanced the quality of the product that I issue to the field.

One, we package the product and pre-review it in an interdisciplinary way before it leaves my organization. Secondly, before it is issued as Rev. 0, there is a constructability walk down so it can be built efficiently and get the plant restored to its normal operating configuration in a quick manner.

Last but not least, when that package is finished, I am responsible to ensure that the control room drawings are as built.

[Slide.]

In summary, the design basis in Sequoyah has been re-established. Those processes needed to maintain it are in place. In my organization, the technical support people have accepted their role as technical owners of a plant and they are currently supporting plant operations.

Thank you.

COMMISSIONER ROBERTS: Mr. Hosmer, you are a TVA employee?

MR. HOSMER: Yes, sir.

COMMISSIONER ROBERTS: Thank you.

MR. WHITE: The next speaker is Steve Smith. I hired Steve Smith last July as a TVA employee. He has 22 years of Navy and commercial experience. Most recently as the assistant plant manager during the recovery program at Davis-Besse. He had the responsibility there for the maintenance program which

got very high marks from the NRC. He played a key role in the restart program. In fact, I believe you met Mr. Smith when he briefed you on the maintenance program at Davis-Besse. He is my new plant manager at Sequoyah.

Steve?

MR. SMITH: Thank you, Mr. White. Chairman Zech, Commissioners, good morning. My name is Steve Smith. I am the plant manager at Sequoyah nuclear plant. My topic today will be discussion of the overall readiness of the plant for restart.

[Slide.]

When the Sequoyah units shut down in August of 1985, a variety of problems had already been identified by the NRC, INPO organization and other organizations which interfaced at the site to conduct inspections and observations.

Those issues as well as issues that were further discovered at the site, were taken into account in programs established to approve the overall performance.

When I came to the site in late fall in 1987, it was with the objectives to ensure that full implementation of those programs had been accomplished and that we brought the communications and organization to a state where they could support the operational readiness and restart of Unit 2.

[Slide.]

In the area of management involvement, we have

reorganized the site organization to assure they are directly aligned to support the operation of the plant. We have created a system engineering organization which I will discuss in detail further. We have reduced the levels of management at the site to assure direct communications between craft and to my level at the site.

We created a management roster which includes representatives from all organizations at the site which must interface to support the correction of operational problems and we have fixed shift support.

[Slide.]

This assures that when a problem is identified during the night or on the back shift, that problem gets immediate corrective attention and corrective action. This back shift and weekend organization is 24 hours a day, seven days per week, and is approximately 45 people in the various disciplines and organizations to assure prompt action in the case of a problem.

[Slide.]

We have proceduralized the accountabilities and responsibilities of these organizations and individuals in a set of procedures called conduct of operations, although they are not fully complete at this time, the most important ones, those which are for operations or maintenance, are implemented. Those procedures describe the duties, responsibilities and

interfaces of each level of supervision and craft in those two areas and their interfaces to the other organizations. They have been trained on those procedures and we re-emphasize the contents and the requirements of those procedures in periodic meetings.

[Slide.]

In the area of housekeeping, material condition, although it has been judged as adequate for restart by a variety of inspections on the part of the NRC and INPO, we felt that housekeeping and material conditions at the site should be used as an example of the excellence we intend to achieve in all areas of our operations at the site.

We therefore implemented a very detailed upgrade program which involves not only housekeeping but painting, insulating, fixing small material problems such as packing leaks. That program currently employs about 200 people. It is intended to conclude in December of this year.

MR. WHITE: Let me interrupt you one second. The way we did this was to select the worse spaces that we could find in the plant and then I told the plant people, get the space ready for inspection. After several tries, that single space passed the inspection. We said, that's the standard, that's the yardstick, take that and do it everywhere in the plant. We have done this both at Sequoyah and at Browns Ferry. It has been an effective way to do it.

MR. SMITH: As I said, it is a visual example of the excellence we intend to achieve in all areas.

[Slide.]

The maintenance program has been upgraded both at Sequoyah and on a corporate level. The corporate program, as a matter of fact, I was hired at Sequoyah to help establish that program, and I've had direct interface with that program since going to Sequoyah as plant manager, there is a good working relationship there and the directives and standards used to establish the maintenance program through TVA nuclear are being generated by that organization.

Two of the most important facets in the maintenance program at the site are the procedures upgrade program, which has been in process for about a year, and the corporate writer's guide for maintenance instructions and the validation program have been selected by INPO and recommended to other utilities to be used in their programs of upgrade.

Also the preventive maintenance program at the site--

MR. WHITE: I might also make a statement with regard to one change in maintenance that INPO is asking is some of our things to use for guides, dramatic change in a period of a couple of years.

MR. SMITH: The preventive maintenance program at the site now includes a review of those pieces of equipment that are important to power production and operation of the balance

of plant portion of the plant. Preventive maintenance activities, once identified, are reviewed and concurred with by the nuclear engineering organization and also recommendations come from that organization for both predictive and preventive maintenance activities at the site.

We have a new work prioritization system which assures that the right priorities are assigned to work at the site and that the plant's needs are addressed first.

The post-maintenance testing program involves two phases, the first phase is a cookbook approach to those routine and repetitive tasks to assure that the proper testing is performed and to assure the operability of the equipment that is repaired.

The second portion of that program is the criteria to be used by engineers to develop post-maintenance testing for critical and complex maintenance activities to assure the operability and serviceability of the equipment that is repaired.

[Slide.]

As I said, we have created a systems engineering organization and that organization has system sponsorship for all the systems in the plant. They coordinate between the various organizations such as engineering, maintenance and operations to assure that the proper action is taken when a problem is identified.

One of the most important functions of that organization is to assure that the proper implementation of system modifications have been performed. They are involved with the modification from its conceptual stages through the walk down in the plant, the actual implementation of the modification, the development and conducting of the post-modification testing, to assure that we have gotten the correct modification installed and the system performed by the design basis.

[Slide.]

Another area of improvement that was a concern by both the NRC and INPO in a variety of inspections is the area of root cause determination. We have provided training on root cause determination. The root cause determination program has been established in a procedure at the site. That procedure also includes the formation of an incident investigation team. Any time a problem occurs at the plant that involves equipment or personnel performance, the incident investigation team is called into action. Their arrival on site is within hours of the incident.

The program involves not only the quarantine of equipment once it is put in a safe condition but on-site at time interviews of the personnel involved with the incident. This helps to assure the correctness of the information that is gathered and management involvement directly at the site, at

the time of the incident, is assured. Also the program includes generic reviews for both equipment at the site and at the other three nuclear sites within TVA.

[Slide.]

In the material area of plant readiness for restart, we have several programs in place, several things have been conducted.

[Slide.]

Plant modifications that were identified as part of the design basis verification program and other activities at the site during the recovery period for the Sequoyah unit are now nearly complete. They were originally approximately 370 modifications to be performed and as of this morning, there were four modifications with remaining field work to do.

[Slide.]

In the area of the restart test program, more than 125 restart tests were identified in the review of the original start up testing program, and of the technical specification review at the site. Those 125, as of this morning, there were four tests remaining to be performed with one in progress.

[Slide.]

Since the shut down in 1985, through the years of 1986 and 1987, over 40,000 work requests have been completed at Sequoyah. To date at Sequoyah from the first of the year, over 2,700 work orders have been generated and 2,400 of those work

orders have been completed.

[Slide.]

In the area of maintenance backlog, currently we have approximately 1,286 work orders and as you can see from the chart, from mid-year, that is a significant work down.

[Slide.]

Of that approximately 1,300 work orders are currently in existence; 500 of those work orders have to do with the paint, fix up, clean up program, which are material conditions type work orders and 750 are actual corrective maintenance activities in the plant. Of those 750, 90 of those work orders are currently in line to be performed prior to the restart of Unit 2.

If you base that number against the industry and against our past two years' performance rate, that is about a two to two and a half month backlog of work, which is very much in line with top performers in the country right now. They generally carry about a three month backlog of work activities.

[Slide.]

COMMISSIONER BERNTHAL: This is top performers as opposed to average performers?

MR. SMITH: As opposed to average performers; yes, sir.

In the area of communications, we have made a number of significant improvements. We do have a daily plant status

sheet. It is issued each morning at 7:30 and it lists the status of both Units 1 and 2. It lists any problems which are identified over the previous 24 hours, conditions adverse to quality, work requests, et cetera. It also identifies any limiting conditions for operation which the plant may have entered during the last 24 hour period.

Limited conditions for operation against a plant are required to have 24 hour, seven days a week support until the condition is corrected.

We have structured periodic meetings with all the plant personnel. I meet with my direct supervisors three times weekly. In those meetings, we discuss plant problems, which may be programmatical, administrative, personnel. We meet monthly with all the supervisors in the plant. In that meeting, we discuss what the plant has done during the past month, what our goals and objectives are for the next month and for the remainder of the year. In those meetings we discuss any problems which may be identified by the supervisors.

Quarterly, we meet with all plant personnel. When I say "we," the superintendents who report directly to me, and I meet with those people. It is a very extensive meeting. It usually requires five days to conduct that meeting because there are over 1,200 personnel who report at the site.

Again, we discuss ongoing activities, where we have come from over the past quarter and where we intend to go to

during the next quarter.

COMMISSIONER BERNTHAL: Will you explain the distinction between a maintenance request and a work request? Is there a step between the two?

MR. SMITH: All activities at the site are identified on a work request. Those corrective maintenance activities which involve safety related equipment, a maintenance request is developed at that point in time. The maintenance request is a much more detailed document. It embodies things such as ASME code requirements, EQ requirements, fire protection requirements, and it gets a more detailed review by a variety of organizations over and above the work request.

Currently, we are modifying that program. The work request itself gets too many reviews and we are reducing it to one level review and putting it on what we call a service request, those things that say paint a wall, move a desk, those activities.

We do have a required mandatory management attendance and training sessions in our daily shift turnover meetings. The shift turnover meetings are a very important phase of our operation. I might add that each of the members of the board, and Mr. Runyon himself, have attended our shift turnover meetings at the site.

[Slide.]

The area of nuclear ethics has been discussed on many

occasions. We spend a lot of time thinking about what the nuclear ethics is and what it means to us at Sequoyah. We feel those items listed are the essentials of a strong nuclear ethic and we feel that improved communications and the trust between employees and management give us the ability to convey those ethics to the lowest levels of craft and operations at the site.

[Slide.]

With those things that I have discussed, the ongoing programs, the improvements in the programs that existed, I feel that in all areas, Sequoyah Unit 2 is now ready for operation.

Thank you.

MR. WHITE: Next I would like to have a discussion on operational readiness by Joe Bynum. Let me tell you a little bit about Mr. Bynum. He has a degree in electrical engineering, a Bachelor's degree and a Master's degree in nuclear engineering. He has 15 years of commercial experience. A very interesting background. He was at TVA from 1972 to 1982, where he held many key operating positions including assistant plant manager at both Browns Ferry and Sequoyah.

He left TVA in 1982 and from 1982 to 1987, he was the plant manager for all three units at Palo Verde. During that period of time, all three units at Palo Verde were licensed by the NRC. I think TVA is fortunate to have convinced Mr. Bynum to return home, like Mr. Smith and Mr. Hosmer, that you heard

earlier, Mr. Bynum has a proven track record.

MR. BYNUM: Thank you, Mr. White.

I'd like to include that even though I am listed on the corporate organization, I am assigned full time at Sequoyah and have been full time there since October, since returning to TVA, specifically looking at readiness for restart.

Mr. Smith has talked about overall plant readiness and now I would like to take the next few minutes to focus on the activities in the main control room and interfacing directly with the main control room.

[Slide.]

We have many inputs on operational readiness. We have already talked about the management team and unlike TVA of old, we now have a lot of commercial experience from outside TVA. You have heard from a few of those individuals today.

In addition to the TVA management, and of course NRC, we have addressed all the lessons learned in NUREG-1275. We have compared that against the nuclear performance plan. You see from the presentations that we have a strong emphasis on operating mentality, shifting to operating mentality.

As a result of looking at NUREG-1275, we have added evolutions into the start up training and I am going to discuss this three day start up training in a few minutes. We have added evolutions, as a result of looking at NUREG-1275. At the staff's request, we did provide our actions in each of the

lessons learned areas to the staff.

INPO did a plant evaluation in late 1986 and two assist visits in November of 1987. Those two assist visits were particularly important because during those visits, they evaluated each individual operating crew on the Sequoyah simulator.

The nuclear managers review group is a permanent staff of approximately 25 people reporting directly to Mr. White.

In the specific area of operational readiness review, we have had two operational readiness reviews done at Sequoyah. The first was in early 1987, and after Mr. White reviewed this report, he decided it was not tough enough. He sanctioned a second operational readiness review which began in August of 1987. This review continued to February, 1988, consisted of eight experienced senior management level individuals with experience in the military, commercial and NSSS vendors.

An interim report was issued in October of 1987 when I came to TVA.

MR. WHITE: Let me interrupt you for one second. I think it might be interesting for the Commissioners to understand the direction I gave that second operational readiness review team. I made it clear to them that I did not want to apply industry standards to TVA. I wanted to apply absolute standards and the highest standards. I challenged

them to be extremely critical in everything we did and extremely thorough. That is what they did.

The second ORR was much improvement in terms of toughness over the first one.

MR. BYNUM: We just issued a final response to that report in March.

[Slide.]

I'd like to really focus in on three specific areas of operational readiness. Management involvement; administrative controls and standards of performance.

[Slide.]

We have already had several discussions on emphasis on walking the space philosophy. I won't go into that in any further detail. Observation and critique of training. We have established a schedule for operations management to observe and critique training, both start up training, the three day training and ongoing requalification training. Again, Mr. Smith has discussed periodic meetings with all personnel.

As far as the plant operations review committee responsibility goes, we revised Section 6 of the technical specifications to go from the traditional procedure review and approval process to responsibilities for an overall interface and safety assessment. This was discussed with the American Nuclear Insurers when they were at the site earlier this year and was a topic in one of their reports. We have responded to

that report with all the actions that we have underway.

[Slide.]

In the area of administrative controls, Mr. Smith again has already discussed the establishment of the work control group and the administrative procedure changes, I chose these four areas because these are specific areas which have historically been problems in other nuclear plants. I'd like to discuss two of those in detail. One is the conduct of operations.

We have completely revised our conduct of shift operations procedure. In this provision, we have clearly spelled out our standards of operation. By "standards," I mean standards for sites communication, standards for procedure adherence, standards for a deliberate questioning approach.

In the area of control and temporary modifications, we have completely revised our program for temporary modifications. This revision has emphasized reducing the number of temporary mods and in addition to carefully controlling temporary modifications when they are in fact necessary and assuring that proper safety evaluations are done when temporary modifications are made.

[Slide.]

In the standards of performance area, we train our operating crews as crews on the simulator, with all of those associated personnel assigned to the control room participating

in that training. Specifically, we held a conduct of operations training based on the new conduct of operations procedure. In doing this, we held an one day seminar off-site. At this seminar, we had an upper management level introduction, we had a professional attention to detail presentation done by an outside contractor, and then we had the conduct of shift operations procedure training performed by the shift supervisor for each of their respective crews.

In the area of start up training, as I have indicated, we developed a special three day start up training course which each of the crews assigned to Sequoyah Unit 2 have completed. This emphasizes start up procedures such as heat up, initial criticality, initial turbine generator synchronization, and power ascension.

CHAIRMAN ZECH: Was that done on the simulator?

MR. BYNUM: Yes, it was. It was a three day, 12 hour days, and we did both classroom and simulator but the bulk of the training was performed on the simulator.

CHAIRMAN ZECH: Each shift did that?

MR. BYNUM: That is correct. Each shift spent three days.

CHAIRMAN ZECH: Thank you.

MR. BYNUM: The heat up will allow us to re-familiarize the operators with a hot plant. We have developed specific evolutions as I indicated in reviewing NUREG-1275. We

put specific evolutions for each operating crew to go through during that heat up phase. Those evolutions are things such as placing the main feed pump in service, placing the auxiliary feedwater pump in service, establishing steam generator blow down and other evolutions.

We completely evaluated our non-licensed operator program. One of the problems we found we had too many watch stations of which auxiliary operators, what we call our non-licensed operators, were required to be proficient on. We reduced that number by separating our stations into two distinct groups. One, water and waste processing and the other, the traditional power block duties of auxiliary building, control building, and turbine building. By doing this now, auxiliary unit operators are only required to be proficient on six stations. In addition to that, once we assign the specific non-licensed operators to those stations, we have evaluated their proficiency on each station they are assigned to.

We have integrated the shift technical advisors into the shift complement. We have gone away from the traditional firemen, 24 hour watch, within ten minutes of the control room, to placing a shift technical advisor on each operating shift and actually assigning them to the shift crew, so we now have six STAs associated with the six operating crews.

We have completely evaluated our chemistry shift

complement and our radiation control technicians shift complement. We have assessed the experience and we now have two ANSI qualified chem techs on each shift and four ANSI qualified rad con techs on each shift. In addition to that, we put a supervisor level individual on each shift for better interface and communications with the control room and better accountability in each of these areas.

CHAIRMAN ZECH: Do you have a college degree program in place?

MR. BYNUM: Yes, we do.

CHAIRMAN ZECH: Encourage your operators and others to take it?

MR. BYNUM: Yes, we do.

CHAIRMAN ZECH: Is it well subscribed?

MR. BYNUM: Very well. In fact, we generally --

CHAIRMAN ZECH: When did you do that?

MR. BYNUM: I don't know the exact date when it was begun.

MR. SMITH: Excuse me. The program has been in place for about two years and we have had six individuals graduate from the program and one individual that is magna cum laude. There will be two more individuals entering the program in May of this year.

CHAIRMAN ZECH: Are these operators?

MR. SMITH: Yes, sir.

CHAIRMAN ZECH: What happened to the fellow who graduated? Is he still a shift operator?

MR. SMITH: Three of them are back on shift; one is a shift supervisor; two are working in our work control organization and one is in training.

CHAIRMAN ZECH: What do you intend to do with them in the future?

MR. SMITH: They will be escalated into the management program and help us to establish --

MR. WHITE: Let me answer that by saying I can use those people in a lot of places, Mr. Chairman, and I will.

CHAIRMAN ZECH: I agree. It is a commendable program. I think that is an important step.

[Slide.]

MR. BYNUM: We divided the operational readiness review and the INPO reports into both restart items and non-restart items. With regard to the operational readiness review report, all restart items are complete and all non-restart items have action plans. Likewise for the INPO restart items, all of those items are complete.

MR. WHITE: Although all those items are complete, there are a couple of areas which definitely need more attention and are given more attention. One is rad con and the second is critical self assessment. I'm not at all happy that we yet have the degree that I want to have on a longer term.

MR. BYNUM: How have we verified that our implementation is --

CHAIRMAN ZECH: Before you get off that, are you telling us that as far as you are concerned today, you are completely satisfied that all restart items are complete, you don't have any problems at all?

MR. WHITE: When you say "problems," obviously there are evolutions and testing that we still have going on today. Mr. Bynum mentioned the fact that from the NUREG-1275, we intend to do some other evolutions.

COMMISSIONER CARR: I read that as only for the operational readiness part of the thing.

MR. WHITE: We have done all the corrective actions in terms of the ORR that we need to to start up.

COMMISSIONER CARR: Personnel and training, that kind of thing, not material?

MR. BYNUM: Some of them are but basically they are procedures, training, things like that.

CHAIRMAN ZECH: You have no remaining material and technical issues?

MR. WHITE: For example, we have seven modifications to complete and so forth. If you were to grant us permission to start up today, I wouldn't start up tomorrow. Obviously we have work to complete. We have documentation to complete.

CHAIRMAN ZECH: Could you tell me briefly what some

of those items are that you are still working on as far as technical issues are concerned?

MR. WHITE: We are still discussing with the NRC the diesel generator issue. I think that is almost resolved. We are discussing Appendix R issues, and I think that one is almost resolved. I believe your staff -- you would have to ask them but I believe the IDI issues are all resolved.

As a result of something we received about three weeks ago on Westinghouse breakers, we are going to take a look at some breakers that have been an industry problem. It is that kind of odds and ends clean-up.

We are very, very close.

CHAIRMAN ZECH: Well, I know we're going to hear from the Staff as far as their concerns, too, but I would hope that you would agree with the Staff as to what you have remaining, and perhaps you would be taking the initiative in telling us what you have remaining as far as the technical side is going, too.

MR. WHITE: Well, I would hope that you will -- communications with the Staff have been very close, and I would hope that you will hear the same report from them as essentially what I've just said.

CHAIRMAN ZECH: All right. Proceed, please.

MR. BYNUM: With specific regard to the implementation and verification of the ORR and INPO items,

during heat-up, of course, we've had intense management involvement, walking the spaces to ensure that any problems we've encountered, that we stop. We evaluate the problem, and we communicate the lessons learned.

The shift operator advisor program is a special program we put in place. It's a joint program between the Operations Department and the Quality Assurance Department. In this program, we place four previously licensed SROs on shift 24 hours a day on all shifts. They were previously licensed from facilities other than Sequoyah, to observe activities, activities such as shift turnover and surveillance testing and equipment operation and tagging, and specifically looking for procedural adherence, knowledge of plant conditions, and a cautious questioning approach.

In addition to that, the Nuclear Managers Review Group did an independent follow-up on the ORR/INPO action plans, the procedures, the training, and they viewed the performance of all operating crews.

Post-restart, of course, we have a continuing verification program of operational professionalism and readiness. Management involvement again is the key to this.

In the quality assurance area, as I indicated, the SOA program was a joint program between QA and Operations, and QA has taken particularly the performance-based elements out of the shift operating advisory program and placed that in their

ongoing quality assurance monitoring program.

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[Slide.]

What are the results of our verification? The shift operating advisory program and the quality assurance review indicate that all areas of shift conduct are acceptable for restart. Again, these are areas such as communications, adherence to procedures, shift turnover, control of temporary mods, and other things that we've discussed this morning.

In addition to looking at each area, each crew was evaluated in each area, and all shift crews are acceptable for restart. Again, this is not to imply that we are where we want to be. We still have work to do. We still have improvements to make, but we are very rapidly making those improvements.

The Nuclear Managers Review Group, as I indicated, independently looked at the INPO and the ORR report restart items, and the acknowledged that they had been adequately addressed, and in addition, that the corrective action implementation was satisfactory.

INPO did a follow-up visit. They reviewed the corrective action plan for their items that they considered important for restart, and they concluded that all corrective actions were acceptable.

In the non-licensed operator proficiency evaluation, we have certified each auxiliary unit operator as being

proficient for the watch stations to which they are assigned.

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[Slide.]

In conclusion, all areas of operational readiness have been assessed from line management, from independent outside observers, from the broad programmatic and attitudinal aspects all the way to specific standards, detailed procedures, and specific knowledge areas. We have the program in place to ensure continuing improvement and continuing self-assessment. Here the emphasis is on management involvement.

I have directly participated onsite in the initial start-up of seven units, all of those units over 1000 megawatts, three in the last three and half years as the Plant Manager. I recognize when a plant and its operating staff are ready. In my experience, I have never seen a unit as systematically or as thoroughly looked at as Sequoyah Unit 2.

Therefore, it is with the highest degree of confidence that I personally conclude that Sequoyah Unit 2 is ready for restart.

MR. WHITE: This completes our presentation on the results of our recovery effort. You have already heard today of such things as 40,000 work requests accomplished, 350 modifications completed, and so forth.

Believe me, these things are only the tip of the iceberg. I could spend much time discussing specific numbers

of things done to illustrate the enormity of our 7 million plus man-hours of effort -- over 7 million man-hours of effort -- to get Sequoyah Unit 2 ready.

But additionally there are many other actions which are not as easily quantifiable with numbers, but they are there nevertheless, and they are very important. I speak of such things as attitudes of the people, their commitment to reach for the highest standards, their willingness to learn from their mistakes and the mistakes of others, their support for a new operational code of conduct, their spirit and their morale. And believe me, there's much more.

It is the totality of these things, both quantifiable and non-quantifiable, that gives me the assurance that we truly are ready to restart the TVA nuclear program. In that restart, as I have always done in a restart, we will be cautious. We will be conservative, and we will be deliberate. And I and my key people will be watching closely.

And I think, Mr. Chairman, kind of in regard to what you said, I expect things may break and have to be fixed. I expect there may be some errors, and if there are, we will stop. We will use the lessons learned before we proceed.

What I hope we've been able to demonstrate to you today is that TVA has put in place a recovery program, making the necessary corporate level improvements, as well as accomplishing the specific work which would permit you to

authorize the restart of Sequoyah Unit 2. In addition, we feel that we have put in place the programs and the resources to allow us to proceed toward the future start-up of other TVA units.

I will continue to pursue excellence to make the TVA nuclear program a showcase. I want TVA to be an example of how things should be done, and I am confident that we are ready to restart Sequoyah Unit 2, and that it will be operated in the best interests of the TVA, its ratepayers, and the public health and safety.

And that concludes our presentation.

CHAIRMAN ZECH: All right. Thank you very much.

Before we call the Staff, I would ask for questions, comments perhaps, from my fellow Commissioners.

Commissioner Roberts?

COMMISSIONER ROBERTS: In your opening remarks, if I heard you properly, you mentioned the pay cap problem. And did I understand you to say you were trying to do something about it, and would you feel comfortable in elaborating on that, or would you rather not?

MR. RUNYON: It's a very real problem in that we're not competitive with the industry. As a matter of fact, we're far from competitive. I have with me a study that -- a recent study that TVA has had made by the Hay Company, who are very well-known in establishing salaries, and we are working with

people in Washington, the Congressional representatives and --

COMMISSIONER ROBERTS: Will it take legislation?

MR. RUNYON: It could take legislation. We're also looking at some other ways that the Board might do something to help alleviate the problem through some other types of incentives, that the Board might have authority to do, and we're looking at that.

It's a very real problem, and if we can't solve it any other way, we'll have to solve it the way we solved Steve White's situation. He's here. And we certainly know that's open.

We would like to have, rather than consultants working at TVA, we would like to have TVA employees working at TVA, because it's very important that we have people that say, "I want to work for TVA for the rest of my life, and I'd like to have that job," because they'll come in, and they'll do a good job, and they'll want to see it improved because that's going to be their home. That's what they're responsible for.

Now I'm not putting down consultants. Don't misunderstand me, because they're absolutely necessary. And if we didn't have them, we'd be in pretty bad shape right now. I'm talking to Steve about the fact that, hey, you can't leave, fellow, until everything's done. And everything's not done.

[Laughte..]

So, you know, we're talking to him about that, but in

the meantime we are working very hard with the people that we know to work with, and that's the people in the Congress and the Senate that right now control that, and we're working within TVA to see what we can do internally to help the situation.

MR. DEAN: And any support you can give us, Commissioner, we'd appreciate.

[Laughter.]

CHAIRMAN ZECH: Anything else?

COMMISSIONER ROBERTS: That's all I have.

CHAIRMAN ZECH: Commissioner Bernthal?

COMMISSIONER BERNTHAL: Well, we've got too little time and too much to cover. I think I'll try and pick out one or two things here that I'd like you to comment on.

Incidentally, I am fully sympathetic with this pay cap situation. We've been talking about that now for the better part of ten years, and the problem still hasn't been solved. The Commission was aware of it some years ago and indicated its concern, I think before all of this even started.

I want to focus for a moment on a couple of the key technical issues that have been raised, and I'll expect the Staff to comment on these as well. But let's get to the point here on one or two.

First of all, on the diesel generator issue, I asked a question about that the last time the Staff briefed us here.

Our Staff, I believe, most recently has offered some assurances that they feel that the question of voltage droops under full load, which I understand to be the principle problem that has been resolved, and I'll ask them about that, but I'd like you to explain to me why you're confident now that these diesels will perform as expected under full load.

And just for the sake of information for the public here, station blackout is very often -- I don't recall for this particular plant, but is very often one of the highest risk factors. When you lose all power in a plant, you're in a serious situation, as you know, so it's essential that these things be able to perform should you lose offsite power.

So have at it. Explain to us why we should have confidence.

MR. WHITE: Well, in my terms as the manager, I have the confidence because it's not only been a review by -- Mr. Raleigh, you might come up -- Mr. Raleigh and the TVA people, but we've hired the best experts that we could find in the country to look over our shoulder, and I spoke to one of them as recently as this morning, and he is completely objective, and it is his opinion that there is not a problem involving restart.

That's not to say that we don't want to make improvements. There are very few areas that I don't want to make them.

COMMISSIONER BERNTHAL: Sure.

MR. WHITE: But mine is based on both our review, as well as the outside technical people we brought in.

MR. RALEIGH: Just the corrective action program for the diesel --

CHAIRMAN ZECH: Excuse me. What's your name again?

MR. RALEIGH: Bill Raleigh.

MR. WHITE: Bill Raleigh. He's Chief Electrical Engineer, and he is a new hire to TVA. I brought him in first as a Contract Manager and then convinced him, I guess, to stay on as a TVA employee. He's now a TVA employee.

CHAIRMAN ZECH: Thank you. You may proceed.

MR. RALEIGH: The corrective action program started in May of 1986, and it involved testing and analysis. That testing and analysis then resulted in modifications, changes to the surveillance instructions, and changes to the technical specifications.

We have submitted that test and analysis to the NRC along with our conclusion that the system is safe to perform its safety-related functions.

In addition to that, we're pursuing long-term improvements we can make in the system to further increase the performance or enhance the performance of the system. But our confidence is based on the test that we did. It wasn't just a paper exercise. We actually did tests.

COMMISSIONER BERNTHAL: Okay. Now you've not performed a test under full load, right?

MR. RALEIGH: That's correct.

COMMISSIONER BERNTHAL: I understand that you're not -- at least my understanding is, and Staff can explain, you're not required to do that strictly under our regulations.

The revision, most recent revision to our regulations, would have required you to do that. Can you explain to me why that is not practical or feasible and why you have confidence in the ability of the diesels to perform, having not been tested under full load?

MR. RALEIGH: It is not practical because the pump systems do not have a full flow bypass capability and as a result you have to recirculate a portion of the fluid, and of course, it doesn't have the full flow capability. It is a relatively simple analytical method to compensate for that difference.

In addition, we have tested the diesel up to its capacity rating so we are sure it will carry that. We have also in our analysis that we have submitted to the NRC, identified margins that no one else has identified that exist in the system. We are sure this system will perform its function.

COMMISSIONER BERNTHAL: Thank you. I appreciate that. I will ask the staff to give their view on that as well.

One issue that is cited, I guess it is still a preliminary safety evaluation report that Mr. Ebneter recently submitted to the Commission, as having remained unresolved at this point or at least at the time you submitted it, concerned temporary changes to drawings and your control of temporary changes to drawings.

I gather there has been a question of implementation of a single system here, so you have one focal point for all such changes, obviously a good idea.

Has this issue been resolved yet?

MR. WHITE: As far as I know, it has been. Isn't that right, Mr. Hosmer? Are there any lingering issues?

MR. HOSMER: I think the issue you are addressing is more focused on the control line red line drawing issue. We do have a single drawing program. We have agreed to a system about three days ago where we will stop red lining drawings, we will issue a cad drawing to the control room and to multiple places in our system, such as outside emergency response facility. That has been resolved. Our procedures have been changed. I think we have resolved that.

MR. RUNYON: Commissioner Bernthal, if I might make a comment. In my visits to the control room, the operators made a point of showing me their drawings and telling me it had been resolved in their opinion.

COMMISSIONER BERNTHAL: Good. Thank you.

One other question, and then I'll give someone else a chance.

I understand the American Nuclear Insurers, the insurance group, conducted an inspection of the plant and especially looked at some of the structural, organizational aspects at the plant and were somewhat critical, I think it is fair to say, in certain areas, certain committees, plant operation review committee was cited, for example. They had several recommendations for making improvements.

What have you done about that? Could you address that briefly?

MR. WHITE: Yes. First, let me say we knew -- I knew that the PORC was not operating to standards that I wanted it to.

COMMISSIONER BERNTHAL: That is a bad word in this town, but go ahead.

[Laughter.]

MR. WHITE: The plant operational review committee wasn't operating to the standards I wanted. We have a number, as you would expect, of other systems to make sure of the fact that they were weaker than I wanted but wouldn't let something fall through the crack. When the new plant manager took over, Mr. Smith, one of this first challenges that I gave him was to fix that darn thing. I'm tired of it not being to standard.

When the ANI people came in, they came in, I believe

-- was that the first meeting?

MR. SMITH: Second.

MR. WHITE: What they observed was, as you would expect, a training and teaching session, the new plant manager was laying down the rules. They observed this and they said, gee, the plant manager sure knows what is going on but we are not sure about the other people, and they formed certain impressions.

Since that time, we have taken a lot of their suggestions, there were some good suggestions. We put those into the plan. As of the first of March, the ANI people have written me a letter signed by Mr. Santacore, the Vice President for Nuclear Engineering, in which he says that our response was prompt, we have identified their recommendations, we have taken actions. I think the particular issue that was involved was the safety review process, whether as a result of this, anything had been missed in the past.

It is interesting, this one sentence, which I will quote to you, "The safety review process in our judgment has adequately addressed nuclear safety issues." Very important. He continues to say they need to gain a better appreciation for the manner in which insurance issues have been resolved. There are no nuclear safety issues involved.

I talked to him the other day. He is going to come down and we are going to meet and see if they have suggestions,

they want to learn more about our process in terms of what he refers to as insurance issues. I see no lingering of any problem at all.

COMMISSIONER BERNTHAL: Thank you very much. I would hope that somebody here will ask you about Appendix R, but I will let someone else. Before you get away, I will, if there isn't a question.

CHAIRMAN ZECH: Commissioner Carr?

COMMISSIONER CARR: I won't ask him about that.

My question is more for Mr. Runyon. Obviously, Mr. White has earned his support and when you bring in those consultants, you have to listen to them. What I am concerned about is when he uses all those recruiting powers and recruits his replacement for a Government salary, whether or not those institutionalized changes and the authority to do the work that he has been doing carries on with that replacement manager. It takes a lot of corporate support, money, authority and so forth. I wondered if you would give us a few words on that item?

MR. RUNYON: Yes, sir. I'd be glad to do that. It is my intention that what you have heard today is what I am committed to do. In reviewing this meeting saw the nuclear ethic and said, that is a business ethic that everybody should do and the only difference is the public safety is much, much higher in the case of nuclear than it is in another type of

operation.

The nuclear ethic is one that I totally support and what it takes to do that, I'm committed to do it.

COMMISSIONER CARR: No doubt he has earned his support. From what he says, and I'm sure you are all giving him that kind of support, we as the Commission are interested if that support is continuing even after Mr. short timer here finishes his work and moves on.

MR. RUNYON: It will continue.

MR. WATERS: If I may respond, Commissioner. This has been too hard to earn, too long in getting. We have all worked too hard. We are not going to let it slip. We are going to use our very best efforts, we are going to stay right on top of it, because we worked very, very hard to get to this point and we recognize the need to continue to give it that kind of attention.

COMMISSIONER CARR: I have one more question. How many non-TVA employees are there in the management and senior operational level at Sequoyah?

MR. WHITE: We have some contractors at the lower levels, very low levels, maintenance and the work coordination and planning, but they are all TVA.

CHAIRMAN ZECH: Commissioner Rogers?

COMMISSIONER ROGERS: It looks like my question has been defined for me.

[Laughter.]

COMMISSIONER ROGERS: I will just ask you, if you would comment on the 26 questions that were sent to you from NRC concerning Appendix R.

MR. WHITE: Yes. We took a look at all those. As in the case of diesel generator, I brought in some outside people and by the way, one of them was the individual who formerly worked for the NRC and wrote Appendix R, to look over our shoulder. We have provided to the staff written response to each of those issues.

Mr. Hosmer, do you know of any lingering issues after providing the information?

MR. HOSMER: I'm aware we owe one written response based on a phone call yesterday. That is in the process of being prepared.

COMMISSIONER ROGERS: There is one yet to come?

MR. HOSMER: Yes. The response was previously provided. More information has been asked for to amend that response. This will be a revision to the response.

COMMISSIONER ROGERS: Just a matter of detail but it is of interest to me. In your systems engineers, how many systems engineers do you have and how many systems does each of those people look after?

MR. WHITE: I will let Mr. Smith speak to it but I think it is 30 and the end goal is 60 for both units.

MR. SMITH: There are currently 30. Let me modify that. We have a maintenance engineering organization that is about 65 people. Those individuals have been and continue to do some system engineering work themselves. We are in the process of combining those two organizations and should have that done by the end of March. That will put the 60 to 65 engineers in place. Each of those engineers will have approximately three systems.

COMMISSIONER ROGERS: Very good. That's all, Mr. Chairman.

COMMISSIONER BERNTHAL: If I may, getting back to the Appendix R issue, on one detail at least, I understand there was one issue and maybe others, and perhaps the staff can tell us, that is going to require some corrective action, something about interaction between cables, but you expected that only to take a few days? Am I not connecting?

MR. HOSMER: I think you are referring to the latest discussion I'm aware of dealt with concerns about the documentation, looking at high to low pressure interfaces, RHR valve interface, had we appropriately implemented a Commission generic letter. What we are providing in writing today is the basis for the fact that we believe we had implemented that properly in the past. I know of no physical changes or any procedural change required to meet the submittal we are providing today.

COMMISSIONER BERNTHAL: There was something about a wire to wire short. I know what it means generally but not specifically, between different cables.

MR. HOSMER: We are talking about the same issue.

CHAIRMAN ZECH: Let me just make a few comments.

First of all, it is obvious you have put a lot of attention into corporate management initiatives and organizational initiatives and certainly what you have told us today, I think, would give me the confidence that you have attacked aggressively the problems at TVA. There is no question about that. I think it certainly shows they needed attention. It would appear you have given it that attention.

Now what you have to do is execute. Now what you have to do is see results. Now what you have to do is as you point out, a cautious, careful, deliberate, slow approach to the forthcoming potential start up events.

I appreciate what you have said about training, all shifts, but there is nothing like the proof, as we all know. I know the staff has a plan to follow your careful, cautious, conservative approach also.

I appreciate what you have said about quality assurance and I think you said you had 68 percent of your conditions adverse to quality determined by the line. I'd like to emphasize that. In my judgment, quality assurance ought to be a line function. Certainly you need a quality assurance

organization to assist and oversee and ensure that it takes place and it looks like you have done an aggressive job in that regard.

You can't really inspect in quality. You have to design it in, build it in, operate it in. Your quality people are a check on your line, but your line has to accept that responsibility. I want to emphasize that point, at least in my view. I've seen it happen too many times where perhaps they decide to turn over responsibilities for quality assurance to the quality assurance people and that's a mistake in my judgment. The responsibility is the line, across the board.

I appreciate also what you said about small mistakes. That's exactly right, small mistakes lead to big mistakes. You better find out what that small mistake amounted to before you proceed.

I also appreciate your emphasis on ownership and team work, because there is where you get people involved and that really is, if there is any secret to success in this business, as far as I'm concerned, it is management involvement and everybody involved. That's team work and ownership.

Your emphasis on the material condition upgrade I think is very important. We didn't talk about it very much. Your emphasis on maintenance upgrade is very important. We didn't talk about that very much either. Those are programs that require follow through in measuring success and results

and following through again.

I guess I feel that you have done a commendable job as far as placing management initiatives at the TVA, at Sequoyah. Obviously, you have made what looks to be at least big improvements that were necessary.

I guess the only concern I have with what you have told us this morning perhaps -- or what you haven't emphasized is what you have not told us. We just mentioned a couple of issues. The diesel generator, as far as I'm concerned, maybe you think it is solved, I don't know that it is solved yet. Fire protection, you may be satisfied but I am not. We will hear from our staff, too. The cable issue I know has been an ongoing issue. It was a serious issue and apparently it is resolved but again, I think it would have been helpful to emphasize some of the issues that you didn't talk about.

I am just mentioning this because I know we will hear from the staff. It would have been helpful to me at least and I think to my fellow Commissioners to have the confidence that you have attacked some of these issues that as far as we know are perhaps still outstanding or if they are resolved, they have only been resolved very recently.

I mention that because I want to hear from the staff on those regards. Having said that, let me just say that I think the technical issues are the ones that at least concern me that are remaining. I know they concern you, too. I would

like the staff to emphasize those technical issues when they come up.

Are there any other comments from my fellow Commissioners before we call on the staff?

[No response.]

CHAIRMAN ZECH: Thank you very much. We appreciate it.

Mr. Stello, you may begin.

MR. STELLO: Thank you, Mr. Chairman

Let me introduce Steve Ebneter, the Director of the Office of Special Projects, and then I'll have him introduce the rest of the people, and I will turn the briefing over to him.

We don't have slides to pass out, and that was intentional. We wanted to be sure that we could listen carefully to the briefing and add or emphasize those areas that we didn't think were covered during the briefing that the Commission ought to be aware of. We've already pointed out some of those areas which we will, in fact, begin to relate to the cable issue and the diesel generator and Appendix R issues.

We will give you a summary of our assessment of the overall readiness of the plant.

I think to cut through to where we stand today, we are watching very carefully. We have 24-hour coverage of the plant. We believe that we are at the point that we can

recommend to the Commission that when the Commission is ready to authorize the Staff to permit restart of Sequoyah. Of course, there are certain conditions, as you already are aware from the briefing you've heard thus far. There are still evolutions of the plant that have not been completed, that we want to see completed, further assessment of the readiness of the plant. We will be talking about that today.

We're not unhappy with what we have seen, but we want to see more, as was indicated in the original plan, and that would take us at least through next week and possibly thereafter.

There is, of course, the issue related to fire protection, and as you have heard, there is documentation to be provided. There is a meeting next week. And pending the outcome of that, which we believe will be satisfactory, we will have no technical issues standing in our way, except the completion of the things that are now on the plate.

I will ask Mr. Ebneter to take you through the briefing, paying careful attention to those things that you've asked us to emphasize, and we will do that this morning.

CHAIRMAN ZECH: All right. You may proceed, Mr. Ebneter.

MR. EBNETER: Good morning, Mr. Chairman and Commissioners.

Our last briefing was January 20, 1988. I'll cover a

few items that you requested us to -- in fact, all of the items that you requested us to address. Our objective is to really address operational readiness. We will talk about some technical issues. Three of those issues -- the diesel generators that Commissioner Bernthal mentioned and the Appendix R and the silicon rubber cables.

Excuse me. Mr. Stello reminded me to introduce the Staff.

Steve Richardson is my TVA Project Director. Jane Axelrad is my deputy. To the left of Mr. Stello and at the far end is Frank McCoy, who is my Startup Manager at the site and is playing a very key role in this evolution of getting to startup.

To get on with it, the technical issues, and then we'll discuss the status of the 50.54(f) letter. Much of that will be redundant to what TVA presented, so I'll sort of back off some of the comments, and lastly we'll discuss the operational readiness.

The technical issues first. Let me address the fire protection issue. I do have the principal technical Staff members here who have done the evaluations, and if you need further information, we can have them address specific technical concerns.

The fire protection issue, let me first address the IDI. Mr. White mentioned IDI.

CHAIRMAN ZECH: Tell everybody what that is.

MR. EBNETER: That is the integrated design inspection.

CHAIRMAN ZECH: And tell them why you did that a little bit. I think it would be important.

MR. EBNETER: We, the NRC, decided that there should be an integrated look at the total design aspects of the Sequoyah plant. The efforts that TVA had done were somewhat fragmented and did not address interfaces, so the Commission decided to do the integrated design inspection, so that we could get a complete look at one system in a vertical slice approach and assure that all different interfaces had been addressed.

That was an extensive effort. It was completed last September.

CHAIRMAN ZECH: In order to verify the design and also walkdown the system and verify that the plant was built in accordance with the design. Is that what the purpose is?

MR. EBNETER: Yes, sir.

CHAIRMAN ZECH: All right.

MR. EBNETER: We have conducted follow-up inspections to that, and TVA has submitted responses to 64 findings of ours. Those issues, we have essentially reviewed and have no more concerns on. So the IDI issues, as Mr. White commented, have been resolved.

The fire protection issue was a late-filed allegation which came in in late January by a previous employee of TVA, who had worked in the Fire Protection Group and therefore had knowledge of TVA's Appendix R analysis. We took the allegation. We had two interviews with this gentleman. They have been transcribed. We reviewed those, boiled out the issues, and that resulted in the letter to TVA with the 26 questions, and that was a request for additional information.

TVA responded to that. We have those in hand. The Staff has reviewed them. There is a major issue with the Staff with regard to cable-to-cable shorts, and this is the issue that Commissioner Bernthal mentioned.

The submission that TVA made was not adequate for us to perform the evaluation. Now there are some complications with the data that TVA sends us, because Sequoyah was what we call a window plant. It was one of those plants that was an NTOL at the time the Appendix R issues came out, so they were caught between some old requirements and the new rule.

So some of the data that is missing, TVA has stated is available. Now it may be in different forms that was not considered as an Appendix R issue, but things such as separations analysis, the design condition of the plant, isolation devices for interfacing non-safety systems. Those types of analyses could help the Staff significantly.

Now TVA, as Mr. John Hosmer has stated, owes us a

submission which should be here today. We cannot resolve that, obviously, today. We will review it, make our determination, and we do plan to have a public meeting next Wednesday on this issue.

Is there anything else in that particular area? Commissioner Bernthal?

COMMISSIONER ROBERTS: Well, no, except the other 25, then, I take it, you are reasonably satisfied with the response or --

MR. EBNETER: We are still reviewing some of those. Preliminary analysis, we don't see any problem with those. Now that doesn't preclude something coming up.

COMMISSIONER BERNTHAL: Okay.

MR. EBNETER: I might add, in those cases, some of them -- some of the issues that we brought out came out of the direct transcripts. Some of those issues have been analyzed in Chapter 15 events and things, such as pressurizer bubble, but they came out of the transcripts, so we included them in the total investigation that we're doing.

COMMISSIONER BERNTHAL: Okay.

CHAIRMAN ZECH: Fine. Proceed, please.

MR. EBNETER: The second issues that I wanted to talk about that Commissioner Bernthal and Commissioner Roberts mentioned was the emergency diesel generators.

The emergency diesel generator issue has been around

for a long time, as Mr. Hosmer again and Mr. Raleigh mentioned. It came out of some employee concerns, some allegations from a gentleman, Dallas Hicks, and it also -- the existence of a problem or potential problem was verified when TVA did a reduced load test as part of their tech spec requirement. The test results analysis did not quite meet nameplate ratings, and that caused the Staff some concern and prompted additional investigations and analysis.

The issues were the dynamic characteristics of the machine, as someone mentioned, the ability of the machine to load, recover from the load, and not exceed overshoots and stay within the minimum undershoots required.

TVA has told you that they did an analysis. They hired one of the best machine analysts in the country. Dr. Concordia, as their consultant, and they also had another consultant, at least one other that I'm aware of, from Sargent & Lundy.

The Staff in their analysis -- our Staff did the review, and to provide additional feedback, we hired a well-renowned consultant from MIT, Dr. Koskos. He did our analysis. We have reached agreement with TVA staff and consultants that the machines, the EDGs, do meet requirements.

Now there was one area of the Reg Guide that wasn't quite met; however, the analysis shows that we have at least 5 percent margin on contractor pickups in all cases, and the

Staff has deemed that to be acceptable for startup and operation.

TVA's consultant, Dr. Concordia, made three suggestions to improve the operation of those EDGs. It is our contention, and we plan to fully impose these on TVA, that they should implement those three suggestions, and one of them is in relation to the regulator. We will give TVA additional time to make those upgrades, since the machines are acceptable for startup and operation. One of the problems is we don't want TVA to rush out and get regulators that are not qualified or have not been proven and install them in the diesel and really give us some sort of a degraded condition.

That's the present stat us of the EDGs. Is there any further questions on those?

COMMISSIONER BERNTHAL: Well, yeah, the very last part you mentioned about replacement of the regulators. Are these not fairly standard items? In other words, one might have thought that you or they would have run out and bought some a long time ago and have replaced them.

MR. EBNETER: Your question is good. They did buy some, and they're sitting in the warehouse. But these devices will have to be qualified and fully tested, and they've been on the shelf for some period of time, and TVA is reluctant -- and we agree with them; we're not sure of the status of those.

COMMISSIONER BERNTHAL: But it's not a question of

them having, under normal circumstances, of those devices being qualified devices. It's because they've been sitting there so long, or is that the point?

MR. EBNETER: That's part of it, and I'm not sure. I could have Mr. Marinos comment from my staff, but I'm not sure what all procurement controls were placed on those.

Angelo, are you available? Would you comment on that, please?

MR. MARINOS: My name is Angelo Marinos. I'm the Chief of Reactor Operations Branch, and I did review the diesel generator issue.

The exciters that they have or regulators --

CHAIRMAN ZECH: Would you speak a little to the microphone, please? I don't think the reporter can hear you.

MR. MARINOS: They need to be --

CHAIRMAN ZECH: And identify yourself again, please.

MR. MARINOS: Yes. My name is Angelo Marinos. I'm the Chief of Reactor Operations Branch, the TVA Projects Division, and my responsibility was to evaluate the adequacy of the diesel generators for Sequoyah.

And in response to your question, Commissioner, about the regulators that they have in the warehouse, it is not necessarily compatible -- they do not automatically become compatible with the machine. They need to be investigated and analyzed before they're placed in service with the machines.

The machines, when they're built, they're built with their appropriate excitation system and the regulator that is accompanying it. So therefore this is an external device, not initially designed for that, and it has to be carefully evaluated.

COMMISSIONER BERNTHAL: I see. And while you're here, you and our expert consultant from MIT are both confident in the tests and calculations, simulations, whatever they may be, that have been carried out, that those would confidently predict adequate performance under full load?

MR. MARINOS: Yes, Commissioner.

COMMISSIONER BERNTHAL: And that it's not necessary to carry out the actual test for 24 hours under full load.

MR. MARINOS: No, it's not necessary to carry out the full test. That's correct.

COMMISSIONER BERNTHAL: Okay. Thank you very much.

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

MR. EBNETER: The third technical issue I'd like to discuss with you briefly is the silicon rubber cable issue, and I'd like to just give you an overview of how we approached that to assure you, the Commissioners, that there is a consensus of opinion and that we have approached this problem from a generic NRC concern.

The cable issue, there were many issues with it, and

I want to address primarily the test program in the resolution of silicon rubber. The test program was done primarily to verify or confirm the adequacy of cable installation practices, which had been called into question in the employee concerns program at Watts Bar.

The generic -- it was determined to be generic to Sequoyah, and that's how Sequoyah got involved with it.

When OSP was formed in February and March of 1987, this issue had been under investigation by the senior management team, and the senior management team had been using a matrix approach to solve TVA problems by using various portions of the NRC organization, such as IE and the Region and NRR.

When we took that over, the consultants on the cable had already been involved and had issued their TER. They had proposed certain test programs. We used the consultants, and we worked with TVA and NRR as a joint effort to establish a test program that would be viable.

The test program was viable. My staff, the Region inspection staff, and our consultants all were involved in witnessing the test program at Sequoyah, so that was a joint effort on our part. We made several trips there, and Mr. Marinos, who commented on the diesels, was also involved with that.

The program was successful in demonstrating that

general cable pulling practices were adequate. However, it also demonstrated that there was a sensitivity to these silicon rubber insulation cables that was more severe than the normal cable installation. Therefore, we embarked on the silicon rubber cable insulation test program.

That was a joint program between the NRC offices. TVA submitted a Part 21 to the Commission, stating that there was a potential generic problem with silicon rubber insulation. The OSP staff reviewed that. The OSP coordinated that with the other NRC offices, AEOD, NRR, and at least three different offices in NRR, the generic communications branch, the technical reviewers, and the project branches. So, we had full coordination on that.

We briefed NRR on their weekly events operations briefings. We coordinated with NRR on issuing an information notice to the industry that there was a potential problem with silicon rubber insulation. And, subsequent to that, we have worked very closely with NRR staff in developing the final generic position which will be submitted to the Commission shortly.

So, I want to try to convince you that this has been a very joint effort among the entire NRC staff. In conjunction with that, the information notice and the generic issue resolution, we're working to try to get a consensus of opinion -- and we have reached that consensus of opinion -- of what is

acceptable.

The problem of silicon rubber was a very complex issue. And, as with all complex issues, we had a variety of opinions on what test voltages were acceptable and how to handle the final resolution. But, there was a consensus of opinion reached. That consensus will be demonstrated when you receive the final paper on the generic issue of silicon rubber.

The status at TVA. TVA has removed all the AIW silicon rubber cable and some of the other cables manufactured by Anaconda and Rockbestos. The other cables that remain in there have been demonstrated to be able to function in a LOCA through the Wyle Laboratories test, and we have accepted that.

The remaining issue on silicon rubber cable is that the Wyle test program only demonstrated the life of that cable at reduced insulation levels for 10 years. We have required TVA to demonstrate full 40 year life of that cable before coming out of the first refueling outage of Sequoyah Two.

That's our present position of this. Any questions on silicon rubber?

COMMISSIONER BERNTHAL: Well, just a brief one. This is an indirect question. As I think you are aware, there was some concern raised about the adequacy of your -- not you personally -- but of the staff's oversight on some of this testing and verification process. In other words, our own QA, if you will, and, more importantly, our own QA documentation

for reaching the conclusions that you have expressed here. Can you comment on that a little bit, or is that all prior to your time, Stu? Maybe you can.

MR. EBNETER: Well, I'll give you some idea of some of the overviews that were performed. I was actively involved in it myself and Mr. Richardson. Since Mr. Marinos is a branch chief and he was in charge of the technical review and evaluations, I participated in some of the tests at the site along with Mr. Marinos.

We reviewed all of the material that was provided. We participated in the public briefings for the staff positions. I was involved with those, and Ms. Axelrad and Steve were involved with them.

As a final overview of the entire issue, we held high level management meetings. One of them involved Mr. Stello, Dr. Murley, and other high level managers, Mr. Sniezak in NRR, to discuss the approach and resolution of this issue.

All of the contractor reports. We made a change in utilizing contractors after we took over the project. The contractors reported directly to us. They did not write individual TERs, but worked with the staff and formulated their conclusions and inspection findings, and those are incorporated directly in the SER and inspection reports.

So, we had direct control of all of the writings and findings of our contractors at that point. Is there anything

more?

CHAIRMAN ZECH: So, what you're saying, as far as you're concerned, is that the cable issue has been resolved.

MR. EBNETER: Yes.

CHAIRMAN ZECH: All right.

COMMISSIONER BERNTHAL: And that you are confident that the questions of oversight over contractors and whatnot and documentation of results --

MR. EBNETER: And consensus of opinion.

COMMISSIONER BERNTHAL: -- whether or not with respect to Watts Bar or with respect to Sequoyah, that those questions, in your mind, are resolved with respect to Sequoyah.

MR. EBNETER: For Sequoyah only, sir.

COMMISSIONER BERNTHAL: Okay. Thank you very much.

MR. STELLO: I would like to add that I would like further opportunity to comment at a later time after we have had a chance to look into this adequately, because I think it's something that deserves fairly careful study, and we will respond to you.

CHAIRMAN ZECH: Well, if there's any doubt about it, you have got to respond before you make your recommendation for restart.

MR. STELLO: There is absolutely no reservation whatsoever that the cables at Sequoyah are okay. It's whether our internal process ought to be improved as we look to the

future and, if so, how. It is only in that context in which I reserved.

COMMISSIONER ZECH: Fine.

COMMISSIONER BERNTHAL: Yes. I fully agree. The question here is not one of physical readiness. The question is over our own processes.

MR. STELLO: That is correct.

CHAIRMAN ZECH: But you're satisfied that our process, in this regard, did give an adequate review.

MR. STELLO: No question.

CHAIRMAN ZECH: But you had to modify our process in order for it to do that, is that what you're kind of telling us? You had to make some modifications to make sure?

MR. STELLO: Well, I'll reserve whether the observations are correct or not. Was there really any problem.

CHAIRMAN ZECH: But the review we gave to this situation you're satisfied with, itself.

MR. STELLO: Completely, yes.

CHAIRMAN ZECH: And the issue itself?

MR. STELLO: And the cables themselves are okay.

CHAIRMAN ZECH: Fine. Thank you. You may proceed.

COMMISSIONER BERNTHAL: Didn't leave much wiggle room there, but go ahead.

[Laughter.]

MR. EBNETER: Thank you. The next topic I would like

to discuss briefly is related to operational readiness. When Sequoyah shut down voluntarily in September of 1985, the Commission under EDO sent a 5054(f) letter to TVA directing them that they could not restart the plant until they had NRC approval.

The two major issues in the 5054(f) letter were management controls and quality assurance. You've heard a great deal from TVA on that. I'd like to address briefly what we've done in that area.

Enclosure 2 to the letter involved questions to TVA on corporate issues, and that was the Board of Directors' actions, management changes to strengthen TVA, corporate tracking system, and the QA process. Item C of that enclosure was related to the Sequoyah Plant itself, and I'll discuss those under that.

TVA, in response to the 5054(f) letter, issued Volume I, the corporate nuclear plan. We have reviewed that and issued NUREG-1232, Part 1, which addresses our satisfaction with the proposed plans to strengthen the corporate structure.

Some things that we did look at and evaluate, and changes that have been made, I'll just quickly run over. The Board of Directors. There is now a full complement of Board of Directors. Mr. Runyon is on board. He is the new Chairman of the Board.

We do see a new change in direction by the committees

and task forces that he has established. Ms. Axelrad and I met with Mr. Runyon, and we're very satisfied and impressed with his comments with regard to support of the nuclear program.

TVA did establish an inspector general program, which has been very significant in reducing I&H and controlling internal management problems.

There is a new corporate structure. I'm not going to talk about it. Mr. White discussed that extensively.

There is an extensive matrix management that provides dedicated support to each site. I think that is one of the key items that is now existing. Mr. Hosmer mentioned to you, for example, engineering. He has 1,400 engineers supporting the Sequoyah Unit alone. And those are dedicated engineering staff for just Sequoyah. That does provide the necessary resources to solve their problems.

The QA program. Mr. Kazanas mentioned that they did revise it. They took five independent QA programs and integrated them into one. We have approved that as a topical report. That has been implemented, and we do see significant gains in the QA program. Very significant improvements.

The evaluation we put into NUREG-1232, I would like to comment briefly on. The ACRS has been interested in this. Their most recent letter -- of February 19th, I believe it was -- was generally complimentary of the changes that have been made at TVA in the management area.

Some questions we have, concerns, and you heard Mr. Runyon echo this same one, that is succession planning. I clearly don't know what Mr. White's plans are, but clearly he is a driving force in the recovery of TVA. I know his contract runs until next January. It is not too early for TVA to be aggressively pursuing a replacement for Mr. White or some enticement for him to stay, whatever their choice. But they have to do something in this area, clearly.

One other area I think they're lagging behind, and it does not impact restart but I want to mention it, is that corporate procedures and directives are significantly behind schedule. They have fallen behind the pace of the normal recovery. I think TVA needs to direct attention to that.

ACRS had a concern about span of control.

COMMISSIONER BERNTHAL: I'm sorry. That was fairly generic terminology there.

MR. EBNETER: Yes.

COMMISSIONER BERNTHAL: Do you want to tell me what that means?

MR. EBNETER: In the new corporate structure, the plan is for TVA corporate to provide the procedures and directives that apply to all of the TVA plants, Browns Ferry, Watts Bar, and Sequoyah. Those are the oversight procedures that provide the directions and implement goals.

Most of those are not completed. They are in

process. There are some good reasons for that. They are not a start-up issue, however. But I just wanted to mention they are behind.

The span of control issue that we had originally with the large number of people reporting to Mr. White, the ACRS reiterated their concern with that. That also could be a problem if Mr. White leaves and someone else has a different style of management. That span of control could be significant.

That's all I have on the corporate area. We're generally satisfied with what TVA has done in that area. We think it's been very effective.

Are there any questions of the staff in that area?

CHAIRMAN ZECH: You can proceed.

MR. EBNETER: All right. The Sequoyah site, the 5054(f) letter, we identified TVA in that area to address several areas. One of those was EQ. You've heard about EQ several times, and I'm not going to belabor it.

They have corrected that problem for Sequoyah, and the staff now feels -- we have done a number of inspections there -- the staff feels that is one of the better programs in the United States on EQ. And we have documented that in our SE.

The upgraded management staff at Sequoyah. You heard a great deal about that from Mr. Smith. I'm not going to

comment too much on that. We do think it is effective.

There is a new deputy site manager who came from outside of TVA. Mr. Smith was outside of TVA. The new maintenance manager you didn't hear much about. He came from outside of TVA. Which gives you a diverse and extensive experience in these key areas. So, we're very happy with that upgrading.

The focus on teamwork, we agree that is significant. The war room is a classic example. And I think Mr. Bernthal observed that when he was down there.

Some areas they have improved. Plant procedures. They have a new design baseline. I'm not going to cover those. TVA did.

The systems organization we think is a significant addition to the TVA staff. That was an area that was consistently identified as lacking in TVA. That is in place, and we think that is an excellent program.

There is a new configuration management program in at TVA. They didn't comment much on it but I think that is one of the most significant preventive measures they have in place. If that is implemented fully, it should prevent degradation of the plant physical conditions and we are looking at that area closely.

For evaluation of that area, by the way, Marilyn Blackburn commented on the training. I did talk and interview

Ms. Blackburn. She provided me with some data. Out at the TVA Sequoyah site, over 190 supervisors on the Sequoyah staff have taken those management development courses, some of them as many as three or four different core courses. We think that is a significant improvement in management development at the site.

We have issued the SE for that. There are a few areas they have completed and they are being revised and incorporated in the SE. It is in the public document room and will be printed within the next few weeks, but it is available to the public now.

Any questions on the Sequoyah overview?

CHAIRMAN ZECH: You may proceed.

MR. EBNETER: I would like to talk a little bit about operational readiness. Again, I'm going to be brief. TVA has done extensive work. INPO conducted two evaluations. TVA did two, the major one extending from August, 1987 to January, 1988. NRC, we have done our own overview of this and the ANI's review, which you heard briefly about. INPO had four key start up items. Those have been completed or will be completed before start up. The TVA overview identified 13 items that had to be completed. They specified that TVA develop a plan to address all start up issues. TVA has done that. We have seen that and there is an official submittal coming in today on the docket for that corrective action plan.

Our review, we did an attributes review. We are generally satisfied with training of the plant and staff operations, procedure upgrades. Our major concern last December and January was the nuclear ethic. We said it needed significant improvement. We have seen improvements in that area.

The ANI issue, we agree with TVA's resolution. ANI, the American Nuclear Insurers, came back and did do another inspection. There is a new report out that was dated March 1, which has just been submitted. We are reviewing that. That is more extensive than what we had on the docket before.

COMMISSIONER BERNTHAL: Can you give us a five word summary on what is the general tone?

MR. EBNETER: The general tone is that their re-inspection, they have confirmed the TVA corrective actions are adequate to correct the problems and particularly in the PORC area. That was the major issue.

There was one I might comment on. They did find a temporary alteration control form, a TACF, that was over three years old at the plant. TVA has done some work in that area. The last word I had on that, they didn't comment, but the TACFs had been reduced to 16 on the plant. That is a figure that TVA gave me. I have not verified that. They have made significant progress in controlling TACFs.

Anything else in that area?

CHAIRMAN ZECH: Go ahead.

MR. EBNETER: I would just comment on the operating staff some features that perhaps didn't come through clearly by TVA. They do have six shift crew operations, it is an integrated crew. It consists of people around the clock coverage. Each crew has HP, chemistry, mainterance and engineering support on it. There is an STA on each shift that is part of that shift and trains with that shift. They commented on some of that integrated crew training and we do think that is very effective.

Some comments and evaluations have been made. The INPO evaluations said that the crews are very good, they are well above average. Our staff generally feels that the crews are above average and we feel those observations are significant.

COMMISSIONER BERNTHAL: Could you very briefly comment on an issue, which as you know, was raised the first time I was down there, and that was the level of experience. There was some concern expressed at that time and I recall your having promised to follow up on it, about the level of experience. For all practical purposes here, we are looking at starting a new plant. The attitude has to be much the same.

You are confident in the SROs and in particular in the ROs, the level of experience is more than adequate?

MR. EBNETER: Yes, we think so. Frank McCoy, who is

down at the site full time running the start up program, Frank, would you comment briefly or that experience on the hot plant?

MR. McCOY: Yes, sir. We did a review of their operational capabilities, past operational experience that the various people on shift have had. What we have determined is of the 12 SROs that are either assistant shift engineers or shift engineer capacity, two of them have not had shift management experience as an SRO but have had extensive reactor operator experience. Of the reactor operators, about 7 of the 12 reactor operators have not had any substantial operating experience in the past. They are relatively new. We think that is a product of the extended shut down and is positive.

We have confidence that if they do in fact proceed in a methodical and deliberate manner, and our experience to date in observing the shut down indicates that is the attitude and approach they are taking, but that the problems that can be encountered by those sorts of weaknesses should become self correcting as they go through this.

COMMISSIONER BERNTHAL: Thank you.

COMMISSIONER CARR: Can I ask you where they sent their people for hot plant training?

MR. McCOY: I couldn't answer that, sir.

CHAIRMAN ZECH: Does TVA want to answer that question?

MR. BYNUM: The hot plant training, what Mr. McCoy

was talking about was those operators have greater than six months experience at Sequoyah in Mode 1.

COMMISSIONER CARR: But Sequoyah has been shut down a couple of years. Have they been anywhere else for training?

MR. BYNUM: No. We have not sent anyone off site for training. We trained on the Sequoyah simulator and they do have Mode 1 experience on Sequoyah.

COMMISSIONER CARR: Two years old?

MR. BYNUM: That's correct.

CHAIRMAN ZECH: You may proceed.

MR. EBNETER: Two comments that I view as weaknesses in this operational staffing structure. In the last presentation that TVA made to us, the Sequoyah staff has a complement of approximately 250 supervisors. There is at least 30 vacancies in those supervisory areas which we think they should spend some time on trying to staff.

We did an inspection on some other organizational areas, in the rad waste and chemistry rad control area, and the staffing level we found authorized 66 positions, 11 of those were vacant. We think they need to spend some attention on meeting authorized staffing levels at the station.

The nuclear ethic again, we have seen good progress. We would like to see more. I wanted to comment on nuclear ethic in regard to the engineering staff. We have applied this nuclear ethic primarily to the operating staff. In the recent

few weeks, we have seen some very poor submittals from the engineering side of the house that need attention. It is not a start up issue but I just wanted to get it on the table, attention to details is extremely important from the engineering side as well as it is from the operating side.

COMMISSIONER BERNTHAL: Is this the on-site engineering staff or off site?

MR. EBNETER: On-site, sir. Small things like not observing commitments made to the NRC, not following --

CHAIRMAN ZECH: That's not a small thing.

MR. EBNETER: Small in the isolated cases.

CHAIRMAN ZECH: As far as I'm concerned, that's about as big a thing you can have.

MR. EBNETER: We agree and that is why I want to bring it out. We have had some discussions with TVA and I wanted to get a little more emphasis on it.

CHAIRMAN ZECH: I trust TVA will accept that challenge right now. Go ahead.

MR. EBNETER: Just some quick comments on our observations of what it looks like. In the summer of 1987, we were experiencing quite a few procedural adherence problems. TVA took prompt action on that. That has tapered off and we have seen good progress in that area. Just prior to going into the heat up, they had significant problems in the ice condenser area, cleanliness of the plant, cleaning up and just following

good housekeeping procedures, doing things in accordance with procedures. Again, they took good prompt corrective action and they got those resolved.

We authorized them to go into Mode 4 on February 4th. They went into Mode 4 on February 6th. We have about 28 days or so experience in Mode 4. We have experienced 10 different events. I call them events. Some of them were notifications -- two of them were notifications of unusual event, several were failure to follow procedure, a few of them were related to failure to get authorization to perform maintenance.

Each time -- that's a significant number we think, ten. We tried to get a baseline against other plants. We weren't too successful in that because for example, TMI, TMI did not have the standard tech spec. They had a customized tech spec and it was difficult to relate some of these. They didn't have all the tech specs --

CHAIRMAN ZECH: TMI-1 when they restarted?

MR. EBNETER: Yes. We did look at two others. Jane, did you have any comments on those?

MS. AXELRAD: We looked at Davis-Besse and Fermi only had four days before it got to load two, and it didn't have any events. It isn't really comparable. Davis-Besse had a 19 day heat up period and they had one event during that time. That was all we could find.

CHAIRMAN ZECH: All right.

MR. EBNETER: I would say that the operators and the staff did recover very well from these problems. They identified themselves, recovered adequately and TVA has been very conservative as Mr. White mentioned. They have case studies. They get the staff together. Mr. White has talked to them. Steve Smith has talked with them, to try to instill this nuclear ethic in the staff. It is paying dividends.

In one case they did stop work for six days and in another case they moved some of the work authority mechanisms outside of the control room. In speaking about the control room, I'd like to address briefly your comment on the drawings. We are requiring TVA to have all those drawings that are essential for operations to be updated in the control room and in all the emergency response facilities, tech support center and off site facilities such that we have a complete set of currently configured drawings for operations and emergencies.

That is the status of that.

That is generally our observation on the start up. It is going slow but we think it has to go slow. There has been more events than we think should be there, but the recovery has been good.

Let me summarize quickly and then if you have any questions, I would be glad to answer them or have the staff answer them.

In summary, we have one technical issue in the

Appendix R issue that we do have to address. The Volume 1 and Volume 2 SERs that bound the 50.54(f) letter, which is necessary for restart are essentially finished. The operational readiness reviews that we have performed and that TVA has performed generally support a start up decision.

We mentioned some concerns, the nuclear ethic, the long term replacement and succession planning for Mr. White, and full staffing at the plant. That's essentially a summary of mine.

I would like to make one last comment. The staff has done an outstanding job, both at headquarters and on the site. We have done more inspection at this plant than any that I know of, under pre-heat up for the plant, there is no plant that I know of that has been in 24 hour shift coverage by the NRC for the length of time this plant has. At TMI, on their restart, that went into effect the day they went critical. We are getting a very good view and opportunity to observe the plant heat up in a much greater detail than any other plant we know of.

That's all I have.

MR. STELLO: I think, Mr. Chairman, that concludes our presentation. I would again reiterate, I do not believe based on what I understand, that TVA will in fact be ready to go critical next week. It will probably be the following week.

We would recommend that the Commission, when they

feel they are satisfied, to authorize the staff to permit TVA to go critical, when we resolve the issues you have heard about today.

CHAIRMAN ZECH: We need to hear from you when they are resolved.

MR. STELLO: We intend to provide the Commission a report and tell you that is in fact the case.

One last comment in the way of a challenge. It is our view that TVA has had indeed a very long and difficult road. I think they have managed to travel that difficult path successfully. I think they have to now set their sights on truly achieving excellence and hope they will continue the programs they have so that the Sequoyah plant will in fact be one of the best operating plants in our country. I think they can do that. They seem to have that commitment. We are going to try to help them achieve that goal.

CHAIRMAN ZECH: Thank you very much. Questions from my fellow Commissioners? Commissioner Rogers?

COMMISSIONER ROGERS: No.

CHAIRMAN ZECH: Commissioner Bernthal?

COMMISSIONER BERNTHAL: Let me roll three items here into one, from the preliminary safety evaluation that you provided us. There were two or three things that the staff stated that needed to be resolved before restart. Let me just name them. I understand -- everyone understands there were a

lot of problems with calculations of various types two and a half years ago and before that. There was one area that I am told from your report, the area of civil calculations, certain electrical calculations especially, that the staff states will need to be resolved before restart.

Another area was small bore piping, that TVA needed to complete some corrective action there. A third area was certification that all the field work was done on environmental qualification before restart.

Have they satisfied all three of those items in your judgment?

MR. EBNETER: The staff has assured me of that. Mr. Herrmann, would you address that particularly on the cals and the small bore pipe area?

MR. HERRMANN: I am Bob Herrmann, Chief of the Engineering Branch. The issues on the calculation program as well as the IDI issues and the other small bore pipe issues have been resolved on the plan for restart. There will be some follow up actions for the long haul but we are done for the restart.

CHAIRMAN ZECH: Thank you.

MR. EBNETER: The certification issue, Mr. Pierson?

MR. PIERSON: My name is Bob Pierson. I am the Plant Systems Branch Chief. We have received a letter certifying equipment qualification has been completed.

COMMISSIONER BERNTHAL: Thank you very much.

Finally, just a word. The first time I was there, I had a chance to meet with I guess 12 or 14 of our staff people in a circle and whatever occasionally may or may not be said about the NRC, I was greatly impressed with the quality of the people and the attention they were giving to their work and it's a tribute to your effort, Stu, and to Mr. Keppler's before you, I think. The candidness and openness, nobody pulled any punches. I very much appreciated that.

Let me mention one item and see whether in your judgment in the three to four weeks, whatever it has been since that point that it has been resolved, there was a concern expressed by two or three of the people doing the work over the rapidity of response to some of the -- how does it go, conditions adverse to quality, reports that were submitted. There was a concern about how quickly the follow up occurred within the organization. I think based on my most recent visit that has improved, but maybe you would like to comment.

MR. EBNETER: The CAQR has been an issue that we have been looking at for a year now. The CAQR process came into existence last February. It's very complex and it has taken some time for TVA to get it fully implemented. We conducted an inspection three weeks ago, I believe, a team inspection, and the staff still had some difficulties with the full implementation. There were three areas that were of concern.

The staff informed me this morning, we discussed it again, that TVA is taking the corrective action to correct those.

Timeliness has been one of our primary concerns, such that any safety issues that are identified get through the system in a reasonable period and that corrective actions and evaluations are done quickly. We think the system essentially is pretty good right now.

COMMISSIONER BERNTHAL: Thank you very much.

CHAIRMAN ZECH: Commissioner Carr?

COMMISSIONER CARR: Yes, I have one question I'd like to ask TVA. I know you have a comprehensive fitness for duty program. Do you have any statistics on recent results for fitness for duty?

MR. WHITE: Our fitness for duty program, I think, is one of the best in the country. It's a two-pronged approach. One is education of our people. We have an education program for both TVA and contractors, for the non-supervisory personnel. It's about a two-hour course; supervisory management, it's about a four and a half hour course. As I recall, we have trained in the neighborhood of ten or eleven thousand. We're almost through the first training cycle. That's the education part.

The preventive part consists of both dogs -- we now have three dogs who are visually present at the sites and at the office locations. And our random drug-testing program.

Now our drug-testing program has in itself several facets. One is for cause; another is for unescorted access to the plant. But the most important and the one that I have seen work in the Navy has been the random process, and to date, our screening of 2876 random screens, there have been 22 positive, and that's .8 percent.

CHAIRMAN ZECH: Were any of those operators?

MR. WHITE: I don't recall. Were any of them --

SPEAKER: No licensed operators.

CHAIRMAN ZECH: No licensed operators. All right. Thank you.

MR. WHITE: In terms of the for cause, there have been 20 for cause, and as you'd expect, they're higher there; two of those 20 for cause were positive.

Pre-employment, 20 out of 1209 were positive, and that's 1.7 percent.

Those numbers are frankly much better than I had expected when we instituted the program.

MR. EBNETER: Commissioner Carr, we did do an inspection of that, a team inspection, last fall to verify the effectiveness of the program, and we found that it was acceptable.

COMMISSIONER CARR: All right. The only other thing I'd say is, I'd compliment you personally, Mr. Ebneter, on jumping into a vacancy at short notice and running an effective

program, and my congratulations to you and your staff. Thank you.

MR. EBNETER: Well, thank you, sir, but the staff did the work, not me.

CHAIRMAN ZECH: Commissioner Rogers?

COMMISSIONER CARR: So did Mr. White's staff, right?

[Laughter.]

COMMISSIONER ROGERS: Would you comment on the work request backlog of about two, two and a half months that we heard in the TVA presentation a little earlier as to whether you think that is a stable number, it might go up, might go down, and whether you're comfortable with it?

MR. EBNETER: Well, we would obviously like to see it go down. I had the same question in the public meeting that the Commissioners had here, and I got the same answer. I don't have any personal experience of what would be an acceptable level, but I would like to see it get lower than 700. But I don't have any real basis for that.

COMMISSIONER ROGERS: Well, I, you know, I couldn't get a feeling from the presentation this morning whether TVA thought that was going to be where they leveled off, or whether they were really going to try to drive that down from that point. Could somebody comment?

MR. WHITE: Well, of course, we're going to try and drive it down. The first thing we have to do is separate out

the nonsense items from our system.

For example, we have a lot of trailers, temporary trailers. Literally, if one of those trailers has a flat tire, it ends up being in the statistics. So we've got to cleanse our system, and then I'm going to drive it down as far as we can. And I may put too much pressure and overshoot, but I'd like to see our backlog be the lowest in the country.

At the same time, I want to make clear that it's a healthy thing to have your people out looking, so that you have a backlog.

COMMISSIONER ROGERS: Well, just also I'd like to join my other Commissioners in complimenting the Staff on the very assiduous attention that's been paid here. It really shows.

MR. EBNETER: Thank you, sir.

CHAIRMAN ZECH: All right. Well, let me join my colleagues, too, to the Staff, especially you, Mr. Ebneter, for your leadership in taking on a very, very important mission for this agency.

Ms. Axelrad has been with you all along, I know. I compliment you, too, and all the members of your team.

I know we're not done yet, and you're still driving, so we expect you to keep going and give us the best recommendations that you can and do it right.

Let me just say, too, I'd like to commend Mr. Runyon

for his willingness to step into this very important responsibility at TVA. You do bring a lot of experience, not necessarily nuclear experience, but you're getting help in that regard, it looks like, but you are bringing a lot of management experience into it, and it would at least appear to me dedication to the TVA organization, which I think is commendable.

To the other members of the Board of Directors, it's been a long, hard row for both of you, but I think you made a courageous decision some time ago to recognize what did appear to be real shortcomings at TVA. As painful as that was, I do think you showed the moral courage to do what's right, and we're not done yet, but I do think you deserve at least the credit for painfully facing up to what does appear to have been a necessary task.

I would say a last word to the Board. I hope you will continue your support for Steve White. He needs that support. The whole organization needs the support of the Board. It's been painful, but perhaps healthy. I like to think it's healthy, what you've done, but the support needs to stay there. It needs to continue. And as you form a more permanent organization somewhere along the corporate level, I commend you for what you've done in getting permanent TVA people in there, but that is awfully important, I think, for continuity and strength over the long haul.

You've obviously made some significant and positive management changes at TVA. I think there are some technical issues, at least, that we want to be confident are fully resolved. We've mentioned several of them here today. It looks to me like you do have an experienced group of people at TVA, and I commend you for your ability to recruit under difficult pay scale circumstances, and I think that's been an effort that needs recognition.

It looks like you've got almost a new team in many ways. I know you've got some of the same people. But when you have a new team, and if startup is authorized, I think you've got to look at it in a sense like first-time startup and recognize that caution and deliberate carefulness and slowness step-by-step is the only way to go, as we mentioned earlier.

Let me just say, too, that speaking for myself -- and I feel confident that I'm speaking for my fellow Commissioners -- that this Commission will only authorize the Staff to allow the restart of the Sequoyah plant if and when we're satisfied that there are no issues that we're aware of for the purpose of restart that are standing in the way of a finding that there is reasonable assurance that the plant can be operated safely without undue risk to the public health and safety.

That's our mandate. We intend to carry it out. And as we pointed out earlier, although we've scheduled a tentative session for a possible Commission vote for the 10th of March

next week, as Mr. Stello points out, it could well be the following week or even later. We're not going to authorize restart until we're satisfied.

With that, I thank the Staff. I thank TVA for an excellent presentation, and unless there are any other comments, we will stand adjourned.

[Whereupon, at 12:35 o'clock, p.m., the Commission meeting was adjourned.]

REPORTER'S CERTIFICATE

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

TITLE OF MEETING: Briefing on Sequoyah Restart

PLACE OF MEETING: Washington, D.C.

DATE OF MEETING: Friday, March 4, 1988

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

Suzanne B. Young

Ann Riley & Associates, Ltd.

3/4/88

SCHEDULING NOTES

TITLE: BRIEFING ON SEQUOYAH RESTART

SCHEDULED: 9:30 A.M., FRIDAY, MARCH 4, 1988 (OPEN)

DURATION: APPROX 2 HRS

PARTICIPANTS: TVA (LICENSEE)

BOARD OF DIRECTORS — 5 MINS

- M.J. RUNYON, CHAIRMAN
- C. DEAN
- W. WATERS

MANAGER OF NUCLEAR POWER — 70 MINS

- S.A. WHITE

TVA STAFF

- T. JENKINS, EMPLOYEE CONCERNS PROGRAM
- M. BLACKBURN, MANAGEMENT DEVELOPMENT
- N. KAZANAS, QUALITY ASSURANCE
- J. HOSMER, TECHNICAL SUPPORT
- S. SMITH, PLANT PERFORMANCE
- J. BYNUM, PLANT OPERATIONAL READINESS

NRC — 45 MINS

- V. STELLO, EDO
- S. EBNETER, DIRECTOR
  OFFICE OF SPECIAL PROJECTS
- J. AXELRAD (OSP)
- S. RICHARDSON (OSP)
- B.D. LIAW (OSP)
- E. MARINOS (OSP)

TENNESSEE VALLEY AUTHORITY
OFFICE OF NUCLEAR POWER

SEQUOYAH NUCLEAR PLANT
UNIT 2
NRC COMMISSION MEETING
MARCH 4, 1988

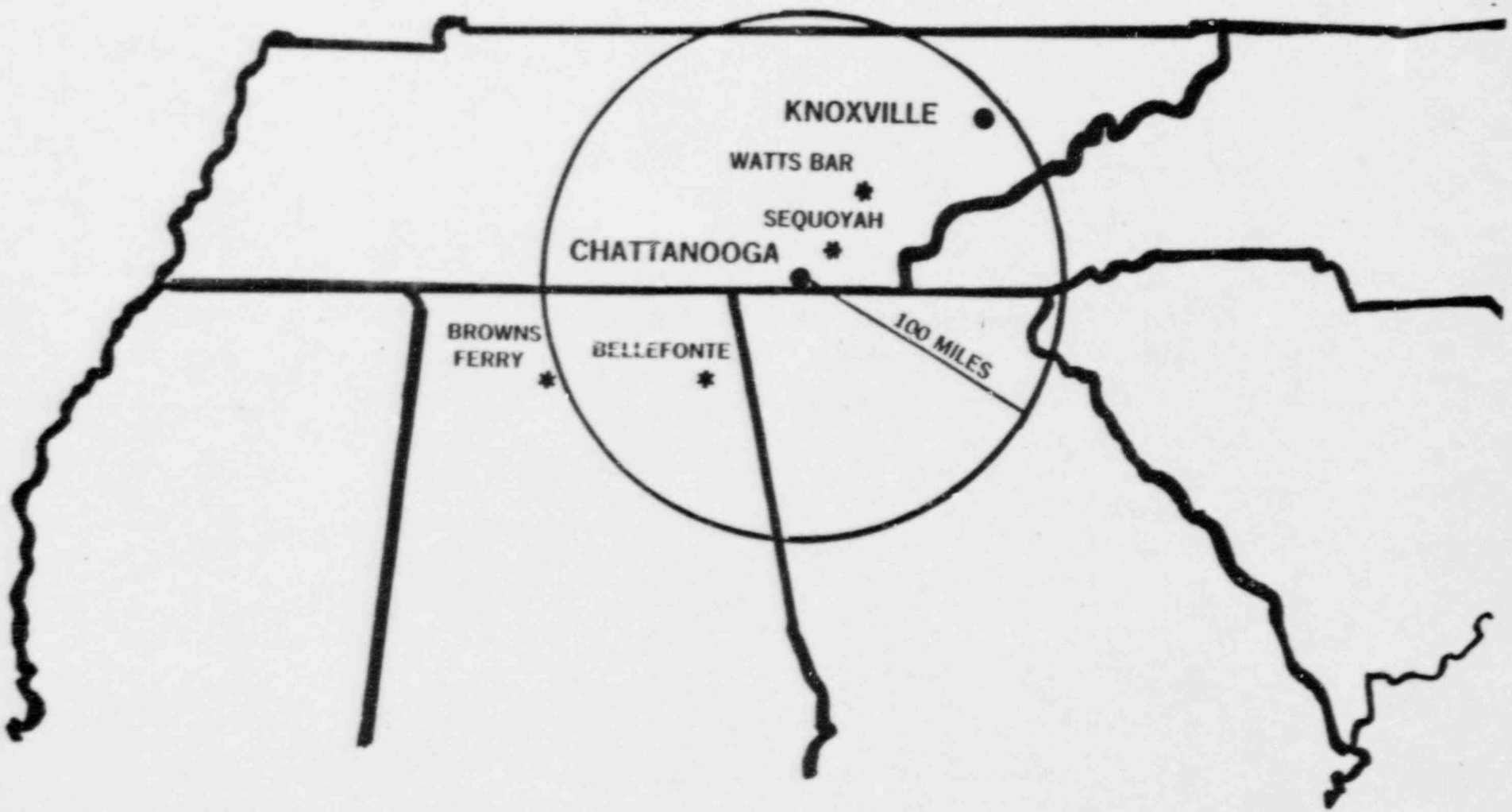
AGENDA

→ OVERVIEW

CORPORATE PERFORMANCE

SEQUOYAH OPERATIONAL READINESS

NUCLEAR FACILITIES



HISTORY AND BACKGROUND

NRC CONCERNS

- CORPORATE CONTROLS WEAK, LACK OF TOP MANAGEMENT INVOLVEMENT
- LACK OF NUCLEAR AND OPERATING EXPERIENCE IN PLANT ORGANIZATION
- TECHNICAL SUPPORT NOT MANAGED
- DECENTRALIZATION (OWNER/OPERATOR CONCEPT) NOT IMPROVING PLANT PERFORMANCE
- ALLEGATIONS
- POOR REGULATORY PERFORMANCE
- LACK OF INTEGRATED TRACKING SYSTEM
- LACK OF SITE-TO-SITE SHARED OPERATING EXPERIENCE
- UNTIMELY AND INEFFECTIVE CORRECTIVE ACTION

AGENDA

OVERVIEW

→ CORPORATE PERFORMANCE

SEQUOYAH OPERATIONAL READINESS

NUCLEAR OBJECTIVES

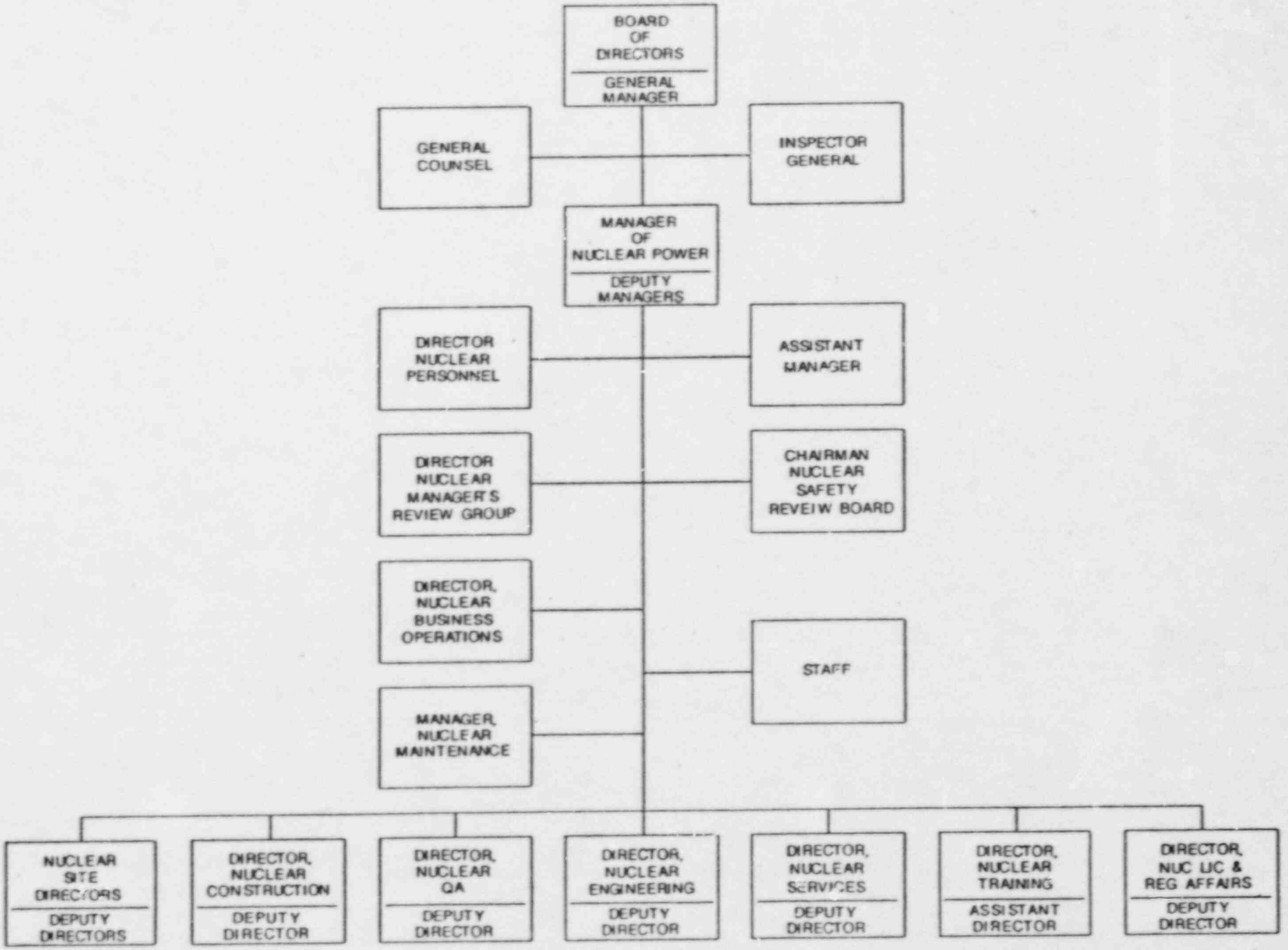
TVA OFFICE OF NUCLEAR POWER OBJECTIVES
TO ASSURE SAFE PLANT OPERATION

1. ESTABLISH A STABLE ORGANIZATION
2. PUT A STRONG MANAGEMENT TEAM IN PLACE
3. ESTABLISH PROCEDURALIZED AND DISCIPLINED WAY OF DOING BUSINESS
4. ENSURE THE TECHNICAL INTEGRITY OF THE PLANTS
5. REESTABLISH TRUST AND CONFIDENCE IN MANAGEMENT

OBJECTIVE 1: ESTABLISH A STABLE ORGANIZATION

- NEW ORGANIZATION IN PLACE
- POLICY AND ORGANIZATION MANUAL ISSUED
- POSITION DESCRIPTIONS WRITTEN

ORGANIZATION



OBJECTIVE 2: PUT A STRONG MANAGEMENT TEAM IN PLACE

- INFUSION OF SENIOR MANAGEMENT TALENT
- MANAGEMENT TRAINING AND DEVELOPMENT

OBJECTIVE 3: ESTABLISH DISCIPLINED WAY OF DOING BUSINESS

EXAMPLES:

- POLICY FOR EACH MAJOR PROGRAM
- HIERARCHY OF DOCUMENTS
- COMPREHENSIVE TRACKING SYSTEMS
- SINGLE PROGRAM FOR CONDITIONS ADVERSE TO QUALITY
- REVISED AND UNIFIED QUALITY ASSURANCE TOPICAL REPORT
- A CONFIGURATION MANAGEMENT SYSTEM
- TRAINING
- CENTRAL CONTROL OF CHANGES

OBJECTIVE 4: ENSURE THE TECHNICAL INTEGRITY OF THE PLANTS

- RE-ESTABLISHED DESIGN BASIS
- CONFIRMED COMPLIANCE WITH COMMITMENTS
- ESTABLISHED DESIGN CONTROL PROCESS
- ORGANIZATIONAL CHANGES TO IMPROVE TECHNICAL OVERSIGHT

OBJECTIVE 5: REESTABLISHING TRUST AND CONFIDENCE BETWEEN MANAGEMENT AND EMPLOYEES

- IMPROVED COMMUNICATIONS WITH EMPLOYEES
- EMPLOYEE CONCERNS PROGRAM
- INTIMIDATION AND HARASSMENT PROGRAM
- MANAGEMENT TRAINING PROGRAM
- WALKING SPACES

EMPLOYEE CONCERNS PROGRAM

T. B. JENKINS

EMPLOYEE CONCERNS PROGRAM IS WORKING:

- EVALUATED AND RESOLVED PAST CONCERNS
- INTERNAL AND EXTERNAL AUDITS
- DECLINING NUMBER OF CONCERNS
- LINE MANAGEMENT NOW HANDLING CONCERNS
- ACTION ORIENTED - GETS RESULTS

EMPLOYEES ENCOURAGED TO REPORT SAFETY AND QUALITY CONCERNS

- EMPLOYEE CONCERN PROGRAM ORIENTATION/EXIT INTERVIEWS
- CONDITION ADVERSE TO QUALITY PROCESS
- MESSAGES OF OBLIGATION OF ALL TO REPORT PROBLEMS
- EMPLOYEES USING LINE MANAGEMENT TO ADDRESS CONCERNS

THERE IS NOT A CLIMATE OF INTIMIDATION AND HARASSMENT

ROOT CAUSES

- MANAGEMENT CULTURE
- MANAGEMENT SKILLS
- DISCIPLINARY POLICIES

ACTIONS

- COMMUNICATIONS
- WALKING SPACES
- DISCIPLINARY ACTIONS
- MANAGEMENT TRAINING

MANAGEMENT TRAINING AND DEVELOPMENT

M. S. BLACKBURN

MANAGEMENT TRAINING

- EMPHASIS AND INVOLVEMENT BY TOP MANAGEMENT
- SYSTEMATIC AND REQUIRED
- QUALITY AND QUANTITY

MANAGEMENT TRAINING PROGRESS

COURSES	#TRAINED
CORE CURRICULUM	
- ORIENTATION TO NUCLEAR SUPERVISION	1149
- SUPERVISOR DEVELOPMENT COURSE	1117
- MANAGING FOR EXCELLENCE COURSE	136
- SKILLS ASSESSMENT	255
ADDITIONAL TRAINING	
- PROBLEM SOLVING/DECISION MAKING (PILOT)	99
- TIME MANAGEMENT	529
- OTHER ELECTIVES	2335

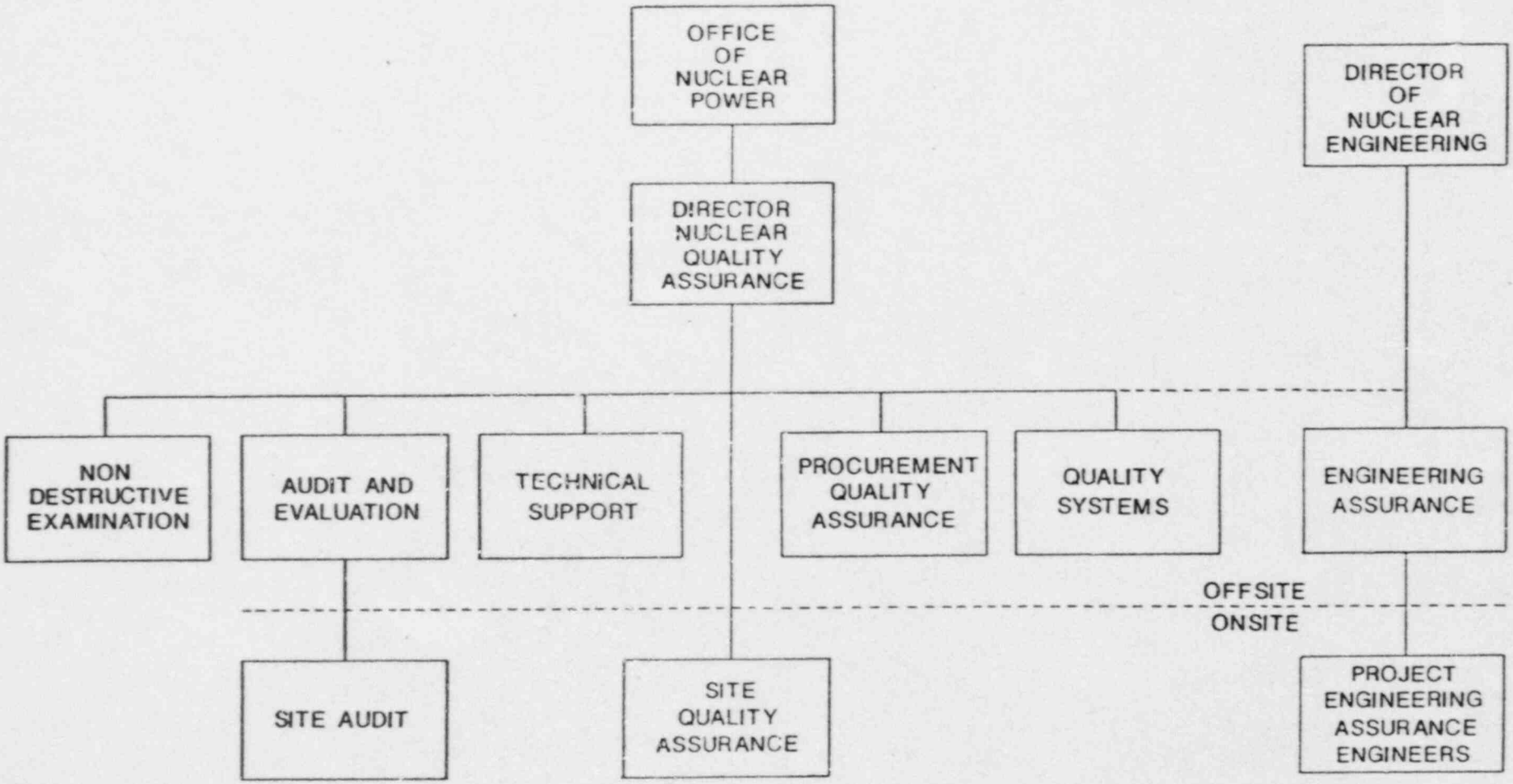
QUALITY ASSURANCE

N. C. KAZANAS

QUALITY ASSURANCE

- ORGANIZATION RESTRUCTURED
- EXPERIENCED SENIOR MANAGEMENT TEAM
- ENGINEERING ASSURANCE WORKING
- EMPHASIS ON TRAINING
- INCREASED EMPHASIS ON PERFORMANCE-BASED QUALITY VERIFICATIONS
- BROADENED SCOPE OF COVERAGE
- NEW PROGRAMS AND MANAGEMENT INITIATIVES

QUALITY ASSURANCE



QUALITY ASSURANCE

- ORGANIZATION RESTRUCTURED
- EXPERIENCED SENIOR MANAGEMENT TEAM
- ENGINEERING ASSURANCE WORKING
- EMPHASIS ON TRAINING
- INCREASED EMPHASIS ON PERFORMANCE-BASED QUALITY VERIFICATIONS
- BROADENED SCOPE OF COVERAGE
- NEW PROGRAMS AND MANAGEMENT INITIATIVES

CORRECTIVE ACTION PROGRAM
(CONDITIONS ADVERSE TO QUALITY)

- 11 MONTHS OLD
- LOW THRESHOLD
- HIGHLY PARTICIPATORY
- PRIORITIZATION
- TRACKING
  - — STATUS REPORTS
  - — MANDATORY ESCALATION

AGENDA

OVERVIEW

CORPORATE PERFORMANCE

→ SEQUOYAH OPERATIONAL READINESS

TECHNICAL SUPPORT READINESS

J. B. HOSMER

TECHNICAL SUPPORT READINESS

- TRANSITION
- TECHNICAL SUPPORT TODAY
- PLANT SUPPORT

TECHNICAL SUPPORT TRANSITION

ISSUE	PAST	TODAY
TIMELINESS	OFFSITE AVAILABLE	ONSITE REAL TIME
ACCOUNTABILITY	"ON CALL" SERVICE	"OWNERSHIP" SUPPORT
DESIGN BASIS	WEAK	REESTABLISHED
DESIGN CONTROL	DRAWINGS	PACKAGES

TECHNICAL SUPPORT TODAY

PROJECT TEAM ON SITE

- RESPONSIBILITIES:

  TODAY

  - DAILY SUPPORT
  - UNIT 1 RESTART ENGINEERING
  - MODIFICATIONS ENGINEERING

  FUTURE

  - DAILY SUPPORT
  - MODIFICATIONS ENGINEERING

- TEAM:

  - TVA ON SITE AND TVA KNOXVILLE
  - ARCHITECT ENGINEERS ON SITE

DAILY PLANT SUPPORT

- PLAN OF THE DAY
- SYSTEMS ENGINEERING
- PLANT OPERATIONS REVIEW COMMITTEE
- ATTITUDES
  - TEAM
  - SUPPORT
  - OWNERSHIP
  - ETHIC
- POSITIVE TRENDS
  - CORRECTIVE ACTIONS
  - DESIGN CHANGES

TECHNICAL SUPPORT

READINESS SUMMARY

- DESIGN BASIS REESTABLISHED
- TECHNICAL SUPPORT PROCESS IN PLACE
- TECHNICAL SUPPORT PEOPLE HAVE ACCEPTED TECHNICAL OWNERSHIP AND ARE SUPPORTING PLANT OPERATION

PLANT READINESS

S. J. SMITH

PAST PLANT PERFORMANCE

AREAS OF WEAKNESS

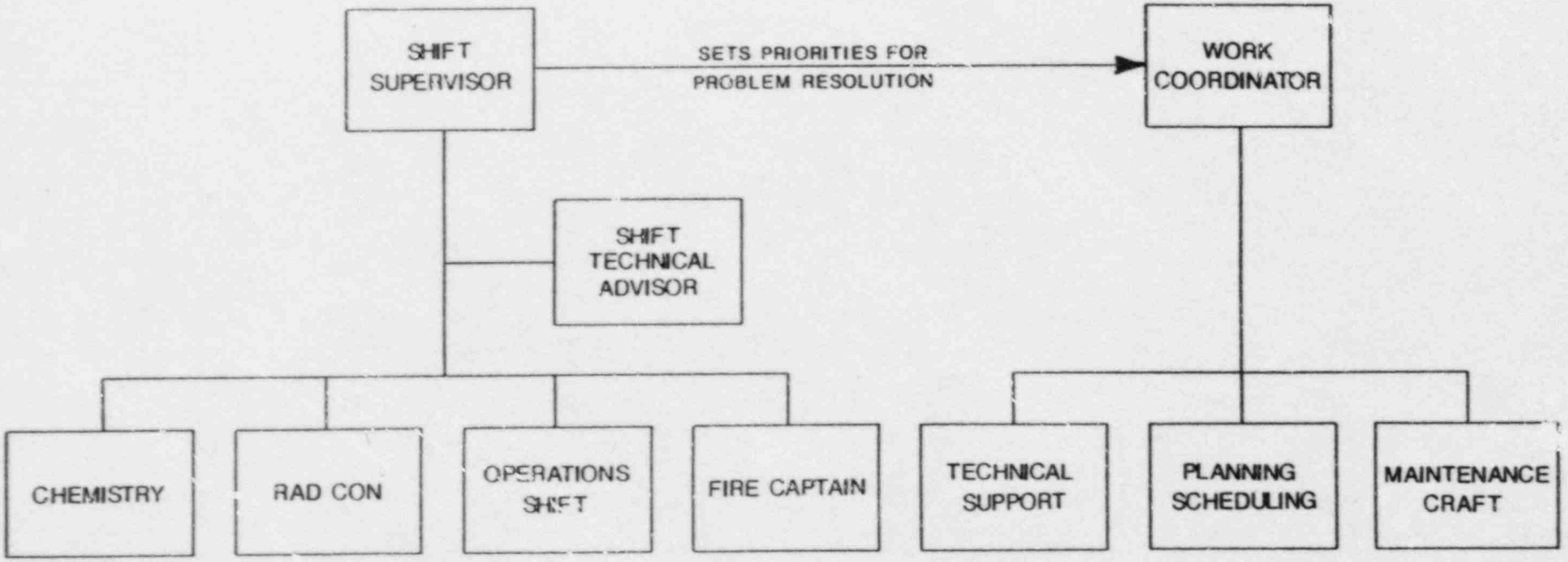
- MANAGEMENT INVOLVEMENT AT OPERATION AND CRAFT LEVELS
- ACCOUNTABILITY AND DEFINED RESPONSIBILITIES
- HOUSEKEEPING AND MATERIAL CONDITIONS
- MAINTENANCE PROGRAM
- SYSTEM SPONSORSHIP
- ROOT CAUSE DETERMINATION
- COMMUNICATIONS
- NUCLEAR ETHIC

MANAGEMENT INVOLVEMENT

- ORGANIZATION TO DIRECTLY ALIGN RESPONSIBILITIES TO CRITICAL AREAS
- REDUCTION IN LEVELS OF MANAGEMENT BETWEEN PLANT MANAGER AND STAFF
- MANAGEMENT DUTY ROSTER
- WALK YOUR SPACES POLICY
- PLAN OF THE DAY MEETINGS
- FIXED SHIFT SUPPORT TO OPERATIONS

SHIFT ORGANIZATION

APPROXIMATELY 45 PERSONNEL



ACCOUNTABILITY AND DEFINED RESPONSIBILITIES

- RESPONSIBLITIES DEFINED IN SITE ADMINISTRATIVE PROCEDURES
- PERSONNEL TRAINED AND HELD ACCOUNTABLE
- RESPONSIBLITIES REEMPHASIZED DURING PERIODIC MEETINGS
- CORPORATE AND SITE GOALS AND OBJECTIVES DEFINED AND PROGRESS TRACKED

HOUSEKEEPING AND MATERIAL CONDITION

- ESTABLISHED DETAILED HOUSEKEEPING AND MATERIAL CONDITION UPGRADE PROGRAM
- COVERS 100 PERCENT OF POWER PLANT AND SHOP FACILITIES
- PROGRAM WILL COMPLETE IN DECEMBER 1988
- WILL BE FOLLOWED BY RECURRING MAINTENANCE PROGRAM WHICH WILL KEEP PLANT CLEANLINESS AND MATERIAL CONDITIONS AT HIGH LEVEL
- INCLUDES EXPANDED PREVENTIVE MAINTENANCE PROGRAM

MAINTENANCE PROGRAM UPGRADE

- CORPORATE MAINTENANCE PROGRAM
- PROCEDURE UPGRADE
- PREVENTIVE MAINTENANCE
- RESTRUCTURING OF MAINTENANCE ORGANIZATION
- PRIORITIZATION OF WORK ACTIVITIES
- POST MAINTENANCE TESTING

SYSTEMS ENGINEERING ORGANIZATION

- SYSTEM SPONSORSHIP
- OBSERVES SYSTEM PERFORMANCE
  - TRENDS
  - PREDICTIVE MAINTENANCE
- COORDINATES PROBLEM RESOLUTIONS
- RECOMMENDS PERFORMANCE IMPROVEMENTS
- REVIEWS TEST RESULTS
- VERIFIES PROPER INSTALLATION OF MODIFICATIONS

ROOT CAUSE DETERMINATION

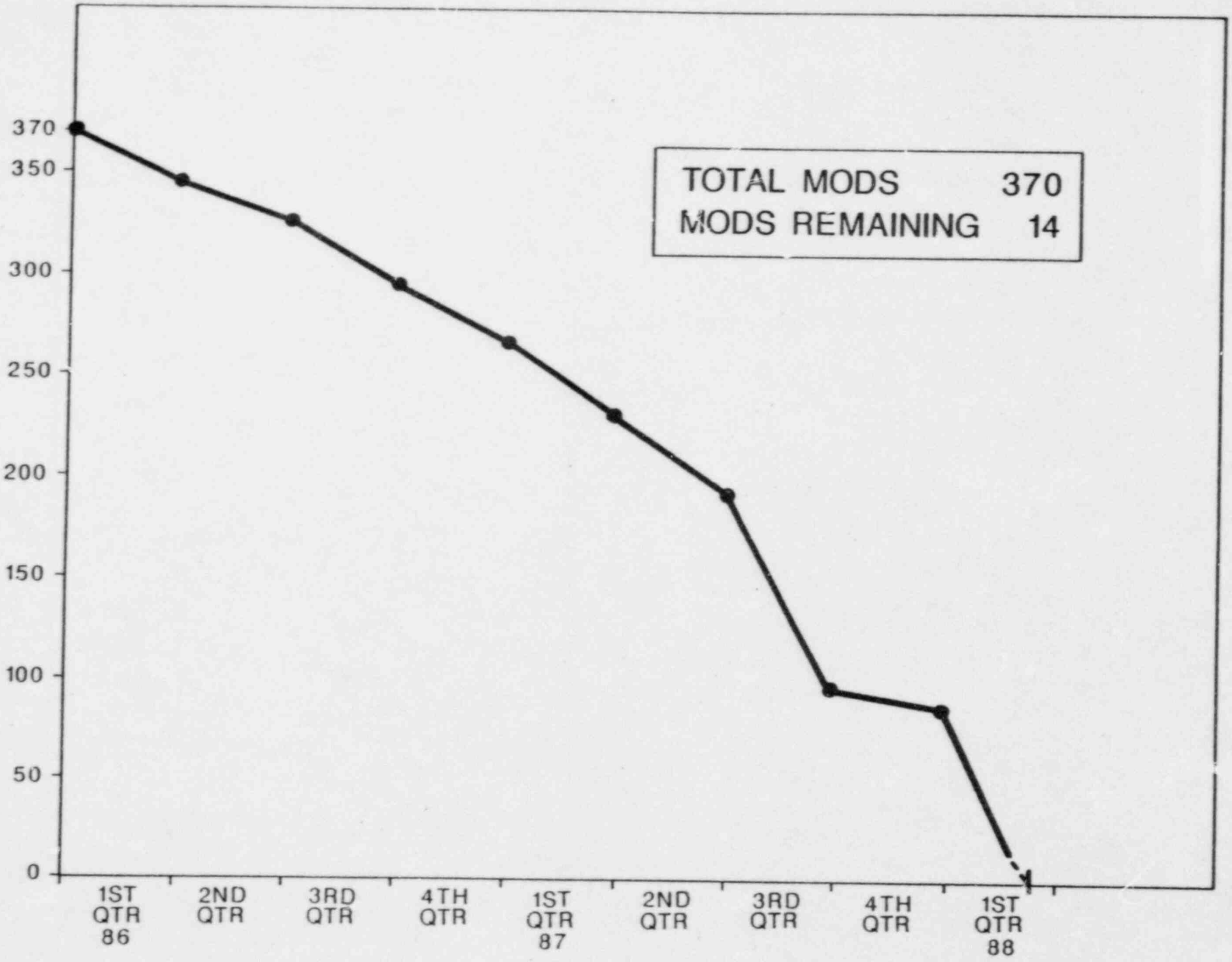
- PROCEDURALIZED
- ROOT CAUSE TRAINING
- INCIDENT INVESTIGATION TEAM
- IMMEDIATE MANAGEMENT INVOLVEMENT
- GENERIC REVIEWS

PLANT READINESS

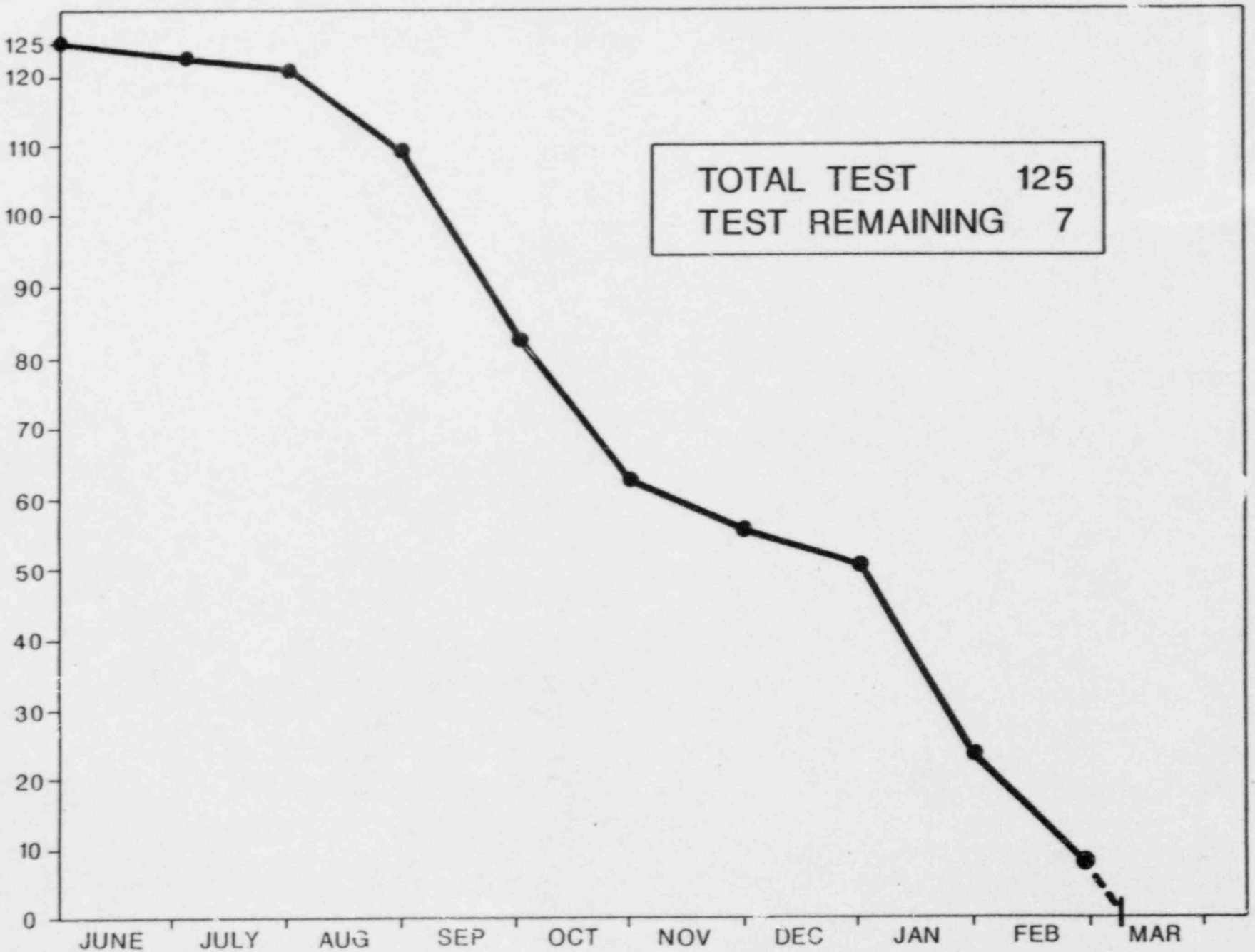
MATERIAL CONDITION

- COMPLETED MODIFICATIONS TO IMPROVE PLANT SAFETY
- RESTART TEST PROGRAM
- MAINTENANCE BACKLOG

MODIFICATIONS PERFORMED FOR RESTART



RESTART TEST PERFORMANCE

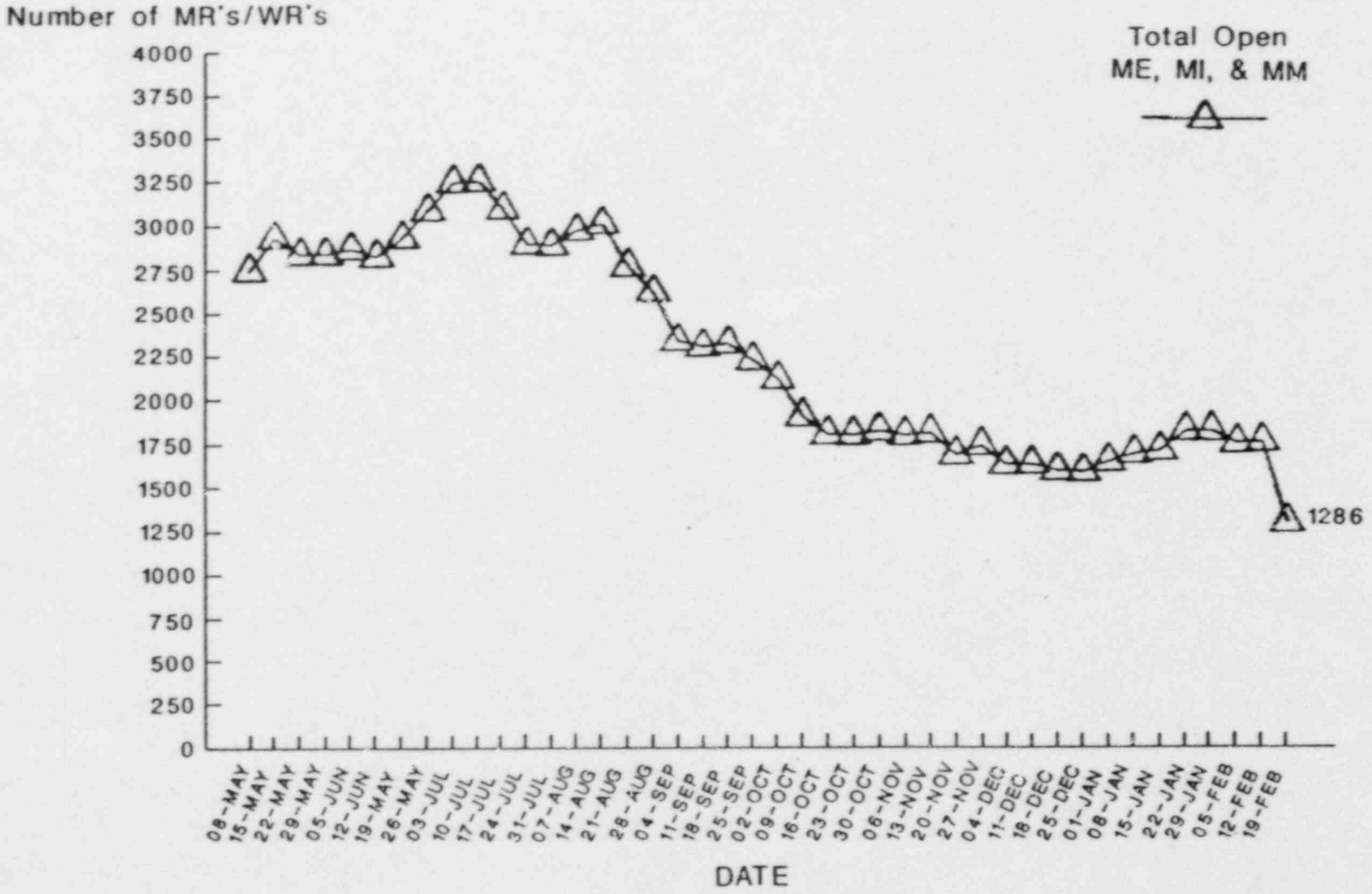


WORK REQUEST PERFORMANCE

1986	SUBMITTED	19,842
	COMPLETED	19,001
1987	SUBMITTED	20,043
	COMPLETED	20,362
1988 THRU 2-23-88	SUBMITTED	2,776
	COMPLETED	2,438

OUTSTANDING WORK REQUESTS FOR
UNIT 2 RESTART -- 89

MAINTENANCE
TOTAL OPEN MRs/WRs



WORK REQUEST BACKLOG

CURRENT TOTAL	1276
HOUSEKEEPING AND MATERIAL CONDITION	APPROX. 500
CORRECTIVE MAINTENANCE	APPROX. 750
BASED ON 2 YEAR WORKOFF RATE, THIS IS ABOUT 2–2½ MONTH BACKLOG	

COMMUNICATIONS

- DAILY PLANT STATUS SHEET
- STRUCTURED PERIODIC MEETINGS WITH ALL PLANT PERSONNEL
  - SENIOR SUPERVISORS THREE TIMES WEEKLY
  - ALL SUPERVISORS MONTHLY
  - ALL PERSONNEL QUARTERLY
- PERIODIC INFORMATION MEETINGS WHENEVER EVENTS DICTATE
- PLAN OF THE DAY MEETINGS
- MANAGEMENT ATTENDANCE AT TRAINING SESSIONS WITH PLANT EMPLOYEES
- MANAGEMENT ATTENDANCE AT DAILY SHIFT TURNOVER MEETINGS
- COMMUNICATIONS FORMALIZED BETWEEN OPERATIONS/MAINTENANCE PERSONNEL

NUCLEAR ETHIC

- DEDICATION TO THE PROTECTION OF THE ENVIROMENT AND PUBLIC SAFETY
- ACTIVE IMPLEMENTATION OF INDUSTRY PROVEN STANDARDS FOR PERFORMANCE AND OPERATION
- RIGOROUS ADHERENCE TO PROCEDURES AND INSTRUCTIONS
- WILLINGNESS TO IDENTIFY AND SOLVE PROBLEMS
- CLEARLY DEFINED EXPECTATIONS AND RESPONSIBILITIES
- PROFESSIONALISM AT ALL ORGANIZATIONAL LEVELS

PLANT READINESS CONCLUSION

- PLANT AND EQUIPMENT UPGRADED
- STARTUP TESTING VERIFIED EQUIPMENT OPERABILITY
- NON-NUCLEAR HEATUP VERIFIED OPERABILITY AND PERSONNEL READINESS
- UPGRADED MAINTENANCE PROGRAM ENSURES CONTINUED EQUIPMENT READINESS
- TRAINING PROGRAM ENSURES CONTINUED PERSONNEL PERFORMANCE

CONCLUSION

- READY FOR OPERATIONS

OPERATIONAL READINESS

J. R. BYNUM

INPUTS

ASSESSED BY:

- MANAGEMENT
- NRC
- INPO
- NUCLEAR MANAGER'S REVIEW GROUP
- OPERATIONAL READINESS REVIEW
- OTHERS

OPERATIONAL READINESS

- MANAGEMENT INVOLVEMENT
- ADMINISTRATIVE CONTROLS
- STANDARDS OF PERFORMANCE

OPERATIONAL READINESS
MANAGEMENT INVOLVEMENT

- EMPHASIS ON WALKING SPACES PHILOSOPHY
- OBSERVATION AND CRITIQUE OF TRAINING
- PERIODIC MEETINGS WITH ALL PERSONNEL
- REVISION OF PLANT OPERATIONS REVIEW COMMITTEE RESPONSIBILITIES

OPERATIONAL READINESS
ADMINISTRATIVE CONTROLS

- ESTABLISHMENT OF A WORK CONTROL GROUP
- ADMINISTRATIVE PROCEDURES CHANGES
  - CONDUCT OF OPERATIONS
  - CONFIGURATION STATUS CONTROL
  - TAGGING PROCEDURE
  - CONTROL OF TEMPORARY MODIFICATIONS

OPERATIONAL READINESS
STANDARDS OF PERFORMANCE

- OPERATING CREW TRAINING
  - — CONDUCT OF OPERATIONS
  - — STARTUP TRAINING
  - — HEATUP
  - — TEAMWORK AND DIAGNOSTIC SKILLS
- EVALUATION OF NON-LICENSED OPERATOR PROFICIENCY
- INTEGRATION OF SHIFT TECHNICAL ADVISORS INTO SHIFT COMPLEMENT
- CHEMISTRY SHIFT ASSESSMENT
- RADIATION CONTROL SHIFT ASSESSMENT

OPERATIONAL READINESS REVIEW

- ALL RESTART ITEMS COMPLETE
- ALL NON-RESTART ITEMS HAVE ACTION PLANS

INPO

- ALL RESTART ITEMS COMPLETE

IMPLEMENTATION VERIFICATION

- HEATUP

  — MANAGEMENT INVOLVEMENT
  — SHIFT OPERATING ADVISOR - QA
  — NUCLEAR MANAGER'S REVIEW GROUP

- POST RESTART

  — MANAGEMENT INVOLVEMENT
  — NUCLEAR MANAGER'S REVIEW GROUP
  — QUALITY ASSURANCE

VERIFICATION

- SHIFT OPERATING ADVISOR PROGRAM - QUALITY ASSURANCE REVIEW
  - ALL AREAS OF SHIFT CONDUCT ACCEPTABLE FOR RESTART
  - ALL SHIFT CREWS ARE ACCEPTABLE FOR RESTART
- NUCLEAR MANAGERS REVIEW GROUP
  - ALL OPERATIONAL READINESS REPORT, INSTITUTE OF NUCLEAR POWER OPERATIONS RESTART ITEMS HAVE BEEN ADEQUATELY ADDRESSED
  - CORRECTIVE ACTION IMPLEMENTATION IN ALL AREAS IS SATISFACTORY FOR RESTART
- INSTITUTE OF NUCLEAR POWER OPERATIONS
  - FOLLOWUP VISIT REVIEWED CORRECTIVE ACTION PLAN FOR INPO RESTART ITEMS - ALL CORRECTIVE ACTIONS ACCEPTABLE
- ASSISTANT UNIT OPERATOR PROFICIENCY EVALUATION
  - ALL AUOs CERTIFIED PROFICIENT FOR EACH WATCH STATION ASSIGNED

CONCLUSIONS

- ALL AREAS OF OPERATIONAL READINESS HAVE BEEN ASSESSED
- PROGRAMS ARE IN PLACE TO ENSURE CONTINUING IMPROVEMENT AND SELF ASSESSMENT
- SEQUOYAH NUCLEAR PLANT IS SAFE FOR RESTART

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Meeting Title: Briefing on Degraded Restart

Meeting Date: 3/4/88 Open X Closed _____

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