UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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ANN RILEY & ASSOCIATES, LTD.
1250 I St., N.W.,Suite 300
Washington, D.C. 20005
(202) 842-0034

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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BRIEFING ON BROWNS FERRY 3 RESTART

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PUBLIC MEETING

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Nuclear Regulatory Commission
Commissioners Conference Room
One White Flint North
11555 Rockville Pike
Rockville, Maryland

Thursday, November 9, 1995

The Commission met in open session, pursuant to notice, at 2:00 p.m., the Honorable SHIRLEY A. JACKSON, Chairman of the Commission, presiding.

COMMISSIONERS PRESENT:

SHIRLEY A. JACKSON, Chairman of the Commission
KENNETH C. ROGERS, Member of the Commission

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

J. HOYLE, SECY/NRC
K. CYR, OGC/NRC
O. KINGSLEY, TVA
R. MACHON, TVA
E. PRESTON, TVA
M. MEDFORD, TVA
L. WILLIAMS, Browns Ferry
C. CRANE, Browns Ferry
J. TAYLOR, EDO/NRC
W. RUSSELL, NRR/NRC
S. EBNETER, Region II/NRC
J. JOHNSON, Region II/NRC
F. HEBDON, NRR/NRC
P. NARBUT, NRR/NRC

P R O C E E D I N G S

[2:00 p.m.]

CHAIRMAN JACKSON: Good afternoon, ladies and gentlemen. The purpose of this meeting is for the Tennessee Valley Authority, TVA, and for the NRC staff to brief the Commission on the readiness of Browns Ferry Unit 3 to restart.

I understand that TVA and the staff will also very briefly discuss the status of the license application for Watts Bar unit 1 since TVA has informed the NRC they have completed the work to load fuel and begin low power operations at Watts Bar Unit 1.

So I would like to welcome all of you who are representatives of TVA here today. The Commission was last briefed by the staff on the status of Browns Ferry on July 12 of this year and I understand that the TVA portion of the meeting will include site and plant readiness and independent assessment results and the staff briefing will cover licensing evaluations, the restart approval process, the NRC's independent operational readiness team inspection and the power ascension test program.

I believe I am right that copies of the presentations are available at the entrance to the meeting. Commissioner Rogers, do you have any opening comments?

COMMISSIONER ROGERS: No, I don't. Thank you.

CHAIRMAN JACKSON: The Commission will hear first from you representing TVA management and so Mr. Kingsley, you may proceed.

MR. KINGSLEY: Thank you very much, Chairman Jackson. Good afternoon. Chairman Jackson and Commissioner Rogers, I am Oliver Kingsley, President of TVA Nuclear. We are extremely pleased to be here today to request permission to restart Browns Ferry Unit 3 and provide you our bases supporting readiness to restart and operate unit 3.

We were also here, Chairman Jackson, approximately two months ago and we gave you a detailed briefing on our Watts Bar plant and I would like to bring you up to date on that plant at the end of our presentation. I would like to have slide one, please.

[SLIDE.]

MR. KINGSLEY: I would like to review the agenda and make some appropriate introductions. I will provide an overview and some history of the Browns Ferry site. Rick Machon seated to my immediate left is our site vice president. He is going to discuss site recovery and site readiness.

Gene Preston seated at his left is our plant manager. He will discuss plant readiness. Chris Crane, our assistant plant manager, is at the table, does not have a formal part of our presentation but Chris is totally

dedicated to unit 3 restart and does have full responsibility reporting up through Gene for that at this period of time.

Dave Stinson seated behind me, not at the table, was our unit 3 recovery manager. We had this in a project fashion since 1993 and Dave did have total project responsibility for engineering and construction.

We also have Mark Medford here, our vice president of engineering and technical services and he will discuss the independent assessments and their conclusions on the Browns Ferry Unit 3.

Lee Williams is our site engineering and materials manager, also at the table, does not have formal presentation but can respond to any engineering and a number of technical programs that we have affected properly on the Browns Ferry Unit 3 and any materials questions that you might have.

We also have a number of other knowledgeable managers seated behind us who can respond to technical questions or other questions as necessary. May I have slide two, please?

[SLIDE.]

MR. KINGSLEY: Chairman Jackson, as you know from your visit to Browns Ferry in July, our plant is located in north Alabama. It is on the Tennessee River. It is a three

unit site, GE BWR 4 nuclear steam supply system with a MARK I containment.

Currently our unit 1 is in extended shutdown laid-up condition. Unit 2 is operating at full power and, of course, we are here today to discuss unit 3. I would like the next slide, please.

[SLIDE.]

MR. KINGSLEY: This slide gives you an overview, a little bit of some historical dates, with respect to Browns Ferry and what we are interested in talking about. Unit 2 was shutdown in the fall of 1984. We restarted that unit in the spring of 1991 and after a successful restart and period of sustained operation we were removed from the NRC watch list in June of 1992.

Unit 3 was shutdown on a voluntary basis in the spring of 1985. Projected restart is later this month and we are prepared to discuss that in detail pending your approval. May I have slide four, please?

[SLIDE.]

MR. KINGSLEY: The NRC Commissioners are very familiar with a number of fundamental problems that we had at the Browns Ferry site. I am not going into detail and discuss those. Rich Machon when he is discussing site readiness and site recovery will touch on a number of these and the associated corrective actions that we put in place

to ensure that Browns Ferry Unit 3 operates properly.

We have made a number of fundamental changes in our nuclear operation. All of these changes have resulted in improved performance. We touched on a number of aspects of our business and changed it.

In the areas of operations, training, maintenance, engineering, quality assurance, we have made these very fundamental changes and we have touched all aspects of our business. We significantly raised our standards on our plants and our operating plants continue to improve and benefit from these changes we have made.

The same standards that we put in place and successfully demonstrated on unit 2 have been fully put in place on unit 3 and we will discuss that when we talk about the site and the plant later in our presentation. May I have slide five, please?

[SLIDE.]

MR. KINGSLEY: Browns Ferry Unit 2 was restarted after I came to TVA. We are extremely proud of its performance. It has a capacity factor of slightly greater than 80 percent over these approximately four and a half years that it has been operating.

It has a good nuclear safety record. The plant is also in very good material condition. The site management team that is here today and that we also have in place at

the site has been together performing as a team for approximately two years.

They have significant experience, proven expertise and a proven track record in operating Browns Ferry 2 and in the significant recovery that we have been about for the last two years on unit 3.

I am very confident that this site organization can handle this additional responsibility and we look forward to demonstrate that to the general public, to the TVA employees and to the Nuclear Regulatory Commission. May I have slide six, please?

[SLIDE.]

MR. KINGSLEY: As I had mentioned earlier, Unit 3 followed a number of significant recovery improvements and precedents that we put in place on unit 2. We have also had the benefit of taking lessons learned over this four and a half year period and putting them in place and ensuring that the improvements that we had to bring about on unit 2 over this period of time were taken care of to the best of our ability in advance.

We have also ensured that we have the right people in place, we have the right programs and we have the right procedures to handle the multi-unit operation down through the operations, the engineering, the maintenance organizations, all the way down and made a number of

procedure changes in order to properly support that.

We have adequate resources available both from a money standpoint, both from a people standpoint and a support standpoint to operate these units. We have had a number of independent assessments and Mark Medford will talk about that which confirm our readiness.

When you put all of this together, it definitely confirms and gives us strong confidence that we are ready to restart unit 3 and demonstrate we can operate unit 2 and unit 3 successfully.

CHAIRMAN JACKSON: Mr. Kingsley, when you speak of independent assessments, has INPO been involved in that regard?

MR. KINGSLEY: Yes. They sent a special team in. This team had been quite involved in the Cooper restart and took essentially the same people from an INPO standpoint and I also asked them to get as many people from the industry who had trouble plant experience, who had multi-unit operation and they came in and did a quite thorough assist visit and we are prepared to talk about that when Mark gives us presentation.

We also had an independent high level team that we chartered to come in and assess the readiness on the site. I would now like to turn and introduce Rick Machon who will discuss site recovery and site readiness. Rick.

MR. MACHON: Thank you, Oliver. Chairman Jackson, Commissioner Rogers, I am Rick Machon, site vice president for Browns Ferry. I am responsible for the safe and reliable operation of the site and I am here to discuss the recovery efforts that we went through.

Unit 2's restart and subsequent two plus cycles of operation provided the foundation for unit 3's recovery. A lot of the lessons learned that has been incorporated into unit 3. Some examples of that are single point accountability for each phase of the project so we know where to focus, consolidated our engineering walkdowns and programs which facilitated not only implementation but closure, efficient testing of components and systems, anticipation of experience problems and reconciling them in the design, for example, like thermal expansion. We believe we have a lot of that taken care of prior to restarting this plant up as well as increased flushing for laid-up systems to make sure that they are ready to go.

Could I have slide seven by the way?

[SLIDE.]

MR. MACHON: I might have gotten ahead of myself. Our review of each system was thorough and it ensures that it will perform as expected. Our regulatory issues have all been addressed and closed with the exception of some required by plant condition that we are going to demonstrate

during the startup.

Design basis requirements have been defined and met and translated into the test procedures which have been written, implemented and surveillance instructions and successfully performed show that they can meet their design criteria.

We have also completed several equipment reliability enhancements as a result of our experience operating the second unit. The condensate system has been upgraded which will enhance our chemistry performance. We have implemented mods on unit 3 to minimize unplanned trips during operation and we have improved body-to-bonnet gasketing surfaces on major balance of plant valves so we shouldn't experience some of the leakage that we saw.

Our plant material condition has significantly improved. Plant areas are clean, painted. We have replaced the recirc pipe, control room upgrade. I think some of these things you saw when you were there with us and we have even removed the stellite rollers from our blades which will minimize cobalt and radiation levels within the plant.

We continue to drive towards operational excellence. The site and each department has developed a plan that goes beyond restart that will help us achieve operational excellence in the future with multi-unit operations. May I have slide eight, please?

[SLIDE.]

MR. MACHON: As we learned from both the unit 2 restart and visits to other multi-unit facilities, the recovery organization is turned over to the operations department of the plant that has low backlogs and low backlogs in all the key areas.

Our regulatory requirements are going to be met by startup. In fact, we will be with the best of the industry. We are not throwing any issues over the fence with regard to restart.

Our engineering backlog is low. Design changes have been implemented and the documentation is in the vault. The critical drawings are all updated in the control room ready to support operation. The secondary drawings are scheduled to be completed sometime in the early spring and temporary alternations within the plant are being kept to a minimum as we do on unit 2.

We have devoted significant effort to ensuring that our procurement process is becoming more efficient and that spare parts are available to support dual unit operation and not just single unit operation.

Our operations backlog and by that I mean nuisance alarms, operator workarounds, LED annunciators in the control room will be maintained at the standard that we have set at unit 2 and we try to achieve zero or a black board

from an operations standpoint and I believe we had five operator workarounds on unit 2. We are looking to have four when we restart unit 3.

CHAIRMAN JACKSON: Not zero?

MR. MACHON: We are moving towards zero. In fact all the things that we need to do to eliminate the ones on unit 2 are going to be implemented in the next outage. Our maintenance backlogs are also very low both in the corrective and minor maintenance area.

Lastly, we have cleaned the plant from a radiation standpoint down to an area of one to two percent of the total area is contaminated and controlled at this time. More importantly our goal is not just to restart the plant with these numbers but to keep these numbers down.

We have the performance monitoring systems in place to assure that we direct the resources to the right areas when we start to see the numbers either increase or decrease as appropriate.

CHAIRMAN JACKSON: Can you be a little more explicit? Can you address what the basic elements of the performance monitoring system are?

MR. MACHON: In a work order world it would be how many did I receive that week, how many did I work off and what is left.

CHAIRMAN JACKSON: So you have a way to track

them?

MR. MACHON: Yes, exactly. Also as part of our performance monitoring with regards to getting the plant ready and the organizations ready we used a tiered approach that evaluated our organization, our processes and the plant material condition or system health as we call it in a windows format that measured against a criteria that INPO uses for near term operating license and also the NRC restart criteria and critically assessed our performance in these areas and the completion of that, in fact, was just two weeks ago.

All the windows now support us being ready to restart and more importantly operate two units at the same time at the site. We have met the objectives that we set out for ourselves when we were moving forward.

CHAIRMAN JACKSON: Have you had much turnover in personnel? Who are the people who are there today compared to the people who were there at the time when you shutdown?

MR. MACHON: In 1985?

CHAIRMAN JACKSON: Yes.

MR. MACHON: I can only speak to the last two years and we have not had much turnover in the last two years other than you know TVA offered an early out assignment. I believe the last time we looked at the roster, Gene, it was 700 people still at the site that were

there when there were multiple units operating.

MR. PRESTON: A lot of experience in our crafts level and the technicians level and engineering, most of the managers are all recent of TVA in the last two to three years.

CHAIRMAN JACKSON: There are two ways to look at personnel. One is to say that you have a number of years of accumulated experience. Another is that if you had problems in the past, how have you changed if your workforce is the same.

MR. MACHON: The 700 represents and there are normally about 1,500 and something total on site so that would be first in the area it is only half of the people.

MR. KINGSLEY: Let me speak to that just a little bit. Let's take the area of operations. All of our operators who were there at the shutdown had to be re-licensed either directly by the Nuclear Regulatory Commission or in a monitored exam and we went through a series of four exams prior to restart on unit 2 and over half of the licensed operators lost their license over that period of time or either resigned.

We also put a little rule in that if you did lose that license, you didn't stay at Browns Ferry unless you had the right character, the right demeanor, the right safety ethic and we eliminated some others.

In the area of maintenance, we took all of our mechanics, our electricians, our I&C technicians and put them back through the INPO accredited training and required them to re-certify.

We also brought in essentially a new first line of supervision in maintenance. We brought a number of people out of the nuclear shipyards throughout the country. We brought in some others that had worked for some vendors. We brought in some technicians that we had hired so we changed that out, Chairman Jackson.

We did put in a new management. We put in a number of new engineers in our tech support group. Our engineering organization was a poor performer in 1985. It was part of the root cause, not the only root cause, of the Browns Ferry shutdown.

We changed the management. We had to put the right procedures and systems in place and we significantly improved that over this period of time. As an example, our engineering organization is second to none.

So we turned this plant over significantly. That was under the leadership of Ike Zeringue primarily and the team that we put in there at the site. So I am confident that we have purged some of the old habits out of the plant.

We also put our people through a significant kind

of self-awareness program similar to what Peach Bottom used a number of years ago which put the right ethic in and how you treat things, how you report things and we are satisfied that we have the right staff and team there at the site.

Rick and Gene just didn't happen to be there during that long process that we went through prior to start up of unit 2.

MR. MACHON: Could I have slide nine, please?

[SLIDE.]

MR. MACHON: As Oliver just talked about we have an experienced and stable site organization and all of the key managers that you see here have been in place as part of this team for about two years now through the operation of unit 2 and the final stages of recovery of unit 3.

We have introduced Gene and Chris over here and Lee is the engineering and materials manager. Behind me is tim Shriver who is the Nuclear Assurance and Licensing manager on the site. The Business and Work Performance manager is Dave Nye and Steve Rudge our Site Support manager are back at the plant taking care of business if you will.

COMMISSIONER ROGERS: What is the significance of the dotted lines here in your flow chart?

MR. MACHON: They are a matrixed organization to me, that there is a corporate presence both in engineering and materials that provides the guidance to the engineering

function on the site and they report to me to deliver the product on the schedule and the same with nuclear assurance and licensing. That is a matrixed organization as well.

COMMISSIONER ROGERS: I see. Thank you.

MR. MACHON: If there aren't any further questions, I will turn it over to Gene.

MR. PRESTON: Thank you, Rick. Good afternoon, Chairman Jackson and Commissioner Rogers. I am Gene Preston, plant manager for Browns Ferry and I have overall responsibility for the safe operation and maintenance of the plant and I am here today to discuss the readiness of our plant organizations to restart unit 3 and return Browns Ferry to a multi-unit operating state. I would like to ask to have slide ten, please.

[SLIDE.]

MR. PRESTON: Chris Crane here on my left is my right-hand man and as stated by Mr. Kingsley he has overall unit 3 recovery responsibility and is dedicated full time on unit 3 thereby allowing me to concentrate on the overall plant status and our readiness to accommodate the second unit out there.

I would like to review each of my departments with you, their experience and their readiness to restart unit 3 and again to safely and reliably operate dual unit operations out there.

As we said earlier our management team has been in place for better than two years in tact. Our departments are staffed with experienced people. I will go over each of those departments on the chart.

The maintenance manager is a group that is comprised of about 250 individuals. They have responsibility for maintaining the plant, modifying the plant and responsibility for the plant facilities.

The maintenance manager was previously the design engineering manager for the site so he has a very good background not only in maintaining the plant but also in the design basis.

We are real proud of our crafts skill level. We have what we believe to be some of the best craftsmen in the country and I think that our operating record and the reliability of our equipment attests to that as well.

Our technical support group is the next one. Our tech support is comprised primarily of the system engineers and component level engineers and these are the folks who have captured the unit 2 lessons learned during its startup testing and have placed into the plan for unit 3's return to service those lessons learned and we think that that will result in improved unit 3 performance.

COMMISSIONER ROGERS: Can you tell me a little bit about your system engineers, how experienced they are and

how many systems each system engineer has charge of?

MR. PRESTON: Yes, sir. We are very fortunate in that most of our system engineers were also the system engineers during the recovery of unit number 2 back in 1991 so they for the most part went through the startup test phase of unit 2, the initial checkout and operation of the equipment as it was readied from construction and then they went through the startup of the unit. So I would say that on an average there is probably six or seven years experience with them.

The group is comprised of three basic areas: NSSS or nuclear steam supply system, balance of plant and an I&C electrical group. The systems are approximately broken into three systems per system engineer, however, the system engineers are also back up to others.

So they will have primary responsibility for three systems on average and they will be backup for an additional one or two systems. That again depends on the importance and the size of the system. The system engineer responsible for say the residual heat removal system which is a large and involved system will not have but that one but on average around three.

COMMISSIONER ROGERS: Thank you.

MR. PRESTON: I will skip the Operations group for now. The Radiations Chemistry group, that is a consolidated

radiation protection and radiological chemistry organization that is responsible for maintaining a reactor coolant system chemistry and the chemistry in the entire plant as well as providing day-to-day radiation protection for workers in the station.

We are extremely proud of their day-to-day performance and I think it also has been recognized by your staff. This particular group has received SALP one ratings for three consecutive reviews.

Next is my Training department. The training manager has a dedicated training staff to ensure that the training is relevant. We also use a rotational assignment where we send people over from the power plant on a one year basis to help augment the permanent training staff.

This also includes operations and, in fact, just recently we have provided additional training simulator scenarios in preparation for our dual unit operation. These scenarios are challenging.

They involve multiple unit participation and, in fact, we have taken some scenarios and moved the shift supervisor from the control room and had him communicate via telephone or with the operators in the room as he just watches the parameters from a computer screen.

We have also trained the operators in our new emergency operating instructions and these had to be revised

as we brought unit 3 ready for operation and we have included such important aspects as the use our unit cross-ties and given them instructions on when they could and could not depend on the other unit to supply a service to them.

Now I would like to the core and that is the operations group. As Mr. Machon said a few moments ago the recovery organization has provided the operating department at Browns Ferry with a very complete and very good plant to start and operate.

We have also done, I think, a very good job in readying the staff to operate the second unit. Our operations manager has been at Browns Ferry since 1987. He has previously held positions in training. He was a training operations manager. He has worked on shift as a shift technical advisor. He worked as the operations superintendent for a number of years and just two years ago we made him the Ops manager.

As we looked at unit 3 and tried to understand what were some of the challenges that we faced in operating unit 3 compared to just operating the unit 2, one of the striking differences is that unit 1 and 2 are common control rooms. Unit 3 is a separate control room.

Up until the recovery of unit 3 if one of the control room operators had the need for information or

direction from the shift supervisor, he or she would merely spin around in their desk and talk to the person that was in the room with them. That won't be as easy in unit 3. It will be a separate room.

So we looked at the impact of that on the organization and how we would expect our people to grow into that if you will. We decided to put a shift operations supervisor mentor on shift and that is the shaded block with the dashed lines on it.

That is a person that has experience as an SOS, that is a senior reactor operator and shift supervisor's position at a multi-unit operating site. We are fortunate in that all of these individuals happen to have been previously licensed as Browns Ferry SOSs and are now not associated with the shift organization but in the higher management positions at the site and what we have been able to do is to draft them into service to help us as we go back to multi-unit operation.

So we have asked these people to join us at the time that we go from initial criticality in the unit until the power ascension phase is completed. They will be providing direct feedback to the operations manager and a weekly report to myself and when we are all comfortable with the performance of our people and we all concur, then we will remove them.

The other one I would like to point out is if you can look at the unit 3 organization down in the shaded area we have a control room SRO SOS qualified person. What that is is essentially a mentor to our ASOS or assistant shift operations supervisor.

In unit 3, you will see there is an ASOS and the additional SRO SOS level person will go in and be with that shift and be with those guys until they again are comfortable in making decisions and know when they can make decisions independent of the SOS, when they have to get permission prior to making those decisions and just help them as they again join the second unit in operation.

The only other thing that I would like to point out on that chart is that the shaded area depicts all of the personnel that we normally have on a shift and they are all above the minimum levels required by our technical specifications. We put a shift clerk on duty for instance to prevent adding any additional administrative burden or reduce the administrative burden on the part of the operating crews.

COMMISSIONER ROGERS: Just before you leave that, the SOS is going to be focusing his or her attention on unit 3 during this period of time, this startup time. How are the functions of that office being discharged with respect to unit 2 during that period?

MR. PRESTON: Commissioner Rogers, we have provided the exact same work station in unit 3 for the shift supervisor as he has in unit 2. He has the ability to go to whichever the two units that he has a desire to go to. We also have provided a camera that allows him to just observe the overall level of activity in the room that he is not in and an intercom system.

We do not see any real diminished ability to communicate or maintain cognizance of the other unit. As we said earlier, we have augmented the permanent staff with these temporary positions in unit 3 to help have a set of additional eyes and ears and to provide additional guidance during this transition period as well when we get to discussing the power ascension phase, there will always be a test director that reports directly to the shift supervisor and keeps him or her cognizant of where we are at with these planned evolutions.

COMMISSIONER ROGERS: Thank you.

MR. PRESTON: May I have slide 11, please?

[SLIDE.]

MR. PRESTON: A little more about our operations staff. This group is experienced and we believe well qualified. More than a third of them are degreed and over a third of them have operated at Browns Ferry when Browns Ferry last operated more than one unit.

The operators are licensed on all three units and they rotate assignments between these units. Our planning and our training to support dual unit operation has been thorough and was long ranged. We visited other reactor plants, other multi-unit sites, learned from their experiences.

For example, we were careful not to create a separate recovery operations organization. Our organization for recovery was formed from within using the existing organization and just augmenting it.

Our operators are a part of unit 2 and unit 3. There is not a separate group of people so we don't have the problem in the end of trying to figure out how to bring them back together. As well, it keeps the experience and the lessons learned in-house.

We also found in our visits to these other power plants that they have experienced numerous occasions or events that were associated with the wrong unit, the wrong train, the wrong component.

We took this and turned it around and stressed it as a positive; positive control of our work, making sure we are working on the right unit, the right train, the right component and that is part of our overall strategy for managing the additional unit in the plant.

We as well implemented a new policy at the plant

that we are calling "STA2R," stop, think, ask questions before you act and then when you are done review, that is, to check one last time that you have done what you are supposed to have done.

We obviously tried to stress individual responsibility and accountability with all of our people as well. Could I have the next slide, please?

[SLIDE.]

MR. PRESTON: Now "STA2R" is just one of the components of our organize for success philosophy. We are structured to ensure that multi-unit work is coordinated and controlled.

For example, our unit separation controls have been established. We are using color-coded boundary drawings. Work order folders are color-coded for the unique color of that unit. Our procedures and our equipment in the areas have been color-coded.

If you were look at our unit number 2, it is painted gold and all of the equipment in it is gold and unit 3 was blue and so if you are out in the plant doing a work activity and you have a blue folder and you are in a gold part of the plant, then you know that you probably need to look at that more carefully to make sure that you are where you should be.

We have also controlled for formalized control of

our common systems. There are a lot of shared systems in the station and we have proceduralized that to make certain that there is a single point of control for all the common systems so in the event that unit 2 has a need for a device that is part of the common part of the system, they will go to the unit that has responsibility for that common system, that requests will go through them.

We have strengthened communications up and down the operations organization as well as between the units. As I mentioned earlier we have installed monitors and intercoms to help facilitate communications in the room.

To ensure that the coordination of work activities is done properly we have implemented a single site wide 12-week rolling schedule. Now all work will be routed, from all plant systems will be routed in accordance with this planned and scheduled system and that will help to ensure that people aren't somewhere where they shouldn't be as well and that the plant can accommodate that without having any decrease in its control.

Now during our readiness reviews each of my departments has had to personally come in and evaluate their readiness and when they felt that they were ready to accommodate the second unit each department head had to come in and convince me, Mr. Machon and Tim Shriver, the nuclear assurance and licensing manager, that they were ready and

that ready means people, processes, resources and programmatic procedures. We have completed these self-assessments and our assessment is that we are ready. Next slide, please.

[SLIDE.]

MR. PRESTON: The power ascension testing program as comprehensive and systematic. Once we receive your permission to restart Browns Ferry Unit 3 we have a comprehensive test program developed. This program has been reviewed, approved and is administratively controlled.

It ensures that a thorough integrated system testing is accomplished on the unit before it is allowed to exceed or move on to the next plateau. We have established systematic hold points and criteria have been established to ensure that our people as well as the plant performance is at a level that ensures that we are ready to operate at that next level.

That concludes my presentation this afternoon and unless there are any questions for me, I would like to turn it over to Mark Medford.

MR. MEDFORD: Thank you, Gene. Chairman Jackson and Commissioner Rogers, I am Mark Medford, TVA vice president of engineering and technical support. I am here to discuss the independent assessments of Browns Ferry readiness to restart unit 3 and commence multi-unit

operation. May I have slide 14, please?

[SLIDE.]

MR. MEDFORD: There were four assessments performed independent of line management. The first of these were performed by the TVA Nuclear Assurance and Licensing organization both site and corporate. There was also an assist visit by INPO which we discussed briefly earlier. There was an assessment by an outside Operational Readiness Review Team and finally there was an assessment by TVA's Nuclear Safety Review Board.

Let me first talk about TVA's Nuclear Assurance and Licensing organization's assessments. Relative to unit 3 restart there were 12 overall site assessments, 32 unit 3 recovery specific reviews and 45 reviews of Watts Bar construction deficiencies for applicability to Browns Ferry. In the main, those 45 reviews indicated a lack of applicability and where there was any applicability we followed up on that.

In addition, they reviewed corrective action documents for restart applicability, made an independent review of employee concerns for appropriate closure and performed control room observations.

One open issue was identified in their September 13th status report to Mr. Kingsley that needed to be addressed prior to restart. That issue involved achieving a

full understanding by employees of the requirements of multi-unit operation and proper sensitivity to the resulting increase in complexity of operations.

As a result of that finding, site wide and departmental training was conducted on multi-unit operational sensitivity issues and operator training was conducted on multi-unit transients, the PSA, system differences and system interactions.

Closure was verified by an assessment of personnel sensitivity which was performed between October 15th and October 17th. This included interviews with 66 personnel. The results indicated sufficient understanding of requirements and sensitivity.

Corporate Nuclear Assurance performed a two-phased review of the site nuclear assurance and licensing readiness assessment plan and implementation results. These reviews were performed in May and September.

There were no findings identified as a result of these reviews and it was concluded that the readiness assessment plan was being thoroughly implemented and would determine adequacy to safely operate two units.

Chairman Jackson, you asked earlier about the involvement of INPO in our restart assessment activities. There was an assist visit which was conducted between August 28th and September 1st. It was performed by a 14-member

team supplemented by two Browns Ferry peers.

As Oliver indicated earlier we stressed in the membership of this team having people who had experience with multi-site operation and people who had been involved from a positive aspect in the restart of trouble facilities.

The Cooper plant manager was a member of the team. In addition, there were key personnel from Oconee, Comanche Peak and South Texas. There were no items identified in this review which would preclude restart.

The third assessment I would like to talk about is the operational readiness review team which was chartered by Oliver Kingsley to perform independent evaluations and assessments of the Browns Ferry management, personnel, programs, procedures and physical plant condition.

The initial review was performed in May of this year with follow-up assessments beginning in August. The membership included Warren Peabody as team leader, Solomon Levy and Ken Harris. Ken is the nuclear advisor to the TVA board. In addition, there were six other TVA and industry experts on the team.

This group identified four prerequisites to restart. First, completion of remaining system turnovers; second, training on unit differences and interdependencies; third, personnel sensitivity to dual unit operation and finally, completion of emergency operating instruction

revisions associated with two unit operations. Completion of each of these prerequisites has been verified by the team leader.

The final assessment was that performed by the Nuclear Safety Review Board. That board is composed of TVA vice presidents and senior TVA and industry personnel. The purpose of this review was to overview the adequacy and quality of preparedness for unit 3 restart and dual unit operations and to provide an independent restart readiness recommendation to Oliver Kingsley.

The Nuclear Safety Review Board's conclusion was similar to the other assessments that I mentioned and was equally positive with respect to readiness of unit 3 for restart.

In summary, these four independent assessments concluded that programs, procedures, management and staff are ready to support unit 3 restart and multi-unit operation. I would now like to turn it over to Oliver Kingsley for concluding remarks.

COMMISSIONER ROGERS: Just before you do, when was the last meeting of these different review teams?

MR. MEDFORD: The Nuclear Safety Review Board's final meeting was Monday of this week. That was not the first meeting in which we covered restart readiness but it was the last.

As I mentioned earlier the operational readiness review team started the second phase of their activities in August and concluded late in the month of September. I don't know the precise date.

The Site Nuclear Assurance and Licensing organization, of course, has been conducting ongoing reviews throughout the recovery process and the INPO visit, I will have to refer back to my notes.

MR. MACHON: It was the end of August, the first of September.

MR. MEDFORD: Right. That was just the one visit.

CHAIRMAN JACKSON: Can you edify us as to any significant findings of the Operational Readiness Review Team and whether there were any corrective actions put into place and more importantly, if there were corrective actions, how you evaluated the effectiveness of those?

MR. MEDFORD: There was a similarity in the findings of the Operational Readiness Review Team and the findings of the Site Nuclear Assurance and Licensing organization and it centered on the adequacy of the training relative to two unit operation.

There was a large number of interviews conducted to assess, number one, the adequacy of training and also the adequacy of personnel sensitivity to the challenges that dual unit operation afford.

There were two entities involved in that. One was the site NA&L organization and the other as far as the Operational Readiness Review Team was concerned, the team leader, Warren Peabody, personally participated in this assessment to assure himself that site personnel were ready for dual unit operation.

CHAIRMAN JACKSON: Mr. Machon.

MR. MACHON: I was just going to add on to that a little bit. The evaluation was actually a process in that a team would in at the beginning, find an issue and also came back at the tail end of the evaluation and would look at the progress and the close out particularly on these four issues.

When we got beyond the closure and submittal of the report which was the last week in September, Warren Peabody, the team leader, came back and in the area of training did a detailed review of the lesson plans that were provided and how they were distributed to each of the departments and this is not necessarily operations. You would have operations involved. You would have maintenance involved and tech support involved.

They went out and personally interfaced down to the craft level with the individuals and actually developed a questionnaire based on the lesson plan to ensure in this case that he was getting the information back from the craft

that it had stuck with them. We went through each one of those and verified them using that process.

CHAIRMAN JACKSON: With respect to the craft and your personnel generally, they have been trained to unit differences and not just sensitivity and not just labeling but actual training to unit differences?

MR. MACHON: Yes, ma'am, they have. Cause and effect.

CHAIRMAN JACKSON: Have you established a mechanism for periodically reassessing corrective actions or actions that related to the findings and for making adjustments on a going forward basis as necessary?

MR. MEDFORD: That is one of the charges of the Site Nuclear Assurance and Licensing organization to do exactly that.

CHAIRMAN JACKSON: All right. So you take that as one aspect of your charter.

MR. MEDFORD: Yes.

MR. MACHON: In addition to that although there were four items identified as restart issues, there were a number of items that were identified and when I talk about achieving operational excellence, we have captured all of those whether it be from INPO or our own assessments in the ORRT assessments and incorporated them into our excellence plan so each department has a plan to start addressing these

past restart into the future.

CHAIRMAN JACKSON: So this is a living plan?

MR. MACHON: Yes, it is.

CHAIRMAN JACKSON: All right.

COMMISSIONER ROGERS: I have one area that I didn't hear anything about and that is physical security. I wonder if you can say anything about the status of your physical security program and whether the new requirements for vehicular intrusion which NRC will expect to be finished, I guess, in place early next year where you stand on that, whether that has been taken care of yet or not.

MR. KINGSLEY: Rick, do you want to address that?

MR. MACHON: We are presently on schedule to complete our security mods and upgrades including vehicle barrier by the end of January.

MR. KINGSLEY: Let me edify on that. We put a completely new security system in at Browns Ferry. Our system was old. We put new surveillance equipment state-of-the-art on the protected area boundary. We put a new cast, new entrance facilities in. We have implemented a new hand geometry that we are signaling with there which is a very positive identification.

The vehicular bomb which will go in in late January is being incorporated --

CHAIRMAN JACKSON: You don't have to go into great

detail.

COMMISSIONER ROGERS: The prevention of.

MR. KINGSLEY: Yes, I mean the prevention.

[Laughter.]

MR. KINGSLEY: Thank you for clarifying that. Prevention of that type of threat so we have overhauled the security entirely at the site.

CHAIRMAN JACKSON: Are there any issues still to be addressed that you see as being on the critical path for restart?

MR. KINGSLEY: There are several. We have a few NRC commitments. We are working off the same list on that. We are in paper closure. We are in total agreement with the staff about what those are. We have a few administrative items that we have to put in place.

I have a couple of things that I am tracking in addition to the formal items that Mr. Medford mentioned, making sure that we have adequate configuration control and that we are properly sensitized, that we are not going too fast.

We have another review of that on the 17th of November and then there is a little bit of physical work. We did complete the integrated leak rate test on the containment earlier this week.

We are in the process of pressurizing for the

reactor vessel hydro and we have had a couple of control rod drives that have not operated properly. We think we have the root cause and in order to correct that we are going to have to go back in the reactor pressure vessel, remove the internals package and there are some lower support castings that are going to have to be moved just a little bit, Chairman Jackson. So we are going to do that and then make sure that everything is totally in place, do all of our configuration control, all the valve line-ups, all the surveillance checks and probably have a little time out to make sure we are totally ready and calibrated properly to assume this additional restart responsibility.

CHAIRMAN JACKSON: Are there any issues that remain to be addressed concerning allegations or safety concerns from within your organization and do any of them require if they exist resolution prior to restart and if so, how are you tracking them?

MR. KINGSLEY: To our knowledge there aren't any. Mark Medford has specifics on that.

MR. MEDFORD: We went through a fairly detailed process of evaluating the employee concerns issues. There are a total of about 12 employee concerns relative to unit 3 which were judged not to be required for restart. We went through a very rigorous process.

Mike Harding who is the Corporate Concerns

Resolution program manager and reports to me and several members of his staff evaluated each of these individually. They were, in turn, reviewed by the site management to assure that they agreed. Through the restart process we have carefully tracked resolution of employee concerns issues to make sure that that was done properly.

CHAIRMAN JACKSON: What is the status of your tech specs? Are you using the improved format?

MR. MEDFORD: We are right in the middle of developing improved standard tech specs for Browns Ferry 2 and 3. We plan to submit in June of next year and following NRC approval plan to implement about a year after that. We are going to improve standard tech specs across the valley. Watts Bar will start up with improved standards and Sequoyah is about a year behind Browns Ferry.

CHAIRMAN JACKSON: Where are you with respect to readiness for the implementation or the effective date of the maintenance rule?

MR. KINGSLEY: Rick or Gene, do you want to take that?

MR. PRESTON: We have developed a steering committee and a group for implementation of the maintenance rule. We have made certain that we didn't go out and create a new organization to implement the maintenance rule.

We really looked at and understood its

requirements. We have added only one person to our staff and the implementation is actually transparent to the rest of the organization. We are just using information that was already available to us. We have always used, for instance, the PSA or PRA in our day-to-day scheduling of maintenance.

So all we have done in addition to that now is these critical significant risk components and the structure, systems and components have all been added to that and they will be included in this matrix that we use for deciding what maintenance has to be performed. We are on schedule for implementation mid next year.

CHAIRMAN JACKSON: At the risk of sounding somewhat repetitive, I know a great deal of effort has been put into coming to a point to ensure that Browns Ferry 3 is ready to restart but it has been ten years.

MR. KINGSLEY: That is correct.

CHAIRMAN JACKSON: So are there any areas of vulnerability that you think you have to be particularly mindful of as you restart and how are you prepared to address them?

MR. KINGSLEY: We have reviewed this many times. We believe we have a very thorough startup test program. However, there are parts of this plant that haven't seen any live steam in over ten years.

It hasn't been exercised. We have done a great deal to do static checks and do operational checks throughout not only the nuclear steam supply system but all the safety systems, the BOP.

We are in the power business so we don't need to unnecessarily challenge the nuclear steam supply system but we are going to have to be extremely cautious and extremely thorough in the startup and really monitor how this entire plant behaves under live conditions. That is why we have the plateaus and we are going to very carefully monitor that.

In addition, we are going to have to see this organization work live with the two unit operation. They have worked well in the startup and recovery but that is a different situation. So we have to be mindful of both of those and we are going to have careful monitoring and oversight by the Nuclear Assurance and Licensing as to how we are doing in these areas.

CHAIRMAN JACKSON: Do we have any further questions on Browns Ferry?

COMMISSIONER ROGERS: You say that units 2 and 3 are essentially identical but there are some differences. What are those differences?

MR. KINGSLEY: Gene, do you want to address that?

COMMISSIONER ROGERS: Let me put it this way.

What are the most significant features that are different?

MR. PRESTON: The unit 3 plant is being started up as I mentioned earlier, Commissioner, with the benefit of having the hindsight of the unit 2. For instance, we noted that the reactor scrams that have occurred on unit 2 this cycle were due to balance of plant turbine trip circuitry.

We went in and evaluated that and in large part those were single channel, single devices, exceeding a parameter causing us to close the turbine valves and trip the reactor. Unit 3 will come up with those trips already redesigned and they will have multiple inputs or redundancy required before it will cause the unit to trip. That is a difference.

Unit 3 also will come up with an improved condensate demineralizer panel and has improved components and also a digital computer interface for the operators and that same modification won't be put in on unit 2 until March of 1996 when we shut it down for the next refueling.

Most of the other differences do not affect functionality and therefore they are not a difference to the operators in the control room.

MR. MACHON: There is one addition, the reactor water clean-up isolation that has been implemented on unit 3 that we will be catching up on unit 2 at the next cycle. Those are the major functional differences between the

units.

COMMISSIONER ROGERS: thank you.

CHAIRMAN JACKSON: Are you going to give us a brief update status on Watts Bar?

MR. KINGSLEY: Do you have any other questions on Browns Ferry?

CHAIRMAN JACKSON: Not on Browns Ferry. If you could just give us a brief update on Watts Bar.

MR. KINGSLEY: I will be happy to give you a brief status on Watts Bar. As you mentioned earlier, Chairman Jackson, last Friday, November 3, I signed a letter coming to the NRC certifying that we are ready from a work standpoint to load fuel and to operate at low power Watts Bar Unit 1.

All work necessary to support fuel load has been completed. We do have some last minute surveillances that we are in the process of running, re-running again. They have certain periodicity requirements and so those will be periodically affected.

We have had our key nuclear power and site managers who have certified that the critical elements of this site are complete. These elements cover engineering, construction, quality assurance, testing and the operational readiness portions of the facility.

When we talked with you on September 11th we did

have a fairly large number of work items left. We have been very systematic, very thorough, very deliberate. You cautioned us about going too fast and so we have heeded that advice.

But I am happy to report that our work is now complete. I talked to the site around 12:30 today and we do have those surveillances to run. We had a noise problem that we are investigating on one source range channel. We believe that is tied into some welding. But all programmatic issues, the CAP, the special programs have been finished.

CHAIRMAN JACKSON: All of those have been completed?

MR. KINGSLEY: Yes, ma'am, everything. We have start-up teams ready to go. We have the independent monitoring. We have the operating team and they are there ready to go. We talked to you about backlog targets and we made, I think, appropriate attention to that and we set those targets and now we have met those targets. So I think we are ready in all respects for Watts Bar.

CHAIRMAN JACKSON: So for whatever backlog items still exist having met your targets obviously you have then done your safety grading.

MR. KINGSLEY: Yes. We are totally governed by the technical specifications and all of the major

programmatic issues whether it be welding, whether it be electrical issues or cable issues, seismic, civil, some 28 which go throughout that plant, they are finished.

CHAIRMAN JACKSON: All right.

MR. KINGSLEY: You had also asked some questions about the effect on the entire organization and I would like to address that. I think we have a very good staff in place at Watts Bar. This staff has grown tremendously.

Ike and I were talking about that late last week and he says they have improved ten-fold from the standpoint of being able to recognize a problem, solve a problem, analyze a problem, get right into a problem and I certainly concur.

They have grown a great deal during the number of special evolutions and I believe this hot functional test too was extremely positive from that standpoint because we got a chance to really practice whereas on the other stations that I have worked on we never did that. You kind of went live and there you were.

We are going to keep Ike there and some other key managers. He is not here today. He is there taking care of business and monitoring that site. I also have a great deal of confidence in these people here, Lee Williams and the people behind us to do a good job on Browns Ferry Unit 2 and 3.

I am going to pay a lot of attention to that. Rick works directly for me and until we can get through these startups and we have a good corporate support team and we will be carefully monitoring that and watching these units come up in conjunction with the Nuclear Regulatory Commission and the hold points that we have in that.

So I believe we are ready to receive the license and take this plant and load fuel safely and take it up to five percent. We will be back with you on the 8th of December and we look forward to giving you a full report when we are discussing Watts Bar Unit 1 full power license and telling you how we are doing on both sites and what the progress is and what the strengths and weaknesses and where we need to shore things up or take additional corrective actions.

CHAIRMAN JACKSON: Since you have already addressed the issue of the potential impact of restarting Browns Ferry Unit 3 as well as fuel load and low power operations for Watts Bar.

MR. KINGSLEY: Correct.

CHAIRMAN JACKSON: You are prepared to tell me today that we don't have to worry about nomadic management.

MR. KINGSLEY: That's correct.

CHAIRMAN JACKSON: That you are not going to take key people from one site or one unit to another?

MR. KINGSLEY: No. We have no intention. We are going to keep these staffs in place. We don't have any personnel changes that we are anticipating. We have no major reorganizations. We are going to focus on these five operating units but this site team has been in place. We are going to keep them there.

We have strengthened it by taking a person like Chris Crane and adding him to it and we have done some similar things on Watts Bar to make sure that we have a little more than what you would normally bring a site up like that.

CHAIRMAN JACKSON: I have to ask you this now. Since you last briefed the Commission, have there been any changes in TVA's financial condition that would be pertinent to a decision by the Commission regarding your facilities?

MR. KINGSLEY: None whatsoever. We did close our fiscal year 1995 books. We are in good shape. We have gone back into the bond market. We are very successful in refinancing some older debt. We are holding to our financial targets, our fiscal targets and we are in exceptionally good shape.

So we can definitely support both units. We can support Watts Bar and the Board has assured me any number of times and I have had to go back that the money is there and it is available to safely operate both of these units and

the Sequoyah units and Browns Ferry Unit 2.

CHAIRMAN JACKSON: Commissioner Rogers.

COMMISSIONER ROGERS: Nothing, thank you.

CHAIRMAN JACKSON: Thank you, Mr. Kingsley. I think we are prepared to hear from the NRC staff at this point.

MR. KINGSLEY: Thank you.

CHAIRMAN JACKSON: Mr. Taylor. Although it says, "Mr. Kingsley" I think I recognize you.

[Laughter.]

MR. TAYLOR: Good afternoon. This as the Chairman noted is an update for a previous briefing on Browns Ferry and with me at the table and in sequence of appearance or discussion I should say are Fred Hebdon who is here from NRR talking some licensing issues.

Jon Johnson from Region II will talk on inspection issues from the regional perspective. Paul Narbut will talk to you about our operational readiness assessment team results and finally Stu Ebneter and Bill Russell will wind up with some management comments. So I will ask Fred Hebdon to begin.

MR. HEBDON: May I have slide number two, please?

[SLIDE.]

MR. HEBDON: In 1985 the NRC requested that TVA submit information about its plans for correcting problems

at its nuclear facilities including Browns Ferry. In response, TVA submitted Volume One of its Nuclear Performance Plan which addressed the root cause of the problems with TVA's corporate management of its nuclear program and described TVA's plans to correct those problems.

Subsequently, TVA submitted Volume Three of the Nuclear Performance Plan which addressed problems specific to Browns Ferry and defined actions planned for correcting those problems.

The NRC staff issued a Safety Evaluation Report addressing Volume One of the Nuclear Performance Plan in 1987. In this SER the staff concluded that TVA had adequately addressed the corporate level concerns raised by the 50.54(f) letter.

In 1989 and 1991 the NRC staff issued a Safety Evaluation Report and supplements addressing the site specific issues from the Browns Ferry Nuclear Performance Plan. These reports concluded that TVA had adequately addressed the concerns raised by the 50.54(f) letter as they applied to Browns Ferry Unit 2.

At a Commission meeting in 1991 the Region II administrator was authorized to allow Browns Ferry Unit 2 to restart. Unit 2 was restarted in May of 1991 and is currently in its third fuel cycle since restart.

After Unit 2 restart, TVA submitted its corrective

action plan for returning Browns Ferry Units 1 and 3 to service. In general, TVA adopted the same methods and criteria and technical positions for Unit 3 that had been previously approved for unit 2.

The staff concluded that TVA's plans were acceptable for returning units 1 and 3 to service. In addition, the staff concluded that TVA had adequately addressed the concerns raised by the 50.54(f) letter as they applied to Browns Ferry Unit 3.

For issues where TVA deviated from unit 2 precedent, TVA submitted descriptions of the revised programs and the NRC staff reviewed approved TVA's revised program for each topic. There are currently no open licensing issues related to Browns Ferry Unit 3 restart. The next speaker will be Jon Johnson from Region II.

MR. JOHNSON: Thank you. Chairman Jackson and Commissioner Rogers, the NRC's Browns Ferry Unit 3 restart panel made up of regional and NRR staff has continued to meet regularly to review the status of TVA's recovery activities for unit three as well as to assess the results of NRC inspections and the status of licensing actions.

Since our last Commission status briefing, TVA has completed until 3 plant modifications and refurbishment of plant equipment and is nearing completion of system testing. Fuel loading began on October 18th and was well controlled.

May I have slide three, please?

[SLIDE.]

MR. JOHNSON: Recent NRC inspections have focused on verification of proper installation and testing of plant modifications which address TVA's Nuclear Performance Plan corrective actions and generic issues such as Three Mile Island action items, NRC generic letters and bulletins.

In addition, NRC inspections have reviewed the station's operational readiness activities and TVA's measures to properly control plant startup and the power ascension test program. Slide four, please?

[SLIDE.]

MR. JOHNSON: NRC inspections of hardware have included a broad sample of TVA activities. For example, inspection areas included electrical power supplies, distribution cabling, structural supports for piping and instrumentation, fire protection modifications and radiological monitoring equipment.

Results of these hardware inspections indicate that the overall quality of plant design and construction is very good. Deficiencies identified by the NRC have been limited in safety significance and were not programmatic.

Preoperational system testing and equipment turnovers from construction to operations have been well controlled. NRC inspections have focused on testing of

safety systems; that is, reactor protection and emergency core cooling systems such as the high pressure coolant injection, the reactor core isolation cooling and low pressure coolant injection.

NRC inspections have also verified proper preoperational testing of selected support systems and secondary balance of plant systems.

COMMISSIONER ROGERS: Excuse me. Mr. Kingsley mentioned the control rod drive problem that is going to be corrected. Would you have looked at that in your preoperational system testing?

MR. JOHNSON: Yes. We observed the testing of the control room drive and scram discharge testing. One of the tests that is conducted is a friction test and what TVA has identified is two control rods that have looked like they exhibit some additional friction and they believe that it relates to some control rod casting supports. I don't know the details. I can get back with any additional inspections or information that our individual inspectors might have.

COMMISSIONER ROGERS: But that deficiency did turn up in the preoperational system testing?

CHAIRMAN JACKSON: We are going to be following through on that.

MR. JOHNSON: Yes. This is an item that needs to be reviewed before completion of the restart panel. This

has shown up in TVA's preoperational testing. I don't know exactly which inspector of ours identified that.

The Browns Ferry plant design includes several shared and cross-connected systems. Our inspectors have observed testing of multi-unit systems such as residual heat removal, service water, emergency equipment cooling water, control air systems and the emergency diesel generators.

Our staff has inspected and verified that equipment condition and operator actions are appropriate to support operation of those two plants. These inspections have concluded that unit 3 design and construction are essentially complete. There are nine open restart panel inspection items to verify prior to restart. There are also four items that need testing during restart. May I have slide five, please?

[SLIDE.]

MR. JOHNSON: NRC inspections of operational readiness have included the status of licensed operator training and qualification, support department readiness as well as the adequacy of procedures and oversight programs.

Browns Ferry control room operators are licensed to operate and stand watch on all three units. In addition to site requalification and simulator training as well as routine operation of unit 2, operators have received specific unit differences training.

TVA station management augmented the number of licensed operators in unit 3 to support the added activity of preoperational testing over the last three months. We have inspected TVA's emergency operating instructions to verify technical adequacy and the ability of their staff to use safe shutdown equipment at remove locations.

Although instances of personnel errors have occurred, they were of limited consequence. Subsequent TVA actions have strengthened oversight and control of plant operations. NRC has also closely reviewed the licensee's self-assessment activities to assure readiness of support departments such as engineering, maintenance and radiation protection and chemistry.

TVA conducted station audits of support departments to verify readiness to support two unit operation. Multi-unit sensitivity training was conducted on a departmental basis as well as during shift turnover briefings.

The operations staff has included lessons learned from other sites as well as activities at Browns Ferry. Independent of the NRC's resident and region-based inspections, an 11-member NRC operational readiness assessment team inspection was conducted by the Office of NRR.

The results of this inspection will be discussed

by Mr. Narbut shortly. Slide six, please.

[SLIDE.]

MR. JOHNSON: The NRC has plans in place to closely monitor plant restart and the associated power ascension test program. This will include the use of additional NRC shift inspectors to augment the normal resident inspection staff.

TVA has established power ascension testing assessment points at which to stop and monitor results. These are at criticality, prior to the run mode approximately 12 percent, 35 percent power, 55 percent power and full power test completion. At these points the NRC will also assess the performance of plant equipment, the adequacy of operations and oversight prior to recommending concurrence with further escalation in power.

Finally, in addition to those generic issues inspected prior to plant restart, final confirmation of post restart items will be completed for four items requiring operations to test. This is similar to other plants and includes the safety parameter display system and the post accident sampling system.

In conclusion, pending completion of final inspections the NRC restart panel has not identified any obstacles to recommending to the regional administrator restart readiness for unit 3. Are there any questions?

CHAIRMAN JACKSON: I notice there is a post restart items list and one of them had to do with the instrumentation for detection of inadequate core cooling.

MR. RUSSELL: Yes.

CHAIRMAN JACKSON: So you are going to pay a lot of attention to that one.

MR. RUSSELL: Yes. Generally these are instruments that in order to perform the calibrations or to have sufficient activity so that you can the radiological analysis, these are consistent with other plants and it requires the plant to be operational in order to perform the testing and we will be watching those closely. I would like to have the discussion of the operational readiness team inspection which was conducted by NRR and then we will come back to additional questions on Browns Ferry.

[SLIDE.]

MR. NARBUT: Good afternoon, Chairman Jackson and Commissioner Rogers. My name is Paul Narbut. I am from the Special Inspection Branch at NRR and I was the team leader for the operational readiness inspection at Browns Ferry.

The team consisted of ten inspectors and a team leader. The team was experienced, independent and objective. The inspection was conducted for a two-week period in October of 1995.

The purpose of the inspection was to assess the

readiness of the licensee to restart unit 3. to do this we assessed the functional areas of management, operations, maintenance, surveillance testing, engineering, fire protection, safety assessment and quality verification.

The team made performance based observations of in-plant activities such as maintenance testing and operations. It had 24 hour continuous coverage of control activities for a period of four days. We observed crew performance in simulator exercises and we performed walkdowns of five systems. In all, we performed about 1100 hours of direct inspection.

The results of the inspection are as follows. In management, we found management at Browns Ferry to be a strength. Management personnel are well qualified and bring experience from plants outside of the TVA system.

We observed management to be aggressive in problem resolution and we saw good involvement with plant staff. Management was well aware of their weaker performance areas and were working to strengthen those areas.

They arranged for outside entities to perform tough, critical assessments of their readiness for operation and they also had well-structured and detailed self-assessments. They had good management systems in place to monitor performance and trends.

In the operations area, we found performance to be

adequate. Operator staffing on each shift exceeds NRC minimum requirements. Operators are knowledgeable as evidenced by their high pass rates on exams and as demonstrated by their good performance in event response and at the simulator exercises.

Operator behavior was professional. We saw good turnovers, good annunciator response, good knowledge of system and hardware status. On the other hand, we observed some individual performance errors.

For instance, some operators failed to log occurrences such as pump starts as is required by their procedure for logs. We also observed some errors in trouble-shooting procedures but should have been caught before the procedures were performed.

The licensee's actions in response to these errors were timely and appropriate. We considered the overall performance of routine shift activities was adequate for operations and typical of other operating plants.

In the area of maintenance and testing, we found the overall performance levels to be adequate. Staffing and craft skills were good. We saw good performance in a majority of our observations and record reviews.

Craft used proper materials and tools and maintained good housekeeping and work controls. Problems that were encountered were properly documented for

resolution. We observed some examples of minor problems in some procedures and work practices.

What we observed didn't affect the end product and appropriate corrective action was taken by the licensee. The quality of the maintenance we observed was in keeping with other operating power plants.

We found engineering to be an overall strong area. The licensee has a large, qualified engineering staff with a lot of site specific experience. We found good support for operations and maintenance and we found the drawing control was good. We identified no significant drawing errors.

Fire protection, we found the fire protection program to be strong. The licensee has a staff of full-time professional firefighters and a good fire-fighting facility. These attributes are both well above NRC requirements.

The fire protection systems are in good condition and the control of combustibles and hot work permits was good. We identified an example of a procedure weakness concerning a ventilation damper isolation. However, the licensee took prompt and adequate corrective action on that item.

We found the area of safety assessment and quality verification to be adequate. The on-site and off-site safety review committees were reviewed and met the

requirements. We observed active management and QA oversight.

We noted that just prior to 1995 the licensee revised and strengthened their problem reporting program to encourage the open identification and resolution of problems. This has resulted in a six-fold increase in the number of problem reports written to date in 1995 as compared to all of 1994. We observed the QA audits and surveillances were in depth and performance based and had meaningful findings.

The team concluded that the licensee has programs, personnel and procedures that are adequate for unit 3 restart and we observed safe operation of unit 3 during testing and that was in conjunction with the concurrent operation of unit 2 at power utilizing essentially the same programs, procedures and people that would be used on unit 3.

That concludes my presentation. Are there any questions?

CHAIRMAN JACKSON: Yes.

MR. NARBUT: I would assume.

CHAIRMAN JACKSON: Remind me of the make-up of your team?

MR. NARBUT: The make-up was ten inspectors and myself. We had four former senior residents, five residents

current or former.

CHAIRMAN JACKSON: From the region?

MR. NARBUT: The residents were from the region and from headquarters mixed and we had two people that were former licensed operators of the plant and two people that are license examiners and we had other specialists.

CHAIRMAN JACKSON: I noticed that in some instances you used the word "adequate" and in some you used the word "good" and "excellent." Was there meant to be a differentiation?

MR. NARBUT: There was, yes. We tried to differentiate between the programs we found to be strong and the programs we found to be adequate for operations.

CHAIRMAN JACKSON: Given that and since the "adequate" adjective was used in some operational areas, the question I would have is, what type of NRC oversight is planned both for the restart and post restart of the Browns Ferry Unit 3?

MR. RUSSELL: Broadly we will continue the process that we have been using. As was mentioned by Jon Johnson there is a power ascension test program. We will be augmenting this with additional coverage at times, 24 hours a day, with additional inspectors brought in essentially a week at a time to augment the on-site staff.

There will be formal evaluations at the various

assessment points with results from the company evaluating performance to that point and any corrective actions that are taken. We will be similarly assessing our observations of performance at that point.

There will then be meetings to discuss those results to understand what corrective actions if any are needed and this will be a phased very controlled activity wrapping up with a final assessment after full power is reached with a period of time of operation at full power and through that process we will be making judgments on adequacy of resources and whether there are different specialty areas that are needed.

So it is a process that we have used on each of the category three facilities. We started following this process with Peach Bottom and Pilgrim and some of the other plants in Region I. We have used it at other facilities. It is similar to the process that was used for Browns Ferry Unit 2 restart.

We have in our internal procedures codified and learned the lessons of the past from these so that we actually have checklists that we use that are generic from which we then develop a plant specific list of activities to be accomplished but generally the power ascension with the evaluation at various assessment points is closer to what is done for a new plant with a power ascension test program

with an evaluation both of hardware and people.

So what you typically see would be power would be increased to that next plateau. There would be a period of time of observation and generally during time of power change and testing is the time that we would be in 24 hour coverage. That is broadly the program that is planned to be conducted for Browns Ferry Unit 3.

CHAIRMAN JACKSON: Then going forward this plant for some period of time is going to have increased focus?

MR. RUSSELL: Should the Commission reach a decision to change the status of this plant from a Category Three to a Category Two, it would still be considered on the list of problem facilities.

It will continue to receive agency-wide monitoring including evaluation at senior management meetings and we would want to see a period of time of two unit operation that is satisfactory for a period of time before the senior management would be prepared.

We have a very rigorous process that we go through to evaluate performance and make judgments as to whether performance is satisfactory. Again, this has been proceduralized.

We have a matrix of specific questions we go through to make judgments as to when it may be time to remove a plant from the problem plant list. The decision is

to move from Category Three which requires a Commission decision to allow restart.

Once that permission has been granted, the staff still continues to monitor and the senior managers still continue to monitor performance until we are satisfied and it meets the criteria for coming off the problem facilities list.

CHAIRMAN JACKSON: You mentioned the open items list and just the four that require essentially restart to evaluate.

MR. RUSSELL: Yes.

CHAIRMAN JACKSON: But presumably there is still a backlog of items and you have reviewed those and concur that none of them have any safety significance that would require their being completed prior to restart?

MR. RUSSELL: There are, I believe, nine yet to be done for restart plus they must meet the facility technical specification requirements which would require surveillances. There are a number of activities which must be performed in accordance with plant procedures.

So there are quite a number of things to be done. I would not expect that those could be completed satisfactorily much before the middle to the latter part of this month. So there are things to be done and we could certainly provide an update status as we get closer and

those things are completed. That is something that we have done in the past.

What we wanted to do was give you an overview as to where it is now. We are down to a relatively short list compared to where we have been but there is still a short list for the company.

CHAIRMAN JACKSON: And they will be done.

MR. RUSSELL: They will be done. Many of them are governed by facility technical specifications so they must be done in accordance with their license. There are some other issues that are open that are inspection items that they have committed to do and there have been meetings going on to make sure that there is agreement on what is on the list that is necessary to be done and why.

So we review that continually. Things may be added as events are identified, for example, going in lifting the head necessarily is going to require some additional work to be done, procedures to be followed. We will be inspecting those as well.

CHAIRMAN JACKSON: What is the status of allegations or safety concerns raised by TVA employees or others to the NRC on Browns Ferry Unit 3 and how are they being resolved and in what timeframe?

MR. RUSSELL: When I was on site the end of October, I went through with the panel, both the regional

staff and the headquarters staff, each allegation that was open at that time. I also have gone through that again today.

At this point there are no allegations which would be a bar to restart. There is one which I would like Stu to address which we have had an enforcement conference on which may result in escalated enforcement but we also believe that that is not a bar to restart based upon the age and some of the circumstances associated with it.

MR. EBNETER: The item that Bill is referring to is listed there on the bottom, one pending escalated enforcement action for H&I. This is a DOL case that we recently received from the Secretary of Labor. He made a decision and order that supported a worker foreman or a contractor at Browns Ferry that he had been discriminated against.

We had an enforcement conference on that panel with TVA. That is pending. It is in decision making within the agency at this time. But in our view there is no bar to restart here.

There is no safety issue with it and it does not involve any significant level of management. So we do not think it is significant. It is significant from the standpoint that it is H&I and if escalated enforcement does occur, it could become more visible.

MR. RUSSELL: There was earlier a question also about corrective maintenance backlogs. When we were on site we went through the status of the various backlogged items and there are some that are governed by technical specifications which would have to be completed prior to but in general the characterization of the backlogs are small is correct.

This plant physically looks good. They have made major improvements both in the safety related systems, the material condition of the facility as well as in the balance of plant.

It has really made a very substantial change and I was quite pleased when I was on site with what I saw and absence of leaks, material condition of the rotating machinery was quite impressive and we were able to get essentially everywhere in street clothes.

I observed turnovers and operations in the control room and they didn't stage it but they actually had a fuel bundle that they could not fully seat that stopped about six inches from seating and so they actually had an operational issue with refueling that was going on at the time.

I interviewed the senior reactor operator on the refueling floor that was responsible for planning the activities in real time. He had a very good plan to address it consistent with procedures. The communications with the

control room was effective.

By the end of the day they had implemented the program to address the issue. So I was quite comfortable with the conduct of activities and the quality of what I saw from turnovers. I did comment to the Company that I thought the turnovers were long.

It was well in excess of an hour to complete the shift turnover and I thought that possibly my being there to observe it may have caused it to be a little longer but it was quite thorough and well done and this was consistent with some of their own observations that they need to make that process more efficient and they have gone to visit some other facilities to see how it is done so that the process could be conducted of equal quality but more efficiently.

But I was quite satisfied with what I had seen at Browns Ferry and would recommend in the future a Commission decision to allow the regional administrator when these items are completed to proceed with restart of the facility.

CHAIRMAN JACKSON: Mr. Ebneter, you are the regional administrator.

MR. EBNETER: Yes, ma'am.

CHAIRMAN JACKSON: Do you have any additional comments you would like to make?

MR. EBNETER: Not particularly. I agree with everything that was said. I think TVA has done a good job

and I think our staff has done a good job in overseeing it. We will verify those open items.

We do have an inspection plan in draft form for the augmented startup and that should be signed out probably next week. So we are prepared to go forward with it and I concur with Bill's comments that we would recommend that the Commission make the decision for authorization of restart.

CHAIRMAN JACKSON: Has the staff considered the effect the restart of Unit 3 may have on Unit 2 operations?

MR. EBNETER: Yes, we have and that was a considerable part of our inspection activities throughout the recent efforts of training and observation of activities at the site. We think it needs to be continually watched.

CHAIRMAN JACKSON: What do you have in place or in mind relative to post restart?

MR. EBNETER: Post restart, part of our augmented inspection plan, a dedicated senior resident will be dedicated to oversight with Jon Johnson and his division overseeing that but each unit will have a dedicated resident inspector and they will augmented by regional staff as necessary for specialties and that will be further augmented by around-the-clock coverage on specific items.

Most of the time throughout this probably 40 to 45 day startup and power ascension but it will definitely be around-the-clock coverage and we will be completing log

books and overseeing all of the operations and control rooms. There are two control rooms so it does take dedicated inspectors for each room.

MR. RUSSELL: Let me comment on one aspect that hasn't come up before and that is the issue of shared systems. This station has quite a number of shared systems. You can use residual heat removal from unit 1 to provide cooling for unit 2.

These kinds of inter-ties while they provide additional capability also raise some new issues. As a result, the IPE was reviewed and it was looked at in the context of multiple unit operation.

We have completed a preliminary review of that and from that we gained some lessons learned, some areas to be aware of and I would guess probably the service water system inter-ties are the most significant from that review. So that is an area that we have paid attention to.

We have completed that preliminary review. We have plans to complete the full review with the IPE later in 1996 but we have done a sufficient review to identify the areas of concern and those have been fed back into the inspection process.

CHAIRMAN JACKSON: Commissioner Rogers, do you have any questions?

COMMISSIONER ROGERS: A couple. I wonder, Mr.

Ebneter, how you would compare and I know it is probably just a little bit early to be able to be totally definitive on this but the number of NRC inspection hours that have gone into getting ready for unit 3 restart compared to unit 2?

MR. EBNETER: I don't have the figures but Bill Russell does so I will turn to Bill.

MR. RUSSELL: I anticipated that that could come up.

MR. EBNETER: They are rather large.

MR. RUSSELL: The effort started to substantially increase with the recovery actions after 1990 but for Browns Ferry 3 in the current year and this is based upon what has been entered into the computer so it may be two weeks out of date but we are up to 8,900 hours for Browns Ferry 3 and the total effort during the recovery period, I didn't add them up, but I would estimate, let's see from 1990 it was 2,200 hours, 1,600 hours in 1991, almost 4,000 in 1992, 2,600 in 1993, 2,700 in 1994 and almost 9,000 in 1995.

So it has been a substantial inspection effort during the recovery process. We will have augmented inspections. So this is consistent with other facilities that have been in the category of requiring close agency-wide monitoring.

There is one other aspect that I think it is

unique and senior managers from NRR and those in the region that have seen this, it has been fairly remarkable. The Company laid out a plan of activities and a schedule over a year go as to what they were going to do and what would be done when.

This is one of the rare cases where they have essentially met or bettered the schedule. At the time they tell us things are done and completed, when we go in and look we find that they have been done and completed. That is a very different situation from what some of the early history has been on other facilities.

So we have been pleased all along this process. It is not just the end with these satisfactory results. They have essentially told us what they were going to do and then they did it which is, I think, commendable.

COMMISSIONER ROGERS: Yes. I have one other question. Mr. Narbut, you mentioned that the drawings were in good condition. What is the status of the design basis documentation? Have we reviewed that?

MR. NARBUT: We did not specifically look at their design basis documentation.

MR. EBNETER: Yes, we have.

MR. NARBUT: Not out team.

MR. EBNETER: The Agency has. The regional staff has reviewed that extensively as part of the recovery and we

found that to be acceptable and they did a good job on that.

COMMISSIONER ROGERS: Good.

MR. RUSSELL: That is also a key issue that feeds into the technical specification conversion because of the extensive amount of information that has to go into the bases of the technical specifications and the adequacy of that so that is usually the area that the most work goes into to support a conversion.

COMMISSIONER ROGERS: I guess I have just one other question. What public meetings have been held in the vicinity of the site and what has been the public interest in the startup of this unit?

MR. EBNETER: I don't have an exact total of them, Commissioner, but we held regular meetings there. ACRS held a meeting there. Fred, do you know of any others? I have another one scheduled for the 17th just before startup, a public meeting just to keep the public informed. But we have had regular meetings. His meetings are open to the public and we regularly have media there for the oversight board.

MR. NARBUT: The team exit was public as well.

COMMISSIONER ROGERS: Generally speaking, how many people would attend one of those?

MR. EBNETER: My guess is that we didn't get an awful lot from the public but we always had media attention,

probably three or four regular attendees from Birmingham, Huntsville and the Athens area. They were pretty well attended media-wise.

MR. RUSSELL: That is the same result I had with the meeting I had on site and then meeting with the press afterwards, print media but not much public interest.

COMMISSIONER ROGERS: It sounds very encouraging.

CHAIRMAN JACKSON: Let me just ask the questions about Watts Bar and then if you want to make any summary comments, I am happy to have them. What issues need to be completed prior to the staff authorizing fuel load and low power testing?

MR. RUSSELL: All of the inspection activities have been completed. We only completed this morning the last of the inputs for Supplement 19 of the Safety Evaluation Report. The matters that are being addressed in that Supplement relate to an Appendix J exemption and I would like to cover that because the status has changed since we last briefed the Commission. When we briefed the Commission back in September the Appendix J rule change had not been finalized.

That rule became final on October 27th. The first facility that will address the changes to the technical specifications and the license conditions necessary to implement the performance based testing will likely be the

Ginna facility. We have been working with the industry. This will also go into the standard technical specifications.

We did not have sufficient time to implement that with the proposed technical specifications for Watts Bar. We are proposing now instead of a lifetime exemption on Appendix J, that there be a schedular exemption only until the first refueling outage which would provide an opportunity for them to develop the program and to gain some experience which is what you need on a plant specific basis with performance of various penetrations such that you can't implement the new rule.

We would look at then a license amendment request coming from the Company sometime during the first cycle which would be reviewed and processed as a normal license amendment. But the exemption for airlock testing would expire with the startup from the first refueling outage.

So after that period of time they would either have the new program approved through the amendment process or they would perform the testing as it is currently required under option A of the Appendix J rule.

The second area that I briefed the Commission on at the last meeting was the issue related to fire penetration seals. They have done the testing. We have witnessed the testing and we issued Supplement 18 to the

Safety Evaluation Report which was approximately 150 pages addressing fire protection issues at the facility.

The aspects of the testing though basically is in the form of a trip report. That is, our witnessing of the testing and what we found acceptable about it, that is being documented in this Safety Evaluation Report.

That was the last item to come together. That has been under review in parallel in the staff and has just recently gone to General Counsel's Office. So that review needs to be completed to support issuing Supplement 19.

We have also completed the input that is necessary to support issuance of the technical specifications. The camera ready copies have been certified. Consistent with the design the inspections have been done, the reviews are completed but that last element is in Supplement 19.

We expect that these issues can come together and be addressed yet this afternoon because we have done a lot of parallel review effort prior to this so it is entirely possible that I would be prepared to issue a low power license for fuel load and operation up to five percent power on Watts Bar yet this afternoon.

It may be late this afternoon or it may be early evening but we are in the last stages of documenting the results. The work has been done. We are now in the documentation stage.

CHAIRMAN JACKSON: What has the staff done to evaluate whether TVA has adequate resources to handle the possible simultaneous activities associated with the Browns Ferry unit 3 restart and Watts Bar initial fuel load and low power operation along with the operations of all their other plants?

The activities for preparation of completion of actions, the CAP, the special programs, and the amount of work that has gone on recently at Watts Bar has been quite intense. In fact, when you move from completion of construction and certification into operations, there are actually fewer people involved and so I would expect that there could actually be some reduction in staffing on site.

The management oversight has been essentially independent. Obviously it comes together in the Director of Engineering and Licensing and the senior levels in the Corporation but the activities on site have been essentially conducted with the people on site. That is true for Browns Ferry and it is true for Watts Bar.

We similarly have organized ourselves to be able to do these independently. There is a separate review team for Browns Ferry from the activities that we have organized for overseeing Watts Bar.

We may have to pull in resources on the NRC side from other regions or others to support the two activities

going on in parallel, but I don't see a problem at this point with either sufficient resources on the Company's side or the NRC side to oversee the activities.

Both sites recognize that the important issue is the quality of what is done, how problems which arise are addressed and addressing them early. There is not a pressure schedular-wise to proceed on either site. Both are taking time to do it right the first time because they understand the implications of something not being done well and that that has a much more serious effect.

CHAIRMAN JACKSON: And they meet our financial assurance requirements?

MR. RUSSELL: Yes, they do.

CHAIRMAN JACKSON: Both of them.

MR. RUSSELL: We have had allegations related to that which has caused us to recently re-review the issue both with respect to funds to operate and decommission. So those issues are being addressed.

You asked me earlier and we sent you information on the status of allegations and because this is an initial licensing decision we have gone through some additional steps and I would like to review with you what those are.

We met in September and in September I was briefed by the TVA IG on the status of investigations related to Watts Bar. We also had meetings with OI briefing me on the

status of our ongoing cases within our Office of Investigations and we also had information from our Inspector General on information that they may have received.

I followed up and I had a meeting with them again today and I met with the IG's office, with OI and in addition, met with the Office of Enforcement to ensure if there were any issues that were pending enforcement that I would understand that status.

In addition, I had the staff brief me on the status of all outstanding allegations that are not closed and we have gone through those individually.

CHAIRMAN JACKSON: Including any new allegations?

MR. RUSSELL: We have two new ones that were not on the list for some late allegations that were filed and I have reviewed those as well and we are treating those as late filed allegations.

One could be considered supplemental information on an earlier allegation that relates to radiation monitors and the Region has addressed that and we are going to handle that as a late filed allegation but based upon the inspection activities that we have conducted, we believe that that allegation does not raise an issue that will be a bar to licensing.

We also had some allegations that were received

that were late filed related to fire protection and based upon the extensive work that we have recently done, we were able to receive and close that allegation today. We have paneled that in NRR and went through the process.

So at this time there are no allegations that I am aware of which would be a bar to proceeding with the licensing decision. Many of them will need to be necessarily followed up in the normal process but none would be an impact on proceeding with low power licensing or fuel load and low power physics testing up to five percent power.

CHAIRMAN JACKSON: What special resources or attention are you planning to give during the fuel loading and low power operations period assuming that decision is made?

MR. RUSSELL: The approach is similar to what we described. We have a dedicated management oversight with a dedicated regional branch chief. We have been following essentially the 350 process for facility startup because of the prior troubled history and our wanting to be assured that the activities are conducted safely.

We have an inspection plan. We will be prepared to brief the Commission on the details of that plan. Right now we are going to be focusing on fuel load activity and physics testing and we have not finalized the plan but I would expect that the elements of the plan would be very

similar for Watts Bar to what we described will be done for Browns Ferry.

That is, there will be periods of time where power ascension will occur. There are required tests which are more extensive on Watts Bar than on Browns Ferry because it is the initial Reg Guide 186 power ascension testing. There are specific tests such as shutdown from outside the control room, load reject from 100 percent power, that the NRC will witness. So we have to be staged with appropriate people around the plant to witness those tests. There will be periods of time when we will monitor operations from the control room 24 hours a day.

CHAIRMAN JACKSON: This is all part of the low power?

MR. RUSSELL: No. You asked me about beyond low power.

CHAIRMAN JACKSON: No. I was asking about low power.

MR. RUSSELL: For low power, we are planning --

CHAIRMAN JACKSON: Because you have to come back to the Commission for full power.

MR. RUSSELL: Absolutely. What I was trying to do was give you a flavor for what we would be telling you when we come back. We don't have that plan finalized yet but it would be similar to what we have done in other facilities.

MR. EBNETER: I do have a draft plan in my briefcase and that is in preparation. We do have the staff to cover it and in addition, we will retain some of our construction inspector dedication to cope with any problems that we may encounter similar to the South Texas or Comanche Peak type things. Sometimes construction issues arise or emerge so we are going to keep some of that staff available also.

CHAIRMAN JACKSON: Commissioner Rogers.

COMMISSIONER ROGERS: No, I have nothing more.

CHAIRMAN JACKSON: I would like to thank the representatives of TVA and the NRC staff for an informative meeting. It has been a long meeting. The material presented today will provide added insights that will assist the Commission when considering the authorization of the restart of Browns Ferry Unit 3.

With respect to Watts Bar, as I perhaps was giving you the hint in my comment a minute ago, we are at the fuel load low power operations stage. Let's not put the cart before the horse. You have to come back to the Commission and let us know how that has gone.

I want to take this opportunity, the staff has obviously been impressed by your laying out your goals and sticking to them but I just want to emphasize and I am sure you know that the need to maintain continuous and close

oversight of your nuclear operations and the importance of self-assessment which you seem to have strongly grabbed hold of and learning from experience.

It is important that TVA's self-assessment programs be strongly supported by management and that any issues that are raised be thoroughly and promptly investigated and resolved and an area that is a general concern to me and doesn't relate to TVA, it is a broader one, that as economic pressures increase there also is the potential for adverse safety impacts.

So I know you want you move to improve the economics of your operations, you have said as much, but it is important to ensure that the safety margins are maintained and that a safe operating culture exists.

In coming to the Commission to restart Browns Ferry which has been shutdown for more than ten years and at virtually the same time coming for the Watts Bar low power license, you are effectively asking to be starting two plants new at the same time. So I think you appreciate my comments.

Unless Commissioner Rogers has any additional comments, we stand adjourned.

[Whereupon, at 4:00 p.m., the meeting was adjourned.]

CERTIFICATE

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

TITLE OF MEETING: BRIEFING ON BROWNS FERRY 3 RESTART - PUBLIC MEETING

PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: Thursday, November 9, 1995

was held as herein appears, is a true and accurate record of the meeting, and that this is the original transcript thereof taken stenographically by me, thereafter reduced to typewriting by me or under the direction of the court reporting company

Transcriber: Marilynn Estep

Reporter: Marilynn Estep

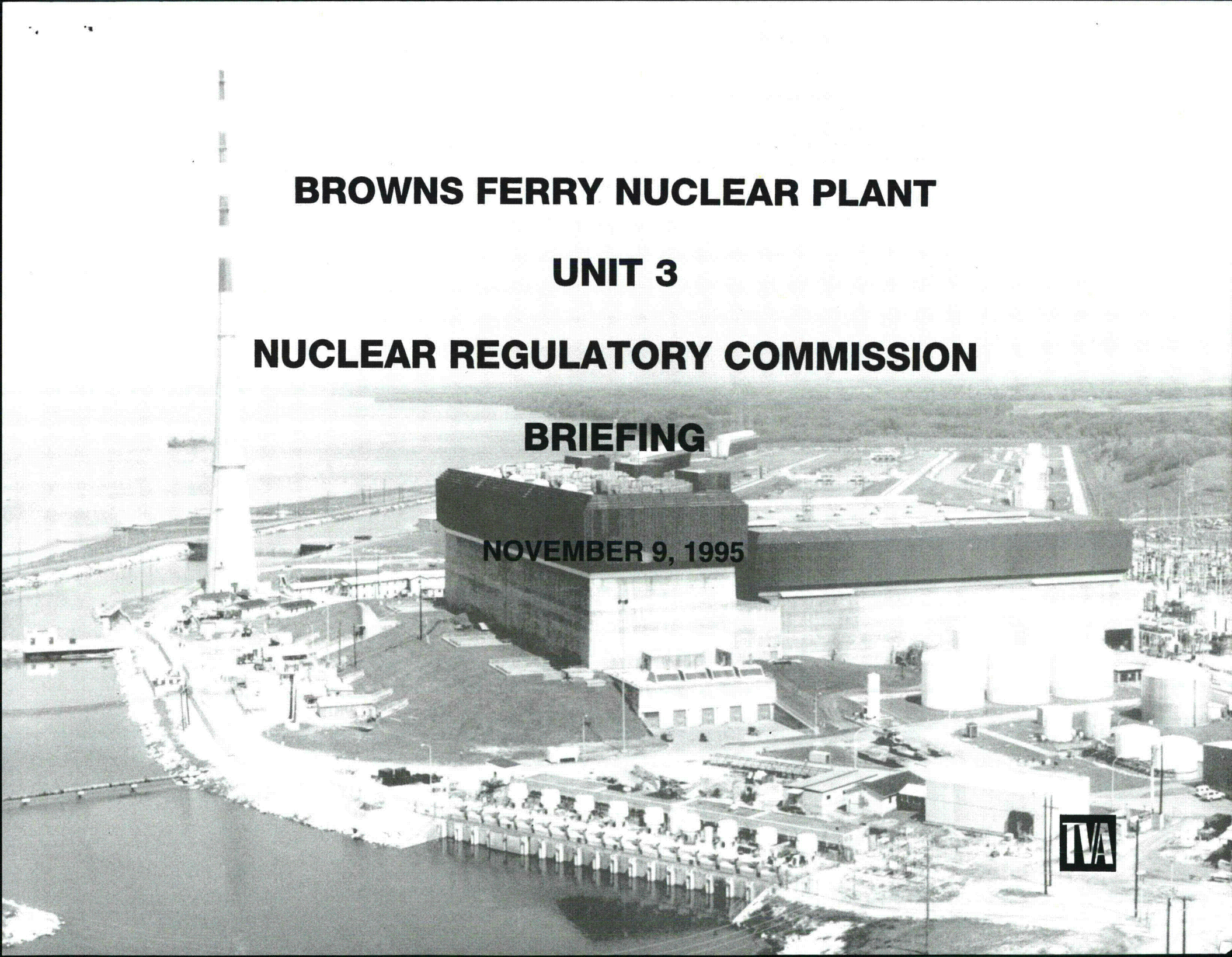
BROWNS FERRY NUCLEAR PLANT

UNIT 3

NUCLEAR REGULATORY COMMISSION

BRIEFING

NOVEMBER 9, 1995



NRC BRIEFING AGENDA

INTRODUCTION	OLIVER KINGSLEY
SITE RECOVERY AND READINESS	RICK MACHON
PLANT READINESS	GENE PRESTON
INDEPENDENT ASSESSMENTS	MARK MEDFORD
CONCLUSION	OLIVER KINGSLEY

BROWNS FERRY NUCLEAR PLANT

- LOCATED ON THE TENNESSEE RIVER IN NORTHERN ALABAMA
- THREE UNIT SITE (GE BWR 4)
- EACH UNIT LICENSED TO OPERATE AT STEADY STATE REACTOR CORE POWER LEVELS OF 3,293 MW THERMAL
- UNIT 1 IN EXTENDED SHUTDOWN
  UNIT 2 IN OPERATION
  UNIT 3 READY FOR OPERATION

BROWNS FERRY HISTORY

- COMMERCIAL OPERATION DATES:
  - UNIT 1 ON AUGUST 1, 1974
  - UNIT 2 ON MARCH 1, 1975
  - UNIT 3 ON MARCH 1, 1977
- UNIT 2
  - SHUTDOWN DATE - SEPTEMBER 15, 1984
  - RESTART DATE - MAY 23, 1991
  - CAME OFF WATCH LIST IN JUNE 1992
- UNIT 3
  - SHUTDOWN DATE - MARCH 10, 1985
  - PROJECTED RESTART - LATER THIS MONTH, PENDING APPROVAL

TVA NUCLEAR
HAS FUNDAMENTALLY IMPROVED

- IMPROVED HOW WE DO BUSINESS
- RAISED STANDARDS OF QUALITY AND PERFORMANCE
- OPERATING UNITS CONTINUE TO IMPROVE
- BROWNS FERRY UNIT 3 HAS BENEFITED FROM THESE CHANGES

BROWNS FERRY UNIT 2
HAS STRONG OPERATING RECORD

- CUMULATIVE CAPACITY FACTOR GREATER THAN 80% SINCE RESTART
- NUCLEAR SAFETY RECORD IS GOOD
- PLANT MATERIAL CONDITION IS GOOD
- SITE TEAM HAS EXPERIENCE, EXPERTISE, AND PROVEN TRACK RECORD

BROWNS FERRY IS READY FOR MULTI-UNIT OPERATION

- UNIT 3 FOLLOWED UNIT 2 RECOVERY PRECEDENT WITH THE BENEFIT OF LESSONS LEARNED
- THE RIGHT PERSONNEL, PROGRAMS AND PROCEDURES ARE IN PLACE
- ADEQUATE FINANCIAL RESOURCES HAVE BEEN AND WILL CONTINUE TO BE PROVIDED FOR SUCCESS
- EXTENSIVE INDEPENDENT ASSESSMENTS AGREE THAT BROWNS FERRY IS READY FOR MULTI-UNIT OPERATION

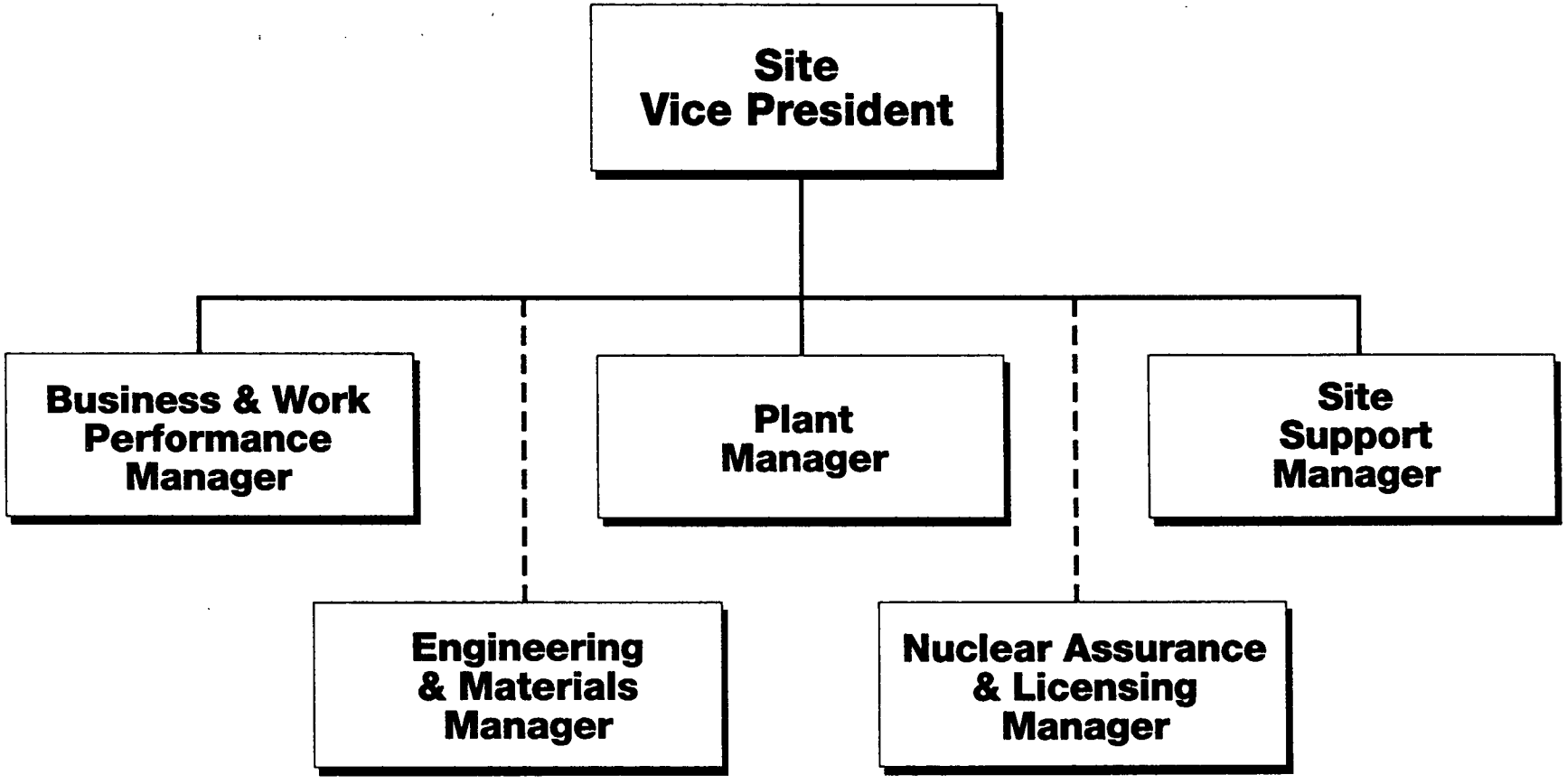
PLANT RECOVERED IN A QUALITY MANNER

- UNIT 3 BUILT ON SUCCESSFUL UNIT 2 PERFORMANCE AND LESSONS LEARNED
- THOROUGH SYSTEM ASSESSMENTS PERFORMED
  - REGULATORY ISSUES CLOSED
  - EQUIPMENT RELIABILITY AND ENHANCEMENTS IMPLEMENTED
- PLANT MATERIAL CONDITION SIGNIFICANTLY IMPROVED
- DRIVING TOWARDS OPERATIONAL EXCELLENCE

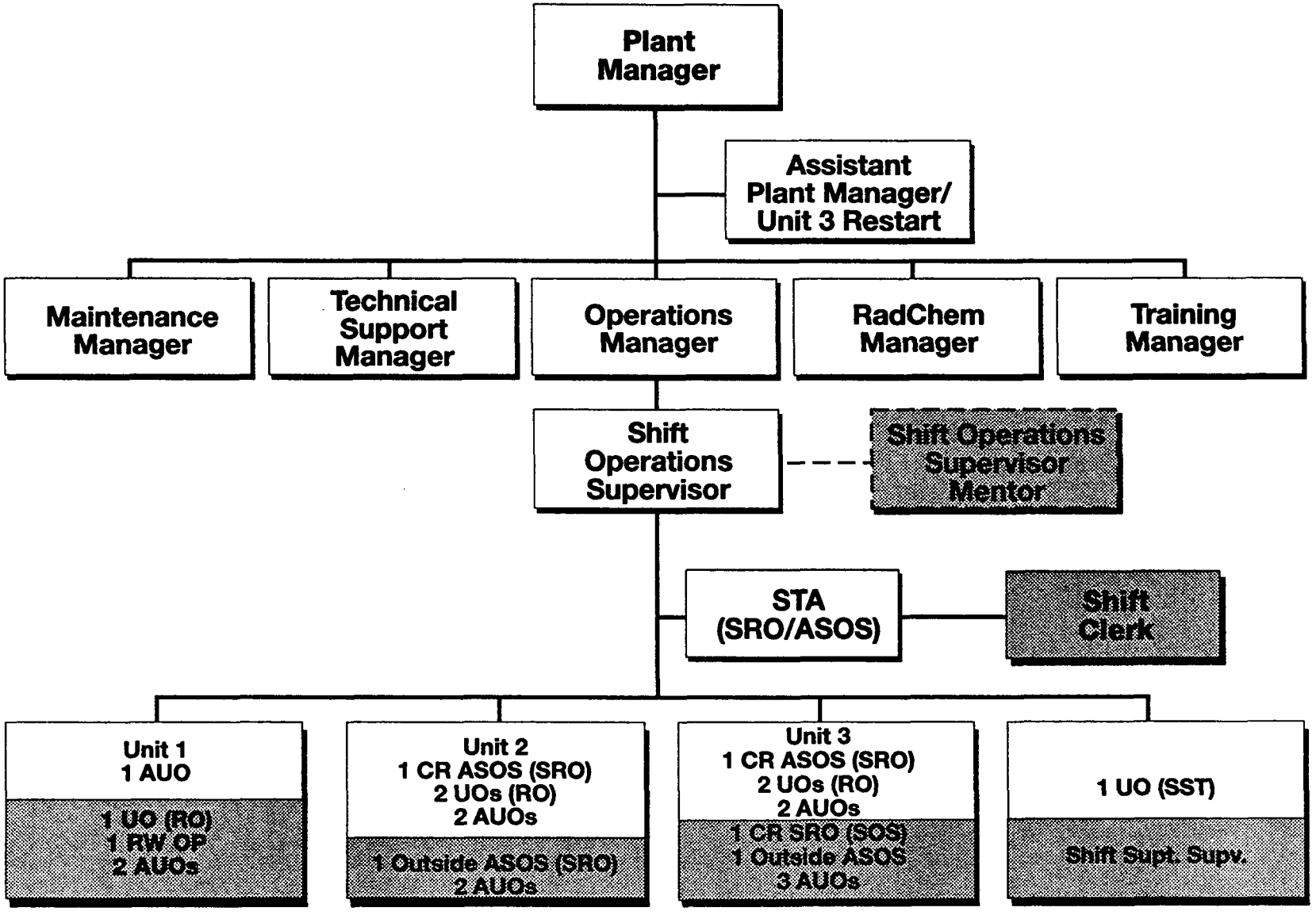
UNIT 3 RECOVERY IS COMPLETE

- LOW BACKLOGS
  - REGULATORY REQUIREMENTS
  - ENGINEERING
  - PROCUREMENT
  - OPERATIONS
  - MAINTENANCE
  - RADIATION CONTROL
- PERFORMANCE MONITORING SYSTEM IN PLACE

BROWNS FERRY IS ORGANIZED TO SUCCEED



BROWNS FERRY IS ORGANIZED TO SUCCEED



NOTE: Positions designated in shaded boxes are above Technical Specification minimum shift crew requirements.

PLANT STAFF IS READY

- OPERATIONS STAFF IS EXPERIENCED
- OPERATORS ARE LICENSED ON ALL THREE UNITS
- PLANNING AND TRAINING SUPPORT DUAL UNIT OPERATION
  - VISITED OTHER MULTI-UNIT SITES AND INCORPORATED LESSONS LEARNED
  - TRANSITION FROM RECOVERY ORGANIZATION TO EXISTING OPERATIONS ORGANIZATION
  - RIGHT UNIT, RIGHT TRAIN, RIGHT COMPONENT
  - STOP, THINK, ASK, ACT, REVIEW (STA^{2}R) TRAINING

MULTI-UNIT WORK IS COORDINATED AND CONTROLLED

- UNIT SEPARATION CONTROLS ESTABLISHED
- CONTROL OF COMMON SYSTEMS PROCEDURALIZED
- STRONG COMMUNICATIONS BETWEEN UNITS
- SITE WIDE 12-WEEK ROLLING SCHEDULE IN PLACE
- SELF-ASSESSMENTS INDICATE THE PLANT IS READY TO PROCEED WITH UNIT 3 RESTART AND DUAL UNIT OPERATION

POWER ASCENSION TESTING PROGRAM IS COMPREHENSIVE AND SYSTEMATIC

- THOROUGH INTEGRATED SYSTEM TESTING
- SYSTEMATIC MANAGEMENT REVIEW AND ASSESSMENT

INDEPENDENT ASSESSMENTS CONFIRM READINESS

- NUCLEAR ASSURANCE AND LICENSING
- INSTITUTE OF NUCLEAR POWER OPERATIONS
- OPERATIONAL READINESS REVIEW TEAM
- NUCLEAR SAFETY REVIEW BOARD
- CONCLUDED THAT PROGRAMS, PROCEDURES, MANAGEMENT AND STAFF ARE READY TO SUPPORT UNIT 3 RESTART AND MULTI-UNIT OPERATION

CONCLUSION

- CONFIDENT THE BROWNS FERRY SITE IS READY TO SUPPORT UNIT 3 RESTART AND DUAL UNIT OPERATION
- STRONG BASIS FOR CONFIDENCE
  - PLANT PHYSICAL CONDITION IS GOOD
  - PROCEDURES AND PROGRAMS ARE IN PLACE AND EFFECTIVE
  - EXPERIENCED AND PROVEN SITE STAFF
  - LESSONS HAVE BEEN LEARNED AND IMPLEMENTED
  - EXTENSIVE SELF AND INDEPENDENT ASSESSMENTS
- WE UNDERSTAND AND ACCEPT RESPONSIBILITY FOR SAFE AND RELIABLE PLANT OPERATION
- BROWNS FERRY IS READY

BROWNS FERRY UNIT 3 RESTART

Frederick J. Hebdon, Jon R. Johnson, Paul P. Narbut
Stewart D. Ebneter, William T. Russell

November 9, 1995

BROWNS FERRY UNIT 3 RESTART

- Licensing Evaluations
  - Exhaustive Review of Nuclear Performance Plan for Unit 2 Restart - NUREG-1232, Volume 3
  - Unit 3 Substantially the Same as Unit 2
  - In General, TVA Adopted the Same Methods, Criteria, and Technical Positions
  - Differences From Unit 2 Were Reviewed by NRC Staff

NRC PROCESS FOR BROWNS FERRY UNIT 3 RESTART APPROVAL

- Recent NRC Inspections
  - Nuclear Performance Plan Corrective Actions
  - TMI Action Items, Generic Letters, Bulletins
- Operational Readiness Reviews
- Power Ascension Test Program

NRC INSPECTIONS OF HARDWARE

- Inspection Areas
- Preoperational System Testing
- Shared Systems
- Open Items

NRC INSPECTIONS OF OPERATIONAL READINESS

- Licensed Operators
- Ability To Use Safe Shutdown Equipment
- Audits Of Station Support Departments
- Operational Readiness Assessment Team

POWER ASCENSION TEST PROGRAM

- Augmented NRC Inspection Program
- Power Ascension Testing Assessment Points
- Confirmation of Post Restart Items

OPERATIONAL READINESS ASSESSMENT TEAM INSPECTION

- INDEPENDENT INSPECTION
- ASSESSED MANAGEMENT, OPERATIONS, MAINTENANCE AND TESTING, ENGINEERING, FIRE PROTECTION, SAFETY ASSESSMENT AND QUALITY VERIFICATION
- PERFORMANCE ADEQUATE FOR AN OPERATING REACTOR
- DEMONSTRATED SAFE OPERATION