

# UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

Title: BRIEFING ON STATUS OF TVA NUCLEAR PROGRAM

Location: ROCKVILLE, MARYLAND

Date: JANUARY 25, 1994

Pages: 64 PAGES

**SECRETARIAT RECORD COPY**

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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BRIEFING ON STATUS OF TVA NUCLEAR PROGRAM

- - - -

PUBLIC MEETING

Nuclear Regulatory Commission  
One White Flint North  
Rockville, Maryland

Tuesday, January 25, 1994

The Commission met in open session,  
pursuant to notice, at 10:00 a.m., Ivan Selin,  
Chairman, presiding.

COMMISSIONERS PRESENT:

IVAN SELIN, Chairman of the Commission  
KENNETH C. ROGERS, Commissioner  
FORREST J. REMICK, Commissioner  
E. GAIL de PLANQUE, Commissioner

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## STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

ANDREW BATES, Office of the Secretary

KAREN CYR, Office of the General Counsel

OLIVER KINGSLEY, JR., President, TVA Nuclear and Chief Nuclear Officer, TVA

OSWALD ZERINGUE, Senior Vice President, Nuclear Operations, TVA

WILLIAM MALEC, Executive Vice President and Chief Financial Officer, TVA

MARK MEDFORD, Vice President, Technical Support, TVA

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

10:00 a.m.

CHAIRMAN SELIN: Good morning, ladies and gentlemen.

The Commission is pleased to welcome representatives from the Tennessee Valley Authority to brief us on the status of their nuclear program. It's been quite awhile since we've had the Authority here.

Mr. Kingsley, we're pleased to have you here.

This is important to the Commission first of all because of the size of the TVA nuclear program and the impact that TVA's performance has on NRC resources. We have been encouraged by the actions taken by the Board of Directors to exercise leadership in the area of the nuclear program to improve the performance of the program. We're very interested in your presentation today.

Copies of the viewgraphs are available.

Commissioners?

Mr. Kingsley, the floor is yours.

MR. KINGSLEY: Thank you very much, Mr. Chairman.

I'd like to introduce our team. We have our Executive Vice President, Bill Malec, Chief

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1 Financial Officer, who will be talking about finances  
2 on our plants. We have Ike Zeringue, our Senior Vice  
3 President of Nuclear Operations. He'll be talking  
4 about staffing and detailed questions about the  
5 operation of our plants. Mark Medford, our Vice  
6 President of Technical Support, will be talking  
7 specifically about the Watts Bar plant status and  
8 employee concerns.

9 (Slide) We do intend to brief you this  
10 morning on a number of key aspects of our nuclear  
11 program. Such matters as our -- if I could get the  
12 agenda on the slide, please. Thank you.

13 Our sequencing of our nuclear plants, our  
14 projected load growth, our actual load growth, what  
15 we've experienced, our staffing plans, our  
16 performance, financial matters associated with  
17 bringing these plants back in, key aspects of doing  
18 engineering first, followed by construction. Then  
19 last but certainly not least, initiatives we've taken  
20 with the Watts Bar plant and our employee concerns.

21 CHAIRMAN SELIN: Thank you.

22 MR. KINGSLEY: (Slide) If I could have  
23 the next slide.

24 TVA's future is literally tied to our  
25 nuclear power program. It's the key to our being

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1 competitive. It has been a key to our being able to  
2 hold our rates constant since 1988 so far in our  
3 plants, and it's a key to our going forward over the  
4 next four years.

5 The proper, safe, reliable operation of  
6 our Sequoyah nuclear power plant and our Browns Ferry  
7 Unit 2 are the top priorities for the Tennessee Valley  
8 Authority. Our Sequoyah plant has been a very  
9 expensive lesson and we intend to talk to you about  
10 that and proper operation later in our presentation.

11 Our Watts Bar Nuclear Unit 1 and our  
12 Browns Ferry Unit 3 are actually needed now in  
13 supplying sufficient power to the Tennessee Valley  
14 Authority system. If you look at our generation  
15 record, we set an all-time generation record on the  
16 TVA system in the summer of 1992. It's slightly over  
17 23,000 megawatts. That's out of a capacity of a  
18 little over 25,000 megawatts, summertime rating. We  
19 set a new summer peak on our system this summer of  
20 23,900 megawatts, higher than we had ever peaked in  
21 the summer. We set an all-time winter peak last week  
22 on our system, on Tuesday night, of almost 25,000  
23 megawatts. Then on Wednesday morning, we interrupted  
24 somewhere between 1500 and 1800 megawatts of power on  
25 our limited interruptable schedules and on our economy

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1 surplus schedules. Had we not done that, we feel like  
2 that we would have almost reached 26,000 megawatts.  
3 So, you can certainly see the need for these plants,  
4 particularly when you figure in desired reserves.

5 During these summer peaks and during this  
6 winter peak, we were purchasing approximately 3,000  
7 megawatts of power. We were selling some of that  
8 power to the north where it was very tight on systems  
9 like American Electric Power, the Virginia systems and  
10 that type thing that you people are well familiar  
11 with, but a net purchase of over 2,000 megawatts.  
12 During our summer peak, we did not have either one of  
13 our Sequoyah units. During our winter peak, we did  
14 not have Sequoyah 1, nor did we have our Cumberland 1,  
15 which is our last plant. Actually, our Cumberland 1  
16 and 2 are a little over 1300 megawatts. But we had a  
17 blade throw event back in December and will not return  
18 that unit to service until April of this year.

19 Our Board is committed to making nuclear  
20 even better. They've shown this commitment by recent  
21 reorganization, rededicating me full-time to nuclear  
22 power, something that I had suggested to the Board  
23 back in July, and certainly they're going to support  
24 us with resources. In fact, we have a full financial  
25 plan out through the year 2000 with sufficient monies

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1 for operation and maintenance expense and capital and  
2 Mr. Malec will address that.

3 (Slide) Could I have the second slide,  
4 slide 3, please?

5 This slide is fairly busy, but there are  
6 a number of key points on the slide. First, as I  
7 mentioned in my introductory remarks, it does  
8 highlight the sequencing of our plants. It shows that  
9 across the top where we do an engineering first  
10 approach. Only work on no more than two plants from  
11 an engineering standpoint at one time and then finish  
12 construction. We've paid a terrible price in the past  
13 for being hand to mouth in engineering and not being  
14 ready for construction. We're essentially out of that  
15 though on our Browns Ferry 3 plant and we're out of  
16 that on our Watts Bar 1 plant.

17 If you look at the blue lines, they are  
18 the requirements on the TVA system. This includes our  
19 projected load growth. You can see though that the  
20 projection for 1994 kind of missed the mark here.  
21 It's a little bit short in what our system was  
22 predicted to grow. It does include reserve margin of  
23 approximately 15 percent. We are evaluating the  
24 reserve margin on a continuing basis as we improve the  
25 reliability of our system because that does mean money

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1 and when we bring plants back in.

2 We are growing and the load growth rate  
3 projections are at 2.3 percent energy growth on our  
4 system. For the last five years, we have actually  
5 grown at 2.3 percent over this five year period of  
6 time. Our summer peaks over this five year period of  
7 time, weather adjusted, have increased at 2.5 percent.  
8 Our winter peaks, and this is strictly preliminary  
9 because we do adjust this for the weather, is  
10 approximately three percent, going back. You actually  
11 have to throw the very cold weather in 1989 out of the  
12 equation and get kind of a best fit curve in there.

13 Our major growth drivers are in our  
14 commercial sector at approximately 2.9 percent. Our  
15 industrial is growing at approximately 3.1 percent.  
16 That's our direct serve and our industrial customers  
17 that we serve through our 160 distributors on the TVA  
18 system.

19 Our economic forecast is slightly above  
20 the national average, some 3.2 percent real growth and  
21 some versus a national average projection of 2.6  
22 percent. We have no plans for any additional fossil  
23 capacity on our system at this time. We are upgrading  
24 our hydroelectric plants, a program that former  
25 Chairman Runyon started some three and a half years

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1       ago, and we will add approximately 300 megawatts as we  
2       go through and upgrade our hydroplants over this  
3       period of time and modernize them because they do have  
4       an average age of approximately 55 years.

5               COMMISSIONER REMICK:       Oliver, two  
6       questions. Isn't the 15 percent reserve margin on the  
7       low side or is that because you're so large and have  
8       diverse plants? I thought at one time it used to be  
9       22 percent and then more recently people saying 17  
10      percent.

11             MR. KINGSLEY: Well, it is a little bit  
12      low, but we have been able to operate satisfactorily  
13      with that because of our fossil plants. In fact, we  
14      at one time were looking at 22 percent. Then we  
15      dropped that down to 18. Our fossil system had such  
16      a poor reliability record, which we have now gotten  
17      above the national average in the last three years.  
18      So, we've been able to lower that. So, we continue to  
19      look at that. We also have operating reserves of our  
20      largest unit plus 500 or 600 megawatts. We've been  
21      able to make it so far with that. We've also upgraded  
22      all of our combustion turbines, spent well over \$100  
23      million upgrading those, which we did not have those  
24      in operable fashion. So, we've been able to operate  
25      satisfactorily. But the proof will have to be in the

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1 pudding how we actually do. It is a number that we're  
2 not going below until we have a much better track  
3 record.

4 COMMISSIONER REMICK: And the second  
5 question, what is the load on the gaseous diffusion  
6 plants compared to what it was a few years ago or what  
7 you project?

8 MR. KINGSLEY: It's extremely small right  
9 now and we don't serve any of those directly. We do  
10 serve through a subsidiary on the plant in Kentucky,  
11 but we don't serve any of that. We actually reached  
12 a settlement and I believe we have, Bill, one more  
13 year?

14 MR. MALEC: One more year.

15 MR. KINGSLEY: On receiving those payments  
16 from the Department of Energy.

17 COMMISSIONER REMICK: I see. Okay.

18 MR. KINGSLEY: (Slide) Could I have slide  
19 4, please?

20 This slide is to highlight what nuclear  
21 means to the TVA system, some 13 percent of our  
22 capacity. That will rise to some 32 percent, assuming  
23 all of our plants are completed in the year 2006.

24 (Slide) Slide 5.

25 COMMISSIONER REMICK: What is the reason

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1 you do not plan to add anymore fossil plants or coal  
2 plants at least?

3 MR. KINGSLEY: The reason that we don't  
4 have any plans right now from a new plant standpoint  
5 is, one, we have so much money invested in our nuclear  
6 plants that when you look at cost to complete, that  
7 becomes a low-cost option. It also would take us some  
8 ten years to site and license a new fossil plant. We  
9 have our clear air program mapped out for phase 1  
10 fully. We need all those plants. The only thing that  
11 we would look at currently would be some type of  
12 repowering on some of our very old plants such as our  
13 Shawnee plant in Kentucky, our New Johnsonville plant,  
14 which was our first fossil plant, and those types of  
15 things. But no build from scratch at the current  
16 time.

17 On slide 5, this simply shows how much  
18 energy we would get out of our plants. It shows the  
19 contribution from our fossil, our hydroelectric, our  
20 gas turbines and that should be gross energy instead  
21 of net. We actually had almost 127,000 megawatt hours  
22 of power requirements on our system for 1993.

23 (Slide) Slide 6.

24 COMMISSIONER REMICK: How do your fossil  
25 plants rate from a heat rate standpoint nationally?

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1 MR. KINGSLEY: We have on the TVA system  
2 the absolute best fossil plant in the United States,  
3 our Bull Run plant, which runs at about 8600 BTUs per  
4 kilowatt. And then we have some of the very worst  
5 fossil plants in the United States in some of our very  
6 old plants, which do not have reheat and some of those  
7 things, which run almost 11,000. They're very small  
8 units, 90, 110 megawatts. So, those are some of the  
9 plants that we would look at from a repowering  
10 standpoint down the road. But we have not done that  
11 as of this time.

12 COMMISSIONER REMICK: What type of plant  
13 is your best performing plant?

14 MR. KINGSLEY: It's a Combustion  
15 Engineering combined cycle, pressurized furnish.

16 COMMISSIONER REMICK: Oh, I see.

17 MR. KINGSLEY: Yes. 890 megawatt. We've  
18 just overhauled that unit and made tremendous  
19 improvement in the efficiency on it, the first time  
20 that had ever been done on our system.

21 I'd like to invite your attention now to  
22 the slide 6, which talks about the integrated resource  
23 plan. The Energy Policy Act passed in October of 1992  
24 requires that the Tennessee Valley Authority have an  
25 integrated resource plan. We have been developing

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1 that process for the last year. We have studied a  
2 number of integrated resource plans from other  
3 utilities, tried to take the best points and the worst  
4 points, combine that. It does have a number of  
5 facets. First, we have to remain competitive. But  
6 the three main facets, that it will look at all of our  
7 supply side options, it will look at our customer  
8 requirements, our customer interfaces. It will  
9 involve a new series of what we call technologies.  
10 Technologies could be electric cars, could be  
11 different types of energy involvement with a  
12 manufacturing process or that type of thing. It also  
13 involves a full spectrum on demand-side management  
14 that we're in the process of rolling out. We had  
15 stopped that program back some four years ago and  
16 we're in the process of reinstituting that now. That  
17 will all be rolled out.

18 You can see on the slide that we will  
19 publish a notice of intent here within the next month.  
20 Then we'll go forward through a series of public  
21 meetings which we have already had close interaction  
22 with our customers, both direct serve, our  
23 distributors, with the environmental community. We're  
24 in the process of establishing an advisory board for  
25 our system. This will all culminate in a draft plan

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1 come summer of 1995 and then hopefully be approved by  
2 the Board in December of 1995. We've put a great deal  
3 of work into this plan and certainly intend to roll it  
4 out and try to do the right thing. It will not have  
5 a certain set answer. Our job in the nuclear program  
6 is to give our nuclear plants the very best chance and  
7 you can see that the Bellefonte plant is included in  
8 the integrated resource plan. The Watts Bar Unit 2 is  
9 included and Browns Ferry Unit 1 is included. So,  
10 there will be a rigorous cost benefit on bringing  
11 these plants back and operating these plants. Our  
12 Watts Bar Unit 1 and our Browns Ferry Unit 3 will be  
13 included in the integrated resource plan.

14 COMMISSIONER REMICK: Oliver, it sounds  
15 like it's a forward-looking plan of additions, but not  
16 what you plan to do with existing facilities including  
17 fossil and hydro and so forth?

18 MR. KINGSLEY: No, it will look at all of  
19 that. It will look at such things as our hydro  
20 modernization. Now, we don't expect to stop that, but  
21 we do have a number of environmental considerations in  
22 the plan such as what we're doing with our dams. We  
23 have done a complete model on the TVA system for  
24 global warming, acid rain. So, we'll certainly have  
25 to look at CO2 and those types of things in the plan.

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1 COMMISSIONER REMICK: Well, it appears  
2 that leaving out of the plan are, it appears at least,  
3 existing units and units that you feel are about ready  
4 to come on-line. That's why I thought perhaps -- the  
5 ones you've mentioned are all future plants. So,  
6 that's why I thought perhaps this is looking ahead at  
7 future planning and not the total system.

8 MR. KINGSLEY: It is actually looking at  
9 both, but we're so close to completing a plant like  
10 Watts Bar.

11 COMMISSIONER REMICK: Right.

12 MR. KINGSLEY: So, we're taking that as we  
13 will definitely finish that plant. We'll definitely  
14 bring back Browns Ferry Unit 3. But it will look at  
15 current TVA plants say from an environmental  
16 standpoint. I would expect that we would have to  
17 relook at phase 2 of the Clear Air Act as a part of  
18 this, particularly in light -- if there were  
19 legislation involving some type of CO2 limit or global  
20 warming limit in that. So, it includes all of that.

21 COMMISSIONER REMICK: I see. Okay.

22 COMMISSIONER ROGERS: So the slide is not  
23 correct then? It says will not -- Watts Bar 1 and  
24 Browns Ferry 3 will not be included. You just said  
25 they will be included.

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1 MR. KINGSLEY: No, they will not be  
2 included. Those two units will not be, but the other  
3 four nuclear plants, Watts Bar 2, all of Bellefonte  
4 plant and Browns Ferry 1 will be included.

5 COMMISSIONER ROGERS: Okay.

6 MR. KINGSLEY: Any questions about  
7 integrated resource plan?

8 COMMISSIONER REMICK: What was  
9 congressional intent? I'm still lacking and I must  
10 admit it's incidental to our interest, but just out of  
11 curiosity. What's the purpose because I'm still a  
12 little bit confused of why you're saying some plants  
13 are out and other plants are in. So, I'm at a loss.  
14 What is the overall purpose of the resource plan?

15 MR. KINGSLEY: The overall purpose of the  
16 integrated resource plan was to ensure from a  
17 congressional standpoint that TVA actually did that,  
18 that there was proper public interaction, that  
19 environmental considerations were actually in the  
20 plan. We had stopped our conservation program. We  
21 have reoriented that to ensure we had that. So, it  
22 was making sure that we covered the whole nine yards.

23 COMMISSIONER REMICK: I see.

24 MR. KINGSLEY: That's why that was put in  
25 the Energy Policy Act.

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1 COMMISSIONER REMICK: I see. Okay.

2 MR. KINGSLEY: (Slide) Slide 7.

3 I'd like to just show you what our SALP  
4 reports are. They're mixed at best and they're  
5 certainly consistent with what our assessments are.  
6 We're going to talk about that.

7 (Slide) Slide 8.

8 We have had significant progress on our  
9 Browns Ferry Nuclear Power Plant, simply a  
10 manifestation of what good clear expectations and good  
11 fundamental work practices can bring about. We did an  
12 exceptionally good job on our refueling outage, which  
13 we started January a year ago, almost to the day,  
14 where we are today, and brought that plant back. We  
15 didn't have any events. The largest outage I've ever  
16 been associated with, well over 200 design changes,  
17 and for the first time that anything I know about the  
18 Browns Ferry plant, we meet all NRC requirements on  
19 that plant. We had gone back to the middle 1970s and  
20 not kept up from the fire, Three Mile Island. So, we  
21 are now up to date on that. We are also putting all  
22 of that in on our Browns Ferry Unit 3 when we bring  
23 that back.

24 On our Watts Bar plant, we shut down  
25 construction actually in December of 1990. We kept

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1 that construction shut down throughout the year 1991.  
2 We did restart in the first half of 1992 on a limited  
3 but controlled basis. We've had good quality work on  
4 the plant since then. We've had little rework. Our  
5 schedule does support fuel loading sometime later this  
6 year, but we are not putting a schedule out until we  
7 see how we do. We've had three schedules on that  
8 plant and none of them have we met, due to not having  
9 the work identified, due to not being able to  
10 effectively manage the work. So, our next milestone  
11 is our hot functional testing and then once we get  
12 through that we'll look at our track record and we'll  
13 actually put a schedule out. I would say it would be  
14 sometime in the last quarter if things go well on that  
15 plant. But quality is the watch word there and not  
16 how fast we get there. We actually have the resources  
17 controlled on the plant, head count caps and we've  
18 seen much improvement.

19 COMMISSIONER REMICK: A few years ago you  
20 folks placed a lot of emphasis on the need and I  
21 forget the language, but improving efficiency of  
22 activities, output and so forth. How have you come  
23 with that? Have you been able to improve it? I think  
24 it was a concern on your part.

25 MR. KINGSLEY: Yes. We have made,

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1 Commissioner Remick, some big improvements in that  
2 area. Actually about 25 percent improvement in our  
3 productivity on all of our plants. It is still not as  
4 high as we would like it, but it is much better. Our  
5 Watts Bar plant has a rigorous series of controls and  
6 it actually has our lowest productivity and our  
7 highest unit for units rates simply because of all the  
8 checks and the procedures and the training that we've  
9 had to put in on that plant.

10 COMMISSIONER REMICK: Okay.

11 MR. KINGSLEY: We do have the plant  
12 staffed. We are completing our training. We're going  
13 to six shifts this next month on our operating side.  
14 We have also stabilized the site staff there so that  
15 we are out of the massive downsizings and hopefully we  
16 can carry that staff into our Unit 2 work.

17 On our Sequoyah plant, we've seen a marked  
18 improvement in our balance of plant condition. We  
19 have actually worked over 15,000 work orders on the  
20 Sequoyah plant since we shut the plant down in early  
21 March of last year. We have dedicated teams working  
22 on our backlogs, something that we had taken care of  
23 on our Browns Ferry plant and we are taking care of on  
24 our Watts Bar plant. We've made significant  
25 improvement in our identification and correction of

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1 problems. But certainly there's much improvement  
2 still needed at our Sequoyah plant.

3 (Slide) Slide 9.

4 COMMISSIONER REMICK: As you go from  
5 operating existing plants to starting up or restarting  
6 other plants, how do you assure that you -- and if you  
7 transfer personnel from one plant to another, that  
8 you're going to maintain the -- I don't want to say  
9 productivity, but the safe operation of the plant.  
10 You've made some changes on Browns Ferry 2, major  
11 changes, and that plant has done very well. How do  
12 you assure yourself that with those changes you're not  
13 going to lose that performance?

14 MR. KINGSLEY: Well, we have a standard  
15 way of doing business at our Browns Ferry plant and at  
16 our Watts Bar plant. We are putting that in place at  
17 our Sequoyah plant, some restart requirements on the  
18 Browns Ferry plant that we're now putting into place,  
19 such as closing out all the work, tracking the work  
20 better on our Sequoyah plant. We also have, I think,  
21 an extremely good management team at our Browns Ferry  
22 plant in our plant manager, Rick Machon, and in the  
23 other team. Ike here was able to bring in a large  
24 number of people and we have several people who are  
25 capable, I think, of managing that plant that we've

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1 actually trained and developed over the last five  
2 years. So, I feel very good about the Browns Ferry  
3 plant and I continue to challenge the staff that let's  
4 show the NRC that we're not going to slip and they've  
5 been very good at responding to that challenge.

6 COMMISSIONER REMICK: There's certainly  
7 been more than one occasion or examples where in the  
8 past people have had a good operating unit and they've  
9 taken some of their better people and moved it on to  
10 another unit and then that plant that had been doing  
11 very well went downhill over time.

12 MR. KINGSLEY: Right here.

13 COMMISSIONER REMICK: That's what I was --

14 MR. ZERINGUE: Our intent was to assure  
15 that we have adequate management systems, programs and  
16 processes in place to support the men in the field  
17 doing the work such that the organizational  
18 performance is not dependent upon the qualifications  
19 of an individual, but upon the staff as a whole.

20 COMMISSIONER REMICK: Well, I certainly  
21 agree with that, but sometimes a difference seems to  
22 be in individuals. Even in the same structure,  
23 sometimes the individuals can make a considerable  
24 difference in carrying out what was the intent of the  
25 procedures and the structure.

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1 MR. KINGSLEY: Slide 9.

2 From an overall standpoint, we have, I  
3 think, three key areas that are less than satisfactory  
4 from our standards. First is in our fundamental work  
5 practices and performance expectations to our line  
6 worker, that you are responsible. We're expecting you  
7 to follow procedures. We're expecting you to carry  
8 out the work. We have some improvement to make in  
9 that. It was, I think, a root cause of some of the  
10 shutdowns and we have made some progress, but it's  
11 still not sufficient.

12 A second area that we have to work on is  
13 to clearly identify and track all of our work, in the  
14 operations area, in the maintenance area, in the  
15 technical work. We've done an exceptionally good job  
16 at Browns Ferry and actually have that as a way of  
17 life, that we do not let the backlogs get up, that we  
18 close the process. But we have not done that at our  
19 other plants or at our Sequoyah plant. Then you have  
20 to make sure that you manage that work, you actually  
21 do it. And last, we must ensure that we do not have  
22 a Sequoyah situation ever reoccur on the TVA system  
23 and that we start Watts Bar Unit 1 up correctly and so  
24 that we make this as a way of life.

25 So, these are three things that we see

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1 from an overall standpoint that we need to continue to  
2 work on.

3 (Slide) If we move to slide 10, I'd like  
4 to talk specifically about the individual plants,  
5 where we need to improve.

6 On our Browns Ferry plant, we need to  
7 continue to work on our personal involvement, to  
8 ensure some process improvement, efficiency  
9 improvement. We're still not as simple as other  
10 plants. We have put in a number of Band-Aids and  
11 tourniquets over the years to take care of those  
12 issues with personnel performance. We've got to build  
13 on our success. We are not still to the top standards  
14 of some of the best run plants in the country. We  
15 worry about complacency on that plant. We've got to  
16 show that we can operate Unit 2 and then successfully  
17 bring back Unit 3 at the same time. We are making  
18 progress. We've finished our engineering on the  
19 plant, but those are the challenges that I see at that  
20 plant, in addition the management changes that we  
21 talked about earlier.

22 On the Watts Bar plant, we've got to  
23 continue to emphasize the quality of the work. We  
24 have had some problems with that. Not in the worker  
25 out in the field, but clearly identifying in some of

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1 the corrective action programs things that need to be  
2 incorporated in the work plans. We've been back  
3 through. We think we've caught all that and we've  
4 actually had a good track record for the last two and  
5 a half to three months with doing the work correctly.

6 Last but not least, we have to demonstrate  
7 that we can put that plant in an operational  
8 condition. The staff, even though a number of them  
9 are new, a number of people are from outside, have not  
10 operated a plant for a very long period of time. On  
11 our Sequoyah plant, very simply we're missing some  
12 operation and maintenance fundamentals. You can see  
13 it in the SALP report. It goes back in time in some  
14 areas, it is current in time in others, such things as  
15 configuration control, such things as having the  
16 proper engineering involvement in the balance of  
17 plant, such things as having the proper engineering  
18 calculations on the balance of plant. We did not have  
19 those on the Sequoyah plant. We had literally two  
20 standards, one for the primary plant and second for  
21 the secondary plant. You can't operate a power plant  
22 like that. We had large numbers of hourly workers  
23 that we have moved out of our system who are working  
24 on systems there. As I said earlier, 15,000 work  
25 orders. That's a tremendous amount of work just to

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1 bring that plant up to what I'll call an average  
2 condition right now. We did have problems in our  
3 start-up, three shutdowns over that period of time  
4 which we're not satisfied that we did a thorough and  
5 complete job on the restart, but we are putting that  
6 in our lessons learned.

7 COMMISSIONER ROGERS: What really happened  
8 at Sequoyah? The Sequoyah story seems to have gone  
9 back for years and years. When I first came on the  
10 Commission six years ago Sequoyah was a concern and  
11 all kinds of efforts were being made to get it on its  
12 feet and so on and so forth. What's your analysis of  
13 the root cause? These are things that have to get  
14 fixed, but they're not root causes.

15 MR. KINGSLEY: One of the -- there are a  
16 number of root causes. If you take the operations  
17 area, such things as the basic configuration control  
18 being incorporated in the procedures, that was not in  
19 place. Such things as having the proper expectations  
20 laid out and the good conduct of operations. That was  
21 not laid out properly.

22 If you look at the maintenance area, the  
23 dual standard between safety-related equipment and  
24 non-safety related. We did track the backlogs, but we  
25 were unsuccessful in working them down. We didn't

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1 have the proper standards on the balance of plant,  
2 what was really wrong with the plant. We were living  
3 with marginal operations.

4 The Sequoyah plant is fairly complex from  
5 a number of shared systems. You have to have all four  
6 diesels as an example. We now know that periodically  
7 we're going to have to shut both Sequoyah plants down  
8 at the same time in order to do the proper  
9 maintenance. You just can't operate them together.  
10 So, we'll have to dovetail a unit shutdown in with a  
11 refueling in order to do the maintenance.

12 If you compare it to the Browns Ferry Unit  
13 2 start-up, there are a number of what I call  
14 completely closed loop processes that were put in  
15 Browns Ferry, such as the engineering paper was  
16 totally closed on Browns Ferry. All the procedures  
17 were totally updated. Those were not put in place.  
18 Then there was simply a relaxation of some of the  
19 proper standards over the five years that I've been  
20 here. So, there's a whole series of problems with  
21 that plant. We had a large number of NRC commitments  
22 that we have satisfied, some 850 over this five year  
23 period. We've done a good job meeting those, but at  
24 the same time we should have put additional attention  
25 on kind of the basics of operating a nuclear power

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1 plant, particularly from the power side of the house.  
2 Some of the instrumentation on the turbine generator  
3 had never been calibrated that we found. When you say  
4 we did over 200 design changes, some 85 percent of  
5 them during this shutdown all on the balance of plant.  
6 We didn't have the proper calculations for flows,  
7 pressures. We didn't have proper configuration  
8 control on the balance of plant. The pipe rupture  
9 actually had a wetted steam line coming out of an  
10 excess vent on a moisture separator that went into an  
11 extraction line that was not on the prints. So,  
12 therefore, that was not put in the proper computer  
13 codes. Therefore the line ruptured. We didn't have  
14 the proper steel in a number of lines. So, it just  
15 goes on and on. We didn't have the right standards  
16 for the switchyard, as evidenced by the trip. So,  
17 there are just a series of problems on that plant that  
18 we have made a lot of effort to correct, but it's  
19 still not exactly where it should be.

20 (Slide) I'd like to go now to slide 11  
21 and talk a little bit about a recent reorganization.

22 We did announce two weeks ago a  
23 reorganization. This will be effective on February 7.  
24 We are dividing the principal parts of the Tennessee  
25 Valley Authority management to a nuclear entity. I

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1 will head that up. We have a Chief Operating Officer  
2 who will take our fossil and hydro, our customer  
3 group, which is our transmission distribution, our  
4 interface with our customers and our resource group,  
5 and then we have all of our administrative functions  
6 will be headed under one function with the Chief  
7 Financial Officer, Mr. Malec, reporting directly in.  
8 Then we're going to study over the next year making  
9 this nuclear entity a totally separate organization.  
10 We'll look at all the support facets and look at  
11 whether we bring them in or not, rigorous cost  
12 benefit, seeing how we do that now, can we do it  
13 better. Totally aim though that nuclear is different,  
14 supporting nuclear fully. I have full commitment of  
15 all three directors, including our chairman, to  
16 support nuclear. This is what we're about. We would  
17 expect to keep you fully informed of what our studies  
18 are showing.

19 We've also made some other organizational  
20 moves. Ike Zeringue here heading up our operating  
21 plants. We have all of our support under Doctor  
22 Medford in one organization. This was part of our  
23 root cause on our Sequoyah shutdown, who is  
24 responsible for various programs. So, this is where  
25 we're headed with our organization. Any questions

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1 about that?

2 COMMISSIONER ROGERS: Yes. What's the  
3 role of the nuclear advisor?

4 MR. KINGSLEY: The nuclear advisor has  
5 been a position that came about during the shutdown  
6 period for the Board of Directors where the Board was  
7 not fully informed on the nuclear plants. We have had  
8 that position since then. It actually operates  
9 independent of my organization, goes to the plants,  
10 deals directly with the Board of Directors, deals  
11 directly with me, and it's strictly in there to ensure  
12 that the Board has an independent pulse of the  
13 organization.

14 COMMISSIONER REMICK: Just a matter of  
15 curiosity. Could you explain the dashed line going  
16 down the diversity, education and training?

17 MR. KINGSLEY: Yes, I can explain that.  
18 The Tennessee Valley Authority has needed a conscience  
19 in the diversity area. So, in order to do that,  
20 Chairman Runyon created a position reporting directly  
21 to the Board of Directors to look at our equal  
22 opportunity, affirmative action, deal with minority  
23 communities. So, we want to ensure that the Board is  
24 fully informed on that. So, that's why that position  
25 is so organized.

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1 COMMISSIONER REMICK: I see. So, it is a  
2 person that fills that position?

3 MR. KINGSLEY: Yes, right.

4 I'd now like to turn it over to Bill Malec  
5 and he'll talk about our capital and O&M budget plans.

6 MR. MALEC: Thank you very much.

7 I'd like to just take a couple moments of  
8 your time, and obviously if you have questions feel  
9 free to ask them, to discuss the relationship of the  
10 nuclear program to the overall ability of the TVA to  
11 finance and support that nuclear program. I've  
12 prepared a few slides which I think illustrate that.

13 (Slide) The first shows the levels of  
14 capital expenditures for all of TVA to nuclear  
15 expenditures. As you can see from a rough inspection  
16 of the chart, the nuclear expenditures, while large,  
17 do not constitute even the majority of the capital  
18 expenditures of the Tennessee Valley Authority. I  
19 think it's indicative from that that while nuclear is  
20 an important vital part of the TVA and one that we  
21 intend to fully support and have the financial  
22 capability to support, it is not the largest part of  
23 the capital expenditures that we anticipate for the  
24 next -- on through the year 2000.

25 COMMISSIONER REMICK: Total capital

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1 expenditures, are those limited to the energy sector  
2 of TVA or total TVA?

3 MR. MALEC: Yes. What we're showing here  
4 is the total power side of the business.

5 COMMISSIONER REMICK: Okay.

6 MR. MALEC: The resource development side  
7 of the business is a relatively small part of the  
8 total, less than two percent of the total  
9 expenditures.

10 TVA will need to raise new funds in the  
11 capital markets and obviously has done so successfully  
12 in the past. As a matter of fact, our level of  
13 external funding requirements over the next five years  
14 or through the year 2000, I guess, actually for the  
15 next six years, is somewhat less than what we have  
16 done in prior years. As Mr. Kingsley has indicated,  
17 we have been able to, since 1987, continue our program  
18 without any rate increases and we have had certainly  
19 good access to the financial markets and we are an  
20 agency borrower similar to Sally Mae, Freddie Mac and  
21 so on. I anticipate no problems in that arena. We  
22 have had the ability to raise any amount of money that  
23 we need to in the external capital markets.

24 CHAIRMAN SELIN: But you've gone over \$30  
25 billion of debt now with your offerings this last

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1 summer. Is that --

2 MR. MALEC: No, that's not correct. We  
3 have an overall capital limitation by Congress that  
4 was established in 1979 of \$30 billion. For purposes  
5 of our debt ceiling, we have approximately, round  
6 numbers, \$25 billion outstanding now. We wouldn't  
7 anticipate that we would have to go back to the  
8 Congress until after the year 2000 for an increase in  
9 the debt limitation.

10 CHAIRMAN SELIN: Mr. Malec, what's the  
11 interaction between integrated resource plan and the  
12 financial planning?

13 MR. MALEC: The integrated resource plan  
14 is a total examination of the sources that will be  
15 required or the generation of sources that are going  
16 to be required in the future. It will, of course, go  
17 to the lowest cost and producing the lowest cost  
18 generation or incremental generation for the Tennessee  
19 Valley Authority. So, it is intertwined in that  
20 manner. The forecasts that we're showing you here are  
21 the planning that we have now. If the integrated  
22 resource plan was to produce a lower cost of  
23 generation from some source, then these numbers would  
24 be improved.

25 CHAIRMAN SELIN: And the related question

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1 is what is the public input to the IRP?

2 MR. MALEC: There will be extensive public  
3 meetings over a period of a year and a half.  
4 Throughout the valley there will be consistencies of  
5 all types who will be invited to participate in an  
6 open and public process which will be indeed a part of  
7 the integrated resource plan process.

8 (Slide) Finally, I've prepared a slide  
9 here that -- if you would focus on the total level of  
10 nuclear operation and maintenance expense. While  
11 these numbers are very large obviously for all of us,  
12 \$400 or \$500 million is a lot of money, if you'll look  
13 down at the bottom of that chart you'll see the  
14 overall level of revenue for TVA. That is \$5.4  
15 billion, for example, in fiscal year 1994. It is a  
16 very small part of the total revenues of the TVA that  
17 are needed to support the nuclear program. TVA is  
18 committed to its support of the nuclear program, Mr.  
19 Kingsley and his team, and has the financial  
20 capability to do so.

21 COMMISSIONER ROGERS: When one looks at  
22 O&M cost on a comparative basis, they're usually  
23 reduced to a per kilowatt hour generated or something  
24 like that to put them on the same footing. Roughly  
25 where does TVA's O&M cost per kilowatt hour generated

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1 stand with respect to national picture of other  
2 nuclear plants? Is it projected to go up or down?

3 MR. ZERINGUE: In 1992, the per kilowatt  
4 expenditures were consistent with industry average.  
5 Because of the long planned outage at Browns Ferry 2  
6 this year and the four shutdowns at Sequoyah, then  
7 those were kilowatt hours quite high. It was in the  
8 high teens. We've looked at our expenditures, our  
9 staffing levels and our generation potential and we  
10 expect to bring those numbers down below 9, those per  
11 kilowatt hour.

12 COMMISSIONER REMICK: Are the dollar  
13 figures constant dollars on the chart or inflated  
14 dollars?

15 MR. MALEC: Well, they are -- what we do,  
16 the process increases the -- for example, the labor  
17 wages are increased by an increment of salary  
18 increases anticipated and so on. So, they are  
19 escalated in that manner, but they're not escalated in  
20 a straight line basis. It's on a for each commodity  
21 basis.

22 COMMISSIONER REMICK: I see.

23 CHAIRMAN SELIN: But they're still current  
24 year dollars?

25 MR. MALEC: Yes. At this point, if there

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1 are no additional questions on the financial, I'd like  
2 to turn it over to Ike Zeringue to talk about staffing  
3 plans.

4 CHAIRMAN SELIN: The basic story from  
5 financial is that these resources are well within the  
6 funding capability of the Authority?

7 MR. MALEC: Yes, well within the funding  
8 capability.

9 MR. ZERINGUE: Good morning. I'll go  
10 ahead and speak to management and staffing plans.

11 Nuclear Power has taken an integrated  
12 approach to evaluating current and future staffing  
13 needs. The three integrated elements are work force  
14 planning, succession planning and targeted recruiting.  
15 The intent of the process is to ensure that we have  
16 the right people in the right places.

17 (Slide) Next slide.

18 The first element, work force planning,  
19 was used to specifically define current and future  
20 staffing requirements at each nuclear location for  
21 each skilled classification, such as reactor  
22 operators, nuclear engineers, or I&C technicians. We  
23 then compare our existing skilled resources to  
24 projected resource requirements to determine future  
25 staffing needs. These staffing needs are met through

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1 a combination of succession planning and targeted  
2 recruiting. The process looks forward five years and  
3 is updated each year at each location and then  
4 integrated at a corporate level.

5 COMMISSIONER ROGERS: Just on that point.  
6 In terms of your new hires, particularly say for  
7 engineers and nuclear engineers, what are the  
8 prospects of the sources of those being able to  
9 produce the kinds of people and the numbers of people  
10 that you think you'll need? University programs in  
11 engineering and nuclear engineering, health physics,  
12 whatever.

13 MR. ZERINGUE: Let me go through the  
14 presentation. We discuss recruiting later on and  
15 address new engineer hires at that point.

16 COMMISSIONER ROGERS: Fine.

17 MR. ZERINGUE: The second element is  
18 succession planning. The process is to ensure that we  
19 develop and maintain adequate management, supervisory  
20 and technical depth. Requirement for each management  
21 position or supervisory position are specifically  
22 defined and subdivided into three categories. First  
23 is education and training. The second is experience,  
24 both amount of time and type of experience. And the  
25 last is specific behavioral skills, such as coaching,

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1 feedback, leadership, communications, skills that  
2 would foster better management-employee interactions.

3 Four candidates, replacement candidates  
4 are identified for each position. Each candidate is  
5 evaluated against the position requirements. Based on  
6 this evaluation, detailed developmental plans are  
7 established which focus on preparing the individual  
8 for the targeted position within a specific time  
9 frame. These developmental plans may include  
10 rotational assignments, formalized classroom training,  
11 SRO licensing or certification, or specific external  
12 training programs. Examples of internal development  
13 through the succession planning process are Senior  
14 Vice President Nuclear Operations, Senior Operations  
15 Vice President -- or, excuse me, the Site Operations  
16 Vice President at Watts Bar, the General Manager of  
17 Nuclear Assurance, and our Engineering Manager at the  
18 Sequoyah facility.

19 MR. KINGSLEY: I made him put that in  
20 there about himself.

21 COMMISSIONER REMICK: It sounded somewhat  
22 like a systematic approach to development that you  
23 have. You're basically identifying what people should  
24 have and then how are you going to see that they get  
25 the training or the education or the experience or

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1       what.

2                   MR. ZERINGUE:   Yes.   That's our intent.  
3       In going through this evaluation process, we've  
4       determined that we're quite good technocrats. It's in  
5       the people management area that we need additional  
6       training and support.

7                   The third element is recruiting.   Since  
8       November 1988, we've recruited 89 senior level  
9       personnel, 24 at Browns Ferry, 13 at Sequoyah, 23 at  
10      Watts Bar, 5 at Bellefonte and 24 at corporate. This  
11      has substantially strengthened our overall nuclear  
12      management team, has given us greater management  
13      stability and has reduced our dependence on external  
14      recruiting at the senior level.

15                  In 1993, we utilized our recruiting  
16      efforts to establish a resource pool. We focused on  
17      mid-level management, on operations and on  
18      maintenance. To date we've hired 23 mid-level  
19      managements and of the 23, 14 were shift supervisors  
20      or assistant shift supervisors from a plant with a  
21      SALP 1 rating in operations.

22                  Again in the operations area, we've  
23      brought on 14 auxiliary operators. Of the 14, 13 were  
24      again from a power plant with a SALP 1 rating in  
25      operations. In May of 1992, Browns Ferry initiated

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1 two auxiliary operator training classes. Twenty-five  
2 of the students were ex-Navy operators. An additional  
3 20 had completed college level work equivalent to  
4 associate degree. So, you can see they were  
5 substantially upgraded in the auxiliary operator area.  
6 In addition in '92 at Browns Ferry, we began  
7 apprentice classes in the electrical maintenance and  
8 I&C maintenance area.

9 COMMISSIONER REMICK: If I recall  
10 correctly, at one time wasn't TVA limited in placing  
11 educational requirements for new positions in the  
12 operator area?

13 MR. KINGSLEY: That's correct. We have  
14 since changed that. In fact, we did that in 1990. We  
15 put in in our apprentice program that we actually  
16 reinstituted or started from scratch a two year degree  
17 requirement for I&C, hopefully a degree for an  
18 electrician, same similar type. We also have access  
19 now to the MAS and POS test that EEI has. We're  
20 administering those tests as part of the entrance  
21 requirement and we're doing similar with our operator  
22 training program. But we had no requirements. In  
23 fact, we couldn't even require a high school education  
24 at one time.

25 COMMISSIONER REMICK: Right. That's what

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1 I remember.

2 MR. KINGSLEY: We were prohibited from  
3 doing that, but we've gotten that changed.

4 COMMISSIONER REMICK: By law was it?

5 MR. KINGSLEY: Well, it was kind of,  
6 Doctor Remick, one of those things that was just there  
7 and I felt so strongly that we were able to work with  
8 the labor unions and work with our corporate human  
9 resources because we just weren't meeting the mark in  
10 that area.

11 COMMISSIONER REMICK: Thank you.

12 MR. ZERINGUE: In addition that, we've  
13 established four year degree programs at Sequoyah and  
14 Browns Ferry, degrees in nuclear technology. These  
15 are certified degrees.

16 COMMISSIONER REMICK: Who is supplying  
17 that?

18 MR. ZERINGUE: I believe it's American  
19 Technical Institute.

20 COMMISSIONER REMICK: In Memphis?

21 MR. KINGSLEY: Yes.

22 MR. ZERINGUE: Yes, Memphis State program.

23 We've also undertaken efforts to recruit  
24 college engineering graduates to meet future demand.  
25 To date we've hired 11 engineers. The individuals are

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1 placed in a development program. They'll do work at  
2 both the corporate office and at the sites. These  
3 assignments will prepare the individuals to assume  
4 positions to support our future needs in this area.

5 MR. KINGSLEY: We haven't had any problem  
6 recruiting. In fact, there's actually a surplus of  
7 young people needing jobs and wanting jobs. So, we've  
8 been very successful.

9 COMMISSIONER de PLANQUE: Do you expect  
10 that to last very long? What do you project five, six  
11 years out?

12 MR. KINGSLEY: I don't really know. Maybe  
13 Ike knows.

14 MR. ZERINGUE: Our major concern is  
15 obviously in the nuclear engineering area with the  
16 cutbacks from so many colleges in that program.

17 COMMISSIONER de PLANQUE: Are most of your  
18 college hires from local colleges or is it across the  
19 country?

20 MR. ZERINGUE: Generally it's from the  
21 Southeast and somewhat in the Southwest.

22 To answer your previous question with  
23 regard to chemistry technicians, rad con technicians--

24 COMMISSIONER ROGERS: Health physics.

25 MR. ZERINGUE: -- health physics people,

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1 when we look out and compare our existing staffing  
2 levels to where we need to go, especially considering  
3 the fact that at Browns Ferry we're doing a lot of  
4 work on Unit 3 in the recovery area, in radiological  
5 controlled areas, we have more than sufficient  
6 staffing in those technical skills areas.

7 (Slide) Last slide.

8 Nuclear power staffing plans support the  
9 existing sites as well as the addition of new sites.  
10 We're building strength internally. The recent  
11 movement of internal candidates into the Operations  
12 Vice President position at Watts Bar and the Browns  
13 Ferry plant manager position is an indication of our  
14 depth. We're recruiting only when necessary to meet  
15 specific needs, yet our recruitment of highly  
16 qualified individuals for the Browns Ferry operations  
17 manager and Sequoyah plant manager positions  
18 demonstrate our ability to recruit experienced  
19 personnel from the outside. The recruitment of five  
20 shift operations supervisors and nine assistant shift  
21 operations supervisors from a SALP 1 facility provides  
22 operational depth for our existing plants and provides  
23 a foundation for future sites.

24 TVA is well prepared to meet today's  
25 challenges and to anticipate future staffing needs.

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1 Are there any questions?

2 CHAIRMAN SELIN: This is quite a different  
3 report from the one that we got about a year, a year  
4 and a half ago as far as recruiting. There really has  
5 been a marked improvement, I take it, in your ability  
6 to attract senior and mid-level people.

7 MR. ZERINGUE: Mr. Medford will discuss  
8 Watts Bar status and our employee concerns program.

9 DOCTOR MEDFORD: Thank you.

10 (Slide) Slide 19.

11 As is indicated here, base engineering was  
12 completed on Watts Bar Unit 1 in June of last year.  
13 The systems completion status is as follows. We've  
14 completed the engineering work on all of the systems  
15 for Watts Bar 1. Modifications have been completed on  
16 a little over two-thirds of the systems. We've  
17 completed start-up testing and have turned systems  
18 over to the plant for a little over a third of the  
19 systems.

20 The schedule for hot functional testing is  
21 March of this year and hot functional testing is  
22 scheduled to take about two months. As Mr. Kingsley  
23 indicated earlier, we are not at this time putting  
24 forth a schedule for fuel load. We will do that once  
25 we've completed hot functional testing and have a

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1 better track record to base that on.

2 There are limited technical issues  
3 remaining for Watts Bar. Basically those are  
4 completion of resolving the fire wrap issues. TVA has  
5 done substantial work with regard to Thermo-Lag and  
6 we're very near the end, resolving Thermo-Lag concerns  
7 and we're currently doing some testing of our own  
8 relative to 3-M.

9 We have one remaining civil seismic issue  
10 and that has to do with U bolt supports for piping  
11 systems.

12 Finally, we have submitted previously a  
13 probabilistic risk assessment for Watts Bar. We are  
14 in the process of revising that PRA and will be  
15 submitting that to the staff next month and working  
16 with the staff to complete their review.

17 COMMISSIONER REMICK: What about IPE?

18 DOCTOR MEDFORD: Our IPE is based on that  
19 PRA.

20 COMMISSIONER REMICK: On that PRA.

21 DOCTOR MEDFORD: That's right.

22 COMMISSIONER REMICK: So, when you say  
23 PRA, it's the PRA for the IPE program.

24 DOCTOR MEDFORD: That's correct.

25 COMMISSIONER REMICK: I see.

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1 MR. KINGSLEY: Correct.

2 DOCTOR MEDFORD: (Slide) Okay. I'd now  
3 like to turn to the area of employee concerns.

4 One of the primary focuses of TVA nuclear  
5 management is the creation of a working environment  
6 where employees feel free to express concerns. It's  
7 our position that the preferred path to resolving  
8 employee concerns is through direct interaction with  
9 their line management. But we recognize that that's  
10 not always going to occur and therefore we've put in  
11 place what we call the concerns resolution program.  
12 In the slides that follow this one, I think I'll be  
13 able to show you some substantial improvement in our  
14 performance in this area. We've listed on this page  
15 several of the reasons why we think we've achieved  
16 that improvement.

17 First and foremost is line management  
18 attention and sensitivity to the importance of hearing  
19 and addressing employee issues.

20 Secondly, we have a substantial dedicated  
21 concerns resolution staff. We have a total of 15  
22 people throughout the Valley and we have folks on-site  
23 at each of the three major sites.

24 Third is a proactive approach to emerging  
25 issues. Clearly, not only do we need to hear and

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1 understand employees' concerns, but we need to address  
2 them quickly. We follow very closely our performance  
3 in this area. We prepare monthly a report that  
4 summarizes how we're doing in this area. That's  
5 reviewed by both site senior management and corporate  
6 senior management.

7 The fifth bullet is also one of the most  
8 important. That is that clearly where you have a work  
9 force that has good morale, you're going to have a  
10 work force that tends to deal with their line  
11 management and has less need of the kind of program  
12 I've talked about.

13 (Slide) Slide 21.

14 This slide shows for the years 1986  
15 through 1993 the concerns expressed to both the TVA  
16 concerns resolution program and to the similar  
17 programs that our contractors have. I'd like to make  
18 the point that the overall trend here is very  
19 positive. You'll note over the last several years  
20 there's been a growth in the contractor component.  
21 That's primarily a result of the fact that in the  
22 early years of this chart the contractors, or very few  
23 of them, had independent programs of their own. The  
24 contractors relied on our program to meet this need.

25 I should point out even with substantial

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1 contractor programs in place now, contractor employees  
2 always have the right to come to the TVA program. We  
3 now have in the '92, '93 time frame all of our major  
4 contractors, the architect-engineer contractor at each  
5 site for example, have their own independent programs.

6 While I observed earlier that the overall  
7 trend for this graph is positive, you'll note a slight  
8 upturn in 1993 for the total. That's largely the  
9 result of a high level of activity at each of the  
10 sites in '93 compared with '92. We had the long  
11 outage at Browns Ferry that has been discussed  
12 previously. We had the two unit shutdown at Sequoyah  
13 and we were in the process of completing engineering  
14 for Watts Bar. All of these things result in a fair  
15 number of people leaving the sites. We offer an exit  
16 interview to every employee, be that contractor or a  
17 TVA employee who leaves a site. That tends to result  
18 in the generation of a larger number of issues. So,  
19 I don't attach any special significance to the upturn  
20 in '93. I'd say overall our performance in those two  
21 years was about the same in this area.

22 (Slide) Turning now to slide 22.

23 What this slide shows is the rate of  
24 concerns expressed to the TVA program per 1,000  
25 employees. The purpose of this slide is to assure

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1 that the absolute numbers are not masked by changes in  
2 employee base. As you can see here, even the rate is  
3 coming down substantially. As I indicated earlier,  
4 the '92-'93 numbers are pretty similar.

5 COMMISSIONER de PLANQUE: And this is for  
6 TVA, not contractors?

7 DOCTOR MEDFORD: That's correct. I didn't  
8 have -- the reason it's done this way, I think that  
9 would show something similar. We didn't have good  
10 numbers on the total contract employee rolls.

11 (Slide) I'd like now to turn to page 23.

12 If you have declining numbers in a program  
13 like our concerns resolution program it means one of  
14 two things. Either you're doing --

15 CHAIRMAN SELIN: It's good or it's bad.

16 DOCTOR MEDFORD: We wanted to test which  
17 one of those two things this might mean. The best  
18 data we have for that is to look at other complaint  
19 mechanisms. What we've looked at here, the first bar  
20 for each year is the TVA program. The second bar for  
21 each year is the aggregate of a number of other  
22 programs such as union grievances, EEO complaints, et  
23 cetera. Then the third bar are DOL complaints. By  
24 the way, we don't plot it here because we don't have  
25 hard data. To the extent we can follow NRC

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1       allegations, we follow that as well and the  
2       conclusions would be largely similar to what I've  
3       shown or will talk about.

4               As you can see, the overall trend for all  
5       of these programs is in the right direction. So, we  
6       think that's telling us that we're not seeing folks  
7       shying away from using the employee concerns program  
8       when they otherwise would. We continue to have an  
9       effective concerns resolution program and the fact  
10      that the numbers are going down means the line  
11      management is doing a better job.

12              I'd now like to turn to --

13              COMMISSIONER REMICK: In categorizing  
14      these as complaints, is that correct or are some of  
15      these -- concerns sometimes cannot be a complaint.  
16      You might just have an observation.

17              DOCTOR MEDFORD: That's correct, and  
18      particularly when you're talking about the concerns  
19      resolution program that's true. For DOL and for this  
20      other category, I think the complaints is descriptive.

21              COMMISSIONER REMICK: Okay.

22              DOCTOR MEDFORD: You're right.

23              (Slide) I'd like now to turn to slide 24.

24              Up until now, my discussion has addressed  
25      TVA generally. On this last slide, I'd like to talk

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1 about the concerns resolution program at Watts Bar.

2 1994 is going to be a very interesting  
3 year for Watts Bar. It's going to be one of intense  
4 activity. We recognize that. Typically when you get  
5 to the end of a project you have more activity in the  
6 employee concerns area than you otherwise would. So,  
7 we've identified on this slide a number of initiatives  
8 undertaken to do what we can to address that problem.

9 The first thing is we've got a look-back  
10 project that's well underway, to go back and look at  
11 closed employee concerns to ensure that we have  
12 addressed the fundamental concern. In theory, given  
13 that the file is closed, that should be the case and  
14 indeed that's what we're finding. But we wanted to  
15 have that additional level of assurance that we  
16 haven't missed something. We're doing that, by the  
17 way, for the 1986 concerns, the original large block  
18 of concerns. We're doing that for all of those. For  
19 the more recent concerns, the ongoing program since  
20 '86, we're doing that on a sampling basis. As I  
21 indicated earlier, what we've seen so far is extremely  
22 favorable.

23 In addition we've got an enhanced  
24 communications plan. The site vice president is  
25 having meetings at least monthly and in some cases

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1 more frequently with the employee base. Oliver has  
2 participated in some of those meetings and he will  
3 participate in others through the course of 1994. In  
4 addition, the Site Vice President has small group  
5 meetings.

6 Supervisor training. I mentioned the  
7 period of intense activity on which we're embarked.  
8 It's a challenging period from the standpoint that  
9 we're asking the most of our supervision and at the  
10 same time there may be a little more likely than usual  
11 to have employees coming to them with concerns. This  
12 training which is provided by our human resources  
13 folks and our concerns resolution program personnel,  
14 the purpose of that is primarily to let supervision --  
15 remind supervision of the support available to them.  
16 Don't let a concern sit idle. If they can deal with  
17 it effectively, deal with it. If they can't, here's  
18 the array of assistance that's available to them.

19 In addition, we've established an employee  
20 concerns task force. The membership of that is the  
21 Site Vice President or his designee, the concerns  
22 resolution program manager for the site, the human  
23 resources manager for the site and a representative of  
24 the Office of the General Counsel. The purpose of  
25 this group is to tackle employee concerns of special

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1 significance, again toward the aim of assuring that  
2 they're addressed promptly.

3 Finally, we've added two or will be adding  
4 two additional personnel to the existing site staff of  
5 four.

6 With that, I'd like to turn it back over  
7 to Oliver.

8 MR. KINGSLEY: This concludes our formal  
9 presentation. We certainly appreciate the  
10 opportunity, Doctor Selin, Chairman Selin, to come  
11 before you and present where TVA is. We take this  
12 challenge of operating these plants very seriously and  
13 we'd now be happy to answer any questions that you  
14 might have about our presentation or about the  
15 Tennessee Valley Authority.

16 CHAIRMAN SELIN: Okay. First of all, we'd  
17 like to thank you for having come. It was a very good  
18 presentation. You hit most of the points of concern  
19 to the Commission and have a plausible answer to each  
20 of them. As you've said, you need to see what happens  
21 in the next few months as far as executing them.

22 I'd like to go back to your demand  
23 projections. That's something new. We've never seen  
24 a demand projection in a TVA presentation in the past.  
25 Could you talk a little bit about what they're based

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1 on? Are these economic models or are these straight  
2 extrapolations of what you've seen recently? Can you  
3 talk a little bit about that?

4 MR. KINGSLEY: You're talking about the  
5 load projection?

6 CHAIRMAN SELIN: Yes.

7 MR. KINGSLEY: It is based on an economic  
8 model. It's based on actual experience. We actually  
9 break that down and look at different sectors of our  
10 energy growth, our residential growth as an example.  
11 We're projecting that to grow at about 1.6 percent.  
12 Now, I mentioned commercial, manufacturing. Our  
13 direct serve we would anticipate growing at about two  
14 percent. Federal actually past the year 2000 goes  
15 negative in the growth because we see a complete  
16 downturn in the federal sector.

17 So, we do a detailed analysis of each one  
18 of the load segments. We then compare that, according  
19 to my understanding, to the regional --

20 CHAIRMAN SELIN: Economic.

21 MR. KINGSLEY: -- product growth out there  
22 compared to the national average. Then we update this  
23 on a six month basis.

24 CHAIRMAN SELIN: The reason I asked is the  
25 numbers seem a little high. Each of the components is

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1 two percent or less. You've said that you're  
2 reinstituting a demand management program, but I don't  
3 think that -- that doesn't sound as if that's been  
4 worked into the --

5 MR. KINGSLEY: It has not been worked into  
6 any of the numbers that we showed you. We have  
7 projected with some four programs which have been  
8 preliminarily reviewed by the Board of Directors and  
9 will be made an integral part of our integrated  
10 resources planning, anywhere from a winter demand of  
11 right at 850 megawatts of DSM to about 700 megawatts  
12 of summer demand, which we would expect to eliminate  
13 or not have occur. Then that would penetrate out  
14 through the year 2010, assuming these programs were  
15 successful, to as much as 2500 megawatts on a winter  
16 demand and about 2100 megawatts on a summer demand.  
17 But we do not have those programs in place and it  
18 would be unfair for me to commit for the Board, but  
19 they have had preliminary reviews and it's my  
20 understanding they are moving to signing off on those  
21 programs.

22 CHAIRMAN SELIN: Well, that just really  
23 makes the point. I was taking a look at the demand  
24 projections and the point at which the reactors would  
25 come on-line. It seemed to me that the demand is

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1 probably still going to be less than you've got  
2 projected, either because of the demand side  
3 management or because of a more detailed look. The  
4 real question that concerns us is in terms of  
5 allocating our resources and looking at the adequacy  
6 of the management is if those demand projections  
7 represent an upper bound as opposed to a best guess,  
8 and my sense is that is true, although I'm sure you  
9 want to take another look at that, what happens to  
10 your nuclear program? Do you phase out some of the  
11 fossil and keep the nuclear program? Do you slip out  
12 the nuclear programs coming on-line or am I just wrong  
13 in my hypothesis?

14 MR. KINGSLEY: No, you're not wrong at  
15 all. When Doctor Remick asked the question about the  
16 fossil plants, we have really not looked at those.  
17 There are a number of questions involving phase 2 of  
18 the Clean Air Act, the heat rate. Those units,  
19 particularly the older ones, have not had a lot of  
20 money put into them for them to be reliable. We'll  
21 have to do that. So, there's a natural question of  
22 what do you do with those plants. We've literally  
23 been in the position of needing every fossil unit that  
24 we've had for the last seven years on our system and  
25 we will look at that as a part of the integrated

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1 resource planning. As also a part of global warming  
2 and everything. There are questions about that. CO2  
3 limit. We are part of the voluntary program. We had  
4 not established what that limit will be, but we've  
5 been working with Secretary O'Leary on that.

6 So, I think your questions are very good.  
7 If you were to take, say, the area of DSM and assume  
8 that we would put that 800 megawatts in, that would  
9 essentially delay one of our units two full years and  
10 the whole program would move if that were to be the  
11 case because of the 2.3 percent. It's somewhere  
12 between 450 and 500. So, for ballpark purposes, that  
13 would move out.

14 COMMISSIONER REMICK: Am I correct,  
15 Oliver, you did have a DSM program in the past?

16 MR. KINGSLEY: Yes. We had one of the  
17 larger DSM programs of loans, insulation, energy  
18 audits, what have you.

19 COMMISSIONER REMICK: How effective was  
20 that?

21 MR. KINGSLEY: It was very effective and  
22 it was also very expensive. We had a large stuff.  
23 The Board felt that it needed to be relooked at and  
24 that was stopped in either 1989 or '90.

25 Bill, do you remember the year?

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1 MR. MALEC: Yes. I think it was 1989.  
2 Let me add to what Oliver had to say because the  
3 numbers that we've shown you here in terms of the  
4 demand projections are what we consider our middle  
5 range. We forecasted a low load range and a high load  
6 range. Because of the size of the system, even if we  
7 had significant -- and so we're taking it at what we  
8 expect the level to be, not in an optimistic or a  
9 pessimistic as we view it. A higher level of growth  
10 which, if one hypothesized a higher level of growth,  
11 we'd need to bring -- we need capacity sooner. DSM  
12 relative to the size of the system also is relatively  
13 small. Even if you were talking about a thousand  
14 megawatts on a 25,000 megawatt system, it's still a  
15 relatively small part. As Oliver indicated, you're  
16 probably talking about shifting in time more than  
17 resources.

18 CHAIRMAN SELIN: But we're not really  
19 trying to predict pieces, but we have three  
20 responsibilities. The first is to make sure that our  
21 resources are set appropriately and your schedule for  
22 bringing on nuclear plants is very central to that.  
23 The second, although it's an indirect responsibility,  
24 is at some point we do have to make a judgment as to  
25 whether TVA resources, including management and

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1 personnel, are adequate to the size of the program and  
2 that's certainly there. The third is that there are  
3 environmental impact statements which include economic  
4 review of the -- review of the economic alternatives  
5 that are involved in licensing and in major issues.

6 So, although it's not our central  
7 responsibility, it is important to us. As I look at  
8 your numbers and as I hear you talk, and perhaps not  
9 in a statistical sense but in a sense of what are the  
10 likely things that might happen between now and then,  
11 most of them seem to lead to lesser demand, not  
12 greater demand, a tougher Clean Air Act, some higher  
13 pricing, good and effective demand side management  
14 program, et cetera. Do we just wait for your  
15 integrated resource planning to see that or will you  
16 be doing some further work in this area, both of  
17 projecting demand and of thinking about the what ifs?  
18 The clear what if is do you look for higher margins,  
19 do you cut back -- do you slow down the nuclear  
20 program further, do you cut back on some of the old  
21 fossil plants which are likely to be more expensive to  
22 clean up than at first?

23 MR. KINGSLEY: We've a group or the old  
24 generating group to look at just what you're saying.  
25 We intend to continue that. It is one of our key

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1 missions that I have in the nuclear program, looking  
2 at the various alternatives. You take as an example  
3 our doing the engineering first on Watts Bar. We're  
4 certainly going to do a detailed lessons learned on  
5 Watts Bar 2, is there a better way, is there a better  
6 way to do the design engineering. Certainly we're  
7 doing a full test program. I think that will take at  
8 least one year and then we're going to be very tight.  
9 So, that schedule on bringing Watts Bar 2 would be  
10 optimistic.

11 CHAIRMAN SELIN: I see.

12 MR. KINGSLEY: We have a group looking at  
13 the older fossil plants. We also have in this same  
14 group someone looking at our phase 2. I think you're  
15 exactly right, that it's not as much as a crap shoot  
16 on what's going to happen out there in the future, but  
17 you can look back over our demand and it is not in a  
18 straight smooth line. It kind of comes up, it leveled  
19 off in '91 and '92 and then it came right back up  
20 again. So, if we level off again, we're not going to  
21 need these plants to come in.

22 CHAIRMAN SELIN: But you're also saying  
23 that you wouldn't mind -- the odds are you wouldn't  
24 mind the extra time when it came to this.

25 MR. KINGSLEY: Not a bit, no.

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1 CHAIRMAN SELIN: All right. Thank you.

2 Commissioner Rogers?

3 COMMISSIONER ROGERS: I don't have any  
4 questions. I just wanted to thank you very much for  
5 a very illuminating presentation.

6 CHAIRMAN SELIN: Commissioner Remick?

7 COMMISSIONER REMICK: Just two, one a  
8 question.

9 If you had your druthers right now, would  
10 you increase the reserve margin from 15 percent up to  
11 17 or 18 or not?

12 MR. KINGSLEY: I think in certain times of  
13 the year we would absolutely do that. We have a  
14 lessons learned group that we actually formed late  
15 last week on our fossil system and because of such  
16 things as frozen coal, we had a lessons learned in  
17 1989, but this was a storm that kind of whipped up on  
18 that. So, we definitely need that. When you see  
19 entire hoppers and I forget how many tons we're having  
20 to actually take out of our Paradise steam plant today  
21 to get that plant back in. But it is a real  
22 manifestation that these large fossil plants are not  
23 made for zero degree weather. So, we're going to need  
24 additional margin in some of those areas.

25 Our hydro did exceptionally well, set a

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1 new record. Our combustion turbines did exceptionally  
2 well. Our nuclear plants ran straight through, no  
3 problems whatsoever. But there was very few fossil  
4 plants out of that 59 units that we didn't have some  
5 problem or some de-rate in that. If you were to carry  
6 that for a two or three week period of time, it would  
7 have gotten worse instead of getting better.

8 COMMISSIONER REMICK: I think the key to  
9 your projections and so forth is the realization that  
10 we have to plan our resources to meet your needs. We  
11 certainly want to be responsive in your plant. So,  
12 it's important that you keep us informed if things do  
13 change in your schedules and so forth because it does  
14 reflect back on our own planning and our resources.  
15 So, I think that's the key.

16 MR. KINGSLEY: The Commission has been  
17 very responsive and in the short-term I think that's  
18 fairly well laid out. But when you go back to Doctor  
19 Selin's question, in the longer term it is not crystal  
20 clear.

21 COMMISSIONER REMICK: I'm sure it's not  
22 clear to anybody. Not only in TVA, but for others.

23 I'd also like to say that I really  
24 appreciate the presentation. I think it was  
25 encouraging and I greatly appreciate again this which

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1 is a characteristic of yours, which I greatly  
2 appreciate.

3 MR. KINGSLEY: Thank you.

4 CHAIRMAN SELIN: Commissioner de Planque?

5 COMMISSIONER de PLANQUE: I have just two  
6 questions. Can you tell me what the current  
7 percentage of contractor employees are versus TVA  
8 employees? Where do you see that trend going given  
9 your current plans?

10 MR. KINGSLEY: The current percentage is--

11 COMMISSIONER de PLANQUE: Ballpark will  
12 do.

13 MR. KINGSLEY: -- a little about 50/50.  
14 We've got about 5400 TVA employees today and we've got  
15 slightly more than that from a contractor standpoint.  
16 That is largely driven by the large hourly work force  
17 on our Watts Bar, our Browns Ferry 3 recovery and  
18 ongoing work at our Sequoyah plant. We do have a  
19 significant number of design engineers. We're looking  
20 at pulling some of that back in now that we've kind of  
21 reestablished some engineering credibility. So, I  
22 don't see that number of contractors increasing at  
23 all, particularly in light of our engineering first  
24 and then working on just a small number of plants at  
25 one time.

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1 COMMISSIONER de PLANQUE: Okay.

2 MR. KINGSLEY: So I think that's kept.

3 COMMISSIONER de PLANQUE: Okay. The other  
4 one is kind of a curiosity. I think I heard you say  
5 that your estimate for siting and licensing a fossil  
6 plant would be about a ten year period.

7 MR. KINGSLEY: Yes.

8 COMMISSIONER de PLANQUE: Did you do the  
9 same estimate for nuclear, if you were to go for a new  
10 nuclear plant?

11 MR. KINGSLEY: It's about 30 to 40 percent  
12 longer than that, Commissioner de Planque.

13 COMMISSIONER de PLANQUE: Okay.

14 MR. KINGSLEY: We have some sites, but  
15 we're not venturing to look at those.

16 COMMISSIONER de PLANQUE: Just curious if  
17 you'd done the experiment.

18 MR. KINGSLEY: Yes, we've looked at that.  
19 It is longer than that.

20 COMMISSIONER de PLANQUE: Okay. With  
21 that, I would also add my thanks to the others. It's  
22 been a very interesting briefing. Thank you.

23 MR. KINGSLEY: Thank you.

24 CHAIRMAN SELIN: Thank you.

25 Just one other observation. When we're

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1 talking about our resources, remember you're 100  
2 percent of the nation's construction program now. So,  
3 although you may only be five percent of the nuclear  
4 generation, in terms of our ability to monitor and  
5 license construction programs, this has a very big  
6 impact on the NRC. It's not just one more or one  
7 fewer operating plant which would be a relatively  
8 small impact on our inspection team. We're not loaded  
9 with people who are still experienced in construction  
10 inspection, et cetera.

11 MR. KINGSLEY: Yes, sir.

12 CHAIRMAN SELIN: So, for all the other  
13 reasons, but that one especially, we do appreciate  
14 your communication and hope you'll keep in close touch  
15 as your plans evolve there.

16 Thank you very much for the presentation  
17 and the discussion.

18 MR. KINGSLEY: Thank you.

19 (Whereupon, at 11:27 a.m., the above-  
20 entitled matter was concluded.)  
21  
22  
23  
24  
25

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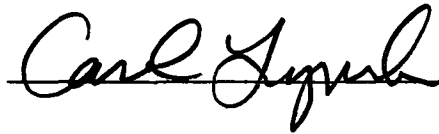
This is to certify that the attached events of a meeting  
of the United States Nuclear Regulatory Commission entitled:

TITLE OF MEETING: BRIEFING ON STATUS OF TVA NUCLEAR PROGRAM

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: JANUARY 25, 1994

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# **Status of TVA Nuclear Program**

Nuclear Regulatory Commission Briefing

January 25, 1994



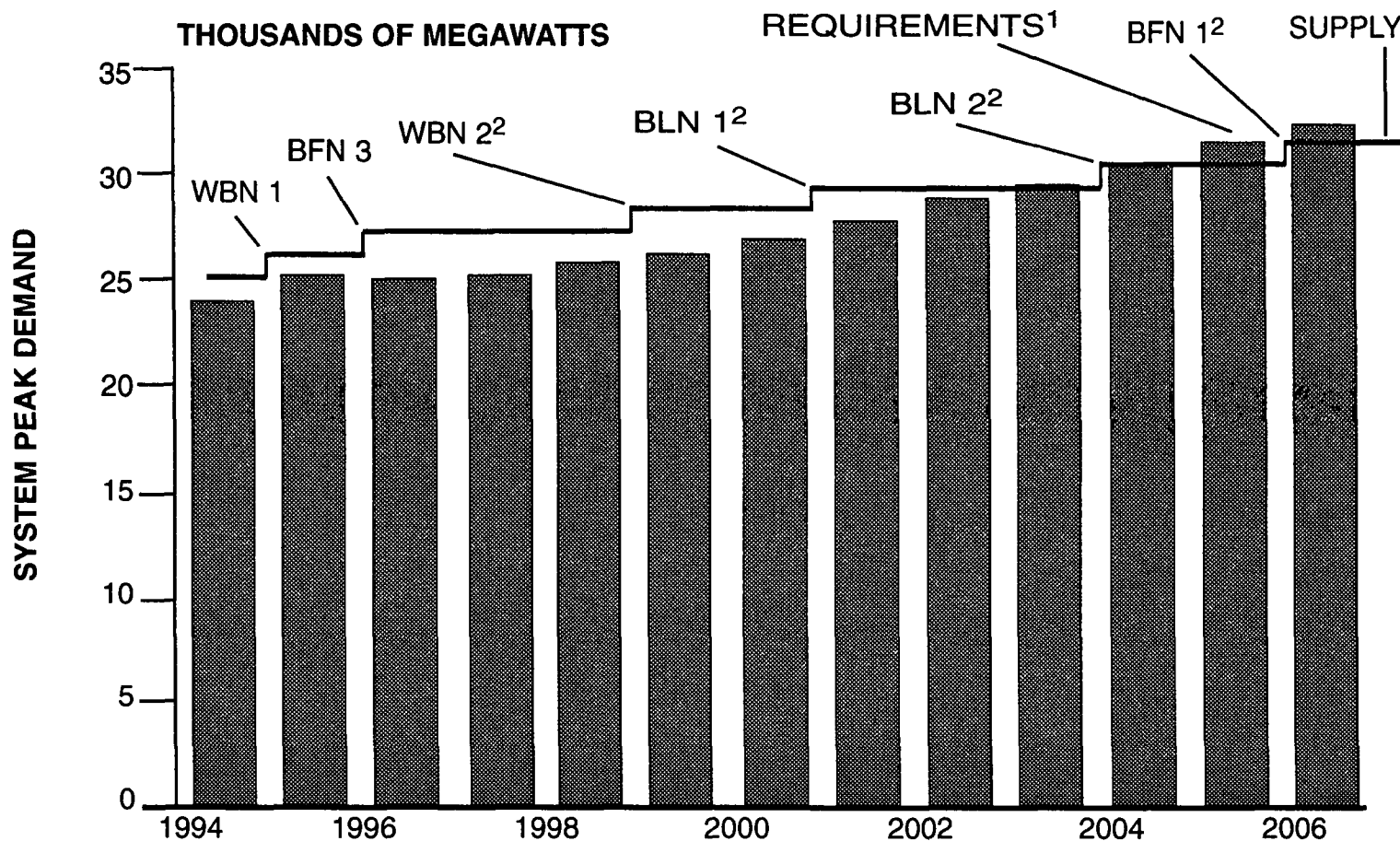
# AGENDA

- Introduction O. D. Kingsley, Jr.
- Nuclear Plans and Load Growth Projection O. D. Kingsley, Jr.
- Recent TVA Performance O. D. Kingsley, Jr.
- TVA and Nuclear Power Organization O. D. Kingsley, Jr.
- O&M/Capital Expenditures W. F. Malec
- Management and Staffing O. J. Zeringue
- Watts Bar Status M. O. Medford
- Employee Concerns Issues M. O. Medford
- Closing Remarks O. D. Kingsley, Jr.

# **NUCLEAR COMMITMENT KEY TO TVA's FUTURE**

- TVA's future is intimately tied to success in its nuclear program
- Watts Bar Unit 1 and Browns Ferry Unit 3 needed to meet TVA near term power needs
- Additional resources to meet TVA's longer term needs will be addressed through the Integrated Resource Plan
- TVA Board will devote resources needed to support nuclear power
- Creation of TVA Nuclear

# NUCLEAR PLANS MEET LONG-TERM NEEDS



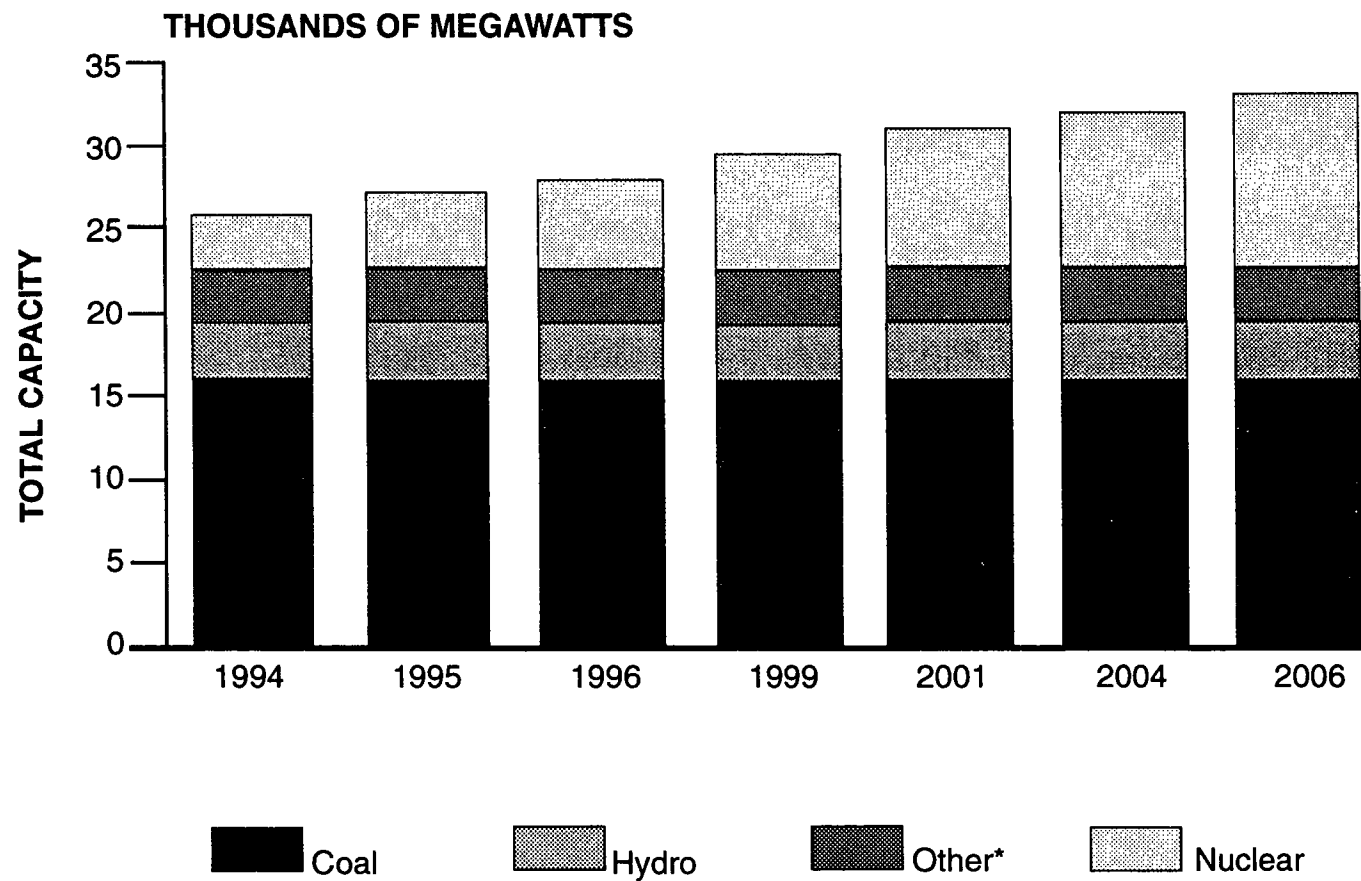
## NOTES:

1 Requirements = Peak Load + Desired Reserves

2 Plans subject to confirmation through Integrated Resource Plan

# TVA COMMITTED TO NUCLEAR POWER

## NET CAPACITY

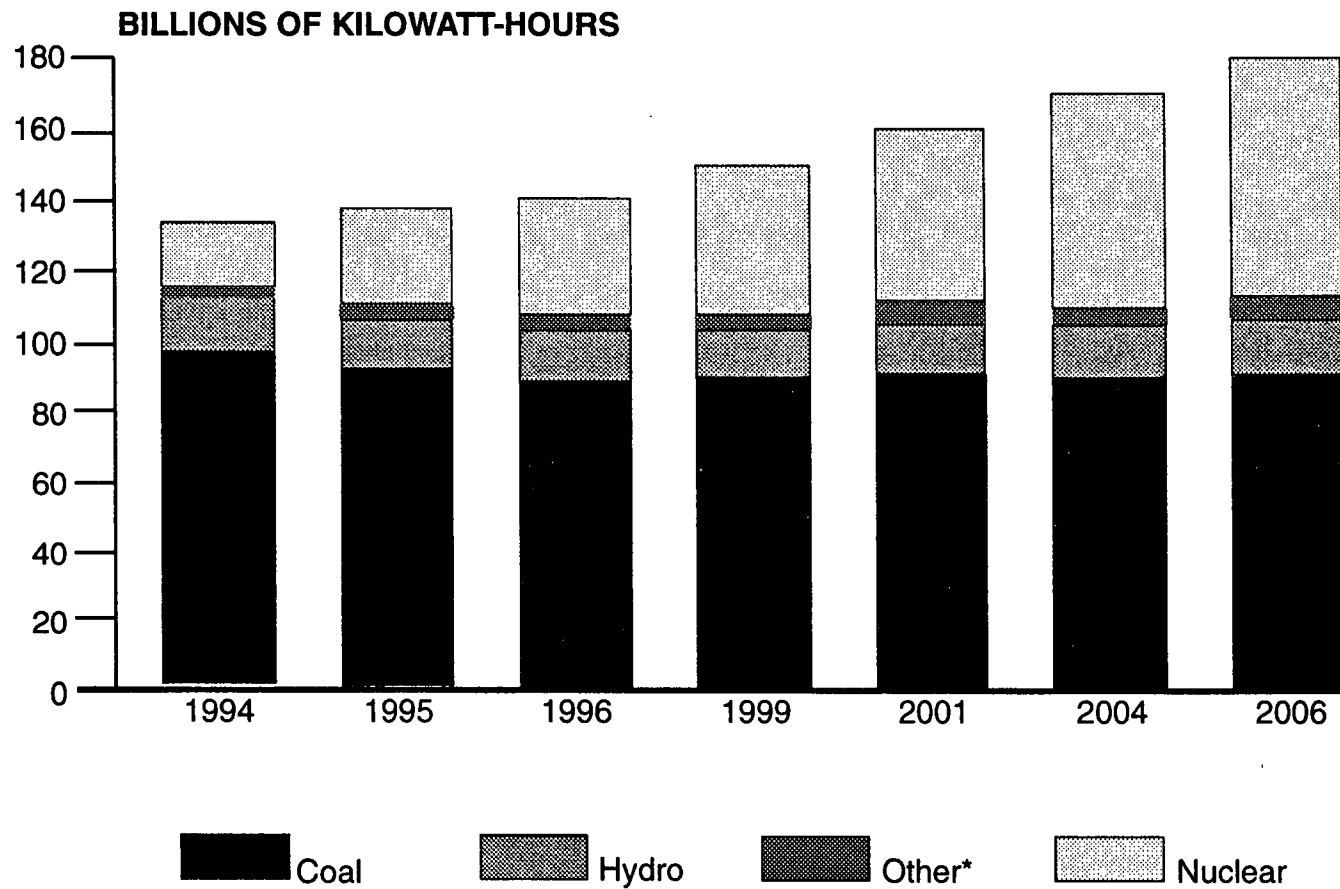


\*Other = Pumped Storage + Combustion Turbines



# TVA COMMITTED TO NUCLEAR POWER

## NET ENERGY



# **INTEGRATED RESOURCE PLAN**

- Notice of intent scheduled for early February 1994
- Series of public meetings to be held May through November 1994
- Draft scheduled for June 1995
- Watts Bar Unit 1 and Browns Ferry Unit 3 will not be included
- Watts Bar Unit 2, Browns Ferry Unit 1 and Bellefonte Units 1 & 2 will be included

# TVA NUCLEAR PERFORMANCE

• SALP category	BFN	SQN
- Engineering	2	2
- Plant support	1	1
- Maintenance	2	3
- Operations	1	3
	WBN	
- Piping systems	2	
- Auxiliary systems	1	
- Elect. equipment	2	
- Engr/tech support	2	
- Safety assess./quality verif.	3	
- Preoperational testing	2	

## RECENT RESULTS SHOW PROGRESS

- Browns Ferry
  - Unit 2 overall performance
  - Performance during last Unit 2 refueling outage
- Watts Bar
  - Restart of construction with high quality field work
  - Construction schedule supports 1994 fuel load
  - Plant staffed and completing training
  - Stabilization of site staff
- Sequoyah
  - Identification of plant material condition
  - Enhancement to balance of plant standards
  - Dedicated backlog reduction process
  - Enhanced focus on technical programs
  - Clearer identification, ownership, and resolutions of problems

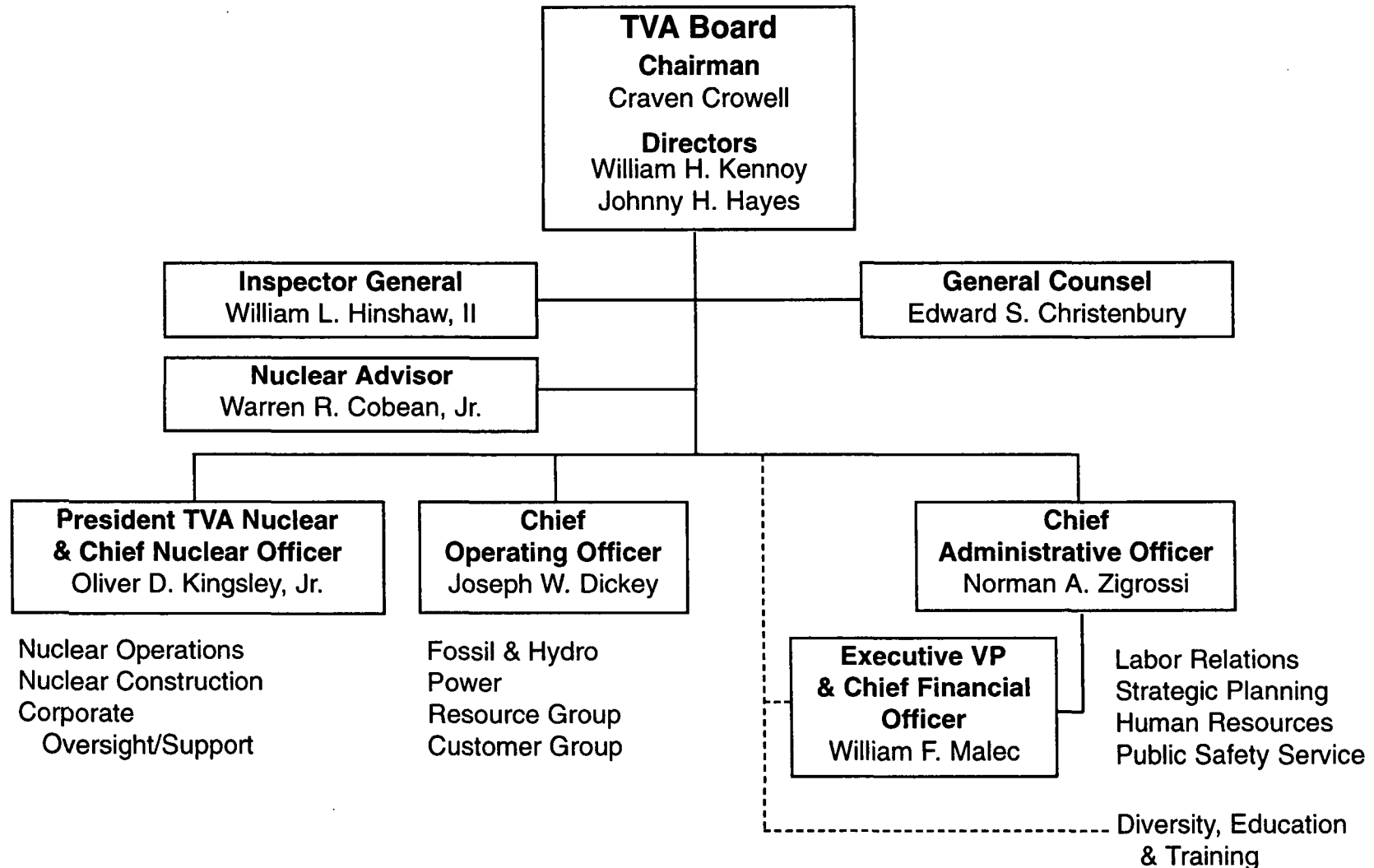
## **AREAS FOR IMPROVEMENT HAVE BEEN IDENTIFIED THROUGHOUT TVA NUCLEAR POWER**

- Fundamental work practices and expectations
  - Ownership and responsibility paramount to good operations
  - Necessary work identified. . . managed effectively
- Management oversight/involvement

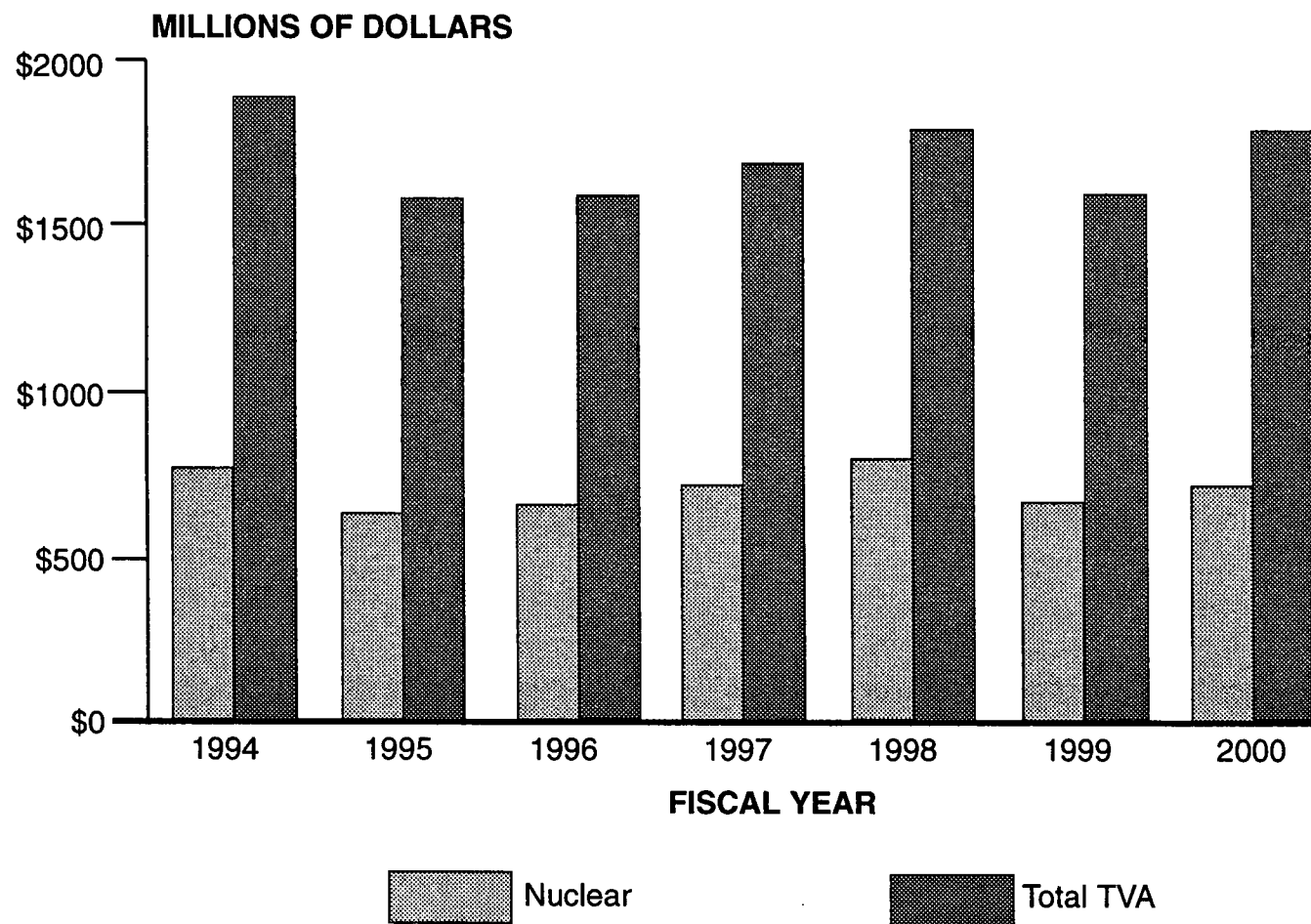
## **AREAS FOR IMPROVEMENT HAVE BEEN IDENTIFIED AT INDIVIDUAL PLANTS**

- Browns Ferry
  - Increased personal ownership
  - Build on gains in performance
  - Process improvements through employee involvement
- Watts Bar
  - Acceptance of quality ownership
  - Problem identification
  - Preoperational testing program improvements
  - Operational readiness
- Sequoyah
  - Operations and maintenance fundamentals
  - Work planning/execution
  - Balance of plant reliability
  - Engineering work processes

# TVA REORGANIZED FOR IMPROVEMENT

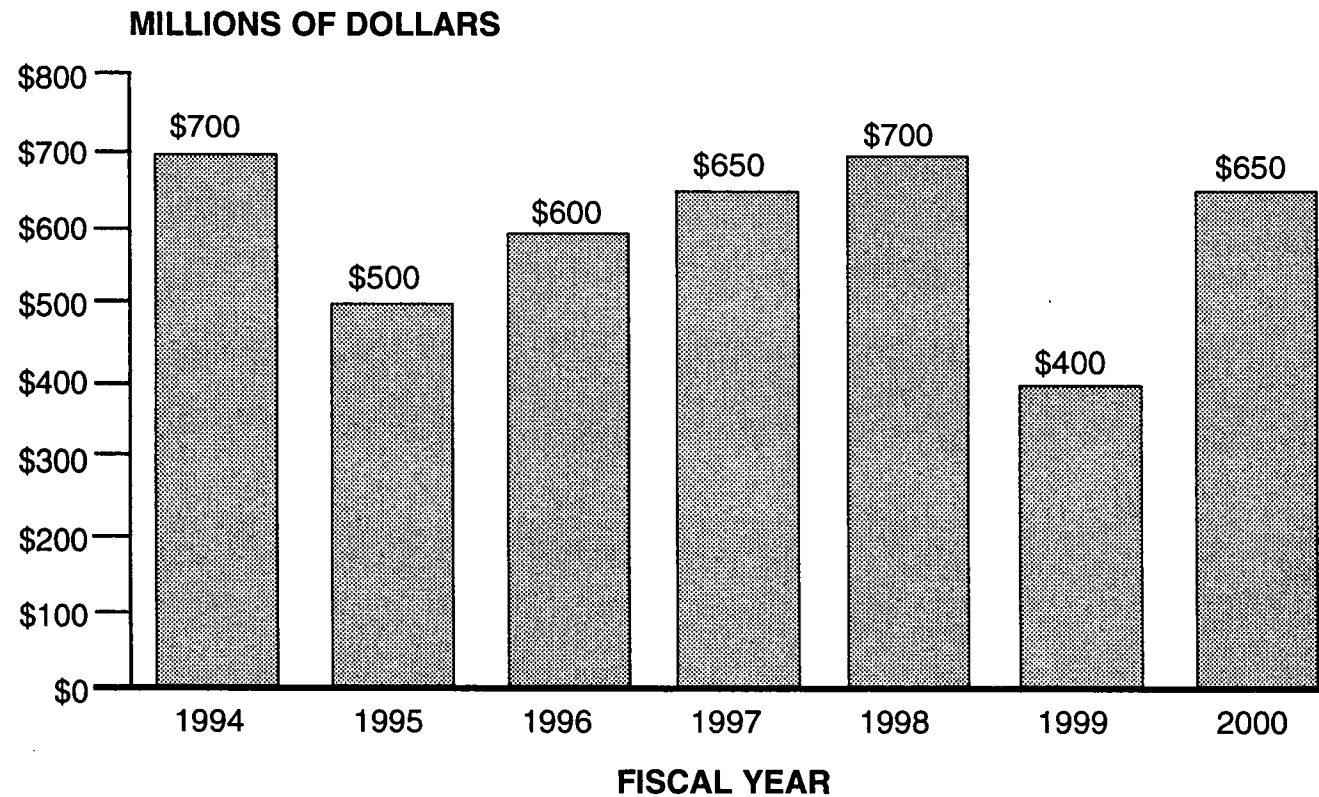


# NUCLEAR vs TOTAL CAPITAL EXPENDITURES

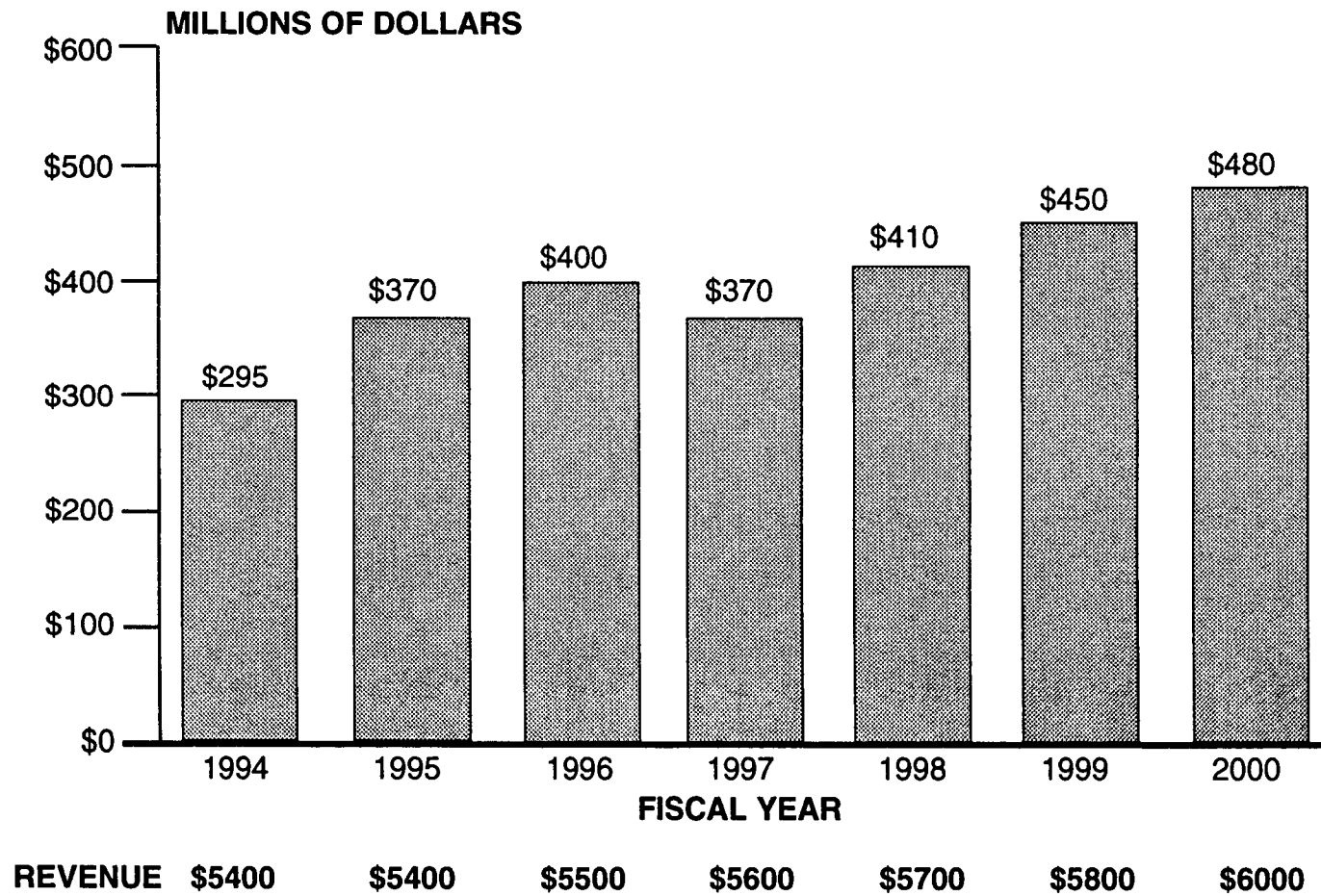




# TVA NEW BORROWING



# TVA NUCLEAR O&M



# STAFFING PLANS FORWARD LOOKING

- Workforce planning
  - System designed to look forward 5 years, assess projected needs, and staff accordingly
  - Plan updated each fiscal year
  - Implemented through succession planning and recruiting of new hires

# STAFFING PLANS FORWARD LOOKING

- Succession planning
  - Define position requirements
  - Identify replacement candidates
  - Define developmental activities

Examples of internal development:

Senior Vice President Nuclear Operations

Site Operations Vice President, WBN

General Manager Nuclear Assurance

Engineering Manager, SQN

# STAFFING PLANS FORWARD LOOKING

- Management strength/stabilization
  - External recruiting since November 1988
    - Total of 89 senior level external recruits
  - Substantially stronger management
  - Greater management stability
  - Reduced dependency on external recruiting
  - A pool of resources created to fill future needs
  - College recruitment reinitiated

# **STAFFING ACTIVITIES SUPPORT CONTINUING IMPROVEMENT AND EXPANDED NUCLEAR SYSTEM**

- Staffing plans support operating and construction sites
- Building strength internally
- Recruiting only when necessary
- TVA prepared to meet today's challenges and anticipate future staffing needs

# WATTS BAR UNIT 1 – CURRENT STATUS

- Base engineering complete
- Systems completion status
  - Engineering 135 of 135 complete
  - Modifications 93 of 135 complete
  - Startup 47 of 135 complete
- Schedule
  - Hot functional testing – March 1994
  - Fuel load – finalize schedule after hot functional testing
- Limited remaining technical issues

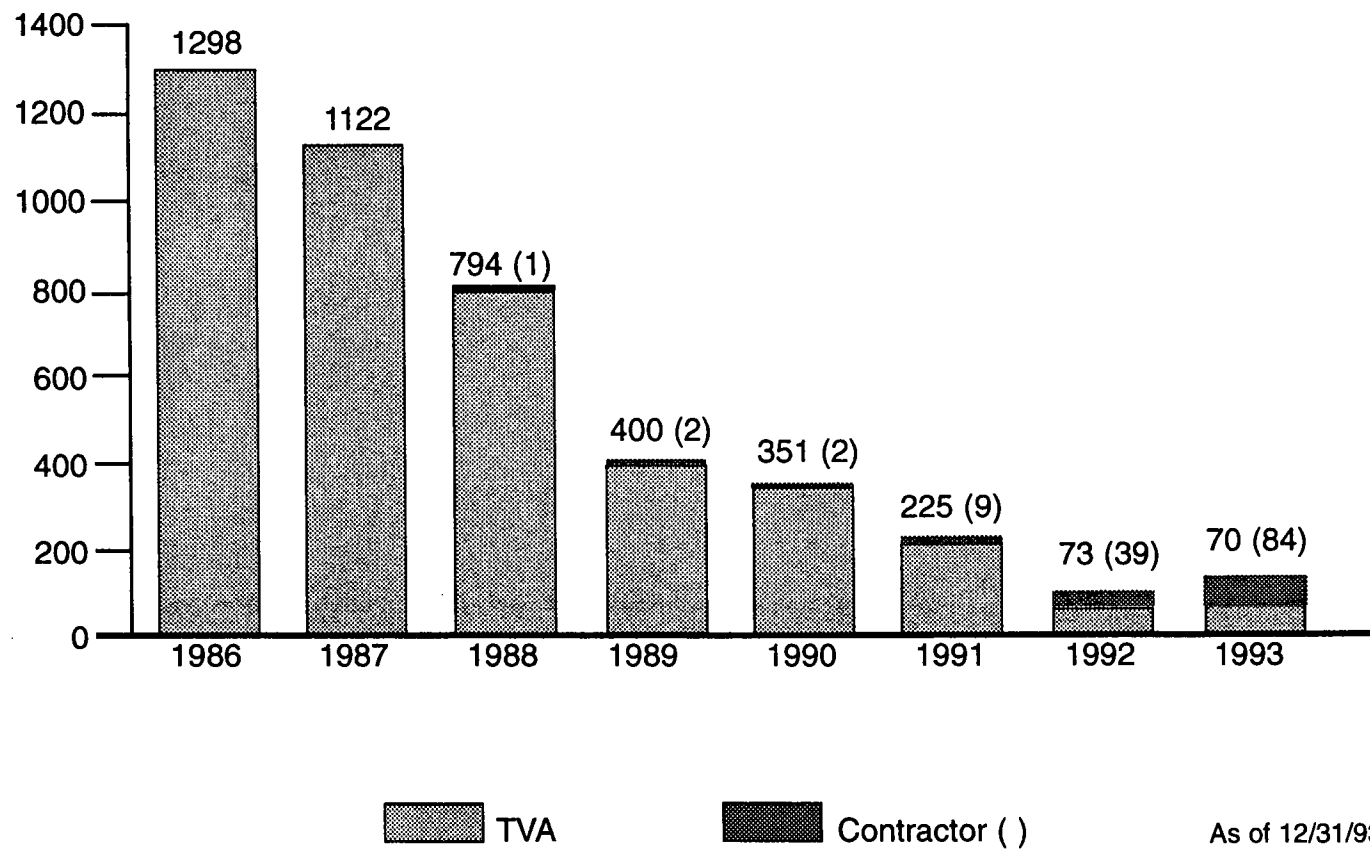
## **TVA IS FOCUSED ON ISSUES OF CONCERN TO EMPLOYEES**

- Line management attention
- Dedicated Concerns Resolution staff
- Proactive approach to emerging issues
- Performance measurement and reporting
- Continue to improve employee morale



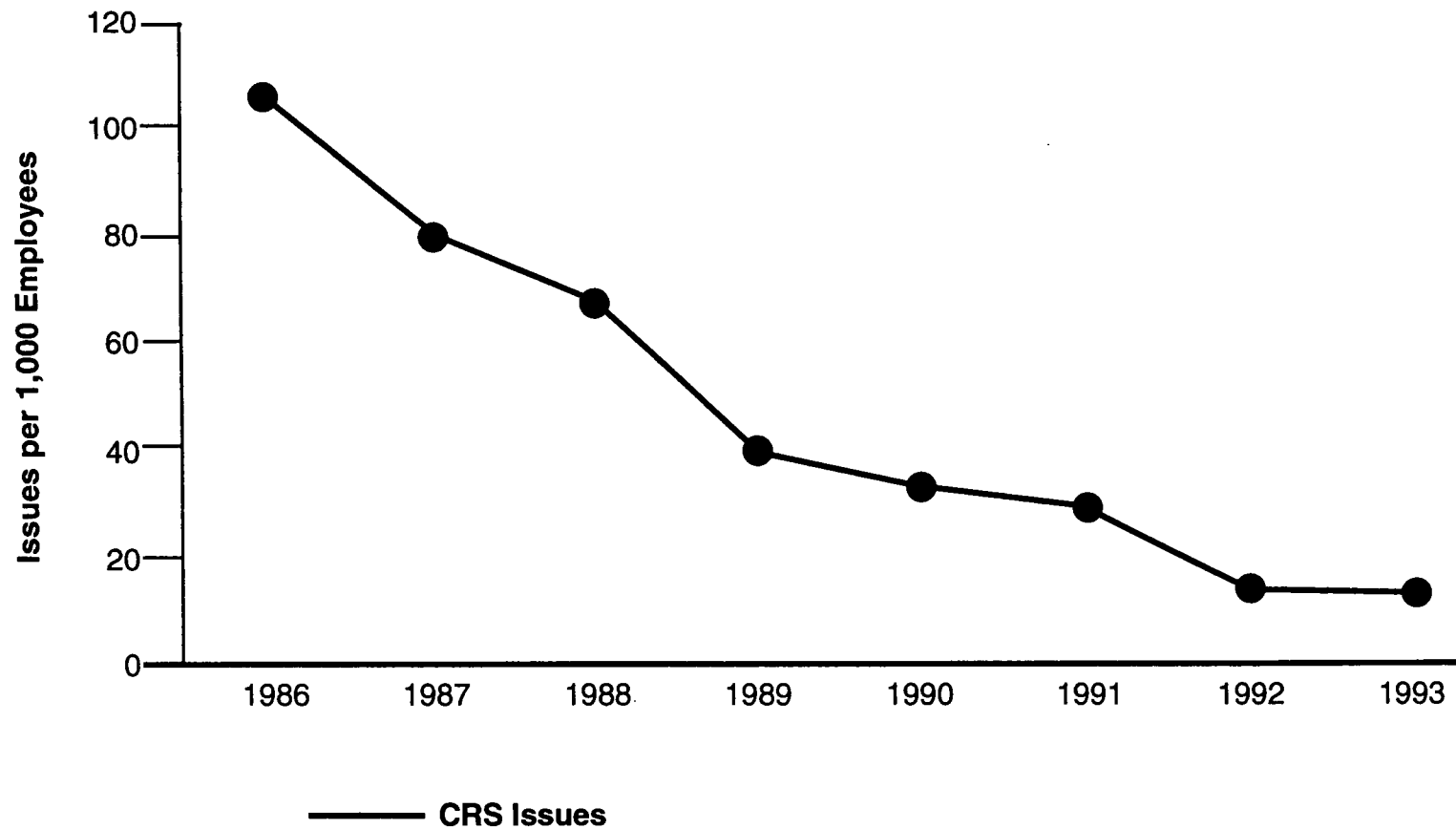
# CONCERNS RESOLUTION ISSUES

## TVA AND CONTRACTOR



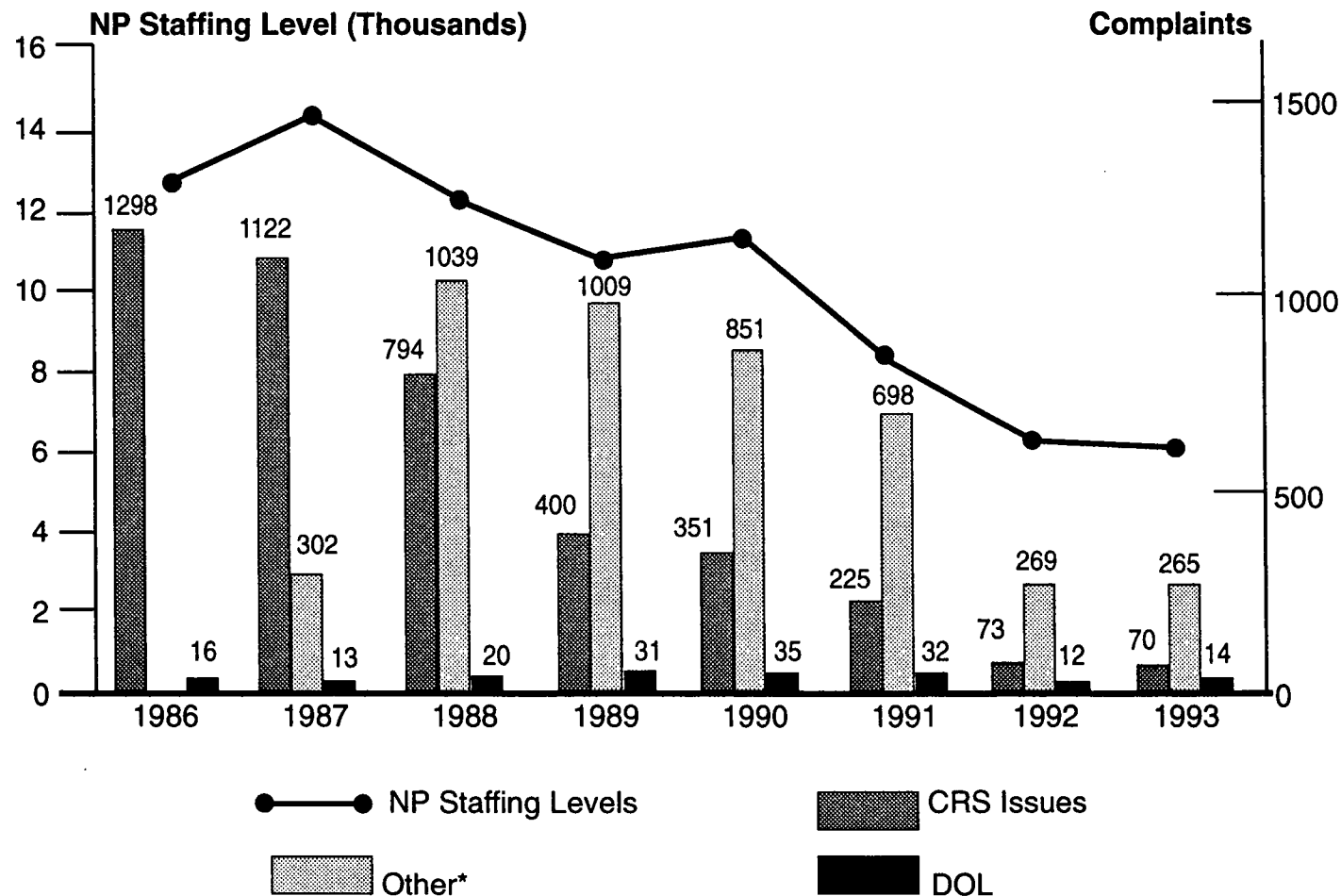
# TRENDS AND PERFORMANCE

## TOTAL CRS ISSUES PER 1,000 EMPLOYEES



# TRENDS AND PERFORMANCES

## TOTAL COMPLAINTS – ALL REPORTING SYSTEMS



\*Data not available for 1986

As of 12/31/93

## **PROACTIVE APPROACH BEING TAKEN AT WATTS BAR**

- Lookback project in progress
- Communications plan
- Supervisor training
- Employee Concerns Task Force
- Strengthen Watts Bar Concerns Resolution staff