

NUCLEAR REGULATORY COMMISSION

ORIGINAL

COMMISSION MEETING

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In the Matter of: PUBLIC MEETING

ISSUANCE OF FULL POWER OPERATING LICENSE  
FOR SEQUOYAH NUCLEAR PLANT, UNIT 2

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

PUBLIC MEETING  
ISSUANCE OF FULL POWER OPERATING LICENSE FOR  
SEQUOYAH NUCLEAR PLANT, UNIT 2

Nuclear Regulatory Commission  
Room 1167  
1717 H Street  
Washington, D.C.

Tuesday, September 8, 1981

The Commission met, pursuant to notice, at

2:00 p.m.

BEFORE:

- NUNZIO PALLADINO, Chairman of the Commission
- PETER BRADFORD, Commissioner
- JOHN AHEARNE, Commissioner
- VICTOR GILINSKY, Commissioner
- THOMAS ROBERTS, Commissioner

NRC STAFF PRESENT:

- SAMUEL CHILK
- LEONARD BICKWIT
- MARK CHOPKO
- HAROLD DENTON
- DON QUICK

1 NRC STAFF PRESENT: (Continued)  
DARRELL EISENHUT

- 2
- 3 CARL STAHL
- 4 JOE SCINTO
- 5 FORREST REMICK
- 6 ROGER MATTSON
- 7 BRIAN GRIMES
- 8 ED FORD

9 TVA STAFF PRESENT:

- 10 LARRY MILLS
- 11 JOHN RAULSTON
- 12 JERRY BALLENTINE

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P R O C E E D I N G S

1  
2 CHAIRMAN PALLADINO: The meeting will please come  
3 to order.

4 The purpose of this meeting today is to discuss  
5 and possibly vote on the full power operating license for  
6 Sequoyah nuclear plant, Unit 2. I think you are aware of  
7 the fact that the low power license was granted on 6/25/81  
8 and the staff is now prepared to proceed with the full power  
9 licensing.

10 I gather Mr. Denton is going to make the  
11 presentation.

12 MR. DENTON: Carl Stahl, our project manager, will  
13 make the presentation but I did want to introduce also Don  
14 Quick on my right who is the Region II section chief that  
15 oversees TVA's reactors.

16 What we will cover are events which have occurred  
17 at the site since we met with you last on this project and  
18 also some items on which TVA is seeking some relief from the  
19 schedules which would otherwise be imposed.

20 Carl, why don't you walk us through today's  
21 presentation.

22 MR. STAHL: Slide No. 1 is the briefing outline  
23 for today's meeting. I will make a few comments with  
24 respect to the first item followed by TVA's proposal on the  
25 six TMI items that they wish to get some schedule relief.

1 This will be then followed by the staff's comments with  
2 respect to those six items.

3 I&E will provide a report through Mr. Don Quick on  
4 the readiness of the plant to proceed beyond the 5 percent  
5 power. In that discussion he will cover three unusual  
6 occurrences that have transpired since the issuance of the  
7 low power license on Unit 2.

8 With respect to a few general comments, as you  
9 know we issued the low power license for Sequoyah 2 on June  
10 25, 1981. The program has been proceeding and we believe  
11 that the plant is near ready to proceed beyond the 5 percent  
12 power level and to proceed into the power excursion  
13 program. With that in mind, we submitted to you on August  
14 17th the proposed full power license for Unit 2.

15 COMMISSIONER BRADFORD: How does their situation  
16 now differ from the situation when we approved the low power  
17 license? I would have said then that they were at exactly  
18 the stage you just described, that is ready to proceed into  
19 power, so we gave them a low power license which they as of  
20 yet have not used.

21 MR. STAHL: That is correct. The number of  
22 construction deficiencies that were noted in our previous  
23 proposed license now has been reduced to one and criticality  
24 at Sequoyah Unit 2 is imminent. Completion of criticality  
25 is approximately ten days to finish all of the tests.

1           COMMISSIONER BRADFORD: Was I just wrong in late  
2 May, early June in thinking that criticality was imminent  
3 then? Chairman Hendrie actually said it would be  
4 irresponsible not to give them a full power license.

5           MR. BICKWIT: That is certainly wrong.

6           MR. DENTON: I think today we can give you our  
7 best estimate of when criticality might occur and when they  
8 need a full power license, but it is one of the  
9 characteristics in starting a program that you can never  
10 foretell what might occur. There was a McGuire case in  
11 which they were unable to go forward for about six months.  
12 I would have thought this plant would have gone much faster  
13 but you may recall they got a bolt stuck in the reactor head  
14 flange.

15           COMMISSIONER BRADFORD: But they had trouble even  
16 before then I guess. I really thought they were going to go  
17 critical in June.

18           MR. DENTON: I guess my concern was to get us off  
19 the critical path. Now that we have resolved our safety  
20 questions and they have completed the items on the I&E list  
21 of things that remain to be done, it seemed a timely time to  
22 discuss with you the results of our review and then whether  
23 they actually use the license or not is somewhat dependent  
24 on how well the plant performs when they test it.

25           COMMISSIONER AHEARNE: I think Peter's question is

1 a calibration question. How do we calibrate how imminent is  
2 "imminent"?

3 MR. DENTON: Let me turn to the senior resident  
4 for Sequoyah so I do not speak in general.

5 MR. QUICK: That is a very difficult question to  
6 answer. I do not think any of us can predict what is going  
7 to happen from one day to the next for a facility that is in  
8 the latter stages of pre-operational testing. As of right  
9 now for example, criticality is scheduled for September 15  
10 with the earliest practical date being possibly September 13.

11 However we do have a knowledge of a couple of  
12 deficiencies in pre-op testing right now which could delay  
13 that even further. For example one of the test deficiencies  
14 that I am aware of happens to deal with one control rod  
15 drive mechanism in that there may be an open coil in the  
16 lift coil. If that turns out to be the case and that has to  
17 be disassembled, there is a possibility that may delay  
18 criticality a little more.

19 I guess my point is very simply that we cannot  
20 predict from one day to the next what may happen during  
21 testing in the final latter stages of construction.

22 COMMISSIONER BRADFORD: They have loaded fuel?

23 MR. QUICK: Yes. Fuel is loaded and the machine  
24 is ready to go with the exception of clearing up a couple of  
25 minor test deficiencies. At least at this point they are

1 considered to be minor.

2           COMMISSIONER BRADFORD: How long is their low  
3 power license test phase?

4           MR. QUICK: Approximately 12 days before they will  
5 need to proceed above 5 percent power.

6           COMMISSIONER BRADFORD: So that if all went well  
7 it would be before the end of the month in any case.

8           MR. QUICK: Yes.

9           MR. EISENHUT: I think it is fair to say also that  
10 if you look at what the predicted fuel load date was back in  
11 June, I think you are certainly right. I think we were  
12 talking then of, I seem to remember a fuel load date of  
13 early July.

14           So the point is as Don mentioned, it is the best  
15 shot we have at the time. But you are certainly right. The  
16 fuel load date was originally in July. It slipped a number  
17 of times. As Don said it is now September.

18           MR. STAHL: To add to the submittal of our  
19 proposed license, we did in September provide you a copy of  
20 a letter submitted by TVA proposing on September 1st that  
21 they be granted schedule relief on six of the TMI items.  
22 This we provided to you.

23           These have been ongoing discussions for several  
24 months with TVA and in anticipation of the number of due  
25 dates in January we decided to formally present this to

1 you. In addition to the September 1st date there was an  
2 additional September 4 date to provide further  
3 clarification. The essence however of their position and  
4 proposal is contained in this September 1 date that was  
5 submitted to you.

6           The six dated items are shown on Slide No. 2. Now  
7 in view of the importance of these issues and the proposed  
8 schedule changes, we consider it appropriate that Mr. Mills  
9 from TVA set forth his views and TVA's views on this entire  
10 matter. The staff then will follow with its comments with  
11 respect to each of the items.

12           MR. DENTON: I should comment to the extent that  
13 we adopt these dates, you are explicitly making decisions  
14 also for Unit 1 in that they would anticipate on some of  
15 them some of the same kinds of relief being needed. But the  
16 focus of the presentation today is on Unit 2. I think  
17 rather than our trying to explain the efforts that TVA has  
18 gone through and the compensating measures, first you should  
19 hear it from TVA and then we will give you our views on  
20 these same items.

21           Why don't we turn it over to Mr. Mills.

22           MR. MILLS: I had some 35 mm. slides. I do not  
23 know if they are going to get those up or not. I do have  
24 the handouts of what I will be talking about here.

25           CHAIRMAN PALLADINO: That would be helpful.

1 MR. CHILK: Can we use the handouts?

2 MR. MILLS: We can use the handouts.

3 I feel that I should make it clear that we are not  
4 arguing about the requirements but merely are asking for or  
5 requesting some delays in some of the implementation dates  
6 that we are seeing primarily due to equipment deliveries.

7 I will go through each of the items that we have  
8 on our list. The items I think are already defined by Carl  
9 which is the first page of the handout. In addition to that  
10 I do not believe he has the reactor vessel level  
11 instrumentation listed or he does not mention to relieve the  
12 safety valve piston program through EPRI.

13 The first one I have on my list is the hydrogen  
14 mitigation system. As I am sure most of you are aware, we  
15 do have an interim distributed ignition system installed and  
16 operational in Sequoyah at this time which we feel is  
17 reliable, has the same capability as the permanent system  
18 and we think equivalent coverage. The difference in the  
19 permanent hydrogen mitigation system in the interim is that  
20 we intend to upgrade to improve the qualification,  
21 redundancy into the control room.

22 COMMISSIONER AHEARNE: Is there any difference in  
23 the igniters themselves?

24 MR. MILLS: The igniters are slightly different.  
25 We had glow plug before and now it is a coil type igniter

1 and it operates directly off 120 volts instead of having to  
2 have a transformer to step it down from 120 to 12 volts. We  
3 feel it is more reliable for a long-term ignition system.

4           COMMISSIONER AHEARNE: You went through a series  
5 of tests using the glow plugs. Are you going through the  
6 same tests with the coil?

7           MR. MILLS: I assume we have done essentially the  
8 same test with these.

9           Is that right, John?

10          MR. RAULSTON: Yes, we have done similar kinds of  
11 tests.

12          MR. MILLS: This is John Raulston, our chief  
13 nuclear engineer from our design organization.

14          COMMISSIONER GILINSKY: In the past I was not  
15 unsympathetic to extending this time in part because I did  
16 not want your research program cut off to meet the early  
17 schedule if it meant that that part of the job was not going  
18 to get done as well as it might. Does this mean that you  
19 will be looking further at the problem? Or have you pretty  
20 well frozen the requirements that you would be carrying out  
21 and implementing?

22          MR. MILLS: Mr. Gilinsky, we feel that we have  
23 pretty much frozen the design. We feel that all the tests  
24 and research and so forth will have been completed by  
25 January 1982. This is an equipment delivery problem that we

1 have. It is going to be June 1982 before we will have all  
2 of the equipment delivered on this permanent system. So  
3 that is the reason for the request. We are in no way asking  
4 for a delay on other conditions on the license. It is only  
5 on the equipment delivery and installation.

6           We feel that after the equipment is delivered it  
7 will require about a 110-day outage to install all this  
8 permanent ignition system. So we are requesting to be able  
9 to install that during the first refueling outage. That is  
10 about the longest time item that we have during that  
11 outage. That is our request regarding the system.

12           COMMISSIONER GILINSKY: What causes this to be  
13 such an item that takes so much time to install?

14           MR. MILLS: You know most of these things are high  
15 points inside the upper and lower plenums. We will have to  
16 have a lot of scaffolding put in. There is quite a bit of  
17 wiring to be done, the conduit and so forth to wire this.  
18 We are putting in qualified wiring and so forth. We are not  
19 using the emergency lighting system as we did on our interim  
20 system. And we are putting in redundant igniters.

21           So there is quite a bit of conduit to be run and  
22 it is the type thing that we will have a lot of scaffolding  
23 inside the containment. That is the type of thing that is  
24 going to take so much time to do.

25           CHAIRMAN PALLADINO: Will you be installing new

1 igniters?

2 MR. MILLS: Yes, sir, we will.

3 CHAIRMAN PALLADINO: When will the first refueling  
4 outage take place?

5 MR. MILLS: The first refueling outage is  
6 scheduled for the first part of 1983 on Unit 2.

7 CHAIRMAN PALLADINO: The first part of 1983, what  
8 does that mean, February, March?

9 MR. MILLS: Sir, I can tell you January is what we  
10 are talking about. However I know you realize that depends  
11 upon a lot of things.

12 COMMISSIONER AHEARNE: Just to make sure I  
13 understand one of your earlier answers, you said you have  
14 completed the same kind of reliability tests in some  
15 environment that you had on the glow plugs. You have done  
16 that for the coil.

17 MR. RAULSTON: We have not completed all the tests  
18 but they are planned in the immediate future and certainly  
19 prior to January.

20 COMMISSIONER AHEARNE: But you obviously have  
21 enough confidence at this stage that the tests are going to  
22 turn out successfully.

23 MR. RAULSTON: Right.

24 COMMISSIONER AHEARNE: You have gone ahead I  
25 gather and are committed to this system.

1 MR. BAULSTON: Yes.

2 MR. MILLS: Yes, sir.

3 COMMISSIONER AHEARNE: Thank you.

4 MR. MILLS: The next item that we have is the  
5 reactor coolant system venting. We started on this we think  
6 pretty early and we let a contract for the reactor pressure  
7 vessel head vent back in December 1979. Then when  
8 NUREG-0737 was issued in October 1980 we realized that our  
9 pressurizer vent system was not going to meet the NUREG-0737  
10 requirements so we have been negotiating since that time  
11 with the vendor to modify the pressurizer vent system.

12 The conceptual design was provided NRC in July of  
13 1981. It will be July 1982 before all of the equipment is  
14 delivered and there is about a four-week shutdown required  
15 in order to install this.

16 So again we ask to be able to install this at the  
17 first refueling outage. Maybe it would be appropriate for  
18 me to tell you now that for all of these items at various  
19 times between now and January 1983 we will have equipment  
20 available. And I think it is clearly understood what we are  
21 asking is not to have a series of shutdowns, shut down for a  
22 month, operate for a month, shut down for a month type  
23 thing. We are requesting that we be able to do all of these  
24 items during the first refueling outage.

25 There are two or three of them that we can do if

1 we have any kind of a forced outage prior to that time of  
2 sufficient duration.

3 CHAIRMAN PALLADINO: What is wrong with the vent  
4 valves that you have now, the PORV?

5 MR. MILLS: They are not qualified seismically I  
6 understand. They do not meet the seismic qualification  
7 requirements.

8 CHAIRMAN PALLADINO: But they do exist. They do  
9 function as vents.

10 MR. MILLS: Yes, sir.

11 CHAIRMAN PALLADINO: Do you have a vent installed  
12 also in the reactor vessel?

13 MR. MILLS: We will be installing one at the first  
14 refueling outage. It will be coming off the UHI overhead  
15 injection line as I understand it. It is not installed at  
16 this time.

17 COMMISSIONER GILINSKY: Are there detailed  
18 procedures for dealing with the problems that the vents are  
19 supposed to solve in the absence of the vents, feed and  
20 bleed procedures or whatever?

21 MR. MILLS: I will verify this with the plant  
22 superintendent, but my understanding is that there are  
23 procedures regarding the use of the PORVs for venting.

24 Is this correct, Jerry?

25 MR. BALLENTINE: Yes, sir.

1           COMMISSIONER AHEARNE: I have one question. I  
2 noticed something. Are adapters provided? You mentioned  
3 you are having difficulty obtaining a particular switch but  
4 no response from the vendors. I wonder if you could say a  
5 few words about why you are not getting any response from  
6 the vendors.

7           MR. MILLS: All right, sir. This is a hand  
8 controller. It is not qualified seismically. We have to do  
9 one of several things. We are either going to have to be  
10 able to find one that is qualified and obtain it or we are  
11 going to have to qualify it ourselves through testing or we  
12 would have to use a non-seismic controller. We feel if we  
13 cannot get one in sufficient time for this outage, either it  
14 is qualification ourselves or obtaining one.

15           COMMISSIONER AHEARNE: But it is a seismic  
16 qualification.

17           MR. MILLS: Yes, sir.

18           CHAIRMAN PALLADINO: You say you will make the  
19 switch yourself if you cannot get anyone to provide it.

20           MR. MILLS: Yes, sir, we will qualify it ourselves  
21 or see that it is qualified.

22           CHAIRMAN PALLADINO: You will qualify it.

23           MR. MILLS: Yes, sir.

24           CHAIRMAN PALLADINO: Are there any other questions?

25           (No response.)

1           CHAIRMAN PALLADINO: I guess we are ready to  
2 proceed.

3           MR. MILLS: The next item that I have is incore  
4 thermocouple system. TVA has installed incore thermocouple  
5 system as upgraded since TMI-2. It includes 60  
6 thermocouples at the core exit, five thermocouples in the  
7 upper head and thermocouple placement is sufficient to give  
8 a radial temperature distribution across the core and  
9 temperature of fluid in the upper head. A spatially  
10 oriented core map indicating temperature at each  
11 thermocouple is available. We have a printout of average,  
12 instantaneous, maximum temperature for all thermocouples and  
13 temperature-time histories.

14           That item and the next one are the two that we  
15 have upgraded since TMI-2.

16           CHAIRMAN PALLADINO: You say you have a printout.  
17 How about a display.

18           MR. MILLS: I am sure we have a display if we have  
19 a printout.

20           Jerry, we have a cathode ray tube or something, do  
21 we not, on thermocouples? We do not?

22           We have only a printout.

23           And the readout range of computer driven system is  
24 200 to 2300 degrees Fahrenheit. Presently the additional  
25 analog readout is from zero to 700 degrees Fahrenheit.

1 However our commitment is to upgrade analog readout with the  
2 best available equipment by January 1, 1982 and we know now  
3 that we can get a readout that will go up to 2,000 degrees.  
4 We are assured of that.

5           COMMISSIONER AHEARNE: Now by a readout you are  
6 not talking about a display?

7           MR. MILLS: I do not know if that will be a  
8 display or not.

9           Do you know, John?

10          MR. RAULSTON: It is just an analog display of the  
11 temperature.

12          COMMISSIONER GILINSKY: Is that the item that you  
13 are asking for relief on?

14          MR. MILLS: Sir, originally we had zero to 700  
15 degrees. We have talked to the staff. The staff would have  
16 to say whether this is satisfactory to them. But we do  
17 commit that we will have the best available equipment by  
18 January 1, 1982.

19          COMMISSIONER GILINSKY: Is that the only item that  
20 is outstanding or have the other items been installed?

21          MR. MILLS: Yes, sir. What I have down here is a  
22 description of our system.

23          COMMISSIONER GILINSKY: So the only thing left to  
24 upgrade for the thermocouple system is to extend the range  
25 of the meter.

1 MR. MILLS: That is what we intend to do, yes, sir.

2 COMMISSIONER GILINSKY: That is what you are  
3 talking about.

4 MR. MILLS: Right.

5 CHAIRMAN PALLADINO: You are saying you would go  
6 to at least 2,000 degrees?

7 MR. MILLS: We know now we can go to 2,000 degrees  
8 by January.

9 CHAIRMAN PALLADINO: Was the requirement not 2300?

10 MR. MILLS: I think the requirement is 2300.

11 CHAIRMAN PALLADINO: So we will have to get an  
12 opinion from the staff whether that causes any problem.

13 MR. MILLS: What we are saying is if one is  
14 available we will have it. We know now we can go to 2,000  
15 degrees.

16 COMMISSIONER BRADFORD: Why was that not done  
17 sooner?

18 MR. MILLS: I guess that this came up pretty late  
19 in the game and that we considered this the system. We had  
20 already the computer driven system going to 2300 degrees as  
21 being satisfactory and did not have the additional system.  
22 We considered an additional system and of course cut it off  
23 at 700 degrees Fahrenheit.

24 COMMISSIONER BRADFORD: What is the situation with  
25 Unit 1?

1 MR. MILLS: We have the same situation there, Mr.  
2 Bradford. But I believe that January 1, 1982 is the date  
3 anyway on this. So it is not that we are late at this time.

4 COMMISSIONER BRADFORD: I see.

5 CHAIRMAN PALLADINO: Can I ask a question? Do our  
6 requirements state that we should have a display of the  
7 instantaneous, average and maximum values for temperature?  
8 I am really asking the staff.

9 MR. MATTSON: The requirement is that they be able  
10 to select from 16 thermocouples and display any of them.  
11 There is a time for displaying all 16 of them within two  
12 minutes or something like that. I can look it up in a  
13 minute.

14 CHAIRMAN PALLADINO: Is that going to be met here?

15 MR. MATTSON: Yes.

16 MR. MILLS: The next item we have is the technical  
17 support center. TVA provided a response to NUREG-0696 on  
18 June 2, 1981. We did identify the technical support center  
19 as the only emergency response facility that would not be  
20 completed by October 1, 1982. The completion of the design  
21 and delivery of equipment is scheduled for April 1982 and  
22 there is about a four-week outage required to install the  
23 system required for the technical support center.

24 We are asking to wait until the first refueling  
25 outage for that. As you are probably aware, we do have an

1 interim technical support center at this time that would be  
2 available in case of a need prior to that time.

3           CHAIRMAN PALLADINO: Is there any problem in  
4 installing the technical support center while you are  
5 operating?

6           MR. MILLS: Yes, sir. I understand that there are  
7 some connections that have to be made to the plant computer  
8 and so forth in order to get some readouts over into the  
9 technical support center. We do not consider it safe to be  
10 in operation during the time that we are hooking on those  
11 parameters.

12           COMMISSIONER AHEARNE: I guess you had a comment  
13 that you have to have the equipment installed in the main  
14 control room. It is more that you have to take taps into  
15 current instrumentation on leads that go into the control  
16 room.

17           MR. MILLS: I believe that both of these are  
18 off-the-plant computer.

19           Is that right, John?

20           MR. RAULSTON: They come from auxiliary racks and  
21 stuff like that which is the common focal point of the  
22 instrumentation that goes in the control room.

23           CHAIRMAN PALLADINO: So it is primarily making  
24 connections. That is the basis for your asking for the  
25 first one.

1 MR. MILLS: Yes, sir. A four-week outage would be  
2 required to shut the plant down, make the connections and  
3 come back up. So we are asking to use our interim technical  
4 support center until the first refueling outage when we can  
5 make those connections.

6 COMMISSIONER AHEARNE: On that related area, do  
7 you have a safety display system that you are installing?

8 MR. MILLS: For this permanent technical support  
9 center, yes, sir, that is included.

10 CHAIRMAN PALLADINO: What is the nature of your  
11 interim TSC? Is it accepted by the staff?

12 MR. MILLS: Yes, sir. I understand it has been  
13 accepted by the staff as an interim support center.  
14 Basically our tie-in at this time on that is through a TV  
15 camera in the control room and monitored in the interim tech  
16 support center. This interim tech support center is located  
17 just adjacent to the control room. There is only one door  
18 between them. So if we did have an accident and manned the  
19 tech support center, we are through one door into the  
20 control room if necessary.

21 The permanent technical support center is still in  
22 the very close vicinity of I would say no more than 25, 30  
23 feet.

24 CHAIRMAN PALLADINO: Do you want it near the  
25 control room or away from the control room?

1           MR. MILLS: We wanted it near the control room.  
2 My understanding is that the philosophy behind this is we  
3 would not have a lot of people in the control room but they  
4 wanted it in the vicinity of the control room.

5           CHAIRMAN PALLADINO: Are there any other questions?

6           (No response)

7           MR. MILLS: The next item that I have is the  
8 post-accident sampling system. The sampling system has been  
9 purchased and is on site and installation is approximately  
10 50 percent complete. It would require about a four-week  
11 outage to complete that. The Radiological Chemical  
12 Laboratory heating, ventilation and air conditioning  
13 requirements are being verified now by analysis. It is my  
14 understanding that we will probably have to have additional  
15 shielding of the Radiological Chemical Laboratory in order  
16 to satisfy the requirements of the type samples that we  
17 would be expected to have.

18           The schedule for the heating, ventilation and air  
19 conditioning equipment, this contract will be awarded in  
20 December 1981 and the delivery of equipment in September  
21 1982. We do have interim procedures in place for obtaining  
22 a sample in some accident environments, probably not at the  
23 levels that we are talking about in the permanent system.

24           The TVA will have sampling system installed and  
25 Radiological Chemical Laboratory upgraded before startup

1 following first refueling outage.

2           COMMISSIONER AHEARNE: We have been and I guess a  
3 lot of people in the industry and the research have been  
4 going through a reexamination of what are the appropriate  
5 materials to be used for doses and dose calculations  
6 following up on some of the questions that were raised about  
7 iodine and so forth.

8           I notice one of the comments we have here is that  
9 some of the dose calculations still have to be completed.  
10 Is there any question in your mind or your staff's mind as  
11 to what ought to be used to do those calculations?

12           MR. MILLS: John, could you address that?

13           MR. RAULSTON: Yes, I can address that.

14           No, sir, to answer your question. It is just a  
15 matter of scheduling the analysis. We postponed it  
16 originally and used some conservative assumptions. It  
17 turned out not to be conservative enough. Now we are going  
18 back and doing some confirmatory analysis to firm up the  
19 design right now.

20           COMMISSIONER AHEARNE: So as far as the questions  
21 about form of iodine or what is the appropriate amount that  
22 might get into the atmosphere, that is not causing you any  
23 problem as far as the calculations?

24           MR. RAULSTON: We have basically been using the  
25 guidance that the staff has provided.

1 MR. MATTSON: I think we are talking about the  
2 primary coolant sample, not the atmosphere sample. The 0772  
3 cesium iodide controversy I do not think would enter into  
4 this one.

5 CHAIRMAN PALLADINO: If your calculations are  
6 wrong, how will they impact on what you do? It says the  
7 calculations are still to be completed.

8 MR. RAULSTON: We have based some preliminary  
9 design of our heating and venting system on some assumptions  
10 and these calculations are going to confirm that our  
11 assumptions are now correct.

12 Basically the problem we have had in Sequoyah was  
13 the area for the Radio Chemical Laboratory was not  
14 originally designed for habitability during these kinds of  
15 accidents. So we have had to go back and upgrade the  
16 habitability of that area and its route to and from the  
17 sampling station. That has required a lot of radiological  
18 analysis and the addition of a lot of shielding to make sure  
19 that the operator can get from the sample station to the lab  
20 and that the lab allows him to stay in there long enough to  
21 analyze the sample.

22 CHAIRMAN PALLADINO: Would you have to make  
23 further modifications if the calculations then confirm your  
24 design basis?

25 MR. RAULSTON: We would probably have to change

1 the specification we now have for additional heating and  
2 ventilating equipment.

3 CHAIRMAN PALLADINO: What are you proposing with  
4 regard to the schedule?

5 MR. MILLS: The schedule?

6 CHAIRMAN PALLADINO: Yes.

7 MR. MILLS: Sir, we are talking again about the  
8 first refueling outage prior to the startup of the first  
9 refueling outage from the first refueling outage.

10 CHAIRMAN PALLADINO: Are there any questions?

11 (No response.)

12 CHAIRMAN PALLADINO: Go ahead.

13 MR. MILLS: Next I have four or five items here  
14 that fall in the category of accident monitoring  
15 instrumentation. The first one is the containment hydrogen  
16 monitors. We are committed to providing containment  
17 hydrogen monitor in accordance with NUREG-0737. The present  
18 status is that the installed monitors we believe meet  
19 requirements except for qualification. The installed  
20 monitors are being tested to demonstrate the upgraded  
21 qualification. The testing will be completed by early  
22 1982. When I say "early," we think in January if everything  
23 goes satisfactorily.

24 COMMISSIONER BRADFORD: Can you explain the phrase  
25 "meet the requirements except for qualification"? I would

1 have said if they met the requirements they would be  
2 qualified.

3 MR. MILLS: I am talking about here I think the  
4 range on it is zero to 10 percent hydrogen. I will say that  
5 they do not meet the qualification requirements. That might  
6 be a better way to phrase it.

7 Let me rephrase that. I will not say they do not  
8 meet them. I will say we tested them to determine if they  
9 are qualified. We think they are.

10 CHAIRMAN PALLADINO: But you have not completed  
11 the test.

12 MR. MILLS: We have not completed the  
13 qualification testing. We believe they will meet the  
14 qualification. When the testing is completed we will be  
15 able to verify that.

16 Those tests are scheduled to be completed sometime  
17 in January, not by January 1st but sometime in January. I  
18 say down there that we will demonstrate the qualification  
19 before startup following the first refueling outage. We do  
20 not believe it will be that long but you know the testing is  
21 not completely under our control and it might slip a week or  
22 a month or something. So I would ask for something other  
23 than January for that. We put the "first refueling outage"  
24 down.

25 COMMISSIONER AHEARNE: But that request is based

1 on the assumption that the ones that you have will meet the  
2 qualification tests.

3 MR. MILLS: Our commitment though is to  
4 demonstrate the qualification of the monitors, whether it be  
5 these or others, prior to startup of the first refueling  
6 outage. I am telling you that we do believe that the ones  
7 we have presently installed will meet the qualification  
8 requirements.

9 CHAIRMAN PALLADINO: Then you will not need the  
10 refueling outage, will you?

11 MR. MILLS: No, sir. All I am saying is we may  
12 not be able to state completely to you prior to January 1,  
13 1982 that we have them completely qualified. The testing  
14 may not be completed at that time.

15 CHAIRMAN PALLADINO: Then when do you complete the  
16 tests? Do you need an outage to complete the tests?

17 MR. MILLS: No, sir. It is a convenient date to  
18 meet.

19 COMMISSIONER AHEARNE: If the ones that you have  
20 do not meet the tests, you have to get other ones.

21 MR. MILLS: Yes, sir. That would require an  
22 outage.

23 MR. MATSON: It might help to note that the  
24 meters that they have in now meet IEEE 323-1971. The  
25 testing is designed to show that they conform to 323-1974.

1 I believe the date for the rest of the equipment is somewhat  
2 more lax than January 1982. So we have concluded that their  
3 proposal makes sense. That is in the worst event, that is  
4 the tests fail between now and January, then we would have  
5 to live with 1972 version of the standard until the first  
6 refueling which is essentially equivalent to what we are  
7 doing with the other equipment anyhow.

8 CHAIRMAN PALLADINO: Do you want to go ahead?

9 MR. MILLS: The next one I have is again under  
10 accident monitoring instrumentation: containment pressure  
11 monitor. Our commitment is to provide a wide-range  
12 containment pressure monitor in accordance with Reg Guide  
13 1.97 and NUREG-0737 qualified to IEEE 323-1974.

14 We presently have installed a wide-range pressure  
15 monitor qualified to IEEE 323-1971. We have gone out for  
16 bids on an upgraded monitor three times since January 1981.  
17 All bids received offered only IEEE 323-1971 qualification.  
18 The vendors have informed us that IEEE 323-1974 qualified  
19 equipment would probably be available in the first half of  
20 1982. So we do intend to go out and buy bids again this  
21 month, hoping that that equipment will be available as  
22 stated in the first half of 1982.

23 CHAIRMAN PALLADINO: Which equipment was this?

24 MR. MILLS: It is the containment pressure monitor.  
25 We basically have installed at this time what is

1 available at this time and we are stating that when  
2 something better is available, which we understand will be  
3 bid next year, we will purchase that and install that.

4           CHAIRMAN PALLADINO: Will that be done the first  
5 refueling outage?

6           MR. MILLS: Yes, sir. We would install it during  
7 the first refueling outage, yes, sir.

8           COMMISSIONER BRADFORD: When you say "first  
9 refueling outage," for Unit 2 that means roughly January  
10 1983. How about Unit 1?

11           MR. MILLS: Unit 1 is, I believe September 1982 is  
12 the current schedule for it. I know you understand that  
13 those are not set dates.

14           COMMISSIONER BRADFORD: I understand that. But if  
15 in fact the various extensions are approved and we are  
16 talking about the first refueling of Unit 1, by that you  
17 mean September 1982?

18           MR. MILLS: I really mean the first refueling  
19 outage.

20           COMMISSIONER BRADFORD: But you do mean the first  
21 refueling outage for Unit 1 with regard to Unit 1 and for  
22 Unit 2 with regard to Unit 2.

23           MR. MILLS: Yes, sir.

24           I guess what I was really asking is if you find  
25 that you can approve these delays, I am asking you to make

1 it the outages rather than making it a fixed date.

2           COMMISSIONER AHEARNE: I understood that. I  
3 wanted to understand the relationship with regard to Unit 1  
4 and Unit 2.

5           MR. MILLS: Yes, sir.

6           The next item that I have is the containment  
7 radiation monitors. We are committed to providing the  
8 radiation monitors in accordance with NUREG-0737 and the  
9 high range radiation monitors are on site ready for  
10 installation. However some of the associated  
11 instrumentation and controls are to be delivered this  
12 month.

13           There is a four-week shutdown required for  
14 installation. We are asking to wait until the next outage  
15 of sufficient duration. Now I do not know if that would be  
16 the first refueling outage. That certainly would be the  
17 last date. We may have an outage unexpected of four-week  
18 duration prior to that time and we would be ready to install  
19 that system if that were the case.

20           CHAIRMAN PALLADINO: Is this something you can do  
21 rather quickly?

22           MR. MILLS: Four weeks shutdown is required.

23           CHAIRMAN PALLADINO: If you have such an outage  
24 would you do some of the other things also that you have  
25 planned for the first refueling outage if the equipment were

1 available?

2           MR. MILLS: Mr. Chairman, the things that we could  
3 do and could be worked in we certainly would. Please  
4 understand that Monday-morning quarterbacking is hey, you  
5 were shut down six weeks; why didn't you do the four-week  
6 item. Six weeks before that we thought it was a two-week  
7 outage. This is one of the things we do run into in that  
8 situation.

9           COMMISSIONER AHEARNE: The equipment that you have  
10 though meets the requirements as far as the range?

11           MR. MILLS: The equipment that we have at this  
12 time is located outside containment.

13           COMMISSIONER AHEARNE: I mean the stuff that you  
14 will be putting in. That does have the appropriate range.

15           MR. MILLS: Yes, sir.

16           COMMISSIONER BRADFORD: Why don't you go ahead  
17 because the question you thought you were answering is the  
18 one I was going to ask. That is what do you do if you have  
19 to measure radiation in the meantime.

20           MR. MILLS: We now have what I would call interim  
21 monitors outside containment which read through the steel  
22 vessel. We correlate what is inside containment with that  
23 through a series of graphs which we then give a close  
24 correlation. In other words I do not know what the numbers  
25 are but I am saying we are reading through this steel

1 vessel. We think we have it calibrated to the point that  
2 10 squared R per hour out here may be 10 to the 7th inside  
3 the containment.

4 COMMISSIONER GILINSKY: Where are the monitors?

5 MR. MILLS: They are located outside containment  
6 at this time, the interim monitors.

7 COMMISSIONER GILINSKY: And they are reading  
8 what? What is it that they are reading?

9 MR. MILLS: We hope that they are giving an  
10 indication of what is inside containment through the steel  
11 vessel, radiation level.

12 COMMISSIONER BRADFORD: Can someone on the staff  
13 tell me if this is a post-TMI requirement?

14 MR. EISENHUT: Yes.

15 COMMISSIONER BRADFORD: There was not required to  
16 be an ability to read radiation levels in containment before  
17 TMI?

18 MR. EISENHUT: I think it is a question of  
19 upgrading.

20 MR. MILLS: The range I think is what it is.

21 MR. MATTSON: It is the high range requirement is  
22 a post-TMI.

23 COMMISSIONER BRADFORD: The reason I asked is if  
24 there was a requirement that there be some capability within  
25 the containment before, where is that instrument now?

1 MR. MILLS: You are asking what is installed  
2 inside containment at this time.

3 COMMISSIONER BRADFORD: Yes. If there had never  
4 been a TMI I take it you would not be reading through the  
5 steel pressure vessel.

6 MR. MILLS: The reason we are reading it through  
7 now is the high range required. We are required I believe  
8 it is up to 10 to the 8th R per hour.

9 COMMISSIONER GILINSKY: Is it the high end that  
10 this is supposed to compensate for? Your instrument is  
11 reading from outside the containment?

12 MR. MILLS: It is the high end rating.

13 I think Mr. Bradford was asking what is installed  
14 inside containment. I do not know.

15 COMMISSIONER BRADFORD: I was saying that I would  
16 have thought that even without the upgrading requirement  
17 there would have been an instrument of some sort inside the  
18 containment.

19 MR. MILLS: Does anyone know the range on that?

20 MR. RAULSTON: I do not know what the range is.  
21 There are lower level radiation monitors.

22 MR. MILLS: It is a lower range, yes, sir.

23 COMMISSIONER GILINSKY: What about effluents? Do  
24 you have instruments installed?

25 MR. MATTSON: I am told back here that we have

1 allowed prior to TMI, and would have allowed had there not  
2 been a TMI for post-accident measuring of radiation inside  
3 of containment, the use of external-to-containment  
4 measurements and correlations which is what they are  
5 proposing as an interim measure.

6 COMMISSIONER BRADFORD: I see. So you may in fact  
7 not have planned to have something inside the containmen..

8 COMMISSIONER GILINSKY: Are you saying there is  
9 nothing inside the containment, Roger?

10 MR. MATTSON: I do not know.

11 COMMISSIONER GILINSKY: What about measurement of  
12 effluents?

13 MR. MILLS: That is my next item I believe, Mr.  
14 Gilinsky.

15 The next item, still accident monitoring  
16 instrumentation, is the wide range noble gas, iodine and  
17 particulate effluent monitors. We will provide monitors in  
18 accordance with Reg Guide 1.97, NUREG-0737 which are IEEE  
19 Class 1E, Seismic Category 1, environmentally qualified.

20 We plan to procure integrated monitoring assembly  
21 which will accomplish the particulate, iodine and noble gas  
22 monitoring in accordance with NRC requirements.

23 The interim procedures for monitoring noble gas,  
24 iodine and particulates are in place and the interim  
25 procedures have been approved by NRC staff.

1           COMMISSIONER GILINSKY: Would you tell us what  
2 those are?

3           MR. MILLS: Yes, sir, just a second. I will get  
4 someone. I would like to continue with this first.

5           The noble gas monitors are on site at this time.  
6 The instrumentation and controls will be shipped to the site  
7 on September 18 and TVA will install during the first outage  
8 of sufficient duration. It is three weeks outage required.

9           The iodine and particulate monitor which meets NRC  
10 requirements is not presently available. We do expect to be  
11 able to procure and install the integrated monitor by the  
12 first refueling.

13           You asked me about the interim procedures for  
14 monitoring noble gas, iodine and particulates.

15           Jerry, can you address that?

16           MR. BALLENTINE: No, I cannot, not just off the  
17 top of my head. I would be afraid to address them  
18 completely.

19           I believe the procedures that we are talking about  
20 are those procedures that are associated with the  
21 implementing procedures as part of the radiological  
22 emergency procedure applied to it. We have recently revised  
23 that.

24           COMMISSIONER GILINSKY:       : there have to be some  
25 instruments in place to at least give a rough estimate of

1 effluent releases. Those requirements have been in place  
2 for some time, a year and a half I think.

3 MR. EISENHUT: I think that is right. If you  
4 recall it was one of the items that came out as one of the  
5 short-term lessons learned: to have an interim procedure  
6 for being able to monitor the noble gas and iodines and  
7 particulates. I seem to remember that.

8 COMMISSIONER GILINSKY: I would like to be assured  
9 that that is in place.

10 MR. EISENHUT: It is my understanding that that  
11 item was in place.

12 MR. RAULSTON: We have got the iodine monitor and  
13 the procedure allows for somebody to go in there and take a  
14 sample cartridge out to a laboratory and analyze it for the  
15 particulate. It is difficult to say what the radiation  
16 level will be and to guarantee that an individual can get in  
17 there and get it out. That is what the procedure, TI-66  
18 referred to, tells the mechanism for going in and getting  
19 that particular sample, among other things.

20 CHAIRMAN PALLADINO: Are you saying that we have a  
21 procedure here but we do not know if it will work?

22 MR. RAULSTON: We know it will work but it is  
23 qualified depending on the radiation level. Depending on  
24 what went on in the plant these cartridges will have various  
25 radiation levels. If they are too high, obviously we will

1 not be able to get them. We think that we can probably get  
2 a sample out to measure the iodine and particulate in a lab  
3 for a lot of the things that one might postulate could go  
4 wrong.

5           CHAIRMAN PALLADINO: But it would not cover all of  
6 the situations.

7           MR. RAULSTON: It would not but what we want to  
8 ultimately put in is a monitoring system that will in place  
9 monitor these things and tell us without having to go in  
10 there and get the sample.

11           CHAIRMAN PALLADINO: Where in the NRC were these  
12 procedures approved, here at headquarters or on the site?

13           MR. GRIMES: Perhaps I could speak to that. We  
14 have an onsite appraisal team made up of both headquarters  
15 and regional personnel and contractor personnel that  
16 specifically reviewed the onsite emergency procedures. So  
17 they would have gone through this and they have been on  
18 site, and the region has written a letter to Sequoyah with  
19 the results of that onsite appraisal. That was not flagged  
20 as one of the big items.

21           So I assume that the team has looked at that and  
22 found no major problems. There were some other monitoring  
23 things that TVA agreed to correct.

24           CHAIRMAN PALLADINO: Don't the people from the  
25 field report when they have approved things or is that not

1 necessary?

2 MR. GRIMES: Yes, it would be in the body of the  
3 report which is just completed.

4 CHAIRMAN PALLADINO: Thank you.

5 COMMISSIONER AHEARNE: I noticed on one of the  
6 staff papers addressed to me it mentioned that some of the  
7 work may require both units to be down. Is that correct?  
8 That is on his post-accident sampling equipment.

9 MR. MILLS: Is that true?

10 Yes, sir.

11 COMMISSIONER AHEARNE: Is that likely to be  
12 difficult to get both units down at the same time on this  
13 outage?

14 MR. MILLS: I guess what we are asking for, Mr.  
15 Ahearne, some of these cases you know are like this one for  
16 example. We are saying the first outage of sufficient  
17 duration, three weeks. Then we add a bottom line which is  
18 the first refueling outage. There might be a convenient  
19 time for us prior to that time which would be more  
20 convenient for both units other than the first refueling  
21 outage. But the latest date would be the first refueling  
22 outage on it.

23 I guess if it comes to the point that we have a  
24 scheduled outage for Unit 2 and both units were required to  
25 be down, we will have to bite the bullet and shut it down.

1 If both of them are required to be down, if it does not  
2 happen accidentally we will make it happen on purpose.

3           COMMISSIONER GILINSKY: Should you have the  
4 release of radioactivity, how would you go about estimating  
5 how much had been released?

6           MR. MILLS: I believe we have the offsite monitors  
7 for releases. I think what we are talking about here, Mr.  
8 Gilinsky, is the internal, what is inside containment and we  
9 are talking about the high levels that we are now being  
10 asked to look at and grab samples and the problems we are  
11 having with that. The reason we are asking to put in a  
12 monitoring system is so we do not have to go in for these  
13 grab samples and deal with the personnel exposure to the  
14 high levels of radiation.

15           COMMISSIONER GILINSKY: I understand that you want  
16 a better system and you are committed to it and it is going  
17 to be installed. But in the meantime suppose you had a  
18 release up the stack. How would you estimate that release?

19           MR. MILLS: I think that we would be doing that  
20 with the offsite monitors, would we not?

21           MR. RAULSTON: We have the noble gas monitors in  
22 there. For the iodine and particulates we have to go in and  
23 take these zeolite cartridges out and take them to a  
24 laboratory. We could determine from that. As Larry said,  
25 what we want to do eventually is to avoid having to put an

1 operator in there in high radiation.

2 COMMISSIONER GILINSKY: I understand that. The  
3 monitors that you have in there will handle the noble gases?

4 MR. RAULSTON: Yes, they read out remotely for the  
5 noble gases.

6 COMMISSIONER GILINSKY: Those are installed now?

7 MR. RAULSTON: Yes, sir.

8 COMMISSIONER GILINSKY: So the problem is for  
9 iodine and particulates.

10 COMMISSIONER AHEARNE: I have a question or this  
11 is more curiosity. I noticed in one of the things the staff  
12 said I guess reporting back from what you told the staff is  
13 that Reg Guide 1.97 impacted your design schedule but aided  
14 TVA in making a decision to lower the classification of some  
15 of the piping and valves which resulted in some cost savings.

16 Was that accurate?

17 MR. RAULSTON: To the best of my knowledge, yes,  
18 sir.

19 COMMISSIONER AHEARNE: All right.

20 MR. MATTSON: There are a couple of examples in  
21 this list where some delay can be attributed to the added  
22 requirements of the Tennessee Valley Authority over what  
23 0737 required. This is one.

24 CHAIRMAN PALLADINO: Do you have any more, Mr.  
25 Mills?

1 MR. MILLS: There are a couple more that I wanted  
2 to mention that are not in that grouping that you had there.

3 COMMISSIONER GILINSKY: May I ask one more  
4 question to be sure I understood what you said about noble  
5 gas monitors? When you say noble gas monitors are on site  
6 and so on and will be installed, these are the improved  
7 systems or what? You now have monitors installed which you  
8 are going to replace, is that right? Do I understand that  
9 correctly?

10 MR. RAULSTON: The ones we have installed meet all  
11 of the current requirements. What we do not have installed  
12 are the monitoring for iodines and particulates.

13 MR. MILLS: John, I have that the noble gas  
14 monitors are on site and the instrumentation and controls  
15 would be shipped September 18.

16 MR. RAULSTON: That is right. I am sorry. The  
17 fully qualified ones are as Larry said. They are there and  
18 the instrumentation and controls for them are coming. The  
19 ones we have are not qualified for the higher  
20 environmental levels.

21 COMMISSIONER GILINSKY: You will then replace  
22 those with the new ones.

23 MR. RAULSTON: Yes, sir.

24 MR. MILLS: There are a couple of other things  
25 that we have previously talked to the staff about but are

1 not on my slides here because it did not make the latest  
2 letter I guess: reactor vessel level instrumentation. The  
3 design drawings are not quite complete on that. It involves  
4 considerable piping, pipe support, wiring, conduit  
5 installation inside containment. Our estimated outage is  
6 about eight weeks to do that. We are asking for the first  
7 refueling outage for that installation of that reactor  
8 vessel instrumentation.

9           The other item that I had was the safety and  
10 relief valve testing. TVA is participating in the EPRI  
11 owners' group effort on this item and committed to conform  
12 to the results of this effort. I guess we are asking that  
13 the Commission agrees with that. That is the program TVA  
14 would like to have regarding the safety relief valve testing.

15           That completes the items that we have.

16           CHAIRMAN PALLADINO: Do we have any date for the  
17 safety relief valve testing?

18           MR. MILLS: I have the report concerning test  
19 results on the Sequoyah test relief safety valves expected  
20 to be submitted to the staff by April 1, 1982. That is the  
21 latest thing.

22           CHAIRMAN PALLADINO: Are there any other questions  
23 for Mr. Mills?

24           COMMISSIONER BRADFORD: If we do wind up feeling  
25 that some further requirement is reasonable, can it be

1 phrased in terms of the first outage after a certain date --  
2 I do not know what the date would be but say January 1, 1982  
3 -- rather than the first refueling outage? On a number of  
4 these you have said that they can in fact be done at the  
5 first outage.

6 MR. MILLS: If we could say of sufficient  
7 duration, Mr. Braiford, the problem that we do end up  
8 getting into is one that I mentioned earlier with what turns  
9 out to be perhaps a six-week outage, which means that you  
10 could have done something that was predicted to be two weeks  
11 when we started.

12 We certainly would attempt to do what we can when  
13 we have the equipment available, so forth, prior to the  
14 first refueling outage. We do not like to pile those things  
15 up any more than we can, and anything we can do prior to  
16 then we would. Of course that is the first outage of the  
17 duration that we need to do some of these things that are  
18 scheduled.

19 Certainly if all of a sudden out there in July  
20 1982 we end up with a six-month outage that we do not expect  
21 or predict at this time, we could certainly do a lot of  
22 these things and certainly would.

23 CHAIRMAN PALLADINO: I gather if you knew it was  
24 going to be a six-months' outage, you would.

25 MR. MILLS: Yes, sir.

1 CHAIRMAN PALLADINO: Are there any more questions?

2 (No response.)

3 CHAIRMAN PALLADINO: We thank you, Mr. Mills.

4 MR. MILLS: Thank you, sir.

5 MR. DENTON: I thought that epitomized some of the  
6 difficulties the staff faces with a specific date in a  
7 requirement: the conflict between the desire to get it all  
8 done and then the practicalities in any particular case.

9 We would like to comment on our view on these. We  
10 do not think the extensions to the first outage are  
11 unreasonable. But I would not want this to be generalized  
12 that we would have the same view for all applicants for all  
13 cases. I think we do have to look and see the effort that  
14 the company has made toward meeting the date, the  
15 compensating measures that they have in place and come to a  
16 judgment about that on a case-by-case basis.

17 That is why I thought it important for you to hear  
18 the rationale in this case. I would not propose that it be  
19 generalized for all other applicants, whatever the decisions  
20 turn out to be.

21 COMMISSIONER BRADFORD: Is it just applicants or  
22 operating reactors as well that would be affected by some of  
23 these changes if they were generalized?

24 MR. DENTON: Some applicants have met some of the  
25 ones that TVA is seeking relief on. There are other ones

1 like water level which is an across-the-board problem for  
2 all the industry because of the additional tests and  
3 unforeseen problems.

4 I would like to have the staff comment on our  
5 views on these very briefly before we move on to other items.

6 COMMISSIONER BRADFORD: Don't you suppose that if  
7 these referrals are granted you will hear from others?

8 MR. DENTON: I think it will probably set some  
9 pattern but I was trying to say I would not think it would  
10 be an automatic pattern unless you want to make it that way.

11 MR. EISENHUT: One may not follow the other. We  
12 have a large number of requests from operating reactors now  
13 where they have sent us letters and have enumerated a number  
14 of items that they feel they will not be able to make the  
15 0737 schedules.

16 We are going through the process now on this next  
17 wave of requirements where you run into many of these same  
18 hardware items that were due January 1982. They are saying  
19 they will have great difficulty meeting them.

20 MR. DENTON: It sure tells me that we need a  
21 better system than everyone meeting the same requirement on  
22 the same date. That forces all of the attention of industry  
23 to that date across the board. On something like  
24 refuelings, if putting in that requirement needs a shutdown,  
25 it is a much more rational time to pick a date of first

1 refueling after some date than to say on July 1 every plant  
2 in the U.S. must have a certain type of monitor. That  
3 causes a big push. Everyone is getting in line trying to  
4 buy that one monitor or ten monitors that are on the shelf.

5           We have looked in detail at these. I think Roger  
6 can talk to the ones that fall within our purview and Brian  
7 Grimes can address the tech support center issue.

8           MR. MATTSON: The information that I had Larry  
9 partially covered in his briefing. You have a paper in  
10 front of you that looks like this and I am not going to go  
11 through it in any detail. Mr. Ahearne I think was following  
12 it as he was going along. Maybe some others of you were too.

13           Let me just echo a couple of things that Harold  
14 said. The total number here is fairly high, the number of  
15 dates that TVA says they cannot meet for Sequoyah 2.  
16 Carrell is right that other plants are not going to meet  
17 some of these dates also. The design features that they are  
18 unable to meet the date on I think varies from plant to  
19 plant but some of them will be difficult in all plants. Let  
20 me try to call out a couple of those as I go along.

21           Because the total was fairly high -- I think if  
22 you total all of the instruments and events and the various  
23 indicators, you will come up to something like ten -- we  
24 looked at two things: first, had the utility made a  
25 reasonable effort to meet the dates and second, was there

1 some interim measure in place for each of the places that  
2 they have fallen behind.

3           Having looked at that, first had they made a  
4 reasonable effort, we found places where they probably could  
5 have done better. That is if certain mistakes or  
6 assumptions had not been made, it might have been possible  
7 to meet the dates. But given where they were today, we did  
8 not see any way to foreshorten the time that they were  
9 estimating remaining to comply with the requirements.

10           COMMISSIONER AHEARNE: I am now puzzled by that  
11 answer because I thought you were addressing had they made a  
12 reasonable effort. Whether or not they have made a  
13 reasonable effort, could they do much better given where  
14 they are today is the second question. The first question  
15 was had they made a reasonable effort.

16           MR. MATTSON: We did not find instances where we  
17 thought that TVA was stalling or intentionally holding out  
18 on us to put themselves in a position where we could not say  
19 no. They had placed early orders. They had followed up  
20 with second and third bids where they put things out for  
21 bid. And being a Monday-morning quarterback, you can say  
22 gee, TVA is a big design organization; instead of going out  
23 for bids why didn't you build it yourself.

24           That is fairly easy to take potshots in that way.  
25 But overall it looked like they had made a reasonable effort

1 to meet the dates. They had run into difficulty in these  
2 few areas and with the time they had remaining, the  
3 resources they had at their command, these looked like  
4 reasonable approaches that they were proposing to us.

5           There are interim measures on each of the areas  
6 where they are not going to be able to meet the date. The  
7 interim measures are like the interim measures that we have  
8 approved for other plants. They may vary from plant to  
9 plant depending on which item they cannot meet. But like  
10 noble gas monitoring and what have you, they are the kind of  
11 thing we have been seeing since the requirements first came  
12 out after the accident at TMI.

13           COMMISSIONER GILINSKY: Does that apply to the  
14 method for measuring iodine releases? Is that comparable to  
15 what we accepted elsewhere?

16           MR. MATTSON: I believe it is, yes, sir.

17           MR. DENTON: Until these new monitors are  
18 installed, the only way to get a sample of what is being  
19 released from the stack is to retrieve the cartridge and  
20 count it in the laboratory. We did make everyone look at  
21 their procedures so to do the best job they could with the  
22 equipment they had until these other devices became  
23 available. So it is comparable.

24           MR. MATTSON: Of course you do pay something for  
25 the delay. Despite the fact you have interim measures to

1 accomplish some of these things, occupational exposures do  
2 go up from having to go back in after operation and making  
3 these changes.

4           We have not attempted to quantify the occupational  
5 exposures. They are the same kind of exposures that we will  
6 be meeting by installing these changes in other operating  
7 plants. So this one slips over from the OL to the operating  
8 class in the sense of occupational exposures.

9           CHAIRMAN PALLADINO: Are these occupational  
10 exposures that would take place in the event of an accident?

11           MR. MATTSON: No, to go back in after it is  
12 operated and install some of this equipment. There are  
13 thousands of man-hours inside a containment for the  
14 distributed ignition system for example to change it from  
15 interim to permanent.

16           One item I would note that is probably a precursor  
17 of some other changes that we will make in schedule: the  
18 vessel level indicator, one of the last ones that Mr. Mills  
19 indicated, is due in all pressurized water reactors by  
20 January 1, 1982. You will remember that the ACRS has  
21 written you at least once and maybe twice saying that that  
22 is pushing too hard for something that we could be a little  
23 more careful about. We could see some prototypical  
24 testing. We need to understand it a little better before it  
25 is rushed into all of these plants.

1           We have a paper in preparation coming down to you  
2 which says we agree with the ACRS. We have pretty well  
3 finalized on the several types of vessle level indicators  
4 that the industry is going to provide. We do need to see  
5 some testing. Some of that is going on in government  
6 laboratories, and we will be proposing a slip in the January  
7 1982 date. So this one is a precursor or harbinger of  
8 things to come for some of the other plants.

9           Other than that the details you have on these  
10 slides are the same as Mr. Mills gave you.

11           MR. DENTON: I think the one that bothered us when  
12 we sent down the memo was this fact that the backup readout  
13 on the incore thermocouples did not go above 700 when we  
14 first saw it and since that time they have extended it to  
15 2,000. I think we find that an adequate interim.

16           MR. MATTSON: That reminds me of something the  
17 Chairman asked a minute ago about how those displays  
18 worked. I found a sentence in 0737: backup display should  
19 be provided with the capability for selective reading of a  
20 minimum of 16 operable thermocouples, four from each core  
21 quadrant, all within a time interval no greater than six  
22 minutes. The range should extend from 200 degrees  
23 Fahrenheit or less to 2300 degrees Fahrenheit or more.

24           They are going to comply with that except they  
25 will only go to 2,000 degrees Fahrenheit by January 1982 and

1 then by the end of the first refueling outage, they will be  
2 in full conformance with that requirement.

3 CHAIRMAN PALLADINO: They will be after that.

4 MR. MATTSON: Yes.

5 MR. DENTON: Maybe Brian would like to discuss the  
6 tech support center.

7 MR. GRIMES: There is one additional page on the  
8 technical support center.

9 We have discussed the matter with TVA and we agree  
10 in principle with a deferral. They are getting equipment by  
11 next April which if the plant were in a pre-startup stage  
12 would have allowed them to meet our date. We do believe  
13 that if they do have an outage, which they know is scheduled  
14 when they come down to last more than about five weeks, they  
15 ought to go ahead and make the connections and subsequent to  
16 that should complete the TSC hardware installation.

17 We understand there are still some uncertainties  
18 in the software procurement and that they will be making the  
19 best effort in that area. We have put an outside date to be  
20 the one that they proposed, which I understand is before  
21 startup after the first refueling outage.

22 CHAIRMAN PALLADINO: Was the original date October  
23 1st?

24 MR. GRIMES: October 1, 1982, yes.

25 CHAIRMAN PALLADINO: How was that date selected?

1           MR. GRIMES: Initially the date was January 1,  
2 1981. I believe immediately after TMI as we developed the  
3 guidance last year, 696, that was published, we had  
4 discussions on the final date. It was published in draft  
5 last summer and then in final last winter. At the time it  
6 was put out in final there were discussions with the  
7 Commission on 696 and the date was proposed at that time of  
8 October 1982 based on discussions with the vendors of the  
9 equipment and utilities at that time.

10           Our latest information on the general industry  
11 compliance comes with the June 1, 1981 submittals on  
12 conceptual designs. Based on our contractor and staff looks  
13 at those submittals, I am not too optimistic at this point  
14 about the October 1, 1982 date if the state of those  
15 submittals really reflects the state of design of many of  
16 the systems.

17           There are a few systems like Diablo Canyon which  
18 have been completed and are functional at this time. And  
19 Davis-Besse has completed their facility and is now  
20 finishing their procedures. There are a few facilities that  
21 did not wait for our guidance but which turn out on a  
22 best-efforts basis to have essentially met our guidance.

23           Those that did wait for the guidance it appears  
24 may go beyond October 1, 1982 even, where they are  
25 constructing new facilities and installing additional

1 equipment.

2           CHAIRMAN PALLADINO: As I recall they said they  
3 would have the new tech support center I guess during the  
4 first outage. Will the interim support center be adequate  
5 until that time even if it was the first refueling outage?

6           MR. GRIMES: Yes. We have looked at this  
7 situation specifically with an appraisal team and it is  
8 comparable to what the rest of the industry has and for the  
9 most part will have until at least next October, the space  
10 with communications facilities and in this case some visual  
11 view of the control room through television cameras.

12           CHAIRMAN PALLADINO: Are there any other questions?

13           COMMISSIONER GILINSKY: Where do we stand on the  
14 EOF for this facility? Is it centralized TVA?

15           MR. GRIMES: Yes, in Chattanooga which happens to  
16 be 14 miles from the Sequoyah site. The Commission approved  
17 the TVA concept last year and the TVA is proceeding on  
18 that. I believe they are planning by next summer to have  
19 some additional information transmittal to that facility.  
20 But they are using that facility right now. It will be  
21 exercised tomorrow in conjunction with the Browns Ferry  
22 exercise.

23           CHAIRMAN PALLADINO: Are there any other questions?

24           (No response.)

25           MR. DENTON: This concludes our presentation on

1 this particular one. We would recommend that the license be  
2 conditioned with the types of dates that have been discussed  
3 here today, the first refueling.

4           COMMISSIONER AHEARNE: Could I ask, I am not sure  
5 where to fit it, it goes back to something that Larry Mills  
6 talked about in the beginning, namely the use of the  
7 permanent system. TVA has made the conclusion that the coil  
8 igniter is better than the glow plug and assuming that their  
9 tests work out correctly, successfully, they will be  
10 installing that. Has the staff, has NRR reviewed the coils  
11 and do they have the same level of confidence that TVA has?

12           MR. DENTON: Let me ask if Roger can address that.

13           MR. MATTSON: We are waiting to see how the tests  
14 work out but my staff says that the change looks like it is  
15 in the right direction to them.

16           If I can offer a partial explanation for what is  
17 going on with the distributed ignition system, we had  
18 Sequoyah first and they got part of the problem solved. We  
19 came along with McGuire, it was a tad bit better than  
20 Sequoyah. The thing put in by D. C. Cook is a little bit  
21 better yet. Now Sequoyah is coming back up with a permanent  
22 hydrogen mitigation system and equaling the level that has  
23 been reached with the others.

24           So we thought that since the changes were not  
25 monumental and were in the right direction that the delay

1 was okay.

2           COMMISSIONER AHEARNE: Will this be the first use  
3 of coils?

4           MR. MATTSON: I believe it is. But I ought to get  
5 back to you to confirm that.

6           MR. DENTON: Maybe I misunderstand something, but  
7 I think they are going to leave in the present system until  
8 the first refueling.

9           MR. MATTSON: Yes.

10          MR. DENTON: So we do not have to face that  
11 question quite today.

12          COMMISSIONER AHEARNE: I understand that.

13          MR. DENTON: We would still expect all of their  
14 information on the program on the present date. So we would  
15 know I would guess pretty soon after the first of the year  
16 an overall view on the system.

17          MR. MATTSON: TVA confirms that this is the only  
18 use of coils.

19          MR. DENTON: Why don't we go back and pick up the  
20 status reports and unusual occurrences part of the  
21 presentation.

22          MR. STAHL: I&E will put on a presentation here on  
23 the status of Sequoyah Unit 2. This is Slide No. 4, I  
24 believe.

25          MR. QUICK: The first item on that slide deals

1 with the plant status of construction deficiencies or  
2 construction items that we had attached to the 5 percent  
3 power license as Attachment 1. We initially had some 40-odd  
4 items on that list back in June of this year when the  
5 Commission acted on the 5 percent license. Since that time  
6 the list has been worked down to the point where we have  
7 only one left on the list which is on the license copy that  
8 you have in front of you.

9           MR. EISENHUT: The one we proposed on August 17,  
10 in that time frame, at that time we had 13 items that we  
11 needed to be done prior to additional criticality and one  
12 prior to full power. Don's point is the list is now down to  
13 one item. I think it is Item 11. All of the rest have been  
14 completed.

15           MR. QUICK: It is Item 11 completing all  
16 pre-operational testing and resolving significant  
17 deficiencies.

18           As of this time all the pre-operational testing  
19 has been completed with the exception of two tests, one of  
20 which has been ongoing and includes the one control rod that  
21 I mentioned that they were having a little difficulty with.  
22 The second testing has to do with loose parts monitoring and  
23 was to be accomplished when they went back down to Mode 5.

24           So that is the status of the construction items.

25           COMMISSIONER AHEARNE: The way it was worded is

1 "and resolving significant deficiencies." Is the control  
2 rod the only deficiency?

3 MR. QUICK: On that particular test; we have other  
4 test deficiencies which have not been evaluated as  
5 significant enough to delay criticality of the unit  
6 however. But there are deficiencies obviously on some of  
7 the other pre-op tests which are having to be resolved by  
8 engineering design.

9 COMMISSIONER AHEARNE: In your judgment they do  
10 not rise in significance?

11 MR. QUICK: That is correct.

12 A couple of the items that were on that list to  
13 start with have been moved into the body of the license and  
14 incorporated along with other items which were already  
15 existent in the license. One in particular is Item 3 on the  
16 license list that you have right now. That has been moved  
17 in and incorporated on page 4 under Item 7 which has to do  
18 with the low temperature overpressure protection system  
19 requirement that is to be incorporated by the end of the  
20 first refueling.

21 The second one that will be incorporated into the  
22 body of the license is the one item that appears on the  
23 attachment prior to reaching full power, the ERCW corrosion  
24 problem. That item is going to require long-term  
25 resolution, probably in the form of replacement of piping

1 eventually. However in the interim TVA has attempted to  
2 model the entire system and come up with the values that  
3 would be appropriate during normal operation to put in place  
4 a surveillance program which would deal with the degradation  
5 of the system on an ongoing basis to alert people to the  
6 fact that the system is degrading to a point where something  
7 has to be done with any particular branch portion of it.

8           We have in Region II reviewed an interim  
9 surveillance program which is a two-part program that TVA is  
10 committed to accomplishing on this system to provide us the  
11 assurance that we need that the system first of all is  
12 adequate to supply enough cooling water for both units in  
13 full power operation. That was the first point. They have  
14 shown this through a pre-operational test and flow balance  
15 of the system.

16           Secondly then there will be an ongoing  
17 surveillance system which basically encompasses volumetric  
18 measurement of certain selected portions of the piping  
19 periodically to verify that corrosion is not building up at  
20 such a rate that would be beyond that that is expected.

21           In addition to that there would be a second  
22 surveillance program which would be implemented any time  
23 that significant changes to the system were made from the  
24 standpoint of flow balance or any time that any operational  
25 components started approaching temperature limits. The

1 Region feels that that surveillance program as outlined by  
2 TVA is sufficient to assure us that the system will be  
3 adequate until the first refueling outage, at least until  
4 that point.

5           By that time TVA will have their computer program  
6 which will be at that point a very elaborate surveillance  
7 program to assure that each particular branch line in the  
8 system is not degrading beyond acceptable limits. That will  
9 be an ongoing surveillance program until final resolution is  
10 accomplished on the entire system.

11           That is the status of the attachment of  
12 construction deficiencies. At this point we do not have any  
13 reason to believe that the final item will not be completed  
14 prior to the present schedule for criticality which is next  
15 week. We do not have any indication of any significant  
16 items that are involved as test deficiencies.

17           COMMISSIONER AHEARNE: There had been one item  
18 still open for full power.

19           MR. QUICK: That was the one item that I had just  
20 discussed on the ERCW corrosion problem. There were really  
21 two of those items. One had to do with the wrong type  
22 strainers being installed in the system which increased the  
23 pressure drop. The second one had to do with corrosion of  
24 carbon steel piping. They are all involved in the same  
25 problem and what we are saying is we are moving that problem

1 into the body of the license.

2           COMMISSIONER AHEARNE: But you have confidence  
3 that with the surveillance procedures that that would not  
4 become a problem?

5           MR. QUICK: Our assurances from TVA are that they  
6 have at least two to three years before any particular  
7 portions of the system would be affected below acceptable  
8 limits.

9           MR. EISENHUT: What we are proposing is a license  
10 condition which has the long-term surveillance program as  
11 they proposed it.

12          MR. QUICK: Right.

13          MR. EISENHUT: The other item Don mentioned about  
14 the low temperature overpressure protection system was  
15 already in as a license condition on page 4, No. 7. We had  
16 it in two places.

17          MR. QUICK: If there are no questions then on the  
18 attachment to the license, I will continue with the unusual  
19 occurrences since the last time the Commission met on this  
20 issue.

21                 The first one deals with the galling of a reactor  
22 vessel stud during installation or reinstallation I should  
23 say of the reactor vessel head studs following fuel load.  
24 It happened that this was the 54th of a total of 54 to be  
25 installed. The last one galled when it was threaded

1 approximately seven inches into the vessel flange.

2           In TVA's investigation of the incident and our  
3 investigation --

4           COMMISSIONER GILINSKY: What does "gall" mean?

5           MR. QUICK: It means that it stuck. It seized and  
6 TVA was reluctant to use excessive force to try to remove it  
7 because usually that just results in causing it to seize  
8 harder and you wind up losing more total threads once you  
9 get the stud out than you would have otherwise.

10           So they proceeded in a fairly conservative manner  
11 from that respect, did not force the stud. They attempted a  
12 couple of days later to use liquid nitrogen to reduce the  
13 temperature of it. That did not work. They finally  
14 contracted with General Electric to come in and drill the  
15 stud out.

16           Upon drilling out of the stud it was observed that  
17 they had lost a total of only two threads on the reactor  
18 vessel flange itself. Westinghouse analysis showed that you  
19 could lose a minimum of ten threads before having any  
20 problems whatsoever.

21           So their investigation and ours as well did not  
22 uncover any failure to follow procedures or inappropriate  
23 steps that were taken during the installation of the studs.  
24 As I pointed out, this was the last of 54 studs. This is  
25 one of those things that happens from time to time in our

1 opinion that is just basically unexplained.

2           In my experience it takes very little interference  
3 with stainless steel threads of that type to cause this  
4 galling or seizing effect. Those are fairly close  
5 tolerances. They had properly cleaned them. They had  
6 properly lubricated them, and we could see no reason at all  
7 why the studs should have seized as they did.

8           As I indicated General Electric successfully  
9 drilled it out. They only lost two threads on the vessel  
10 flange and we felt that that was a minimum impact and as the  
11 Westinghouse analysis shows.

12           CHAIRMAN PALLADINO: Did they have any further  
13 trouble then with that stud? Did they put a stud in there?

14           MR. QUICK: Yes. After removal of the stud of  
15 course then they chased the threads in the vessel flange,  
16 put another stud in. The only thing that was done was they  
17 changed the procedure to thread the studs in by hand rather  
18 using the pneumatic tool that was provided for that  
19 purpose. But as I indicated previously, the pneumatic tool  
20 worked fine on the first 53.

21           Are there any other questions on that item?

22           (No response.)

23           MR. QUICK: The second item was an inadvertent  
24 spill to the containment sump of approximately 8,000 to  
25 9,000 gallons of water. This water came from the reactor

1 coolant system into the containment sump through the  
2 residual heat removal system suction path via the  
3 containment sump suction for the residual heat removal  
4 system.

5           If I could have my No. 1 slide there please, the  
6 residual heat removal pump is shown there on the lower  
7 right-hand side of the slide. Adjacent to the pump is one  
8 remotely operated control valve which is operated from the  
9 control board, and it also receives an automatic signal to  
10 automatically close. Just below it, the valve that is  
11 marked "inadvertently opened" is a second valve that  
12 receives another automatic signal to open.

13           During an accident sequence normally the residual  
14 heat removal system would be aligned to take a suction from  
15 the refueling water storage tank, which is shown in the  
16 upper center of the diagram, and discharged directly into  
17 the cold waves of the reactor coolant system.

18           Upon a point where the refueling water storage  
19 tank reaches a low level, an automatic signal is generated  
20 to switch the suction for the residual heat removal pumps  
21 over to the containment sump. There are three signals  
22 involved in this. One is that the refueling water storage  
23 tank level must be low. The second is the containment sump  
24 level must be high, sufficiently high. And the third is  
25 that a safety injection actuation signal must be present.

1           During pre-operational testing of this particular  
2 aspect, this automatic switchover function, in the early  
3 stages of the procedure there were some checklists in there  
4 to go through and verify contact status on the slave relays  
5 in the solid state protection system. While that was being  
6 done, one of the relays that was called out in the procedure  
7 to be checked, it turned out through later investigation  
8 there was a typographical error and the wrong relay was  
9 called out in the procedure.

10           As luck would have it, the relay that was called  
11 out had exactly the opposite contact status as the relay  
12 that should have been called out. When the test director  
13 and his instrument technician attempted to verify those  
14 relay contact status points and they came to that particular  
15 one, they noted that the relay contact status was opposite  
16 what it should be in the procedure.

17           Just what happened exactly at that point we do not  
18 really know for sure, but all investigation points to the  
19 fact that the contact state was changed on that relay at  
20 that point in time during pre-operational testing, such that  
21 for that relay that was called out in the procedure, the  
22 contact state would then agree with what the procedure  
23 said. However keep in mind that there was a typographical  
24 error on that relay.

25           As a result of changing the contact state on that

1 relay, what effect that had on the overall system logic was  
2 that it essentially would create a signal comparable to a  
3 safety injection actuation signal all the time for the  
4 automatic switchover for recirculation on Train A only. So  
5 that when they got ready to run the rest of the test, the  
6 instrument technician started putting in the simulated  
7 signals for low RWST level and high containment sump level.

8           As soon as they installed the second signal, the  
9 valves automatically started moving. That should not have  
10 occurred in accordance with the procedure until they had  
11 actuated the safety injection signal after these simulated  
12 signals had been put in. But because these contacts had  
13 been reversed on that relay, the SI signal was already there  
14 and the valves started moving when they installed the  
15 simulated signals.

16           So in that particular case there was a failure to  
17 follow procedures which resulted in approximately 8,000 to  
18 9,000 gallons of RCS water --

19           CHAIRMAN PALLADINO: You said there was a failure  
20 to follow procedures. It looks to me like they followed the  
21 procedure but the procedure was wrong. Is that right?

22           MR. QUICK: Yes, I maybe got my story a little out  
23 of sequence.

24           The first point was that the procedure was wrong.  
25 There was a typographical error in that particular pre-op

1 test procedure. However there are other administrative  
2 procedures which were not followed as a result of an  
3 identification of a test deficiency which was not followed  
4 upon.

5           CHAIRMAN PALLADINO: Would those procedures have  
6 prevented this circumstance?

7           MR. QUICK: Yes. They probably would have because  
8 it would have required the nonconforming report to have been  
9 evaluated which would have meant that possibly it would  
10 have been compared to the as-built drawings and so forth and  
11 the error would have maybe been picked up at that time prior  
12 to the performance of the tests.

13           COMMISSIONER GILINSKY: Why was there water in the  
14 sump?

15           MR. QUICK: It came from the reactor coolant  
16 system. It came back through the suction line from the hot  
17 leg of the reactor coolant system down to the suction of the  
18 RHR pump and back through the inadvertently opened valve  
19 into the containment sump.

20           COMMISSIONER GILINSKY: It came in that way. I  
21 see.

22           MR. QUICK: Yes.

23           Are there any other questions on that particular  
24 incident?

25           The third one, if I can have Slide No. 2 please --

1           COMMISSIONER GILINSKY: Presumably the procedures  
2 have been corrected.

3           MR. QUICK: The procedures have been corrected,  
4 yes. It was also reemphasized by management of the  
5 importance of initiating the administrative procedures for  
6 the nonconforming deficiencies and so forth that are  
7 identified during testing.

8           The other event that I wanted to talk a little bit  
9 about was the most recent which involved the identification  
10 of three recirculation test valves being found in the open  
11 position when they should have been normally locked closed.  
12 Our resident inspectors during a routine tour on August 26  
13 were in the pipe chase area of the auxiliary building and  
14 they were routinely checking position of valves in that area  
15 when they identified that all three of these valves which  
16 are on an eight-inch recirculation line to the refueling  
17 water storage tank were open.

18           They are supposed to be locked closed. They are  
19 there for the purpose of recirculating the containment spray  
20 pumps one at a time for the purpose of testing them  
21 surveillance testing in accordance with the technical  
22 specifications.

23           With those three valves open, if a single failure  
24 was assumed which would have left only one spray pump  
25 operable, in the Regional evaluation of this event we

1 determined that one pump would not deliver sufficient flow  
2 to the containment spray nozzles for the accident condition  
3 that they were designed for.

4           If both pumps had started as they should have and  
5 we would fully expect them to, then water would have been  
6 delivered through the spray nozzles. However it probably  
7 would not have had the normal spray pattern that you would  
8 expect it to have inside containment. So the containment  
9 spray may not have been quite as effective as it should have  
10 been.

11           So the event itself was fairly significant. TVA  
12 conducted a very thorough investigation of the event. Their  
13 investigation basically corroborated what we found. They  
14 came into Region II on September 3 to attend an enforcement  
15 conference where they proposed some 11 corrective actions  
16 that they would take in response to the high rate of failure  
17 to follow procedures which we had noted on Sequoyah in the  
18 recent past.

19           Now these 11 corrective actions had to do with  
20 both corporate- and plant-level management people.

21           COMMISSIONER GILINSKY: Would you say a word about  
22 how the valves can be left open before you go to the  
23 corrective actions?

24           MR. QUICK: These pumps had been used during the  
25 preceding week to recirculate the refueling water storage

1 tank during the initial fill of that tank and the initial  
2 boration of that tank. As you well know, that tank is kept  
3 at 2,000 parts per million boron and is the primary accident  
4 water source for all of the ECCS equipment. It is a 400,000  
5 gallon tank.

6           They were using the containment spray pumps for  
7 the recirculation of the tank, based on the fact that those  
8 pumps have a higher capacity than the spent fuel cooling  
9 pumps which would normally be used for that purpose.

10           Now the reason that the valves were left open is a  
11 matter of conjecture at this point. The investigation shows  
12 that people that manipulated the valves or caused the valves  
13 to be manipulated did not fill out the configuration status  
14 logs for that particular system which would have kept track  
15 of the position of those valves.

16           The reason that it was not filled out was  
17 basically because the plant was in Mode 5 where the  
18 containment spray system is not required and as a result and  
19 the pressures of a lot of work going on, they neglected to  
20 fill out these status logs in anticipation that prior to  
21 returning into Mode 4 the valve checklist would have been  
22 run which would have picked up the position of these valves.

23           In other words in Mode 5 where the system is not  
24 required, the concern was not necessarily as great as it  
25 would have been in Modes 1 through 4 where the system was

1 required. Therefore the procedures were not strictly  
2 adhered to.

3 COMMISSIONER GILINSKY: Do the procedures apply to  
4 Mode 5?

5 MR. QUICK: Yes, they do.

6 The procedures were not strictly adhered to and as  
7 a result of a combination of failure to adhere to the  
8 procedures plus some holds in the procedures which did not  
9 pick up these particular three valves on the system  
10 alignment procedure that was accomplished prior to reentry  
11 into Mode 4, these valves were not caught before they went  
12 back into Mode 4.

13 COMMISSIONER GILINSKY: If the procedures had been  
14 adhered to would this have been avoided?

15 MR. QUICK: Yes.

16 COMMISSIONER GILINSKY: What was this extra hold  
17 that you were referring to?

18 MR. QUICK: The extra hold that they had, they  
19 failed to maintain the configuration status logs which is a  
20 status checklist, if you will, that requires them to log  
21 each time a valve position is changed from that which it is  
22 supposed to be in for normal configuration. That is one  
23 system.

24 The system they banked on catching these valves  
25 was the system alignment procedure which, would have normally

1 been run prior to entering Mode 4. The problem was that  
2 these particular valves since they are manual valves are  
3 accounted for separately on a separate surveillance  
4 instruction which up to this point had only been initiated  
5 in Modes 1 through 4 when the valves were manipulated. The  
6 system alignment instruction did not have these locked  
7 valves included in it. These are referred to as the  
8 Category E valves, if you will, that come under in-service  
9 inspection program, Section 11.

10 Now the fact that these valves were not included  
11 on the normal system alignment checklist was how they  
12 happened to be missed when the plant returned into Mode 4.  
13 It was taken for granted that because they were on the  
14 locked valve checklist that that would have accounted for  
15 them. Obviously with the system configuration logs they had  
16 another method of accounting for the valves.

17 What I am saying is that because the plant was in  
18 Mode 5 and the system was not required, the system status  
19 logs were not strictly adhered to. And as a result of the  
20 loophole in that, these valves were not included on the  
21 system alignment checklist. They were not picked up when  
22 the plant came back into Mode 4.

23 Since that time obviously those procedures have  
24 been fixed. All of the valves on the locked valve  
25 surveillance instruction have now been incorporated into

1 individual system alignment checklists as well as remaining  
2 on that locked valve checklist. The locked valve checklist  
3 has been made a periodic surveillance, not just one that  
4 would be initiated whenever a valve is manipulated in Modes  
5 1 through 4.

6           In addition to the procedure changes, Mr. Green  
7 who is the director of nuclear power in TVA has been touring  
8 all of the TVA sites and briefing all personnel, in  
9 particular the management personnel down to and including  
10 the shift engineers and assistant shift engineers. This  
11 briefing pertains directly to the TVA upper level management  
12 policy of following procedures, strictly adhering to the  
13 procedures as written and that if something is wrong with  
14 the procedure, then the procedure will be changed but that  
15 they will be strictly adhered to. He accomplished this  
16 briefing this past Saturday at Sequoyah and the proceeding  
17 Friday at Browns Ferry.

18           There are other corrective actions in the form of  
19 management briefings of all operations personnel along the  
20 same lines which are being undertaken by the plant  
21 management itself. Those are ongoing. If I can take just  
22 another minute or so I would like to have my senior resident  
23 give you his impression of the effectiveness of these  
24 briefings. He spent the entire weekend at the plant at  
25 Sequoyah sitting in on the briefings and talking to

1 operating people and so forth. At this time I would like to  
2 have him say a few words.

3 MR. FORD: My name is Ed Ford, senior resident  
4 inspector at Sequoyah.

5 I would like to preface my remarks to give you  
6 some perspective on my conclusions by saying that I was not  
7 totally convinced that Sequoyah or TVA was going to be able  
8 to put into effect a good corrective action. I base that on  
9 the fact that these failures to follow procedures have been  
10 a pattern that I have watched develop over the past six  
11 months.

12 However I have seen the director of nuclear power  
13 generation, a corporate level individual, make a firm  
14 commitment to the need to follow procedure regardless of how  
15 it affects scheduling. I must also say that in the past  
16 scheduling has been king at Sequoyah. I do not believe that  
17 can any longer be true. I believe that the philosophy of  
18 procedure is going to rule.

19 Saturday morning at 7:00 I sat in on his talk when  
20 he talked to virtually every member of management at  
21 Sequoyah. The message was quite clear to me what he meant.  
22 I interviewed some of the middle management members after,  
23 in depth, and they not only listened, they believe that they  
24 will be following the procedures verbatim.

25 I sat through a whole series of secondary lectures

1 that were given by the assistant plant superintendent for  
2 operations where the message was again repeated without loss  
3 of content or tone. I again interviewed personnel in the  
4 operating shifts and I repeated this on Saturday, Sunday and  
5 yesterday.

6 My resident inspector was present at a maintenance  
7 meeting this morning where all of the people who were not  
8 present over the weekend again received the same message. I  
9 have seen the changes that were put into effect in the  
10 administrative instructions that will ensure that they will  
11 not be deviated from again.

12 The reason I gave you that perspective in the  
13 beginning was so that you would understand that I have come  
14 a long way in my thinking in regards to how they will behave  
15 in the future. There were three things that I was looking  
16 for. One was a direct and outright admission by the  
17 management that there were problems; they have done that.  
18 The second thing was an effective corrective action; I have  
19 seen that. The third thing does remain to be seen but I  
20 have no reason to believe it will not be seen. That is the  
21 implementation of procedure compliance.

22 COMMISSIONER BRADFORD: I have one question to ask  
23 you. Those seem to be a fairly important set of changes.  
24 Would I be right in thinking that before you had observed  
25 these meetings you would have had some hesitation about the

1 company's willingness to put procedures ahead of  
2 scheduling? Would I be right in thinking that say a week  
3 ago before you had observed these meetings you would have  
4 doubted the company's willingness to put compliance with  
5 procedures ahead of scheduling?

6 MR. FORD: Yes, sir.

7 COMMISSIONER AHEARNE: You have been at the site  
8 for how long?

9 MR. FORD: Six months.

10 COMMISSIONER AHEARNE: And this has been a trend  
11 you have been seeing for many months.

12 MR. FORD: Yes, sir. Understand that I do this on  
13 a sampling basis. An argument can be made that I have a  
14 skewed sample. However certain events have been generated  
15 which cause me to believe my sampling is correct. So I came  
16 Saturday morning with a very skeptical viewpoint.

17 COMMISSIONER BRADFORD: If your senior inspector  
18 was of a significantly different view as of a few days ago,  
19 then I wonder how this meeting can have been scheduled and  
20 how a staff recommendation to go ahead with the full power  
21 license can have been arrived at.

22 COMMISSIONER AHEARNE: If I could add on, I was  
23 just wondering where in all of the paper that has come up to  
24 us would we have found that concern that your senior  
25 resident has expressed was growing over many months.

1 MR. FORD: I have to put that in perspective  
2 also. Some things just do not crystalize until there is an  
3 event that crystalizes them for you. I believe this was the  
4 event.

5 COMMISSIONER GILINSKY: There has been a history  
6 of problems and valve misalignments and so on at the site.  
7 They had quite a few problems at Unit 1. So I am not  
8 commenting on your view here and what caused you to firm up  
9 your thoughts, but just as an observation this has been a  
10 fairly trouble-plagued startup of both units.

11 MR. QUICK: If I can elaborate on that a little  
12 bit, this is not something that has come new to us in Region  
13 II. I think you are all aware of the statements that I have  
14 made in the past with respect to this. I think you are  
15 aware of the fact that we have had TVA into Region II on  
16 numerous occasions for management conferences, if you will,  
17 on one subject and another.

18 I think that this time basically as Ed pointed  
19 out, these three valves were very key valves in a very  
20 important system and we at this point decided that something  
21 more than the standard corrective action needed to be taken.

22 COMMISSIONER GILINSKY: What was the date of this  
23 realization that the valves had been left open?

24 MR. QUICK: These were found open on August 26.

25 COMMISSIONER GILINSKY: How long had they been

1 open?

2           MR. QUICK: They had been open as nearly as we can  
3 tell for approximately four days. However the plant was in  
4 Mode 4 at the time. And you have to recognize as well that  
5 there are no fission products in the core. The core is  
6 brand new. It has not been critical yet. Therefore the  
7 impact had anything happened such as a steam break for  
8 example would have been minimal from that standpoint.

9           I might point out as well that there was a second  
10 surveillance which has to do with testing the individual  
11 spray pumps which would have found these valves open. It  
12 just turns out that the first surveillance on the one pump  
13 was due to be accomplished the same evening that our  
14 residents found these valves open. They found the valves  
15 open during the afternoon and the surveillance was due to be  
16 accomplished on the A pump that evening. So they would have  
17 been found that evening.

18           CHAIRMAN PALLADINO: Are you satisfied that TVA is  
19 procedurally oriented or at least following the procedures  
20 as set forth?

21           MR. QUICK: I was going to elaborate on that  
22 point. I think that it is important to note that we in  
23 Region II have taken a very strong view toward TVA in the  
24 past. We have had them in on a number of occasions. One of  
25 the particular aspects of our problems has been failures to

1 follow procedures.

2           In this particular case I think that for the first  
3 time, well, maybe I should not phrase it that way, but I  
4 think that TVA understands now some of our concern of the  
5 past. I think that up to this point TVA really believed  
6 that they were doing a good job in the operations area and  
7 that maybe some of the things that we were bringing out were  
8 not as important as they felt they should be.

9           But I think that this particular event combined  
10 with the spray event obviously in February on Unit 1 brought  
11 out the fact that maybe there can be some tightening up both  
12 from the standpoint of following procedures and also from  
13 the standpoint of supervision by management, because  
14 adherence to procedures, doing a good job, striving for  
15 excellence is born at the upper level management positions  
16 and it filters down through the ranks that way.

17           For the first time that I am aware of at least, a  
18 very high member of TVA management admitted to us in the  
19 enforcement conference on September 3 that they had not been  
20 managing effectively and that the attitudes of some of their  
21 people were wrong.

22           Now in my opinion I believe and we in the Region  
23 believe that that was a significant step forward because  
24 that had never occurred before. They would always agree  
25 with what we had to say, go back and take the corrective

1 actions, but this was the first time I think they started to  
2 believe it themselves.

3           In my mind then that is a significant turnaround  
4 point. I think that what Ed has alluded to that he has  
5 witnessed over the weekend is evidence of the strength in  
6 which that message is coming across at the site level.

7           We would then propose to follow up and assure the  
8 implementation by verifying first of all that all living  
9 corrective actions have been completed prior to the time  
10 that they would undertake initial criticality in Unit 2. We  
11 would then propose that following the test program but prior  
12 to the time that they are ready to go above 5 percent power  
13 we would go back and do an additional verification of the  
14 effectiveness, the continuing effectiveness of the  
15 implementation of these corrective actions.

16           We would then also propose that we would do the  
17 same thing again prior to their proceeding above 50 percent  
18 power after they have had an opportunity to get all of the  
19 systems into operation in the facility. We have received  
20 agreement from TVA on these three hold points in their  
21 scheduling of the operation.

22           So that basically is what allows us to come before  
23 you today and say that we can support a license, because we  
24 believe that within I&E we have the effective tools that we  
25 need to stop the plant at any point in time that we feel we

1 need to. We have already gotten agreement from TVA that  
2 they will get our concurrence prior to the time that they  
3 will go critical above 5 percent and above 50 percent and  
4 that we will accomplish a verification of the effectiveness  
5 of these actions at each of these points.

6           That is it, sir.

7           CHAIRMAN PALLADINO: Thank you very much.

8           MR. DENTON: This concludes our presentation.

9           CHAIRMAN PALLADINO: Are there any other questions?

10           I gather we have before us the question of our  
11 deciding whether or not we are going to go ahead with the  
12 full power license for Sequoyah Unit 2. I was going to open  
13 it up for discussion but you are free to ask questions on  
14 anything you want to.

15           COMMISSIONER AHEARNE: These are two peripheral  
16 questions. First as we all know, one of the big issues in  
17 Sequoyah has been the hydrogen problem. I guess it was  
18 partially on the Sequoyah case that led to a lot of  
19 discussion and then led to further reorientation of a lot of  
20 NRR and research work in hydrogen.

21           I wondered whether we had any later information on  
22 research focused specifically on Sequoyah that has come in  
23 since the last time we met.

24           MR. DENTON: I am not aware of any. Let me ask  
25 the staff.

1           MR. MATTSON: There have been continuing meetings  
2 and a lot of information flowing. I am sure there is new  
3 information on Sequoyah since the last time we gave you an  
4 update.

5           COMMISSIONER AHEARNE: Is there anything  
6 significant that you know of?

7           MR. MATTSON: No. We are still pointing towards  
8 receipt of a lot of information early in October. We are  
9 under the gun to turn it around and finish a review in four  
10 months. All of the information will not come in until the  
11 end of January. It is going to be a tight four months. We  
12 still remember your encouraging us that if we needed a  
13 little longer, to make it the right decision rather than a  
14 rushed decision, which I think was your spirit a few months  
15 ago. I hope it is still your spirit.

16           COMMISSIONER AHEARNE: I was just wondering if  
17 there were any new developments that you knew of that were  
18 significant.

19           MR. MATTSON: Nothing has been brought to my  
20 attention that I should be bringing to your attention. We  
21 are still on course as far as I know.

22           COMMISSIONER AHEARNE: The second question was  
23 going back to the SER, the last supplement, which really  
24 goes back to the previous question I had asked once before.  
25 I noticed in 22.19 down at the bottom, the second paragraph

1 from the bottom, we say that based upon discussions with TVA  
2 we understand that the pressure indicators will survive the  
3 effects of hydrogen ignition.

4 I ask the same question: should I read this as  
5 that the staff is saying it is their opinion that this is  
6 true? Or are they just passing on the information that TVA  
7 has told them and you are just relaying it to us?

8 MR. EISENHUT: I thought we answered this before.

9 COMMISSIONER AHEARNE: The before answer was it is  
10 going to be clarified.

11 MR. EISENHUT: We will have to check.

12 (Laughter.)

13 CHAIRMAN PALLADINO: Are there any other questions  
14 or comments?

15 COMMISSIONER BRADFORD: Harold, do I understand  
16 the staff position correctly on each of these items, the one  
17 on page 2 of the briefing outline? That is is the column  
18 headed Staff Requests still your proposal?

19 MR. DENTON: No, the staff request was the  
20 original dates.

21 MR. STAHL: That is correct.

22 COMMISSIONER BRADFORD: So you are then in accord  
23 with the TVA proposal except for the technical support  
24 center?

25 MR. MATTSON: If you will look at the handout that

1 I had, the separate one, down in the bottom section it says  
2 how the license --

3           COMMISSIONER BRADFORD: Okay, for each of these  
4 items.

5           MR. MATTSON: They are roughly comparable.

6           CHAIRMAN PALLADINO: I did not follow you.

7           MR. DENTON: We are in accord with the Applicant's  
8 dates. The first column was the staff request originally  
9 back in June when we were trying to hold to those dates.  
10 Then we have evaluated the TVA proposal. When I sent down  
11 the memo on the 31st I pointed out that there were two areas  
12 that we had not completed our look at. That was the range  
13 of the backup incore thermocouple and the tech support  
14 center.

15           Since that time we have concluded that they have  
16 adequate provisions in those areas such that extended the  
17 incore to 2,000, and I&E is happy with the interim technical  
18 support center. So today we are in accord with the new  
19 proposed TVA dates for first refueling.

20           COMMISSIONER BRADFORD: But on the tech support  
21 center, if I understood correctly, you are saying that if  
22 there were an outage scheduled to last more than five weeks  
23 after May 1 you would look to that, which is a little  
24 different from the TVA proposal.

25           MR. DENTON: I think TVA has indicated they can

1 foresee a scheduled outage to get as much done. They were  
2 concerned with any outage that runs five weeks. So we will  
3 have to be careful how we word that provision.

4 MR. EISENHUT: I think the words we were thinking  
5 on a number of these is an outage that is of sufficient  
6 duration but no later than.

7 MR. DENTON: Yes, after they have all of the  
8 equipment necessary.

9 CHAIRMAN PALLADINO: Are there any other questions?

10 (No response.)

11 CHAIRMAN PALLADINO: Are you ready to vote on the  
12 full power license for Sequoyah Unit 2 based on the  
13 consideration for the extension of the dates shown on the  
14 staff proposal?

15 COMMISSIONER BRADFORD: Since they have not used  
16 any of the authorization that they currently have, I must  
17 say my own inclination would be to let them proceed a little  
18 further into their program and then make a decision,  
19 assuming that we are on schedule. It is not a point that I  
20 feel strongly about, I must say in this case, and unless the  
21 Commission's decision is a different one I will not be very  
22 discomfitted by it.

23 But it seems to me that procedurally since we have  
24 given them one authorization which they have not used at all  
25 yet and since I am a believer that there is a value in the

1 Commission staying in close touch with the plant as it  
2 starts up for the first time, I would just wait and see how  
3 the startup proceeds. There is not anything in this  
4 briefing that I would not be prepared to authorize.

5           CHAIRMAN PALLADINO: The startup of the plant is  
6 within the period that is relatively short compared to the  
7 time within which we would act.

8           COMMISSIONER BRADFORD: That is right, and the low  
9 power test phase is not a long one. I would feel much more  
10 strongly if we were looking at eight weeks of low power  
11 testing or something. But if in fact they are on a 12-day  
12 schedule, then the total period involved is only about 20  
13 days.

14           CHAIRMAN PALLADINO: We would still have open to  
15 us if we would get some feedback adverse to --

16           COMMISSIONER BRADFORD: We could step in and stop  
17 it of course. Those all add up to the reason that I do not  
18 feel strongly.

19           As I say my inclination would be to hold off but  
20 if the Commission felt differently it certainly would not be  
21 a major source of disagreement among us.

22           CHAIRMAN PALLADINO: It would also involve more  
23 staff time I presume. They would have to keep attention on  
24 the case at least to the extent of bringing it back to us.

25           COMMISSIONER BRADFORD: Not necessarily; if at the

1 end of ten or twelve days they said that in fact they had  
2 gone critical on schedule and they were proceeding without  
3 problem, I am not sure they would have to come back.

4           CHAIRMAN PALLADINO: I do not see the pertinence  
5 of that. What I would see is the pertinence of any  
6 indication that they were not functioning correctly. The  
7 fact that they are critical might be delayed a day or two  
8 would not necessarily --

9           COMMISSIONER BRADFORD: No, I agree.

10           COMMISSIONER GILINSKY: I wanted to say that I  
11 gather you want to take a vote. I would be prepared to go  
12 ahead but I want to say that that is based on staff  
13 conference that TVA's management performances improve and if  
14 at the various checkpoints it turns out that your  
15 expectations are not met, I would like to hear about it.

16           COMMISSIONER BRADFORD: The important point, Joe,  
17 is the one you made which is if there are any serious  
18 reservations from now and the time they expect to go above  
19 5 percent, we would want to know about it and at least  
20 consider steps again.

21           CHAIRMAN PALLADINO: I think we would all accept  
22 that as part of any vote that if any information comes forth  
23 that ought to be brought to our attention and might modify  
24 the actions we would take, I think we would take for granted  
25 that the staff would bring that to us forthrightly. If that

1 is not true, it would influence my vote as well.

2           MR. QUICK: I believe that you can rest assured in  
3 that anything that is identified in the field pertinent to  
4 the safety of that facility will be brought to your  
5 attention.

6           COMMISSIONER AHEARNE: I am willing to go ahead  
7 but I would have to comment that unlike the senior resident,  
8 Ed, whose skepticism is decreasing, I guess mine is somewhat  
9 increasing. I am always a little skeptical when I find that  
10 just before a decision the Applicant now will make a  
11 change. If it is a hardware change that is once made, it is  
12 made. But a management philosophy change is a much more  
13 fundamental question.

14           So my skepticism as far as TVA's management  
15 approach is increasing, but I am willing to go ahead with  
16 that caveat.

17           MR. FORD: May I take the liberty of making a  
18 remark?

19           My skepticism is decreasing. I also have a great  
20 deal of faith in my management after having watched them for  
21 three years deal with problems in the field. I think if  
22 there is a problem we will not have a problem with it. If  
23 there is anyone who should have concerns, it is the  
24 immediate populace of the Sequoyah plant. I happen to be  
25 one of them.

1           COMMISSIONER AHEARNE: Ed, the management I was  
2 talking about was not your management.

3           MR. FORD: Yes, I understood, sir. I guess I was  
4 trying to make the point that I have a lot of faith in my  
5 Regional management to back me if I have a problem also.

6           CHAIRMAN PALLADINO: I was almost going to make a  
7 comment during part of your presentation that we did not  
8 know how bad things were there until we saw the improvements  
9 that could be made.

10           (Laughter.)

11           CHAIRMAN PALLADINO: If you have faith then we  
12 would like very much to be apprised of any developments that  
13 either indicate we ought to reexamine the situation or are a  
14 disappointment to you.

15           I wonder if I could ask for a vote on the  
16 willingness to grant a full power license to Sequoyah  
17 nuclear power plant, Unit No. 2.

18           COMMISSIONER BRADFORD: Aye.

19           COMMISSIONER GILINSKY: Aye.

20           COMMISSICNER AHEARNE: Aye.

21           COMMISSICNER ROBERTS: Aye.

22           CHAIRMAN PALLADINO: Aye.

23           That is with the understanding of course that the  
24 caveat would apply.

25           We thank you all for coming. I presume that is

1 all the business we have this afternoon.

2 (Thereupon, at 4:20 p.m., the hearing adjourned.)

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NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the  
COMMISSION MEETING

in the matter of: Public Meeting - Issuance of Full Power Operating License  
for Sequoyah Nuclear Plant, Unit 2

Date of Proceeding: September 8, 1981

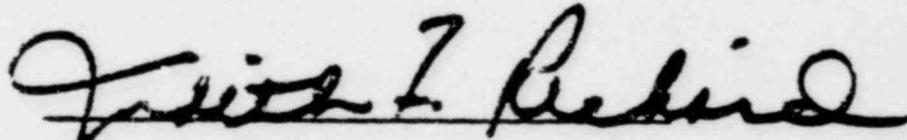
Docket Number: \_\_\_\_\_

Place of Proceeding: Washington, D. C.

were held as herein appears, and that this is the original transcript  
thereof for the file of the Commission.

Judith F. Richard

Official Reporter (Typed)

  
Official Reporter (Signature)