

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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In the Matter of:           :  
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THREE MILE ISLAND           :  
SPECIAL INTERVIEWS         :  
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NORMAN C. MOSELEY (continued)

Room 400  
6935 Arlington Road  
Bethesda, Maryland

Thursday, September 27, 1979  
9:10 a.m.

BEFORE:

For the Nuclear Regulatory Commission:

WILLIAM J. BALLAINE, ESQ.  
GEORGE RIVENBARK

1 licensee necessarily reaches what is referred to as  
2 commercial operation for accounting purposes?

3 A None that I -- no, none that I know of. It has no  
4 meaning to us, as I have said.

5 We ignore that date.

6 Q Are you aware of whether or not a plant can reach  
7 what is called "commercial operation" for accounting purposes  
8 before it has gone through its start-up testing program?

9 A Before it has completed its start-up testing  
10 program? Yes.

11 Q Are you aware of the earliest point at which  
12 during the start-up testing program a licensee can actually  
13 reach this point of what they call commercial operation?

14 A I have not made any effort to determine which plant  
15 made that declaration. I just haven't --

16 Q As far as you know, that kind of information  
17 isn't compiled by I&E or anyone in the NRC.

18 A It is not compiled by I&E.

19 Q You are not aware of it being compiled by anyone  
20 else in the NRC?

21 A No. I believe the Gray Book has an entry which  
22 contains the date of commercial operation. One can take the  
23 Gray Book and go through and put down the date at which their  
24 license was received and then the date at which the commercial  
25 operation was achieved and subtract the number and then cor

1 up with such a determination.

2 I have not done it.

3 For the record, why don't you explain what the  
4 Gray Book is.

5 A The Gray Book is a book that is published by MPA  
6 monthly, which lists on the left page some historical data.  
7 Also, on the left page, it lists some current inspection  
8 information. And on the right-hand page, it is a page that  
9 is related to the power performance of the -- power production  
10 of the facility during that month.

11 Q Now, during each of the discrete power levels, the  
12 licensee is required to perform certain tests. Is that right?

13 A Yes.

14 Q There is some kind of audit of those tests by  
15 inspectors. Is that a fair statement?

16 A There is an inspection program that is specifically  
17 addressed to the start-up testing program.

18 Q Where is the inspection program that specifically  
19 relates to power start-up?

20 A It is a section of our inspection manual, our  
21 module, certain modules that are applicable during this  
22 time period.

23 Q And is it fair to say that that is the only  
24 written direction to an inspector as to how to go about  
25 auditing the testing of the licensee during each of the

1 discrete power levels?

2 A Yes.

3 Q Do you know how it was decided what type of direction  
4 to give the inspector in auditing the testing program of the  
5 licensee during these various discrete power levels?

6 A The inspection program for start-up testing, just  
7 as all the other inspection programs, is a result of an  
8 evolutionary process that began with no written direction  
9 whatever to inspectors.

10 In the beginning, inspectors inspected to the FSAR and, in  
11 fact, there were no tech specs back in the early days. So  
12 the inspector took the FSAR and the license and decided for  
13 himself what he thought should be inspected and went out and  
14 inspected it.

15 As we grew, we believe that that wasn't sufficiently  
16 definitive, that we needed to provide more guidance and  
17 direction to individuals who inspected.

18 So the people who were then in the program contributed  
19 their ideas as to what ought to be done.

20 This was written down and became the first inspection  
21 procedure. And our present manual is the evolutionary result  
22 of this effort.

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1 Q Do you believe that there are any phases of the  
2 startup testing that a licensee goes through during which  
3 the licensee is more eager to complete testing and get on  
4 from one power level to another?

5 A I expect that licensees are eager to complete  
6 power ascension from the very beginning, from the time they  
7 obtain the license. The point of building the plant is to  
8 make power, and the higher the power level the more money  
9 they can get in revenue. So I think there are always consi-  
10 derable economic pressures to complete the power ascension  
11 program.

12 Q Is it your impression that they are as eager getting  
13 through the first stage of the program as they are getting it  
14 through the last stage to full power?

15 A My impression is that the motivation is not much  
16 different.

17 Q I take it you are aware that the term "commercial  
18 operation" does have tax significance to a licensee; is that  
19 right, or at least you believe it?

20 A I believe that, yes.

21 Q Do you know whether anybody in the NRC has ever  
22 given consideration to whether or not the licensee is more  
23 eager to complete testing, such testing that leads to the  
24 point that they can declare commercial operations, than they  
25 would be after they have received that tag?

1           A.       I am sure someone in the NRC at some point in time  
2 may have thought of this and maybe even perceived that a  
3 particular licensee may have been unduly influenced by the --  
4 maybe the change of the tax year or whatever is important in  
5 making that decision. So yes.

6           Q.       Is that speculation on your part?

7           A.       That is speculation. It has not been a particular  
8 issue, to the best of my knowledge.

9           Q.       I guess that is what I am wondering: whether you  
10 ever recall seeing anything in writing raising that issue or  
11 suggesting that certain steps be taken because of some  
12 perceived issue like that?

13          A.       I have had discussions with licensees when I was  
14 an inspector and when I was a branch chief and regional  
15 director about concerns that they were in too big a hurry,  
16 without regard to the commercial operation date. And one has  
17 to concede that that may be a motivation for licensees at a  
18 particular moment in time.

19          But what I am trying to say is that these motivations to  
20 hurry are already there, with or without that.

21          Q.       To your knowledge, is there any difference in the  
22 way in which the inspection program works as respects the  
23 various discrete power levels?

24          A.       No.

25          Q.       As far as you know, the kinds of things that an  
26

1 inspector is supposed to do, the extent to which the inspector  
2 is involved, is the same during each of the power levels of  
3 a power ascension program for licensing?

4 A The amount of inspection effort is in relationship  
5 to the amount of testing. The same amount of testing is not  
6 required in each discrete power level. So at whatever power  
7 level more testing is done, then more inspection is done.

8 Q So the inspection would be related to the number of  
9 tests that have to be conducted during power level?

10 A Right.

11 Q With respect to the testing, are there written  
12 rules or instructions or guides for the inspector as to  
13 whether or not a particular test conducted by the licensee  
14 during a power level is sufficient?

15 A There are modules for this, the power ascension  
16 testing program. It is -- it does not define which specific  
17 test will always be inspected. It provides a list of those  
18 from which the inspector chooses to observe and review  
19 test programs.

20 Q And the modules, again, are found where?

21 A In the IE manual.

22 Q And that is the extent of the writing, as far as you  
23 know?

24 A I was trying to answer the specific question --

25 Q With respect to this question of setting out whether

1 -- what type of review should be made of a particular test?

2 A I am not real sure what your question is trying to  
3 get at. But I believe the answer is that the guidance to the  
4 inspector and the direction to the inspector as to what to  
5 inspect is included in the manual. There are no other sources  
6 of instruction, with the exception that perhaps individual  
7 regions may have adopted some informal directives that certain  
8 things might be done. On a national basis there are no other  
9 directives.

10 Q Does the manual also indicate what the standards is  
11 for whether a licensee -- the licensee's test result is satis-  
12 factory?

13 A The inspection procedures are more general than  
14 cookbook. They provide in one section -- they provide  
15 guidance to the inspector, which is in the way of providing  
16 some acceptance criteria. But they aren't go-no go type  
17 guidance or directives.

18 Q The only criteria there are, again, are in the  
19 manual, at least at the national level?

20 A The criteria for the acceptability of a test is  
21 really the design of the system. So an inspector has to go  
22 back to the safety analysis report and determine, for instance,  
23 what a pump is required to deliver at what pressure, in order  
24 to determine whether this pump, when tested, delivered the  
25 amount of flow at the specified pressure. So the detailed



1 acceptance criteria come more from what is being tested and  
2 what was the design intent and requirement, which is an FSAR  
3 requirement, rather than from the inspection manual.

4 Q To your knowledge, are there any minimum or maximum  
5 time limits with respect to the completion of a power ascension  
6 program?

7 A There is nothing that is predefined as a requirement.  
8 We have expressed dissatisfaction with licensees in the past  
9 if they didn't proceed with their startup testing program in  
10 what was perceived to be an orderly manner. By that I mean,  
11 if he went and did his testing at 50 percent and then stayed  
12 at 50 percent, he obviously -- he must complete the testing  
13 by license. Each time he goes to a new power level, he must  
14 complete those tests.

15 But there is nothing by the licensing that would prevent  
16 him from going to 50 percent and stopping and operate for a  
17 while. But we don't feel very happy about that kind of a  
18 thing.

19 BY MR. RIVENBARK:

20 Q But there is a time limit, is there not, on the  
21 licensee itself that is issued, such that if one takes longer  
22 -- and we are talking years now -- if one takes longer than  
23 so many years, the license will have expired and you would  
24 have to get an extension of that license in order to continue  
25 either to construct the plant --

1 A We are talking about startup testing. The operating  
2 license has been issued. The operating licenses are typically  
3 issued for 40 years now.

4 BY MR. BALLAINE:

5 Q You only have 40 years to complete your startup  
6 testing?

7 A Provisional operating licenses were issued for a  
8 couple of years, but that hasn't been done recently.

9 Q Do you think there should be some fixed minimum or  
10 maximum time periods for -- at least for parts or all of the  
11 power ascension program?

12 A I really don't see a great deal of value in such  
13 limits. One can't predict problems that a licensee would have,  
14 and a limit which said, complete all of your startup testing  
15 in three months, just to take an arbitrary number, would add  
16 additional pressure, if you had a problem, to try to rush  
17 through that problem, in addition to the economic pressures in  
18 order to meet that deadline, which is a license requirement.  
19 I think it might be, under certain conditions, more detrimental  
20 than it would be helpful.

21 Q But I take it that you believe that there can be  
22 problems with the licensee remaining at one power ascension  
23 level for a long period of time; is that right?

24 A Yes.

25 Q What is the nature of the problem with that

1 happening?

2 A. Because in the startup testing program, there are  
3 some things that aren't tested at all until you reach power  
4 level X. So if you are operating at some power level less  
5 than that, even though you have completed all of the tests  
6 that are required for that power level, there are still tests  
7 that have not been done.

8 Q Give me a dramatic example?

9 A. Loss of off-site power. It may only be run at  
10 75 percent. I don't know what the actual is, but let's take  
11 that as an example.

12 Q What method does the NRC have to ensure the  
13 adequate safety of the public in a situation where the plant  
14 has stopped at -- seems to be stuck at a particular stage of  
15 power ascension before testing something like off-site power?

16 A. Well, the method that has been used in the past is  
17 the one that I have described earlier, where we meet with the  
18 licensee and express our concern and find out what his plans  
19 are and when he is going to complete this. If we became  
20 concerned sufficient to raise a health and safety issue, we  
21 would issue an order.

22 Q Are you aware of any such order having been issued?

23 A I am not aware of any such order.

24 Q Are you aware of any situations in which somebody  
25 from the NRC has met and expressed concern to the licensee

1 about the stage of -- the speed with which he is pushing  
2 through the power ascension program?

3 A Yes, that has happened in the past. We have had  
4 such --

5 Q Can you think of meetings that you yourself were  
6 involved in?

7 A Yes.

8 Q Over the past five years, how many can you think of?

9 A That I personally participated in, maybe one or two.  
10 I suspect there may have been more than that.

11 Q And any others that you are aware of that people in  
12 your division had over that time period?

13 A I am generally aware that these types of things  
14 have happened before. But I don't have a feeling of what the  
15 average rate is.

16 Q Other than issuance of an order, does the NRC have  
17 any means other than expressing concern whereby they can  
18 encourage a licensee or -- to do something about the speed  
19 with which they are proceeding through the power ascension  
20 program?

21 A I don't know of anything other than meeting with  
22 them and an order.

23 Q Do you think that is adequate?

24 A Sure.

25 Q Mr. Moseley, I want to show you what has already