

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:  
Robert M. Lazo, Esquire, Chairman  
Emmeth A. Luebke, Ph.D.  
Cadet H. Hand, Jr., Ph.D.



SERVED  
JAN 27 1981

In the Matter of:

DUKE POWER COMPANY

(William B. McGuire Nuclear Station,  
Units 1 and 2--reopened operating  
license proceeding)

Docket Nos. 50-369-OL  
50-370-OL

January 27, 1981

MEMORANDUM AND ORDER

The original design of the McGuire reactor containment buildings as described by Applicant in its PSAR and FSAR had a value for pressure capability that was analyzed and determined to reflect, we presume, the best professional engineering judgment at the time of those reports. This design and the determination of the pressure capability was reviewed and accepted by the NRC Staff. In view of the contentions which have been admitted relating to the issue of hydrogen-generation and control, it is expected that the testimony at the reopened evidentiary hearing in this proceeding will include a redetermination of the pressure capability of the reactor containment building.

ORDER

For the foregoing reason, it is this 27th day of January, 1981

ORDERED

That the parties in prefiled written testimony:

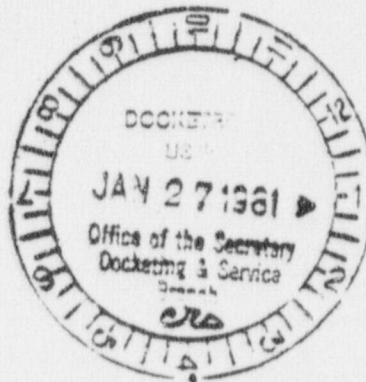
NUCLEAR REGULATORY COMMISSION

ORIGINAL

In the Matter of: BRIEFING FOR COMMISSIONER GILINSKY  
ON MCGUIRE OPERATING LICENSE

DATE: January 21, 1981 PAGES: 1 - 35

AT: Washington, D. C.



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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

\* \* \* \* \*  
Briefing for Commissioner Gilinsky on McGuire  
Operating License  
\* \* \* \* \*

Wednesday, January 21, 1981

Room 1130,  
1717 H Street NW,  
Washington, D.C.

Commissioner Gilinsky met with the NRC Staff at  
3:30, pursuant to notice.

Present:

VICTOR GILINSKY, Commissioner.

Present for the NRC Staff:

D. Eisenhut  
E. Christenberry  
R. Tedesco  
R. Vollmer  
S. Hanauer  
T. Donat  
T. Kavern

Present for the OGC:

L. Bickwit



P R O C E E D I N G S

COMMISSIONER GILINSKY: I hesitate to use the gavel because this isn't a Commission meeting, it's just an informal briefing for me on the subject of the McGuire Plant which has been approved by the Board for fuel load, criticality and testing. Under our rules, the Commission has to approve that license, and the briefing today is to help me think about the subject.

There is still some questions and controversy, about this. I understand hydrogen generation and control, there might be some others I don't know about.

Because we may be breaking some illegal ground here, as one of the members of the General Counsel's Office says they do not --

(Laughter.)

-- I think I'd better let General Counsel say a few words about what we are up to, and what some of the constraints are. But I do want to stress it is an informal briefing which I would just hold privately, were it not a contested proceeding and my own inclination is if there are any other parties present -- the General Counsel can think about this -- if they have some brief remarks they'd like to make along the way, that's ok with me, too.

How does that sound?

MR. BICKWIT: That's fine. I don't think there's a requirement along those lines, but I think that's perfectly



1 permissible if that's the way you want to proceed.

2 I think I should say a word about constraints.  
3 This is a public briefing, and it is arguable that because  
4 our rule uses the term "off the record" in deciding and determining  
5 what is and what is not an ex parte communication, the mere fact  
6 that this is a public briefing would satisfy the ex parte rule.

7 We haven't interpreted the rule that way in the past  
8 but it's conceivable that it could be. Assuming we don't here,  
9 the procedure that our office recommends be followed is one  
10 that we have used in the past with respect to uncontested  
11 matters, where factual matters which are at issue before the  
12 Commission, in which such factual matters may be discussed.

13 In those circumstances, we have allowed discussion  
14 between the Staff and the Commission on the uncontested matter,  
15 and this is uncontested, I should add, because no exceptions  
16 have been filed to the decision of the Licensing Board with  
17 respect to the zero power license.

18 We have allowed discussions between the Commission  
19 and the Staff on these uncontested matters. Where facts at  
20 issue in a contested proceeding before the Commission are  
21 raised in connection with an uncontested matter -- and they  
22 might be here -- we have provided the parties to the contested  
23 proceeding with the transcript of this matter, the transcript  
24 of this meeting, and we have allowed the parties an opportunity  
25 to comment on anything that is being said by the Staff

1 prior to any Commission action in the contested matter.

2 In this case, the contested matter is the proceeding  
3 on low power and full power which is still in a contested state  
4 so that would be what I would recommend be the procedure here.

5 If you want to modify that procedure, by actually  
6 having the parties express themselves at this point, I think  
7 that's perfectly fine. But the understanding would be that  
8 the Commission would not act in anything that involves  
9 until there was an opportunity for the parties who are at the table  
10 at this table to express themselves in response to the party  
11 who is here at this table.

12 MR. CHRISTENBERRY: Len, if I could add, I don't  
13 think it's inconsistent with what you're saying, but just by  
14 way of further clarification.

15 Commissioner, as you pointed out, the three things  
16 that the License Board had before it were initial criticality,  
17 fuel load, and zero power testing, and that is what it authorized  
18 a license on, and that's what the Staff will certainly address.

19 The two issues that are still remaining in contention  
20 for full power are the hydrogen generation problem and emergency  
21 planning.

22 The Intervenor's contention on emergency planning is  
23 quite clear. It seems to be that if you have a hydrogen  
24 generation problem, you also have an emergency planning  
25 problem. But I think for conservative purposes, we would say

1 there are basically two contested contentions. One is hydrogen  
2 generation, and the other is emergency planning.

3 Thirdly, the Intervenor has sought to raise a third  
4 contentior relating to Class 9 accidents. The Staff has filed  
5 their response in this regard, and the License Board has not  
6 ruled on that contention.

7 MR..BICKWIT: Now I would say that if you want to  
8 get into those contested matters, because you regard them as  
9 relevant, on the issue of whether a no-power license should be  
10 issued, you may do so, but subject to the constraints that I  
11 have outlined.

12 COMMISSIONER GILINSKY: Well, actually on those  
13 points, I wouldn't expect to get into them in terms of evaluati  
14 the effectiveness of measures and so on; but I would like to  
15 know the status of both hydrogen control measures and emergency  
16 planning. I don't see any difficulty in that.

17 MR. BICKWIT: There's certainly no difficulty with  
18 that. As I said, if, for some reason, in the course of this  
19 discussion you regard those issues as relevant to the decision  
20 that is now pending before the Commission on the no-power  
21 license, you can discuss those matters, subject to the  
22 procedures I have outlined.

23 COMMISSIONER GILINSKY: Darrel, with that, let's  
24 get to the informal part.

25 MR. EISENHUT: Okay. Certainly we'll try to follow



1 that guidance.

2 First, I guess just as a way on, the  
3 McGuire Unit 1 license that's proposed fourth  
4 plant Duke has coming on line. The other the Oconee 1, 2  
5 3 units, and they have several others coming on the line.

6 The presentation that we are going to give you  
7 today -- and I believe we have given the copies of the view-  
8 graphs we will be using -- is somewhat of an overview of the  
9 same kinds of issues that have been some major issues that we  
10 have discussed in the past on the licenses. The most recent,  
11 of course, was the Salem full power license.

12 You will notice that some of these issues are the  
13 very same kinds of issues.

14 We will be able to give you sort of a summary of  
15 where we are on the hydrogen review on McGuire, sort of status  
16 in the sense that you mentioned.

17 We don't have our detail people on the hydrogen issue  
18 here with us today, since they are off right now working on  
19 another plant.

20 What we will also be doing as we go through, you  
21 will be seeing us identify a couple of the issues that are still  
22 problem issues, so to speak, in the sense that they are issues  
23 that are being resolved and we will be working to resolve after  
24 the zero power license; that is, prior to 5 percent or prior to  
25 100 percent.

1           If you remember our process, we broke down certain  
2 issues that had to be resolved before zero power; others  
3 before 5 percent power; and others before full power.

4           One other note I should point out is the safety  
5 evaluation that I believe we sent downtown with -- accompanying  
6 the license, was a safety evaluation we had written for fuel  
7 loading, initial criticality, zero power testing, up to 50 perc  
8 power. So the safety evaluation actually encompasses more  
9 than is necessary for zero power license. That's just the way  
10 we have written it. It was much easier issuing the final  
11 document.

12           With that as a simple introduction, I'll turn the  
13 immediate discussion over to Bob Tedesco.

14           First, however, I would like to identify Tom Donat,  
15 who is sitting at the end of the table, the resident inspector  
16 from I&E, who is here with us also today. And I think you  
17 know everyone else who would be speaking; Dick Vollmer and  
18 Steve Hanauer addressing their respective areas.

19           MR. TEDESCO: Okay, we can begin now. Can I have  
20 the first slide, please.

21           (Slide.)

22           This is an outline of what we would like to share  
23 with you this afternoon, Commissioner. We begin with a general  
24 description, talking about the status of the TMI and non-TMI  
25 items. The last one would be an identification of what we

1 consider to be outstanding issues that we would deal with for a  
2 fuel load license

3 The next slide.

4 (Slide.)

5 Again we have a description of the plant, very much  
6 along the lines of the Salem, Sequoyah, North Anna plants.  
7 Westinghouse plant, four loop and so on. There is an ice  
8 condenser containment.

9 The difference that I would note here for clarificat.  
10 is that the design pressure went a little higher than the  
11 Sequoyah Plant, 12 vs. 15 psig.

12 ECCS is pretty much the same, and the UHI system  
13 with it, along with the other accumulators and the low head  
14 injection pumps.

15 The next slide is --

16 (Slide.)

17 -- just an overview of the location of the plant.  
18 This is near Charlotte, and gives you a kind of a good  
19 perception of the plant's location and the areas around it.  
20 Charlotte being the population center. Based on the 1970  
21 census, we're talking about maybe 240,000 people or so, of that  
22 general nature.

23 The next slide --

24 (Slide.)

25 -- starts to deal with our non-TMI issues, and as a



1 result of the review that we set forth in our SER -- as  
2 Darrel says, up to a low power condition -- we haven't found  
3 any unusual features about the design configuration.

4 Equipment qualifications are following pretty well.  
5 We are set to go forward into our February 1st SER which is  
6 consistent with the Commission's May 23rd memorandum and order.

7 The Staff has been to the site. We are doing an  
8 audit, and things are coming along pretty well.

9 COMMISSIONER GILINSKY: How would you characterize  
10 the various degree of qualifications and categories of equip-  
11 ment?

12 MR. TEDESCO: Well, we have -- do you want to say  
13 something, Dick?

14 MR. VOLLMER: Why don't we go to the other slide?

15 (Slide.)

16 We have performed for the McGuire plant, or we are  
17 performing a more detailed review than we were able to for the  
18 other NTOL plants because of the timing. We have done a full  
19 audit of the items for environmental qualification which means-

20 COMMISSIONER GILINSKY: When you say full audit, does  
21 that mean 20 percent of audit or --

22 MR. VOLLMER: That's basically the 20 percent audit,  
23 and we had no major deficiencies identified there, which would  
24 be -- say a major deficiency would be one found in a piece of  
25 equipment that was unqualified and would threaten the

1 functionability of a safety-related system. The same type of a  
2 deficiency that would at an operating plant require the issuance  
3 of an LER and going to the tech specs and declaring inoperability  
4 until replacement or something like that.

5 This does not mean that all of the safety-related  
6 equipment did not have -- or much of it did not have some one  
7 or more deficiencies in accordance with the NUREG or the guide-  
8 lines.

9 COMMISSIONER GILINSKY: You don't have a breakdown  
10 of the sort you've had before, so many categories of equipment,  
11 so many are qualified --

12 MR. VOLLMER: We weren't able to do that, but we are

13 COMMISSIONER GILINSKY: I guess the next stage of  
14 licensing would be --

15 MR. VOLLMER: As a matter of fact, on February 1st,  
16 we expect to have our complete SER which will break down all  
17 of it, a much more detailed breakdown than we've had before  
18 on any plant.

19 MR. EISENHUT: I guess one other point -- and Dick  
20 can correct me -- I think our Staff is coming down saying that  
21 it looks like this is perhaps one of the cleanest plants we  
22 have seen with respect to environmental qualification reviews  
23 up to this point in time.

24 So I took that even without having a detailed  
25 breakdown. Their point was that there were no major

1 deficiencies identified and, in fact, we are going through  
2 the detailed review right now, and putting all the final  
3 documents together, but they had completed the audit, and it  
4 looked like one of the cleaner plants we have seen.

5 COMMISSIONER GILINSKY: Well, that sounds good.

6 MR. EISENHUT: Of course, we will giving you that  
7 detailed itemized list.

8 MR. TEDESCO: The other item here that we will talk  
9 more about later deals with fire protection, and that has  
10 moved along well, too.

11 COMMISSIONER GILINSKY: What is the status of that?  
12 Do you want to talk about that later?

13 MR. TEDESCO: We have a slide on it. We can do them  
14 in any order.

15 MR. VOLLMER: Well, it's up there now.

16 (Slide.)

17 Okay. As far as the -- well, we start off by saying  
18 that the McGuire Station is unique in that they have proposed  
19 a dedicated shutdown system which none of the NTOLs have  
20 proposed, very few plants have proposed. And that's currently  
21 under view by the Staff. In terms of the dedicated shutdown  
22 system, we are in the process of establishing what sort of  
23 criteria such a shutdown system needs to have in order to meet  
24 the requirements for fire protection, and I must stress that  
25 this dedicated shutdown system is not intended to meet all of t



1 requirements that one might think a dedicated shutdown system  
2 could be used -- in other words, to get around nonfunctioning  
3 of a lot of equipment, nonfunctioning in the event of seismic  
4 so on.

5 This system is proposed to be able to assure  
6 functionability in the event of a fire, so it is limited in  
7 scope, and we have yet to on the Staff really develop full  
8 criteria for that in a generic sense, but it will, if things  
9 work out as we think they will, will assure us that we have  
10 safe shutdown capability and continual supply of fairly low  
11 quantities, with a continuous supply of coolant makeup in the  
12 event of a fire by a system that would be completely independent  
13 have its own power supply valves and coolant supply.

14 So it truly would be a dedicated system.

15 COMMISSIONER GILINSKY: What is it that makes that  
16 system able to cope with fires, but not other events?

17 MR. VOLLMER: Well, it would be independent,  
18 basically independent in all regards to those systems that would  
19 normally be required for this service, and independently located  
20 and independent power and so on, so if you constrict the fire  
21 to a reasonable magnitude, you can design and build this thing  
22 such that any reasonable fire can't wipe both of them out.

23 MR. EISENHUT: As you point out, the Oconee, as I  
24 recall, Oconee 1, 2, 3 units were the first units that came  
25 in with a dedicated system. Back a couple of years ago when we

1 were having discussions, there are two things here I think that  
2 are missing.

3 The first one is the McGuire fire protection program  
4 as laid out meets our requirements for fire protection evaluati  
5 except for those areas that were grandfathered, so to speak,  
6 in time by Appendix R. That is they were given so much time  
7 to come up with a dedicated system and so much time for the  
8 three other areas that you recall we backfit.

9 The way I look at this is actually a little bit  
10 simpler; and that is that rather than go through your plant and  
11 fix up area A, system B, part C, et cetera, it's probably  
12 more beneficial and in everybody's best interest if instead of  
13 upgrading every one of those little bits and pieces, you improv  
14 the overall reliability by putting in a completely separate  
15 new system. Go out, tap off a new water supply or reliable  
16 water supply, and actually have a separate new dedicated shutdo  
17 system. And that's basically the concept of a dedicated system  
18 as opposed to where you normally see on other plants an alterna  
19 shutdown system capability.

20 MR. VOLLMER: What that does basically is take care  
21 of one of the more important features, the separation feature  
22 that we have talked about so much, the fire barriers and  
23 separations and things like that.

24 As I understand it, they will modify those things  
25 that are needed, upgrade to meet Appendix R, except in that

1 particular area, the separation criteria and so on, would be  
2 met by a dedicated shutdown system.

3 COMMISSIONER GILINSKY: Good enough.

4 MR. TEDESCO: Okay. We can move on to criteria 51,  
5 and this is the situation that we are looking into, that we  
6 have discussed with you on Salem; namely the boundary of the  
7 containment --

8 (Slide.)

9 -- in dealing with situations with the material  
10 properties to ensure they're not in an embrittled state for  
11 the different conditions, and we have found nothing unusual  
12 with McGuire, and now we are just pursuing what we did on  
13 Salem, to go through the piping and the fittings --

14 COMMISSIONER GILINSKY: What did you do, go back to  
15 the records?

16 MR. TEDESCO: We went back to the fabricator and  
17 tried to get the heat treatment data and what data were avail-  
18 able, to demonstrate the adequacy of fracture toughness. It's  
19 a matter of just going through a lot of records and even  
20 trying to track a pedigree right down the line. It's a rather  
21 tedious process, but at the present time it's the best way we'  
22 found to handle it. We narrow it down here to the point that  
23 we were on Salem, namely looking at the steam and feedwater  
24 lines up in the first isolation valve, everything else has  
25 been checked out pretty well.



1 COMMISSIONER GILINSKY: And you were able, in fact,  
2 to obtain the records you needed?

3 MR. TEDESCO: Well, they went right to the heat  
4 treatment place and even talked to the foreman of the process  
5 plant and got records out, to the extent that they were able to

6 MR. EISENHUT: Not without tremendous difficulty.  
7 Let me put this in sort of the negative.

8 COMMISSIONER GILINSKY: Lucky they were still there.

9 (Laughter.)

10 MR. EISENHUT: That's right. As I point out, there  
11 was only one person left that was there during that time, as I  
12 recall. .

13 The point here, that the Applicant needs to supply  
14 data for the steam and feedwater system materials, that is an  
15 open problem area. We don't feel that it's necessary for zero  
16 power, but it is something that we will be working on trying  
17 to resolve.

18 In the past, we have taken the position that that  
19 would be resolved for full power, and there will have to be one  
20 of several options undertaken to be able to show us that there  
21 is not a problem with those small pieces of pipe.

22 COMMISSIONER GILINSKY: So that's a relatively  
23 recent interpretation of our requirement, is it not?

24 MR. EISENHUT: That is correct.

25 MR. TEDESCO: It's really updating it, using a more

1 current code requirement, versus a time when the plant was  
2 built with the existing code at that time, where such data were  
3 not required. It's that type of approach that we are dealing  
4 with.

5 COMMISSIONER GILINSKY: We basically restricted it  
6 earlier to the containment.

7 MR. TEDESCO: Yeah.

8 MR. VOLLMER: The containment materials itself.

9 MR. EISENHUT: I guess strictly speaking, if you use  
10 the applicable code, literally following the regulations, you  
11 would say that you need not evaluate this on this plant, because  
12 an earlier code, probably the '68 version, was the applicable  
13 piece. But since we now believe that the later code was in fact  
14 more appropriately addressed to this area, we are sort of in  
15 essence backfitting this requirement on all these plants.

16 MR. VOLLMER: We're going to the more basic requirements  
17 of the criteria, rather than using the code as a criteria of  
18 acceptability. We are really going back and looking at the  
19 material acceptability and using the GDC-57 criteria as a  
20 definition of containment boundary, such as we did on Sequoyah.

21 MR. TEDESCO: Okay, let's take this slide on  
22 masonry walls.

23 (Slide.)

24 This is another non-TMI item. Again it's not unique  
25 it's something that we are doing generically. The situation or

1 McGuire is that Duke Power is doing a reevaluation, and based  
2 upon the criteria that they would use, they would make modifica-  
3 tions as necessary. The Staff is in parallel reviewing this.  
4 However, we find that completion is not a requirement from a  
5 zero power configuration. It's something that we will be doing  
6 in the way of full power, as we did on Salem.

7 Dick, do you want to add something?

8 MR. VOLLMER: Well, I'd point out that on the masonry  
9 wall issue, we did find today that there are of the order of a  
10 couple hundred masonry walls, none of these being in the contain-  
11 ment building, but all being in the auxiliary building. We have  
12 not identified how many of those we could call of safety  
13 significance; that is whether or not they have safety-related  
14 equipment attached to them in some way or penetrating them, or  
15 they're close enough so a failure of the wall itself would impact  
16 on safety-related equipment. But if we judge from what we have  
17 seen in other plants, 30 or 60 percent of those might be a  
18 fairly good guess.

19 For those, we will require that strengthening, such  
20 that they would have seismic capability, if ---

21 COMMISSIONER GILINSKY: We are counting on the utility  
22 to identify the walls? Do we --

23 MR. VOLLMER: We have been taking a part in that, yes.

24 COMMISSIONER GILINSKY: Any inspections on that? I  
25 assume the resident inspector examines the walls.



1 MR. DONAT: As of this time, I haven't heard anything  
2 through the regional office in this regard. I can certainly  
3 follow up on it.

4 MR. EISENHUT: I think it's fair to say that this is  
5 an area that's been growing over the last few months, and at  
6 the same time, in a lot of people's minds, it's an area that  
7 may not be really that urgently important from a safety stand-  
8 point, because I think it's our best technical judgment of the  
9 engineers working this, that in all likelihood this is not a  
10 big problem. But still you have to go through, check the walls,  
11 check the loads.

12 We have draft criteria for acceptability in-house.  
13 It's sort of our spinout of the Trojan review and the Trojan  
14 shutdown of some time ago.

15 However, while that's being developed over the next  
16 few months, we are asking the utilities to reanalyze and revert  
17 to their own criteria.

18 I think it's also fair to say that this is an item  
19 that before a plant would go forth to full power, it is an item  
20 that we would be asking I&E to verify, for example, that the  
21 fixes have been put in place. So I&E would be doing an audit  
22 evaluation. They're just not at this stage in the process yet,  
23 but we would be asking them later.

24 COMMISSIONER GILINSKY: Fine.

25 MR. VOLLMER: Questions on structures on --

1 COMMISSIONER GILINSKY: I think we can go on to the  
2 next item.

3 MR. TEDESCO: The next slide --

4 (Slide.)

5 -- will be dealing with some of the aspects of TMI  
6 items, review in the control room. This was done by the Staff  
7 and it was -- the control room review had been done by the  
8 Staff. Staff found no major deficiencies. We added some new  
9 information here for you to deal with the in-core thermocouples,  
10 where we do have a good capability.

11 That really should be not CFR, but CRT. It's the  
12 cathode ray tube display.

13 COMMISSIONER GILINSKY: It displays the --

14 MR. TEDESCO: The temperatures.

15 COMMISSIONER GILINSKY: -- the core, or you can call  
16 them up one at a time?

17 MR. TEDESCO: You can get a printout, a printout of the  
18 core, if you want.

19 MR. HANAUER: A display or a printout. I don't guess  
20 I know the format at the moment. It's easily changed and they  
21 are still messing with it.

22 MR. TEDESCO: But they have the capability for high  
23 temperature readings.

24 MR. EISENHUT: I think the key is we have been requiring  
25 all plants post-TMI and certain of the new OLS, that it's just

1 not acceptable to have the package as it was before, where you  
2 throw the little switch, get down 12 inches off the ground,  
3 and watch the little dial and read a measurement.

4 We do want to get core-mapping capability, to get  
5 the temperatures and up to the highest levels. We have been  
6 requiring that across the board.

7 COMMISSIONER GILINSKY: Please proceed.

8 MR. TEDESCO: The next slide --

9 (Slide.)

10 --- deals with the staffing and, Steve, I guess you  
11 ought to say something here before starting off.

12 COMMISSIONER GILINSKY: Did you have anything more  
13 to say on the control room?

14 MR. HANAUER: It's different in an interesting way.  
15 It's going to be interesting just to find out how it goes.  
16 It's small, and there are several other small control rooms  
17 around, but it's small in that the Unit 1 and Unit 2 parts of it  
18 are close together, and we are kind of watching it. Of course,  
19 at the moment, they have one unit about to go into operation.

20 When Unit 2 comes into operation, we are going to  
21 have to look pretty carefully to see if there's any interference  
22 because it's a narrow U-shape with Unit 1 on one side of the  
23 U and Unit 2 on the other.

24 I have some pictures, if you are interested.

25 COMMISSIONER GILINSKY: One room?



1 MR. HANAUER: One room. And it's by far the  
2 closest proximity of Units 1 and 2 we have seen. The two  
3 units are unfortunately in a mirror image, but the panels, when  
4 you get inside the panels, they are the same, rather than  
5 mirror images of each other.

6 That is to say, the layout panel by panel, the  
7 layout of the panels with respect to each other is a mirror  
8 image, but the two panels of any one kind, Units 1 and 2,  
9 are the same.

10 MR. EISENHUT: Do you follow? Because a real mirror  
11 image would mean if one dials clockwise, he's increasing --  
12 the image would be counterclockwise.

13 MR. HANAUER: That's right, and there are plants  
14 like that.

15 COMMISSIONER GILINSKY: There are?

16 MR. HANAUER: Yes. This one is a somewhat less  
17 obnoxious kind of mirror image.

18 COMMISSIONER GILINSKY: I guess that surprises me.

19 MR. EISENHUT: Well, that's one thing when you go  
20 to the plant and look at the mirror images, what it really is,  
21 if -- to pick a simple case, if it's a 3-section panel, the  
22 three sections, A, B, and C, are in reverse order, but within  
23 each panel, everything is identical.

24 COMMISSIONER GILINSKY: But the control room mimics  
25 the plant, because the plant is --

1 MR. HANAUER: I don't know if this plant is mirror o  
2 not. Someone would have to tell me. Some plants are mirror an  
3 some plants are not.

4 COMMISSIONER GILINSKY: I guess I was asking a  
5 question and not making a statement.

6 MR. HANAUER: I don't know.

7 COMMISSIONER GILINSKY: I'll be going down there and  
8 take a look. I guess I'll discover that.

9 Why don't you go on.

10 MR. TEDESCO: The next slide --

11 (Slide.)

12 Steve, do you want to --

13 MR. HANAUER: We have a little more information on  
14 staffing. I'm sorry, I'm groping for a piece of paper.

15 Since we wrote the SER, there have been some  
16 examinations given. They did a little better on reactor  
17 operators and not quite as well on seniors as they expected.

18 I have also managed to lose my list that I had here.

19 Here we are.

20 COMMISSIONER GILINSKY: Can you say something about  
21 the experience level of the crew?

22 MR. HANAUER: Yes. They are using some people  
23 from Oconee, so they know what PWRs are. The crew is -- I  
24 can't recite it to you, but they are overall very experienced.

25 COMMISSIONER GILINSKY: Okay.



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1 MR. HANAUER: I can give you some up-to-date numbers  
2 At this moment there are 15 licensed senior operators, plus  
3 seven or eight who are licensed, but who are intended for the  
4 management staff, and are not regularly assigned shift duties.  
5 They have a total of 23 licensed SROs, and 14 licensed operator

6 So these are slightly different from the numbers  
7 which we predicted when we did the SER. We then predicted 17  
8 seniors and nine operators. This, compared with the requiremen  
9 is -- the best view of the requirements is in the SER, page  
10 22-8. The requirements for each shift they need two SROs  
11 and two ROs.

12 They plan to start with four eight-hour shifts.  
13 The ideal is five, but they're a little short on the five.  
14 Because their shift technical adviser is also SRO-licensed,  
15 this is a plus. This means that their shift technical adviser  
16 is well-versed in the plant and its operation and the procedure  
17 in a way that is not true in many plants, where the shift  
18 technical adviser is not licensed.

19 However, they pay for this in a situation where  
20 they are a little short of senior reactor operators by depleting  
21 the number available for shift operation. They have therefore  
22 asked and we have accepted a situation where the shift technical  
23 adviser may for short periods relieve the senior reactor operator  
24 in the control room, since he's licensed and otherwise entirely  
25 available. But we have placed limits on this in order to



1 control it, and we are going to review it.

2 There are a substantial number of different arrangem  
3 in how the different companies use the shift technical adviser.

4 COMMISSIONER GILINSKY: Does the shift technical  
5 adviser requirement apply in the zero power stage?

6 MR. HANAUER: Yes, sir.

7 MR. EISENHUT: We took the position that any license  
8 if you have a license and you are above modes --

9 MR. HANAUER: 5 and 6.

10 MR. EISENHUT: Yeah, I know. I was trying to rememb  
11 What it really means is the plant is operating and not shut dow  
12 in cold shutdown, you need to have an STA. That's the position  
13 we are taking. And Steve said, we are seeing all kinds of  
14 tradeoffs.

15 Here, theoretically, if you count the numbers, they  
16 can make it with 15 SROs going to five shifts. However, there  
17 is no flexibility at all for anyone even to take off, or no  
18 flexibility for requalification, because you need the one STA,  
19 the one control room, you need the one SRO, control room, SRO,  
20 plus the STA. So you really need three people in this plant.  
21 And they are one of the better plants in the sense of a  
22 qualified STA in that sense. There are not that many coming  
23 in that as of today can say they have --

24 COMMISSIONER GILINSKY: Let's see, did you say all  
25 the STAs are --

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1 MR. EISENHUT: Yes, sir.

2 COMMISSIONER GILINSKY: -- are qualified SROs?

3 MR. HANAUER: All the STAs have senior licenses.

4 COMMISSIONER GILINSKY: That is very nice.

5 MR. HANAUER: Yes, that's good, and you pay for this  
6 in a smaller complement of SROs available for the shift work  
7 and in the concession we have made allowing the STA who has a  
8 license and is legal for this purpose to relieve the control room  
9 SRO for brief periods.

10 COMMISSIONER GILINSKY: Let's see. Does that about  
11 do it?

12 MR. HANAUER: Yes, sir.

13 COMMISSIONER GILINSKY: Thank you.

14 (Slide.)

15 On management, this is a highly-experienced company.  
16 They've been running the Oconee Station for years. They have  
17 McGuire and Catawba under construction, and have construction  
18 permit for another plant they are --

19 COMMISSIONER GILINSKY: Are nuclear plants handled  
20 separately within the company, or does that fall under some  
21 general --

22 MR. HANAUER: They have not concentrated the nuclear  
23 plants under a single corporate official at the vice president  
24 level.. They have an operations supervisor and an engineering  
25 supervisor, both of whom supervise both nuclear and non-nuclear



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1 plants. It's a very large corporation, and each of these  
2 officials has a nuclear assistant who has substantial resources  
3 at his command. And it works very well at Oconee. We have  
4 therefore chosen not to impose some paper pattern upon them.

5 COMMISSIONER GILINSKY: Okay.

6 MR. TEDESCO: The next slide --

7 (Slide.)

8 -- deals with emergency planning, and here we are  
9 focusing on the issues for the zero power license to establish  
10 the requirements that they had to meet in the existing regulat  
11 before November 3rd.

12 They have established a technical support facility,  
13 emergency operations facility. We have ---

14 COMMISSIONER GILINSKY: Where is the emergency  
15 operations facility?

16 MR. TEDESCO: It's an interim facility right now.

17 MR. KEVERN: Commissioner, I'm Tom Kevern --

18 COMMISSIONER GILINSKY: Why don't you just sit down.

19 MR. KEVERN: I'm Tom Kevern, Division of Emergency  
20 Preparedness.

21 The EOF is an interim facility they have presently  
22 designated which is a short distance from site -- a short  
23 distance from the plant itself, approximately 1000 yards. It's  
24 an adjacent set of buildings housing the simulator and  
25 training facilities and the EOF facility. The technical support



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1 center is just adjacent to the control room.

2 COMMISSIONER GILINSKY: And you say that's an interim  
3 center?

4 MR. KEVERN: As of now, yes, sir.

5 COMMISSIONER GILINSKY: Are there plans for a more  
6 permanent center?

7 MR. KEVERN: They will meet whatever our requirement  
8 are in accordance with NUREG 0696, when it is published.

9 COMMISSIONER GILINSKY: Okay.

10 Let's see. Where is the status of the state plan?  
11 Do you know?

12 MR. KEVERN: The state plan is under review by FEMA.  
13 They have reviewed several iterations of it. Most recently the  
14 review was brought to a head by the exercise that was held  
15 the early part of December. We are presently awaiting a report  
16 from FEMA, and our preliminary findings were that it was  
17 a favorable exercise, and they will okay the plan.

18 COMMISSIONER GILINSKY: Do you know when they are  
19 likely to act on it?

20 MR. KEVERN: I expect the report in by the end of  
21 this month.

22 COMMISSIONER GILINSKY: Well, thank you.

23 MR. EISENHUT: The last slide --

24 (Slide.)

25 -- is just a brief summary. It's some of the kinds

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1 of things we are working on. Obviously there is a whole list  
2 of things we are still working on. Some of the non-TMI things,  
3 are some of the ones we mentioned already. The I&E inspection  
4 of a number of areas. I&E bulletin 79-02, which is base plates  
5 79-14 is the as-built --

6 COMMISSIONER GILINSKY: Can you tell me something  
7 about the containment leaktight integrity?

8 MR. TEDESCO: Yeah, that's a license submission.

9 COMMISSIONER GILINSKY: What is that about? I  
10 notice that --

11 MR. TEDESCO: It modifies around the airlock, so  
12 they run a test, run a leak test. It's not a modification that  
13 has to be made.

14 MR. EISENHUT: This is a generic problem on most of  
15 the plants, including the operating plants. In order to make  
16 the plants be able to meet Appendix J, Part 50, we have taken  
17 the position that you have to be able to run local leak-rate  
18 tests, and then as an overall containment integrated leak-rate  
19 test. And quite often there are some modifications required  
20 to be able to actually even run the test, and then they actually  
21 have to run the test to show the leaktightness, so in this  
22 case the airlock is the key.

23 It's a standard issue that's generic across the  
24 board, and it's just one issue that's still being wrapped up  
25 to be able to show that they have made the modifications to be



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1 able to run this test.

2 COMMISSIONER GILINSKY: Fine. Why don't we just go

3 MR. EISENHUT: Sure. The I&E inspection, a number  
4 of areas, the generic general one to say that the plant is  
5 ready to go.

6 02, 79-02, is one on base plates.

7 79-14 is one on the as-built conditions of the plant.

8 COMMISSIONER GILINSKY: Are these inspections  
9 performed by you?

10 MR. DONAT: Right. In the case of the first one,  
11 there we are waiting again, like we are waiting for that  
12 modification to be completed, they are waiting for the seals to  
13 arrive, and then they will be doing the leak tests.

14 In the case of 79-02 and 79-14, we're getting togeth  
15 there with the construction people. The Licensee's work on the  
16 base plates, which is 79-02, is supposed to complete this week.  
17 We should be reviewing that next week.

18 The next item, which is fire protection, there the  
19 items have been identified by specialist inspector, and when  
20 the Licensee indicates that the modifications are complete, we  
21 will get together with the specialist inspector and the License  
22 and verify the completion of the work.

23 COMMISSIONER GILINSKY: And the TMI items?

24 MR. EISENHUT: The TMI items is just a listing,  
25 this is just a handful of the whole listing of the standard



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1 TMI issues that you have seen before. We will require the low  
2 power testing program to be gone through similar to other  
3 plants since TMI. And we will be going down the entire list of  
4 the TMI issues that we normally do, that you'll expect to see,  
5 a listing, actually, in the license itself.

6 COMMISSIONER GILINSKY: Could you tell me what sort  
7 of tests are conducted at zero power? What --

8 MR. TEDESCO: They're basic criticality tests. They  
9 run rodworth, check out the instrumentation, and do some --

10 COMMISSIONER GILINSKY: They have to predict  
11 criticality, don't they?

12 MR. TEDESCO: Oh, yes, yes. Sure.

13 COMMISSIONER GILINSKY: How close have plants been  
14 coming to that?

15 MR. TEDESCO: I think very good by now.

16 MR. DONAT: I think the best explanation for it is  
17 to say that you always should be ready for criticality at any  
18 time. They usually predict it fairly closely. They do 1 over  
19 plots of the source range indication, and by doing that, then  
20 they can pretty well estimate the boron concentration when  
21 they'll actually go critical.

22 COMMISSIONER GILINSKY: What are the safeguards  
23 for ensuring that you don't go above zero power?

24 MR. TEDESCO: We define zero power as a condition  
25 where you are within one decade of the point that you start

1 having heat to your primary coolant. So you establish a power  
2 level and you start putting energy into the coolant, and you  
3 monitor the temperature rise. You find out where that minimum  
4 point is, and then we say within one decade of that level is  
5 zero power.

6 You are not at a point where you are able to do a  
7 heat balance on the whole point, because you're just not putting  
8 out that much energy. So it's just a very, very low amount of  
9 fission energy that goes into the system.

10 You can't run a real good calibration, so you have  
11 to stay way below that level.

12 COMMISSIONER GILINSKY: The plant is set up to trip  
13 that point?

14 MR. TEDESCO: Oh, yeah. There are reactor protection  
15 systems in effect.

16 COMMISSIONER GILINSKY: And what is that power level  
17 roughly?

18 MR. TEDESCO: Right now, the best estimate we have,  
19 we are talking about a few tenths of a percent. It really is  
20 very low level versus, you know, the 5 percent that we were  
21 dealing with before.

22 MR. EISENHUT: Yeah, I was trying to look. There is  
23 actually --

24 MR. TEDESCO: It's on the license.

25 MR. EISENHUT: Yeah, I know it's in here. I just



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1 couldn't find it. There's an actual license condition where we  
2 defined what we meant by it, so that anything above that would  
3 be a --

4 COMMISSIONER GILINSKY: Well, let's see. A percent  
5 would be something like 30 megawatts?

6 MR. TEDESCO: That would be roughly 1 percent.

7 COMMISSIONER GILINSKY: So you are talking about 20  
8 or 30 megawatts or something like that?

9 MR. TEDESCO: No, no.

10 COMMISSIONER GILINSKY: Oh, you're saying tenths.

11 MR. TEDESCO: Tenths of 1 percent, yeah.

12 COMMISSIONER GILINSKY: So several megawatts.

13 MR. EISENHUT: In fact, maybe certainly less than a  
14 megawatt. In fact, we said in the license zero power should be  
15 considered to be one decade as measured on the intermediate  
16 range nuclear instrumentation, above the point at which sensibl  
17 heat is added to the reactor coolant. So they can actually mak  
18 a determination as to where they would be and make setpoints  
19 accordingly.

20 COMMISSIONER GILINSKY: Okay. I've got a few  
21 random questions left over.

22 Does the license seem to have a whole lot about  
23 antitrust in that? Why is that in there at zero power?

24 MR. CHRISTENBERRY: Though it is a zero power licens  
25 it is nonetheless an operating license which does require under



1 our regulations -- these are license conditions that were  
2 placed on by the Board to be carried over into the full power  
3 license as well.

4 COMMISSIONER GILINSKY: Let's see. On the question  
5 of operators, does Duke have a simulator for McGuire?

6 MR. TEDESCO: They do?

7 VOICE: Yes.

8 COMMISSIONER GILINSKY: They do?

9 MR. TEDESCO: They're shaking their head.

10 COMMISSIONER GILINSKY: Well, that's why they are  
11 here. It's good to know.

12 Let's see. And if authorization was granted by  
13 the Commission, when would fuel be loaded?

14 MR. TEDESCO: The license as written could be issued  
15 at any time. Now the actual date is about what, the end of  
16 January?

17 MR. DONAT: The licensee is saying they'd be ready  
18 by the 28th. Based on the outstanding items that they have got  
19 plus the overall condition of the plant, they could probably  
20 achieve that date, or by the end of the month.

21 Other than these items here, I'd say probably about  
22 the only other major item would be probably cleanliness in  
23 some of the areas, and they have crews working on that.

24 COMMISSIONER GILINSKY: Okay. That about covers  
25 the points that I wanted to cover.

1 Did you have anything that you wanted to add on the  
2 basis of your experience? How long have you been there?

3 MR. DONAT: I arrived the 1st of August.

4 And I'd say that the items that are presently in the  
5 license pretty well cover the outstanding areas. Like I said,  
6 the additional area of plant cleanliness, which they are sendin  
7 sizeable crews to work on. And hangars and supports, generally  
8 the 79-02, has really been the pacing item until now, and that  
9 appears to be coming around.

10 COMMISSIONER GILINSKY: Yeah, I hope to visit the  
11 plant before it gets authorization for certainly full power,  
12 and I hope well before then.

13 Is there anyone here who-- a party, would like to se  
14 a word or two?

15 If not, then thank you very much.

16 MR. TEDESCO: Could I just indicate to you that --

17 COMMISSIONER GILINSKY: You'd like to say something  
18 You're a party, too.

19 (Laughter.)

20 MR. TEDESCO: We have been working on the license,  
21 and as we go through it, we see that there are some areas we  
22 want to clarify some of the wording on. So there will be  
23 some very minor changes to clarify it.

24 COMMISSIONER GILINSKY: On this license?

1 MR. TEDESCO: On this license that we have shown you  
2 yes. We got together with our lawyers, and we realized that  
3 some words should be sharpened up a little bit. But there will  
4 be no substantive changes to it, though.

5 COMMISSIONER GILINSKY: Okay. Well, thank you very  
6 much. I appreciate it.

7 (Whereupon, at 4:20 p.m., the meeting was  
8 adjourned.)  
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NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the  
NRC Commission

in the matter of:

McGuire OL

Date of Proceeding: Jan. 21, 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.

ANN RILEY

Official Reporter (Typed)



Official Reporter (Signature)

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of )

DUKE POWER COMPANY )

(William B. McGuire Nuclear )  
Station, Unit Nos. 1 and 2) )  
)  
)  
)

Docket No.(s) 50-369  
50-370

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document(s) \*  
upon each person designated on the official service list compiled by  
the Office of the Secretary of the Commission in this proceeding in  
accordance with the requirements of Section 2.712 of 10 CFR Part 2 -  
Rules of Practice, of the Nuclear Regulatory Commission's Rules and  
Regulations.

Dated at Washington, D.C. this  
27<sup>th</sup> day of Jan 1981.

C. R. Stephens  
Office of the Secretary of the Commission

+ 3 documents

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Docket No. (s) 50-369  
50-370

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