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Plant License Renewal Subcommittee

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
(ACRS)

PLANT LICENSE RENEWAL SUBCOMMITTEE

+ + + + +

TUESDAY

OCTOBER 8, 2002

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ROCKVILLE, MARYLAND

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The Subcommittee met at the Nuclear Regulatory Commission, Two White Flint North, Room T2B3, 11545 Rockville Pike, at 8:30 a.m., Dr. Mario V. Bonaca, Chairman, presiding.

COMMITTEE MEMBERS:

- |                  |          |
|------------------|----------|
| MARIO V. BONACA  | Chairman |
| F. PETER FORD    | Member   |
| GRAHAM M. LEITCH | Member   |
| DANA A. POWERS   | Member   |
| STEPHEN L. ROSEN | Member   |

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ACRS STAFF PRESENT:

TIMOTHY KOBETZ

OTHER NRC STAFF PRESENT:

RANI FRANOVICH

BILL BATEMAN

TANYA EATON

BARRY ELLIOT

JOHN FAIR

ALLEN HISER

DAVID JENG

CAUDLE JULIAN

PT KUO

KAMAL MANOLY

JAI RAJAN

BILL ROGERS

PAUL SHEMANSKI

SIMON SHENG

JOHN TSAO

HAROLD WALKER

I-N-D-E-X

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

8:32 a.m.

CHAIRMAN BONACA: Good morning. This is the meeting of the ACRS Subcommittee on Plant License Renewal. I am Mario Bonaca, Chairman of the Subcommittee. The ACRS members in attendance are Graham Leitch, Peter Ford, Dana Powers and Steve Rosen. The purpose of this meeting is to review the Staff's Safety Evaluation Report with open items related to the application for renewal of the operating licenses for McGuire Nuclear Station, Units 1 and 2, and Catawba Nuclear Station, Unit 1 and 2.

The Subcommittee will gather information, analyze relevant issues and facts and formulate the proposed positions and actions as appropriate for deliberation by the full Committee. Tim Kobetz is the Cognizant ACRS Staff Engineer for this meeting.

The rules for participation in today's meeting have been announced as part of the notice of this meeting previously noticed in the Federal Register of September 23, 2002. A transcript of this meeting is being kept and will be made available, as stated, in the Federal Register notice. It is requested that speakers first identify themselves, use one of the microphones and speak with sufficient

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1 clarity and volume so that they can be readily heard.

2 I would like to point out that copies of  
3 these presentations are in the back of the room. In  
4 addition, copies of the McGuire and Catawba license  
5 renewal applications are also available for reference  
6 in the back of the room. We have received no requests  
7 for time to make oral statements or written comments  
8 from members of the public regarding today's meeting.

9 We will now proceed with the meeting. I  
10 call upon Mr. Kuo, Program Director for the NRC  
11 Division of License Renewal and Environmental Impacts  
12 for opening remarks.

13 MR. KUO: Good morning. Thank you, Dr.  
14 Bonaca. My name is PT Kuo, the Program Director for  
15 License Renewal and Environmental Impacts Program.  
16 The Staff will brief the Committee this morning on its  
17 safety evaluation of the McGuire/Catawba license  
18 renewal application. The project manager for this  
19 review is Rani Franovich. Ms. Franovich will lead the  
20 presentation today, and then we'll call upon Staff  
21 experts to provide technical details when needed.  
22 There are also technical reviewers sitting in the  
23 audience who are ready to answer any questions you may  
24 have.

25 Briefly, the Staff issued the Safety

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1 Evaluation Report with open items for McGuire/Catawba  
2 August 14, 2002. There were a total of 41 open items  
3 in the SER, but about 70 percent of these items have  
4 been either resolved or become confirmatory items.  
5 The Staff is still working with the Applicant to  
6 resolve the remaining open issues, and Ms. Franovich  
7 will talk about the details of these -- about these  
8 open items in her presentation later.

9           During the last ACRS meeting on license  
10 renewal, the Committee indicated an interest in the  
11 license renewal inspection process. We have invited  
12 Caudle Julian of Region II to make a presentation  
13 today for the license renewal inspection process. Mr.  
14 Julian is the Team Leader for the license renewal  
15 inspection for Oconee, Hatch, Turkey Point, North Anna  
16 and Surry and the McGuire and Catawba. He also  
17 provided the training for the license renewal  
18 inspection for the inspectors in other regions. I'm  
19 glad that Caudle can -- is able to take time off his  
20 busy inspection schedule to come here to make the  
21 presentation.

22           And with your permission, now I'm asking  
23 Ms. Franovich to make the presentation.

24           CHAIRMAN BONACA: Yes. Before we move  
25 into that, let me just ask you a question.

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1 MR. KUO: Sure.

2 CHAIRMAN BONACA: We've been asked by the  
3 Commission regarding the effectiveness and the  
4 efficiency of the process, and we're reflecting on it  
5 to provide an answer in the future to that question.  
6 We have seen some applications where open items have  
7 come -- I mean SERs have come to us with maybe three,  
8 four open items. And then we have this application  
9 coming to us with 42 open items, and, of course, as  
10 you can imagine, that raises a question in our mind of  
11 what's happening there? Is it because the package  
12 came too early for our review? Is it because there is  
13 something about lessons learned which is not being  
14 utilized, particularly by an Applicant that already  
15 has significant experience with the process as Duke,  
16 because they already get license renewal for the  
17 Oconee units.

18 So at some point we would appreciate your  
19 perspectives and the Applicant's perspective on this  
20 issue because we would like to learn about that. Is  
21 the industry moving towards a more effective and  
22 efficient process or are we still encountering the  
23 fickelties which we would like to understand?

24 MR. KUO: Yes. Actually, Ms. Franovich is  
25 going to talk about the whole process and about the

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1 nature of the open items and how many have been  
2 resolved and all that. She will go through all that.

3 CHAIRMAN BONACA: Thank you.

4 MR. KUO: You're welcome.

5 MS. FRANOVICH: Okay. With that, I'm Rani  
6 Franovich, the Project Manager for the Staff Safety  
7 Review of the license renewal application for  
8 Catawba/McGuire.

9 Before I get started I wanted to --

10 MEMBER ROSEN: Would you use the  
11 microphone?

12 MS. FRANOVICH: I have one on here but  
13 I'll use this one too. Before I get started I wanted  
14 to give a little background on me. I've been with the  
15 NRC for 11 years, spent eight years in Region II. Six  
16 of those years were at Catawba Nuclear Station as a  
17 resident inspector, and I certified on McGuire, so I'm  
18 pretty familiar with these two ice condenser plants.  
19 I've been the License Renewal staff for just over a  
20 year, and with that, I'll make a couple of opening  
21 comments.

22 The first is on the agenda. I apologize  
23 for a correction in the agenda. The opening remarks  
24 were actually made by Dr. Bonaca, so I apologize for  
25 that. Also, there are some changes that are fairly

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1 recent in the presenters. I will be doing more of the  
2 presentations than we originally planned. So the  
3 presentation slide with the agenda is correct. And  
4 I'm just going to go through briefly the agenda. The  
5 times we should still be able to stick to.

6 Okay. The license renewal application for  
7 McGuire/Catawba was submitted to the Staff on June 13,  
8 2001. McGuire Nuclear Station is located in  
9 Mecklenburg County, North Carolina. It's a four-loop  
10 Westinghouse ice condenser plant. McGuire Unit 2  
11 operating license currently is scheduled to expire in  
12 2023, so for McGuire Unit 2, the Applicant came in for  
13 an exemption from our requirement that a plant have 20  
14 years of operating experience before they come in for  
15 renewal. Same thing for Catawba Units 1 and 2. And  
16 these exemptions were approved by the Staff.

17 MEMBER LEITCH: What were the reasons for  
18 those exemptions?

19 MS. FRANOVICH: The reason why the  
20 Applicant requested them?

21 MEMBER LEITCH: Yes.

22 MS. FRANOVICH: I think I'd like to defer  
23 to the Applicant to answer the question.

24 MEMBER LEITCH: We can address that  
25 question later.

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1 MS. FRANOVICH: But I can talk about the  
2 basis for the Staff's approval of the amendment, or  
3 the request.

4 MEMBER LEITCH: I was just curious why it  
5 came in earlier than we currently expect.

6 MS. FRANOVICH: Can you cover that, Greg?

7 MEMBER LEITCH: We can address that later  
8 in the session. Thank you.

9 MS. FRANOVICH: Okay. Sure. I wanted to  
10 talk briefly about the principles of license renewal,  
11 which essentially state that the regulatory process  
12 that we're using now is adequate to ensure that  
13 license bases of all currently operating plants  
14 provide and maintain an acceptable level of safety.  
15 And plant-specific licensing basis must be maintained  
16 during the renewal term. These principles are useful  
17 for the Staff because they guide the Staff to focus on  
18 aging management rather than current operating issues  
19 or current performance issues.

20 We have had intervenors in this project --  
21 Blue Ridge Environmental Defense League and Nuclear  
22 Information Resource Service. Both of these groups  
23 came in with a large number of contentions. Two were  
24 admitted by the ASLB, the Atomic Safety and Licensing  
25 Board. The Staff appealed and Duke appealed both of

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1 the contentions. The Commission since reversed the  
2 contention of potential use of MOX fuel at  
3 Catawba/McGuire, and we are currently in abeyance on  
4 the severe accident mitigation analysis for station  
5 blackout events. I just wanted to touch on that  
6 briefly.

7 CHAIRMAN BONACA: I have a question.

8 MS. FRANOVICH: Sure.

9 CHAIRMAN BONACA: I think on Page 312 of  
10 the application it stated that the aging effects  
11 identification process assumes that license activity  
12 is in accordance to current licensing basis, e.g. use  
13 of low enriched uranium dioxide fuel only. What does  
14 it mean if plants transition to MOX fuel?

15 MS. FRANOVICH: Well, this is what we've  
16 spent a lot of time discussing with the Petitioners.  
17 Right now their licensing basis is that they use the  
18 low enriched fuel. They haven't come in with an  
19 amendment request to either burn the lead test  
20 assemblies for MOX or burn the batch fuel for MOX. So  
21 Staff has to rely upon the current licensing basis at  
22 the Plant. It's still speculative in nature as to  
23 whether or not they actually will be using MOX in the  
24 reactors. So if they do come in for a license  
25 amendment request to use MOX, that is when the Staff

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1 will address the effects on aging, assuming that they  
2 receive a renewal operating license and their  
3 operating term is another 40 years.

4 CHAIRMAN BONACA: So I mean -- so really  
5 there is no process right now to reopen that. The  
6 process would have to be established.

7 MS. FRANOVICH: Correct.

8 CHAIRMAN BONACA: Okay. Thank you.

9 MS. FRANOVICH: Sure. Okay. Before --

10 MEMBER POWERS: Do we have any reason to  
11 think that use of MOX fuel would accentuate any aging  
12 effect?

13 MS. FRANOVICH: Well, I think, and I can  
14 let my technical experts jump in if I'm incorrect  
15 here, but we don't have any information from the  
16 candidates that might be using MOX fuel to really  
17 know, and we would expect that information to be given  
18 to us as part of the amendment request package. I'm  
19 not sure if the Staff really knows much at all about  
20 what the potential effects of MOX fuel use at these  
21 two plants would be, but I'll open the floor to any  
22 Staff that wants to comment on that.

23 CHAIRMAN BONACA: Well, my main question  
24 was regarding the reactor vessel internals.

25 MS. FRANOVICH: Right. There are certain

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1 --

2 CHAIRMAN BONACA: And the reason why is  
3 that there is a program here in this application and  
4 lengthy, but it really relies on the Oconee experience  
5 at the inspection, so that's why it came to mind  
6 because I don't know if that may require something  
7 specific to these units.

8 MS. FRANOVICH: It may, it may, but of  
9 course that would come up in the Staff's review of the  
10 amendment request package. If it comes in, that's  
11 when the Staff would review it. And the package would  
12 have the materials that the Staff would need to review  
13 on those effects.

14 CHAIRMAN BONACA: So, essentially, you  
15 would -- no, that's okay. I don't need to --

16 MS. FRANOVICH: Okay.

17 MEMBER POWERS: It seems to me that the  
18 French are migrating over to use of MOX fuel. Have  
19 they seen anything altering the aging of their  
20 facilities as they migrate towards MOX?

21 CHAIRMAN BONACA: Not that I know. Not  
22 that I know, but it's more -- I already have questions  
23 about the full dependency of the reactor vessel in  
24 inspections on Oconee. I would like to hear more  
25 about it when we get to those, you know, why are they

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1 applicable in any way and form to McGuire and Catawba.  
2 Maybe there are good reasons, but they're not  
3 necessarily spelled out in the application. And so  
4 this puts a little additional twist that says, you  
5 know, I would like to hear more about is there any  
6 effect you would expect from MOX fuel, and maybe the  
7 answer is no, but I think it pertains in that kind of  
8 open question about there isn't any specific reactor  
9 vessel inspection, it seems to me right now, that for  
10 internals that focuses specifically on McGuire and  
11 Catawba, and this is an additional change that may  
12 explain to me why we can do without that.

13 MS. FRANOVICH: Right. I understand your  
14 question now, and I would hope, but this is still  
15 speculative in nature, that the package would address  
16 whether or not they would still use the Oconee  
17 internals inspection program because of this unique  
18 operating condition for McGuire and Catawba.

19 MEMBER ROSEN: I'm uncomfortable going  
20 past this slide without knowing whether we're going to  
21 have a full exposition of the last bullet on your  
22 slide on severe accident mitigation analysis for  
23 station blackout sometime in this discussion today.

24 MS. FRANOVICH: When you say full  
25 exposition, I think what we were prepared to talk

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1 about is that this particular contention involves a  
2 generic safety issue, I believe it's GSI-189 on  
3 combustible gas control. It's a current operating  
4 issue, and as far as the license renewal process, this  
5 particular contention is held on abeyance, in part --  
6 well, it's because the Commission had reversed  
7 partially this contention as well. There was a part  
8 of the contention that had to do with the dedicated line  
9 that would be made available for McGuire and Catawba  
10 from hydro units in the event that off-site power were  
11 lost and diesels were not available. That part was  
12 reversed by the Commission.

13 The part that's still in the hearing  
14 process has to do with whether or not Duke considered  
15 information from the Sandia report on direct  
16 containment heating. The Staff and Duke has asked the  
17 Commission to define what they mean by Duke should  
18 consider the information in that report or the  
19 contention is correct in asserting that Duke had not  
20 fully considered that information. That's why we're  
21 in abeyance now. Since that time, there have been  
22 RAIs, responses from the Applicant addressing the  
23 information that's in that Sandia report. So we're  
24 looking for guidance from the Commission on to what  
25 extent is further evaluation of that information

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1 needed?

2 MEMBER ROSEN: But your Licensee and  
3 Applicant is asking for a license renewal without that  
4 contention being resolved.

5 MS. FRANOVICH: Well, the License Renewal  
6 Staff review process pursues a parallel path to the  
7 hearing process. But the renewed operating license  
8 will not be issued until the hearing is resolved, the  
9 outcome of the hearing is known.

10 MEMBER ROSEN: Well, this is a bit of a  
11 process problem, isn't it, for ACRS? We're asked to  
12 write a letter based on what we hear now, and yet some  
13 matter of some significance remains --

14 MS. FRANOVICH: That's a good point.

15 MEMBER ROSEN: -- on the table. so I  
16 don't understand the process that we'll use. Perhaps  
17 it's not something we discuss with the Applicant or  
18 the Staff, it's just something we need to talk about  
19 internally.

20 MS. FRANOVICH: Good point. Shall we go  
21 on? Okay. Before we issued our formal RAIs, and this  
22 is to address your question on efficiency and  
23 effectiveness, Dr. Bonaca, we had a number of  
24 conference calls, 21 in fact, with the Applicant to  
25 discuss the Staff's questions or concerns about

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1 information in the license renewal application. We  
2 were able to resolve a number of open items -- not  
3 open items but potential questions with that method.  
4 The Applicant had an opportunity to clarify  
5 information that was in the application or direct the  
6 Staff to areas of the UFSARs or the application to  
7 find answers to the Staff's questions.

8 After that process, we issued 273 official  
9 RAIs, or requests for additional information, and in  
10 these slides, the next two slides, I've just  
11 categorized them by discipline. Duke provided a  
12 response to our formal RAIs between March 1 and April  
13 15, 2002. And in addition to our RAIs, we also  
14 applied the scoping methodology review audit, which  
15 one of the lead reviewers will talk about in a minute  
16 here. That was back in October of last year. During  
17 that audit, we looked at how they evaluated seismic  
18 II/I scoping.

19 We also used two inspections: The scoping  
20 inspection, which occurred in the spring of this year,  
21 and the aging management review inspection, which  
22 occurred in the summer, one week at each of the two  
23 plants. And with that, I'd like to turn the  
24 presentation over to Caudle Julian so he can talk with  
25 you a little bit about the License Renewal Inspection

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1 Program.

2 CHAIRMAN BONACA: Let me ask a question  
3 before that.

4 MS. FRANOVICH: Sure.

5 CHAIRMAN BONACA: Just your impression.  
6 We have transitioned from early applications that  
7 included two volumes or three volumes to one that is  
8 quite condensed and seems pretty efficient the way it  
9 has been put together. But we have seen also a large  
10 number of RAIs. Is this number of RAIs due to the  
11 fact that information is not being provided just  
12 because of the format, the condensed format in it, or  
13 is it because of other reasons?

14 MS. FRANOVICH: Yes. I understand your  
15 question, and I think the format may have something to  
16 do with it. I know that some of our technical  
17 reviewers are concerned that the applications are  
18 providing less and less detail over time. Another  
19 thing that may have to do with it is that the Staff is  
20 getting a lot of applications in at one time, and so  
21 we're looking to contractors to help provide some of  
22 the review. So sometimes there's a learning curve for  
23 the contractors as well. But this is the volume for  
24 the technical information and the application. It  
25 applies to both Catawba and McGuire, it's one

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1 application, and it is a very condensed source of  
2 information. But I think those two and the fact that  
3 we're using some contractors, some newer staff and the  
4 fact that applications are getting more scarce on the  
5 details is probably the best explanation for why we  
6 have this number of RAIs.

7 CHAIRMAN BONACA: Well, I think it's  
8 something we have to understand as we go forth,  
9 because we're seeing more and more condensed  
10 applications and we see a surge in RAIs and then we  
11 see a surge in open items, and some of them, I am  
12 convinced, is just a question of communications.

13 MS. FRANOVICH: Yes. I would tend to  
14 agree.

15 CHAIRMAN BONACA: So we've got to  
16 understand as we go towards a more standardized  
17 approach using GALL whether we are getting better or  
18 worse.

19 MS. FRANOVICH: Right. Achieving the  
20 efficiencies that we anticipated.

21 CHAIRMAN BONACA: Absolutely.

22 MS. FRANOVICH: Right. That is certainly  
23 a question that we're looking at. It will be  
24 interesting to see how the GALL applicants compare to  
25 some of the pre-GALL applicants and the number of open

1 items and RAIs.

2 CHAIRMAN BONACA: Thank you.

3 MS. FRANOVICH: Sure. With that, I'll  
4 turn it over to Caudle.

5 MR. JULIAN: Thank you. Can you hear me  
6 okay? My name is Caudle Julian from NRC Region II,  
7 and I've been involved in license renewal inspections  
8 from the start. It's about half of my job. The other  
9 half is working in the Division Reactor Safety in  
10 Region II.

11 We have compiled a Manual Chapter 2516,  
12 which is the License Renewal Inspection Program, and  
13 I'm sure you've probably seen copies, it's been around  
14 for a long, long time. It was put together for the  
15 first inspections, which we did at Calvert Cliffs.  
16 Under that Manual Chapter there's an inspection  
17 procedure, only one right now, 71002, and it specifies  
18 how we will do the inspections. For each site, we do  
19 a site-specific inspection plan, and I compose that,  
20 or have in the past, as a team leader. I draw from  
21 the applications quite heavily, but we put together a  
22 specific list of what we're going to look at, what  
23 systems we're going to look at and then later on what  
24 aging management programs we're going to look at. And  
25 that is dually approved by a division director in

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1 Region II and a manager in NRR.

2 The review level for that has gone down --

3 MEMBER LEITCH: When you say what systems  
4 you're going to look at, is that an audit kind of  
5 basis; in other words, you pick certain safety-related  
6 systems, presumably, to look at?

7 MR. JULIAN: Yes.

8 MEMBER LEITCH: Typically, how many  
9 systems would that be?

10 MR. JULIAN: Gosh, I hate to throw out  
11 numbers, but I'm going to say 20 or 30.

12 MEMBER LEITCH: Oh, okay.

13 MR. JULIAN: We take a large sample. We  
14 have been in the past. Because I found in my  
15 experience that in looking at the scoping and  
16 screening process during our inspection, it's getting  
17 easier to cover because the applicants are very  
18 conservative. They tend to put more things in scope  
19 than not. And so we could take quite a large sample  
20 of site systems.

21 MEMBER LEITCH: Now, to what extent does  
22 this inspection look at procedures and paperwork  
23 versus actually looking at the physical hardware at  
24 the plant?

25 MR. JULIAN: It's a mixture. I'd like to

1 kind of explain that as I go along if I could.

2 MEMBER LEITCH: Okay. Sure. Sure.

3 MEMBER ROSEN: Before you go much further,  
4 I'd like to know how you decide what your criteria are  
5 when you're making up your plan for what systems and  
6 things you look at.

7 MR. JULIAN: The criteria is, again, a  
8 site-specific one. Our inspection procedure, 71002,  
9 says we will take at least half of the ones that the  
10 applicant brings in scope. We're actually going more  
11 like I'd say 80 or 90 percent. The criteria that  
12 we've used in the past is we take all the ECCS  
13 systems, for sure, the major things which you expect  
14 to be important, the reactor coolant system, the  
15 reactor vessel, all those things are always included.  
16 We include as many structures as the applicant says is  
17 in scope, and that's typically very conservative.  
18 They put many, many things in scope. It would be hard  
19 to argue whether or not the auxiliary building, for  
20 example, is in scope, so it's nearly always there.

21 MEMBER FORD: So to take a specific  
22 example, in the SER the discussion of the pressurized  
23 valve support lugs, whether they were in scope or not,  
24 and the applicant made the argument that they were not  
25 in scope because there was some piping support systems

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1 which took in fact the place of the safety-related  
2 component. In that particular -- then the Staff  
3 agreed with the applicant.

4 MR. JULIAN: I'm not familiar with that  
5 issue. Are you Rani?

6 MS. FRANOVICH: Well, that was as the  
7 result of an RAI, I believe.

8 MEMBER FORD: It was, yes. To answer the  
9 two previous questions, in using that specific  
10 example, did the Staff agree with the applicant  
11 because they just went and looked at the drawings or  
12 did they look at analyses to show that the pipe  
13 supports were an adequate safety-related function?  
14 Did they look at the fact that the pipe supports were  
15 embedded in the concrete and that there is no  
16 degradation? I mean to what depths did you go along  
17 with their contention?

18 MS. FRANOVICH: If I could ask you to hold  
19 that question just until we can get through Caudle's  
20 discussion of the inspections, and when we start  
21 talking about the Staff's review of Section 3.1, which  
22 is where I believe that issue comes up --

23 MEMBER FORD: Okay.

24 MS. FRANOVICH: -- we'll pick it up again.

25 MEMBER FORD: Great. I'll bring it up

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1 then, because you're talking about this inspection  
2 manual, procedural manual, and I wondered if that was  
3 covered in this manual. To what degree of depth do  
4 you go?

5 MR. JULIAN: well, I think those are  
6 probably two separate issues. I'm not familiar with  
7 the RAI, unfortunately, that you're speaking of.

8 MEMBER FORD: Okay. Wait until the next  
9 items.

10 MR. JULIAN: Okay. Let's see, moving on,  
11 we've participated with NRR in following the standard  
12 30-month schedule. The resources that we have used so  
13 far are a team of five to six inspectors depending on  
14 how many are available. I typically have a gentleman  
15 from NRR who's in the room here with us who's been  
16 doing my structural inspection who comes along with  
17 us. And in Region II, Luis Reyes, our regional  
18 administrator, thinks very highly of this program,  
19 thinks it's very, very important, and so he's  
20 supported us very strongly, and we've been able to  
21 keep together the same team, basically, of inspectors  
22 going plant to plant, and that helps a whole lot for  
23 continuity.

24 Scoping and screening inspection, we did  
25 a one-week visit. In this case, we went for the Duke

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1 corporate office in Charlotte, because that's where  
2 they're engineering staff is and where they were doing  
3 their work. In the past, we've gone out to the site  
4 to do this audit, but in this case it was convenient  
5 to work down at the corporate office. We go to  
6 wherever the material is and where it's effective and  
7 efficient for our Staff and for the applicant.

8 We picked, as I said, a sample of systems  
9 and structures inspected, and the objective of this  
10 inspection is confirm the output, to confirm that the  
11 Applicant included all systems, structures and  
12 components required by the rule into the scope of  
13 license renewal. They're typically rather  
14 conservative. There will be some systems that we  
15 select to look at which are noes. The applicant has  
16 determined that this particular system is not in  
17 scope. Those are typically the ones that we have  
18 discussions with the applicant about. Why not, why  
19 shouldn't this be in scope?

20 The major review that we have to look at  
21 for the scoping and screening is the plant drawings  
22 that they send along with it. The send along with the  
23 applications now typically a set of marked up  
24 drawings, which are typically color-coded, you may  
25 have seen some of those, that describe the boundaries

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1 of what is in scope for a given system. Those have  
2 not been determined to be part of the application but  
3 they're a very smart way to understand what the  
4 applicant says is in scope and is not. Without it,  
5 it's very, very hard to such a review.

6 Calvert Cliffs, for example, the  
7 application was nothing but a list, lists and lists  
8 and lists and lists of components, and you're  
9 comparing that to equipment lists at the plant, and so  
10 that's very, very hard to do. The drawings themselves  
11 make is quick to run through systems, and typically if  
12 you'll pick one that's inherently in safety injection,  
13 for example, it will all be in and so you can very  
14 quickly go through that.

15 MEMBER ROSEN: Now, when you're looking at  
16 drawings, you're looking at piping and instrument  
17 diagrams?

18 MR. JULIAN: Typically, yes.

19 MEMBER ROSEN: But you don't go on and  
20 look at, say, structural drawings or piping isometrics  
21 or electrical elementary drawings or all the other  
22 subsidiary sets of drawings that support the piping  
23 and instrument diagrams.

24 MR. JULIAN: Typically, the biggest bulk  
25 of them will be piping and instrumentation drawings.

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1 We also have certain structural drawings, but usually  
2 the structure drawings will be kind of limited,  
3 they'll be more like a site layout, and the auxiliary  
4 building and the reactor building will be colored in.  
5 And, indeed, most applicants do include electrical  
6 one-line drawings. We have not had occasion to look  
7 very much at isometrics. If we have a specific  
8 question about how is something arranged, then we can  
9 ask the applicant to go get us a copy of it and we'll  
10 look through a specific isometric. But those are not  
11 typically included in the group that they send along.

12 MEMBER ROSEN: Do you worry at all that  
13 just using the piping and instrument diagrams may lead  
14 you to a narrower scope of review than if you had used  
15 the full set?

16 MR. JULIAN: I don't really think so  
17 because the current status is that the applicants are  
18 being rather conservative. There's very few  
19 disagreements that we get into, and those tend to be  
20 on the fringes of the systems.

21 MS. FRANOVICH: And I think the answer to  
22 your question may be where the Staff's safety review  
23 augments the inspection program. The Staff in the  
24 application reviews tables that contain the systems  
25 and the structures that were not included within the

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1 scope of license renewal, as well as the systems and  
2 structures that were. And so the Staff really kind of  
3 in-house evaluates for those things that were excluded  
4 whether or not they were excluded appropriately, and  
5 that kind of augments what the inspection team looks  
6 at. Does that make sense?

7 MEMBER LEITCH: Let me understand. These  
8 marked-up drawings then are not part of the document  
9 material. They're an aid in your review, but they're  
10 not formally docketed.

11 MR. JULIAN: That's correct.

12 MS. FRANOVICH: Actually, I think they are  
13 docketed. They are docketed.

14 MR. JULIAN: They're docketed, but they're  
15 not a part of the application is my understanding.

16 CHAIRMAN BONACA: And they are the source  
17 of the list of components, right? I mean you're  
18 pulling out those components from those drawings.

19 MS. FRANOVICH: Right.

20 MR. JULIAN: These drawings depict which  
21 components will be in scope.

22 CHAIRMAN BONACA: Yes. That's right.

23 MEMBER ROSEN: I need to follow-up my  
24 question a bit. If you're using a piping and  
25 instrument diagram for an ECCS system, for example,

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1 then you pretty much have most of the drawing in scope  
2 because the boundaries show it that way, you could  
3 pick a piping isometric for that same system and take  
4 a point off of the piping and instrument diagram and  
5 go to the piping isometric diagram for that point or  
6 that area, let's say, on the pipe, and then say, "Oh,  
7 well, here is a support, a major support for that ECCS  
8 line." That support now doesn't show on the piping  
9 and instrument diagram, but it's there in the plant,  
10 and it's shown on the isometrics. Now, how does that  
11 support -- just as an example now, I mean I could take  
12 all day to talk about these things, I don't intend to  
13 but I could -- how does that support now get included  
14 in what you look at?

15 MR. JULIAN: We have not pursued it that  
16 much to that depth usually, and the reason is because  
17 it would be overwhelming. You could go and go and go  
18 for months and months and months doing just what you  
19 said again and again and again. Typically, again, the  
20 licensees' applicants are very conservative, and they  
21 will typically say all supports are in scope.

22 MS. FRANOVICH: The answer to your  
23 question is that that's part of the Staff review in  
24 headquarters. The inspection team does not look at  
25 that level of detail. But the Staff evaluates the

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1 scoping and screening methodologies that were used by  
2 the applicants to determine to what extent were  
3 structural supports or seismic supports brought into  
4 the scope of license renewal. So it's really part of  
5 the scoping methodology that the staff evaluates here  
6 in headquarters to make sure that they included all of  
7 those things. A lot of that methodology is described  
8 in the application, but we've also had RAIs and  
9 methodology audit to make sure the Staff understood  
10 the criteria that the applicant applied to scoping and  
11 screening, seismic II/I components as well as  
12 structural supports.

13 MR. JULIAN: And a more direct answer  
14 possibly is we could do that but if the applicant says  
15 all supports on safety-related piping are in scope, we  
16 agree. And so there's no reason for us to disagree  
17 over something we agree on. And so we haven't needed  
18 really to go to that level of detail to debate with  
19 the applicant. Very rare occasions we'll get into  
20 something of that nature out on a periphery of a  
21 system where a safety-related system interfaces with  
22 non-safety-related. And we've put a criteria for that  
23 that says you need to move downstream from the  
24 interface point to one support, the first support,  
25 which is seismic support in the non-safety area, and

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1 that's the boundary. And I think the industry has  
2 pretty well agree with that. We find it very  
3 conservative. Once they say all supports are in,  
4 there's no reason for us to pursue anymore we've  
5 found.

6 MS. FRANOVICH: Does that answer your  
7 question?

8 MEMBER ROSEN: I hope so.

9 MS. FRANOVICH: Okay.

10 CHAIRMAN BONACA: Let me just ask a  
11 question specific to the application. In the SER, on  
12 containment air return exchange and hydrogen skimmer  
13 system, the Staff identified certain duct work that  
14 was not included and should have been included. And  
15 the response to that was that the duct work doesn't  
16 exist on the site. Does it mean that there is a  
17 configuration management issue there? I mean is that  
18 something defined in drawings that is not --

19 MS. FRANOVICH: Again, that's another  
20 Staff RAI that is not part of the inspection process,  
21 but I believe that that is a system that has hard pipe  
22 rather than ducting.

23 CHAIRMAN BONACA: Okay. There is some  
24 other place on the auxiliary systems where there is  
25 some loose ends there.

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1 MS. FRANOVICH: Okay.

2 CHAIRMAN BONACA: And, you know, when you  
3 perform inspection you don't have the sense that there  
4 is a configuration management issue there where there  
5 are certain pieces of equipment which are represented  
6 and are built and you don't know what's up?

7 MR. JULIAN: I don't believe so. I'm not  
8 familiar with that particular RAI, but that sounds  
9 like one of your communication issues that you  
10 mentioned.

11 CHAIRMAN BONACA: Well, I mean, no, that's  
12 very specific. It says in the SER that they looked at  
13 the drawings, there is the duct work, so they asked  
14 why wasn't this scoped, and the answer was, well, it  
15 doesn't exist, it's not implemented.

16 MS. FRANOVICH: Well, yes. We'll have to  
17 find where that is in the SER to help you with it.

18 CHAIRMAN BONACA: Page 239 in the SER.

19 MS. FRANOVICH: Two dash 239?

20 CHAIRMAN BONACA: Two dash 39.

21 MS. FRANOVICH: Two dash 39, okay.

22 CHAIRMAN BONACA: It's the second to last  
23 paragraph.

24 MS. FRANOVICH: Okay. Let me do a little  
25 bit of reading here, but I'd like to go on and ask

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1 Caudle --

2 CHAIRMAN BONACA: Well, you don't have to

3 --

4 MS. FRANOVICH: Yes, I'll check on that.

5 CHAIRMAN BONACA: I don't want to  
6 interrupt the presentation right now, but I'd like to  
7 hear about that.

8 MR. JULIAN: Okay. Very good. Well, let  
9 me move forward. With the scoping inspection, the  
10 results that we got from our review were favorable.  
11 As I say, the applicants are becoming more and more  
12 conservative as time goes on, including more things in  
13 scope. Our report is published within 45 days, and I  
14 hope maybe you've seen a copy of it. They're  
15 available in the PDR, in the ADAMS system.

16 As an example of something we came across  
17 in the scoping inspection at Catawba and McGuire I  
18 guess probably more confusion over fire protection  
19 than anything else, what's in scope for Fire  
20 protection? That's a discussion that we have with the  
21 whole industry, and Duke is very active in discussing  
22 this with the Staff. They started off to use a scheme  
23 that they have at the Plant of fire protection  
24 equipment being identified as QA Condition 3. That's  
25 their designation for it. And they thought a very

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1 good way to bring things into scope would be to just  
2 select off the drawings the things that are noted as  
3 new QA Condition 3. But when we looked at it, it was  
4 very confusing. There was definitions in the  
5 paperwork for Catawba and the paperwork for McGuire  
6 which seemed to not match up, and we couldn't  
7 understand what was in scope and what was not. And so  
8 we had to leave that issue for further review by NRR,  
9 and I'm sure it will be discussed a little bit later  
10 on today.

11 The simple version of the discussion  
12 between us, I think, is that Duke's contention is that  
13 of all the fire protection equipment in the Plant  
14 there is a subset that is regulatory important and  
15 they've agreed to take care of in a regulatory manner,  
16 and that's the group of equipment that protects  
17 safety-related equipment and will allow them to  
18 perform a safe shutdown. And their contention is that  
19 other fire protection equipment, yard hydrants, things  
20 of that nature, are there for insurance purposes and  
21 are included in the description in the FSAR merely for  
22 completeness. And the Staff has been contending that  
23 if it's described in the FSAR, then it's in regulatory  
24 space and it should be in scope. And so that's a  
25 discussion that we've had ongoing still.

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1 MS. FRANOVICH: And we'll talk about that  
2 a little bit more later too.

3 MEMBER ROSEN: And that's open now?

4 MS. FRANOVICH: Well, there were six open  
5 items originally. We met with Duke October 1 and we  
6 resolved four of those six. So actually they're now  
7 confirmatory. But we still have an open item on  
8 whether or not jockey pumps should be within the scope  
9 of license renewal and fire suppression systems,  
10 particularly manual suppression systems in the turbine  
11 buildings. So those two are not yet resolved.

12 CHAIRMAN BONACA: We will hear about them  
13 later?

14 MS. FRANOVICH: Yes.

15 CHAIRMAN BONACA: Okay. The jockey pumps,  
16 particularly?

17 MS. FRANOVICH: Yes.

18 MR. JULIAN: Let me speak briefly then to  
19 the next portion of our inspection, and that's the  
20 Aging Management Programs Inspection. We recognize  
21 that this one is going to be larger and it's always  
22 two weeks. In this case, since we had a dual  
23 application, we did one week at McGuire and then one  
24 week at Catawba. And I have been fortunate that I  
25 have pretty good resources and experience staff, and

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1 we can take a look at all the aging management  
2 programs rather than a sample. And in this  
3 inspection, this changes focus rather than scoping and  
4 screening. In this way, we're looking at the output  
5 of their whole process.

6 The net result of all this work should be  
7 aging management programs, which are going to take care  
8 of the plant in the future. The objective is to  
9 confirm that existing aging management programs are  
10 effective and to examine the Applicant's plans for  
11 enhancing certain existing programs and establishing  
12 new ones. The net output usually is that the things  
13 that have always been there, like in-service  
14 inspection, for example, boric acid corrosion  
15 prevention programs, things of that nature, chemistry  
16 programs, things that have been existing in the plant,  
17 are now brought into the license renewal space as  
18 aging management programs.

19 Some of the existing programs, which the  
20 Applicant has had all along, they may want to enhance  
21 and expand typical service water inspection. Nearly  
22 everybody has some sort of a repetitive program for  
23 going out and looking at the service water piping,  
24 which is bringing in raw water from the plant or  
25 wherever it is, and typically they will expand this a

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1 little larger and make it an aging management program.

2 And then there are some things that are  
3 just new, and what we're getting at the stage we're at  
4 now is a promise from the Applicant that they're going  
5 to create before the existing license is up, and aging  
6 management program for something such as reactor  
7 vessel internal inspections that you mentioned. Alloy  
8 600 is typically one now, that's a cracking issue in  
9 the industry. And to the extent to which we can look  
10 at those is to read the paper that they have there,  
11 which is more than is in the application. That's by  
12 design. They have more documentation at the Plant  
13 than they actually put on the docket. And discuss  
14 this with the engineers and understand their plans and  
15 agree that where they're headed their promise is going  
16 to be a good thing.

17 MEMBER LEITCH: Excuse me.

18 CHAIRMAN BONACA: Please go ahead.

19 MEMBER LEITCH: I had a couple of  
20 questions about this Aging Management Program  
21 Inspection. Has this already been done?

22 MR. JULIAN: Yes.

23 MEMBER LEITCH: It has been. Now,  
24 normally -- you indicated that normally there would be  
25 a two-week inspection.

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1 MR. JULIAN: Right.

2 MEMBER LEITCH: In this case, because  
3 there were two plants, it was a one-week inspection at  
4 each plant.

5 MR. JULIAN: At each plant.

6 MEMBER LEITCH: I'm not sure I understand  
7 the rationale for that. I mean this is a very  
8 important leg of the program here. Did you look at --  
9 and I guess the aging management programs are similar  
10 at the two plants. Is that what --

11 MR. JULIAN: Nearly identical, nearly  
12 identical. And that's the reason we think this is --

13 MEMBER LEITCH: Did you look at some  
14 programs at Catawba and some different programs at  
15 McGuire or did you -- how did you split up that work  
16 effort?

17 MR. JULIAN: The programs are nearly  
18 identical, the description in the application is  
19 nearly identical, and the actual program is very, very  
20 similar. I break up those aging management programs  
21 and dole them out to the inspectors, and each one has  
22 assigned group of aging management programs. And I  
23 asked them to look at the aging management program at  
24 both plants. If they had a Boric Acid Corrosion  
25 Program or whatever the site-specific name is, I asked

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1 them to take a look at McGuire and take a look at the  
2 same thing at Catawba to a certain extent.

3 I was about to add the existing aging  
4 management program is one of the things we can do to  
5 gain faith that they're working and have been in the  
6 past is to look at past test results. We look at ISI  
7 reports and we look at containment integrated leak  
8 rate test results, and boric acid is one of my  
9 favorites. We look at the records from the last few  
10 outages to see what paper they generated as a record  
11 from the results of their walkdowns after the reactor  
12 is shut down or refueling outage. And so we covered  
13 some information at each plant, and I let my  
14 inspectors use their own judgment about how deep to go  
15 here or how deep to go there.

16 MEMBER LEITCH: I guess I'm getting the  
17 feeling, though, that, for example, boric acid, if you  
18 only have so much -- you had half the time then to  
19 devote at one particular plant to that inspection, so  
20 how did you --

21 MR. JULIAN: Yes, but I think we covered  
22 it. I think we covered it fairly well. I think we  
23 got through all the necessary material.

24 MS. FRANOVICH: And the Region II  
25 inspection team is a little different from the other

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1 regions. They've had a lot of experience with the  
2 License Renewal Inspection Program, so they're very --

3 MR. JULIAN: One of my team members is a  
4 former senior resident at Catawba. He's familiar with  
5 it, he's worked at McGuire before also.

6 MS. FRANOVICH: And they're inspectors,  
7 and they're proficient at looking at these things at  
8 this point in time.

9 CHAIRMAN BONACA: I had a question about  
10 the issue of -- you mentioned before that you go in  
11 and you look at the programs and then you look at the  
12 enhancements to address license renewal. And in some  
13 cases, as you said, there isn't yet enough detail that  
14 is supposed to be generated. For example, I don't  
15 know, critical crack size and notice for the internals  
16 hasn't been defined yet.

17 MS. FRANOVICH: Right.

18 CHAIRMAN BONACA: There's a commitment to  
19 the solution of that. And there are many commitments  
20 of this nature as I went through the programs. And  
21 the question I'm having is the commitment is to  
22 develop all these criteria before the licensee gets  
23 into the license renewal area. How do you track these  
24 commitments? I mean I don't understand exactly. We  
25 have an application that already is not complete from

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1 the perspective that there will be modifications to,  
2 for example, the one-time inspection that you're  
3 asking through the RAIs and so on and so forth. Then  
4 you have an SER that we're going to bless as we review  
5 it, and there is a lot of understandings in it that  
6 something has to be added.

7 MS. FRANOVICH: Right.

8 CHAIRMAN BONACA: So I don't understand  
9 how you're going to keep track of it.

10 MS. FRANOVICH: Let me try to address  
11 that.

12 CHAIRMAN BONACA: Where is it going to  
13 come through and --

14 MS. FRANOVICH: Let me try to address  
15 that.

16 CHAIRMAN BONACA: -- and when do we get  
17 involved with this, if ever?

18 MS. FRANOVICH: That's a very good  
19 question, and it's a unique challenge because we have  
20 to essentially plan to either do an inspection to  
21 verify that the commitments have been met or determine  
22 that, for example, today, we're really focusing on  
23 more of a risk-based inspection program that wouldn't  
24 go and just verify that commitments are met. So it's  
25 a unique challenge that we have to plan 20 years from

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1 now to go and follow-up on these loose ends. Two  
2 years ago, I worked on an inspection program that  
3 would do that.

4 I'm not sure what the status of that  
5 program is now, but I know that the Staff has been  
6 developing an inspection program to do two things.  
7 One is to verify that commitments are met before the  
8 extended period of operation begins, and the other is  
9 to ensure that aging is adequately managed at the  
10 sites. And right now it's part of the maintenance  
11 rule inspection procedure. But I'm not sure what the  
12 current status of that is. I'm going to defer to PT  
13 Kuo to handle that.

14 MR. KUO: Yes. Let me just supplement  
15 what Rani just said. We've been working on what we  
16 call the post-renew licensing inspection procedures,  
17 and actually we signed a number 71003, and that's  
18 almost done. And we just recently a few weeks ago I  
19 was talking to our inspection branch managers to see  
20 how we can go about issuing this procedure. That's  
21 one aspect of the tracking. Another aspect of  
22 tracking is, of course, the FSAR. All the commitments  
23 are listed in the FSAR.

24 CHAIRMAN BONACA: But the FSAR update  
25 doesn't seem to include a very detailed list of all

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1 these things that have to be enhanced. I mean if  
2 you're going through the SER, you understand, okay?  
3 But the question I'm having is 20 years from now is a  
4 long time, and somebody now has to go through the SER  
5 and understand what was in the mind of whoever wrote  
6 it to understand what needs to be completed and  
7 closed. And I think it's an inefficient process from  
8 that perspective. I mean why do we have to go for a  
9 life extension 20 years before the extension period  
10 when we have not developed all this criteria? I mean  
11 let me just say that maybe one could wait ten years  
12 and have all the criteria set already and put on paper  
13 so that the commitment will be there. I'm not  
14 challenging here what is happening on this  
15 application. I'm only asking what is the rationale to  
16 get a license renewal so much ahead of time when so  
17 much definition of the enhancements of the programs is  
18 not there.

19 MS. FRANOVICH: Yes. Let me try to  
20 address --

21 MR. KUO: Your question is right on, Dr.  
22 Bonaca, and that's the major aspect of this post-  
23 renewal inspection procedure, how to track all these  
24 commitments that the Applicant is making right now.

25 CHAIRMAN BONACA: And you'll inform us on

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1 how you're going to do that?

2 MR. KUO: Yes, sir. As soon as we get it  
3 issued, we will come back to the Committee to report  
4 to you.

5 MEMBER ROSEN: Perhaps we could get some  
6 comfort also from the Applicant himself about this  
7 process, because, obviously, the Applicant does not  
8 want to cross into the license renewal period and miss  
9 a bunch of commitments.

10 CHAIRMAN BONACA: Right. Absolutely.

11 MEMBER ROSEN: Maybe Duke can address that  
12 when you --

13 MR. JULIAN: Okay.

14 MEMBER FORD: Could I ask one more  
15 question?

16 MR. JULIAN: Sure.

17 MEMBER FORD: It relates to what is being  
18 discussed. As I understand it, you've got the two  
19 weeks, one at McGuire, one at Catawba, looking at very  
20 similar aging management programs, the scopes, the  
21 procedures, et cetera. One thing that could be  
22 missing from that examination is this whole safety  
23 culture question as to how well they are performing.  
24 You have different staff at each plant. One staff  
25 might be highly motivated, I'm not saying that they

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1 all aren't motivated, but assume that one is motivated  
2 and one is not, and yet they both are characterized in  
3 terms of their plans and procedures in the same way.  
4 Is that an issue?

5 MR. JULIAN: For our inspection purposes,  
6 we're looking at the aging management programs as they  
7 exist, and we're spending a good bit of time, I  
8 haven't got to that part yet, but out and about in the  
9 plant looking at the current status of the hardware  
10 today. During these inspections, I have my inspectors  
11 spend a good bit of time with Applicant  
12 representatives walking down physically in the plant  
13 the systems that they were assigned at the first  
14 inspection. I have a person who's doing safety  
15 injection, and he's out with hopefully either the  
16 system engineer or an operator-type person and goes  
17 out and physically looks at it today. That's one of  
18 the features of our inspection program is maybe we get  
19 some comfort about the future, how things are going to  
20 be in the future by how they apparently are today.  
21 And so, hopefully, if one plant is in a particularly  
22 bad condition and the other is not, you could  
23 recognize that difference.

24 Now, our people, of course, are focusing  
25 again, as I say, on the license renewal aspect and are

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1 not pursuing the current performance day to day of the  
2 operators and the overall performance of the plant.

3 CHAIRMAN BONACA: That would be more an  
4 issue of moving the current licensing basis.

5 MR. JULIAN: Yes.

6 CHAIRMAN BONACA: I mean that would be an  
7 issue --

8 MS. FRANOVICH: Right.

9 MR. JULIAN: That's exactly like where we  
10 started with current licensing basis. Hopefully, the  
11 applicants are running their plant in a safe fashion  
12 today and we have a resident inspector program and  
13 region-based inspector program who are watching that  
14 day by day.

15 MS. FRANOVICH: Right. That's the revised  
16 oversight process that's managing the performance  
17 aspect of the current operation.

18 MR. JULIAN: But going out --

19 MEMBER ROSEN: That comes down to the  
20 question of what we do, Mario, with a plant, a  
21 hypothetical plant now, not the current one, but a  
22 hypothetical plant that was in a severely degraded  
23 status in the ROP and came in for license renewal. It  
24 hasn't happened.

25 CHAIRMAN BONACA: It hasn't happened yet.

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1 MEMBER ROSEN: These plants, though, are  
2 not in that category. But it clearly would raise  
3 questions.

4 CHAIRMAN BONACA: I agree with you. And  
5 yet, you know, the current performance or culture of  
6 the plant is not going to tell us anything about a  
7 culture 20 years from now.

8 MS. FRANOVICH: That's right. That's  
9 right.

10 CHAIRMAN BONACA: So I think the only  
11 thing that we can say is that, certainly, I agree with  
12 you that if there was a significant problem today, I  
13 doubt that we would be reviewing this application,  
14 because we are receiving now a commitment from the  
15 Applicant that he will do all these things, and if you  
16 don't trust the Applicant, we have a problem with  
17 that. So I agree with you that there is an issue.  
18 But, again, I think we have to trust that the ROP will  
19 be effective 20 years from now when --

20 MEMBER ROSEN: And I agree with you that  
21 it's possible that one could get into the position  
22 that we would suggest to the Commission that they  
23 extend the license for an applicant who is currently  
24 in good shape, and then ten years from now that  
25 applicant may go into a degraded status in the ROP.

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1 CHAIRMAN BONACA: Right.

2 MEMBER ROSEN: And in that case, we'd have  
3 to rely on the ROP, not the LRA, not the license  
4 renewal process, to catch it. The ROP is our  
5 safeguard.

6 MS. FRANOVICH: And, of course, the  
7 requirements of 10 CFR Part 50 --

8 CHAIRMAN BONACA: But I think, in part, I  
9 mean the license renewal rule, you know, the more we  
10 look at it it's quite effective in the sense that it's  
11 segregated all the issues that have to do with the  
12 current operation from the issue of aging and how you  
13 have to deal with them in case you go to license  
14 renewal. Of course, your performance is so awful that  
15 you can't run those plants 20 years from now, then you  
16 won't go to the license renewal. But in case you do,  
17 then there is a series of commitments that seems to  
18 take care of the equipment passive long-lived  
19 components the proper way, as far as we understand it  
20 today, the technology today. So that's an issue that  
21 is always coming up.

22 MR. JULIAN: Well, let's see, moving  
23 along, we started this discussion talking about how  
24 we're going to attract commitments down the line, and  
25 one of the things that we do take a look at and did

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1 during this inspection is their future plans for how  
2 they are going to track commitments in the license  
3 renewal space. We saw that Duke had a very  
4 comprehensive program. It was one just like the one  
5 they built at Oconee that we took a hard look at back  
6 when we were there. They have a document they call a  
7 Specification 16 which has a very well laid out  
8 program for tracking commitments in the future and  
9 putting those commitments over into regular,  
10 established commitment tracking systems at the Plant.  
11 I believe that Duke has decided they can tell you the  
12 details, but they're going to have, I believe, a  
13 license renewal coordinator person at each of the  
14 plants, at McGuire and Catawba and Oconee. Most  
15 applicants have come to that conclusion now, and  
16 that's going to be a person in the future who's  
17 supposed to be thinking aging all the time and  
18 continually coaching and bringing up aging issues to  
19 the plant management, and we think that will help go  
20 a long way towards doing this.

21 CHAIRMAN BONACA: This will be part of  
22 what they call life cycle management, right? I mean  
23 you have a big plant and this fits into it or does the  
24 same thing? It's part of it.

25 MR. JULIAN: All right. The findings from

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1 this inspection, the Aging Management Program  
2 Inspection at these plants were rather good. We have  
3 no big issues at all with them. I think the one that  
4 stuck out to me as I was reading through the report  
5 again last night to refresh my memory was again fire  
6 protection. That's something I looked at. And when  
7 we started looking around at all the surveillances  
8 that they were doing in the fire protection area, they  
9 identified in their review, when they were getting  
10 ready, I think, for our inspections, that they had  
11 missed some in the past.

12 There was a couple of surveillances at  
13 McGuire that had fallen through the crack and weren't  
14 being done. They were of minor safety significance,  
15 going out and visually inspecting fire barriers to  
16 make sure that they're still in good condition. And  
17 when we started asking the same questions at Catawba,  
18 I believe they identified again that they had missed  
19 some surveillances in the sense that it appeared that  
20 the work was getting done but they were not properly  
21 documenting the work, they weren't following the  
22 procedure. These were of minor significance and were  
23 not pursued for the purposes of enforcement at all.

24 And we observed that the overall  
25 condition, we thought, Of the power plants was very

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1 good.

2 MEMBER POWERS: Let me ask you a question.

3 MR. JULIAN: Yes.

4 MEMBER POWERS: They were missing  
5 surveillances or not documenting that they had done  
6 surveillances in the fire protection area. Was that  
7 characteristic of surveillances done for other aspects  
8 of plant operation?

9 MR. JULIAN: I did not pursue that. I  
10 don't know. I haven't -- for it to get done and I get  
11 done that week but I got the --

12 MEMBER POWERS: Maybe you should have  
13 spent two weeks.

14 MR. JULIAN: Maybe we should have. Maybe  
15 we should have. Maybe we should have. We  
16 communicated to the resident inspector, so we expect  
17 that they will be looking into that down the road.

18 MEMBER POWERS: What I'm wondering is, is  
19 there something peculiar about the fire protection  
20 culture at these plants or is it just a general  
21 culture that we miss surveillances or fail to document  
22 surveillances?

23 MR. JULIAN: In the case of McGuire, the  
24 situation, as described to us, was several years back,  
25 three or four years back, they took a large

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1 surveillance and were going to break it down into  
2 smaller ones and establish what they call model work  
3 orders for doing this thing over and over and over  
4 every 18 months. And some way they missed a couple of  
5 facets of the procedure. That was the explanation  
6 that they put on their documentation, and they wrote  
7 that up in their corrective action system.

8 In the case of Catawba, it was a little  
9 different in that mechanical people were doing this  
10 routine, surveillance, and going out and looking at  
11 the equipment, but they, for whatever reason, had  
12 decided they'd done long enough and weren't following  
13 the proper format to document their results. They log  
14 in the log, "Yes, we did it successfully," but they  
15 did not fill out the proper procedures.

16 MS. FRANOVICH: The extent to which the  
17 inspectors would determine whether or not that's  
18 indicative of how they manage their overall  
19 surveillance tech spec or selected licensing  
20 commitments surveillance program is really beyond the  
21 scope of the License Renewal Inspection Program  
22 objective. So we really don't have an answer for you  
23 on that, but Caudle did indicate that he shared that  
24 with the resident inspectors, so, presumably, they've  
25 got the information that they'll follow-up on and see

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1 how extensive that might be. Of course, the ROP would  
2 -- it's in process now. It would probably reveal  
3 those kinds of problems.

4 MEMBER POWERS: Well, and it seems to me  
5 that if I found people breaking systems down into  
6 smaller unit works and missing some things, failing to  
7 document inspections and what not, I would be very  
8 concerned about the proposed aging management programs  
9 here, which rely heavily on inspections and  
10 surveillances.

11 MS. FRANOVICH: And documented findings.

12 MR. JULIAN: And we did see that this was  
13 put into a corrective action system, and I have faith  
14 that they will pursue that and get to the bottom of  
15 it. The fire protection area, you mentioned is it  
16 susceptible, it probably is because there are so many,  
17 many, many things that they do for going out and  
18 looking at fire protection equipment. And so it is a  
19 little bit more prone to losing something in the  
20 crack. It seems to me that's fire protection. I  
21 think --

22 MEMBER POWERS: Especially if they're  
23 having not the fire protection people doing it but  
24 general maintenance people doing it. I find that very  
25 distressing.

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1 MR. JULIAN: That is typical at most of  
2 the plants now in that fire protection surveillance is  
3 going out and visually inspecting things that are  
4 typically done by plants now. So that concludes what  
5 I had to say. Are there any questions?

6 MS. FRANOVICH: Did you want to say  
7 anything about the optional final inspection and what  
8 would drive the NRC to perform that final one?

9 MR. JULIAN: We wrote into our program an  
10 optional third inspection, and it's at the discretion,  
11 decision of the Regional Administrator, Luis Reyes.  
12 He has not yet reached a conclusion on the Duke, the  
13 Applicant, whether or not we want to do a third  
14 inspection. We just completed one a few weeks back at  
15 VEPCO. We did not do one at Turkey Point, we did one  
16 at Hatch. And the judgment that is made by the  
17 Regional Administrator I think is based on the number  
18 of issues that we find in our inspections that are  
19 open that we feel need following up, things that were  
20 not right in the application, inaccuracies and any  
21 particularly interesting features that we see out in  
22 the plant that we think need prompt corrective action.

23 We did not have any large number of issues  
24 at the Duke plants that would require it, but we have  
25 not yet made that final decision yet whether or not

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1 we're going to do it. We also could use that  
2 inspection as a vehicle if we're requested by NRR to  
3 go follow-up on particular aspects of their review.

4 MEMBER FORD: You mentioned that you did  
5 a final -- optional final inspection of VEPCO. What  
6 was the turning -- as you read through this  
7 application in the SER, the history of a lot of RAIs  
8 and open items which have been, some of them,  
9 resolved. But by your description just now as to the  
10 kind of gut feeling as to what goes into the decision-  
11 making as to whether there's going to be a final  
12 inspection, you'd say that, yes, there should be a  
13 final inspection since there are some milestones that  
14 haven't been determined for commitments, et cetera.  
15 So you say you don't think we're going to have a final  
16 inspection. What is the thinking behind that?

17 MR. JULIAN: Well, our --

18 MEMBER FORD: -- for this Station?

19 MR. JULIAN: For our inspection program,  
20 we wrote into our program that we're looking primarily  
21 at open items from our inspections, from the scoping  
22 and screening inspection and from the Aging Management  
23 Program Inspection. We would do some things if  
24 requested for confirmation by NRR. After all is said  
25 and done, usually there comes down to be very few of

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1 those from NRR.

2 MS. FRANOVICH: Right. The SER open items  
3 are really for the Staff and headquarters to resolve.  
4 So when Caudle's management decides whether he needs  
5 to go back to do the optional final inspection, it has  
6 more to do with what items did the inspectors identify  
7 that have not yet been resolved, unresolved items from  
8 the inspection reports, that kind of thing.

9 MR. JULIAN: One of our --

10 MEMBER FORD: Okay.

11 MR. JULIAN: -- heavy interests is in just  
12 the issue you all have described about how is the  
13 applicant going to track issues down the road, and in  
14 the case of VEPCO they were early in the process of  
15 doing that. When we went back last week or so. We  
16 found that they had advanced significantly. When we  
17 went to Duke, they had a leg up on that because they  
18 had already established that process at Oconee and had  
19 two years to work out a scheme, and so they were well  
20 down the road. But, again, that decision has not been  
21 made, and we have time to do that.

22 MS. FRANOVICH: Thank you, Caudle.

23 MEMBER LEITCH: Just one further question.  
24 I'm coming away with the impression that in both the  
25 scoping and screening inspection and the Aging

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1 Management Program inspection a very high fraction of  
2 the work is a paperwork review, and I guess I'm still  
3 trying to understand was there any conclusion drawn as  
4 to the general material condition of these plants?  
5 That is, did you go and look at things such as, for  
6 example, cable tray for cable degradation --

7 MR. JULIAN: Yes.

8 MEMBER LEITCH: -- or something like that?  
9 Or is that kind of an inspection primarily left to the  
10 residents and the current licensing basis?

11 MR. JULIAN: No. We try to perform a  
12 mixture of that. I didn't touch that feature, but  
13 it's probably important that I mention it. At each  
14 site that we go to for a license renewal inspection,  
15 we've managed to find a time when they're in an outage  
16 and sent an inspector up for a walk-about inside  
17 containment for a day. We did that at one of the  
18 Catawba units and one of the McGuire units and  
19 documented the results in our report. They have  
20 nothing bad to say about what they saw inside the  
21 containment at the Duke plants. The overall condition  
22 of the Plant we thought was good, and that's what we  
23 wrote in our report. I was not at the last meeting  
24 that you all had, but I understand that was a topic of  
25 discussion about why we would say that. We do try to

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1 reach a conclusion in our inspection reports, and we  
2 thought the overall condition of the Duke plants was  
3 a good one.

4 We found some corrosion on external piping  
5 in the service water, the in-take structure pit where  
6 there has been a bad condition down there that existed  
7 for a number of years where a seal leak-off from a  
8 pump had been just spraying all over the outside of  
9 the piping. That was, I think, the major issue that  
10 we had at Catawba and McGuire. We did mention in our  
11 report that has Catawba has a continuing struggle with  
12 plugging up of raw water systems coming in from their  
13 lake because their lake water is susceptible to  
14 causing fouling inside their piping. We saw that they  
15 had a really good program, a good start on a program  
16 to go clean all those pipes out. They've already done  
17 the safety-related one, and they're working on  
18 programs to clean out the others. They have some  
19 internal inspections, some photographs that we looked  
20 at, and we talked to the engineers who are in charge  
21 of that, and we have confidence that they're on top of  
22 that issue.

23 So we do quite a bit of looking about, and  
24 we go during the outage to get to areas that are  
25 inaccessible inside the containment and other areas

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1 that might be high radiation while they're running.  
2 And then all my inspectors fan out across the plant  
3 and walk down their particular systems, and we write  
4 about it in our inspection reports. We typically  
5 don't write good stuff. We typically write if we see  
6 something bad, because otherwise the report could get  
7 very, very thick. And so it's not spread throughout  
8 the report, but it's typically in one paragraph in the  
9 back, one section in the back. So it's a mixture of  
10 looking at paper, which we must do, and trying as much  
11 as we can to also look at hardware in the plant to get  
12 a feel for the condition of the plant today.

13 MEMBER LEITCH: Yes. One of the things  
14 that I'm grappling with is just how significant those  
15 material condition issues are. When you look at the  
16 plant today, what does that really say about license  
17 renewal 20 years hence? You know, it's a little  
18 difficult to know just how focused these inspections  
19 should be on material condition. In our gut, we kind  
20 of say if it's good today, it may or may not be good  
21 tomorrow. If it's bad today --

22 MEMBER ROSEN: It's unlikely to be great  
23 tomorrow. I think that's where I come down. That's  
24 a very good question.

25 MEMBER LEITCH: But the linkage is not

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1 entirely clear when we're dealing so far into the  
2 future.

3 MS. FRANOVICH: Let me comment.

4 MR. JULIAN: Let me say, we struggled with  
5 those same issues when we were writing our inspection  
6 procedures and starting this off, but we thought what  
7 we lined out is the best we could think of to do  
8 today. And doing what we're doing is better than not  
9 doing anything at all.

10 MEMBER ROSEN: Doing what you're doing is  
11 very encouraging, and I think I'd like to continue to  
12 use your presence here, pardon me, to get a little  
13 better feel.

14 MR. JULIAN: Sure.

15 MEMBER ROSEN: It's very helpful to me to  
16 listen to you about what you've done. In the area of  
17 fire protection, and we're going to discuss, I  
18 understand later, the scope issues, and that's  
19 important, but what about the condition of the fire  
20 protection system at these plants? Did your  
21 inspectors go out and take a hard look at that?

22 MR. JULIAN: I did. That was my assigned  
23 system to do fire protection, and I thought that the  
24 equipment was in good condition, the fire protection  
25 that usually observed from the outside. That's

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1 another limitation is that we can't out wrenches and  
2 tear things apart. They won't let us do that. But I  
3 did look at also at the surveillances, the results of  
4 tests that they had done. Overall, I think they're  
5 pretty good. They have one ongoing issue at Catawba  
6 where they have an underground rising post valve  
7 that's twisted off or something, and they can't  
8 perform a flow test to test redundancy of water  
9 capacity coming up from the river. But that's an  
10 operational type thing that we see at all plants.  
11 From time to time, equipment just, with time,  
12 degrades. That is aging, and they need to be working  
13 on things. When they successfully complete  
14 surveillances, write a work request, tear it apart at  
15 the proper time and refurbish it.

16 MEMBER ROSEN: But you get a sense at  
17 Catawba and McGuire that the fire protection equipment  
18 -- pumps, piping, sprinkler heads, hose stations --  
19 are in --

20 MR. JULIAN: Good condition.

21 MEMBER ROSEN: -- what kind of condition?

22 MR. JULIAN: Good condition. They're in  
23 good condition. The biggest struggle, I think, that  
24 they'll have at Catawba is the one that I mentioned  
25 earlier with continuing to worry about plugging or

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1 piping. They do flushes, of course. Part of our  
2 surveillances are to flow test systems periodically  
3 and see that they have sufficient flow, and I think  
4 they are in good condition.

5 MEMBER ROSEN: Good. Thank you.

6 MS. FRANOVICH: Shall we proceed? Thank  
7 you very much, Caudle, appreciate it.

8 MR. JULIAN: You're welcome.

9 MS. FRANOVICH: We need to make up for  
10 some lost time or Greg will only have five minutes to  
11 present. The next slide just reveals the format and  
12 organization of the SER, which is consistent with that  
13 of previous SERs. And just briefly wanted to mention  
14 that, again, we met with Duke on October 1 to talk  
15 about five scoping open items and September 17 through  
16 the 19 to talk about the other open items from the  
17 SER. Out of those meetings, we were able to resolve  
18 or make confirmatory the bulk of the RAI -- or open  
19 items. We still have 13 that are not resolved yet.

20 We had to add one open item that's not in  
21 the SER because it came -- it revealed itself after  
22 the SER was issued through Part 50, a reactor vessel  
23 coupon surveillance test result that indicated that  
24 their TLAAs from McGuire Unit 1, I believe, would need  
25 to be reevaluated. So we've given that an open item

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1 number 4.2-1 for tracking purposes only. We sent a  
2 letter to Duke asking them to submit their reevaluated  
3 TLAAAs and we're waiting for that information. Thirty  
4 of the previously identified open items are now  
5 confirmatory, two are resolved, and on October 2, Duke  
6 provided some responses, interim responses to a number  
7 of the confirmatory items but that letter is still  
8 under Staff review, so those issues are still  
9 characterized as confirmatory in today's presentation.

10 MEMBER LEITCH: I'm having a little  
11 trouble with the scorekeeping here, and I guess some  
12 of our questioning later today may deal with some of  
13 these open SERs or open items. Do you have a list or  
14 some way to help us scorekeep as to which 13 you  
15 consider still to be open?

16 MS. FRANOVICH: Sure. What we're going to  
17 do is when we talk about the areas that they were  
18 identified in, the sections of the SER, we're going to  
19 list those that are still open and those that are  
20 confirmatory.

21 MEMBER LEITCH: Okay. That will be  
22 helpful. Okay. Thank you.

23 MS. FRANOVICH: Sure.

24 MEMBER ROSEN: I guess I can't let it go  
25 by on this one. I know you added 4.2-1. Clearly,

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1 it's a reactor vessel issue?

2 MS. FRANOVICH: Correct.

3 MEMBER ROSEN: We need to hear a whole lot  
4 more about that --

5 MS. FRANOVICH: Yes.

6 MEMBER ROSEN: -- before we leave today.

7 MS. FRANOVICH: Sure. When we discuss  
8 Section 4 -- or Chapter 4 of the SER, which is the  
9 TLAAs, my lead reviewer will be up here talking to you  
10 about that open item.

11 MEMBER ROSEN: Okay. Good.

12 MS. FRANOVICH: Yes. And final letter  
13 from Duke, we expect at this month to resolve,  
14 hopefully, remaining open items. This slide will help  
15 with that question on where are there still open  
16 items, where are there still confirmatory items. This  
17 is just a quick rundown of the sections that these are  
18 in.

19 With that, I'd like to take a break from  
20 my presentation and invite Greg Robison from Duke to  
21 come up and present his.

22 MEMBER LEITCH: Just before we move on, I  
23 think Dr. Bonaca has surfaced an important issue. I  
24 just would like to just add my comments to it, and  
25 that is this issue not only of the licensee continuing

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1 to develop the programs necessary to support license  
2 renewal in this period of the current license, but I  
3 think we're also building up a significant bow wave of  
4 inspection activities for the NRC down the road here,  
5 perhaps 15, 20 years out into the future.

6 So I mean I just wanted to point out, I  
7 guess, what is perhaps obvious to everyone, but there  
8 is a significant workload of inspection activities  
9 coming on down the line. And to the extent that  
10 that's all deferred until the last minute, it's going  
11 to be very difficult to deal with. So, obviously, in  
12 some fashion, those inspection activities have to be  
13 undertaken as soon as possible so that we don't have  
14 too big a peak in the workload as we approach the  
15 license renewal period of these plants.

16 CHAIRMAN BONACA: The other thing that  
17 would be added to that, by the way, is some of these  
18 one-time inspections may not be turning out to the  
19 expectation that there is no problem there. And that  
20 will be followed by further notification to the  
21 problems, the commitments to carry out the inspection,  
22 potentially. So you're going to have -- you're  
23 absolutely right, there's going to be another war  
24 coming and we will have to really understand how the  
25 planning is going to be.

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1 MR. JULIAN: And we are building a  
2 procedure. As Dr. Kuo mentioned, that's 71003, and  
3 there's been discussion amongst the Staff about where  
4 do we put it, but everyone agrees that the substance  
5 is going to be in a document that has a list for each  
6 plant of what items need inspection and when. That  
7 will be ours to pursue on down the road.

8 MR. KUO: And Dr. Leitch, I just wanted to  
9 add that you're exactly correct. It's a subject of  
10 extensive discussion among the Staff and the region as  
11 to how many FTEs is going to be required to do this  
12 inspection. So as part of that discussion, some  
13 options were discussed. Now, for instance, just an  
14 example, whether the post-renewal licensing inspection  
15 should be part of the visions of regular inspection or  
16 it should be an independent inspection. So these are  
17 being discussed -- has been discussed and that's the  
18 reason that we are still working on it and trying to  
19 resolve these type of issues. It's been definitely  
20 discussed already.

21 MEMBER LEITCH: Good. Good. Thank you.

22 MS. FRANOVICH: Okay. And with that,  
23 Greg, do you want to come up and present for Duke?

24 CHAIRMAN BONACA: We are running about 20  
25 minutes late, and so what I would like to do is just

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1 for you to proceed until you see a good place for a  
2 break between now and 10:30 and then we'll take a  
3 break at that time.

4 MR. ROBISON: All right.

5 CHAIRMAN BONACA: You let me know when you  
6 get to that point.

7 MR. ROBISON: Okay? All right. Good  
8 morning. My name is Greg Robison. I'm the Project  
9 Manager for License Renewal for Duke Energy, and it's  
10 a pleasure to be here with you this morning.

11 What I'm going to do is take a few minutes  
12 and just overview various aspects of the application.  
13 I think we will hit some of the topics where questions  
14 have already been raised this morning. Perhaps we can  
15 explore those a little further. And with that, we'll  
16 go on.

17 The second slide in your package, I want  
18 to acknowledge my team is with me today. Up here with  
19 me in front is Bob Gill. He's our licensing point  
20 person and really handles the bulk of the load at the  
21 end of the project. As you can see from the slide,  
22 Paul Colaianni, our electrical person, handles the  
23 electrical area. Paul is here with us today. And  
24 should questions come up through the course of the  
25 day, I want to make sure that our technical folks are

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1 available to also contribute. Mary Hazeltine did our  
2 reactor coolant system work. Mary is here with us  
3 today. Debbie Keiser's our structural person, and  
4 Debbie's with us. Rounette Nader is one of our two  
5 mechanical folks and Rounette is here along with Mike  
6 Semmler, who also is a mechanical person. And also on  
7 this slide I would ask you to note the significant  
8 industry participation that these folks have had over  
9 the last ten years. Collectively, on this team,  
10 there's over 60 years of license renewal experience.  
11 So this is a very experienced team. We brought the  
12 Oconee team forward and we're glad to keep it together  
13 and work on McGuire and Catawba.

14 I won't spend much time on the next two.  
15 I brought some diagramatics. This is a map that you  
16 can perhaps read it. The McGuire and Catawba plants  
17 are north and south. Bob, could you point to those on  
18 the map? McGuire and Catawba are north and south of  
19 Charlotte; Oconee is approximately 180 miles to the  
20 west. So what you're looking at is a map of the Duke  
21 system, and I wanted you to have a perspective on  
22 where our plants are located.

23 And one of the reasons when Caudle  
24 mentioned that we could have a meeting in Charlotte  
25 and encompass McGuire and Catawba, each of the plants

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1 are just a 30-minute drive either way from the  
2 downtown area, so it's easy to have a central team and  
3 then migrate to the site even that morning if we  
4 needed to.

5 The next picture is some photographs of  
6 the Plant just to give us some visual familiarity with  
7 the Plant here this morning. McGuire up on Lake  
8 Norman and Catawba down on Lake Wiley, south of  
9 Charlotte. Plant details, Rani has covered a good bit  
10 of this. Again, the details are there in your  
11 package, and I won't belabor them, but I thought it  
12 would be interesting to show you some statistics on  
13 the plants themselves.

14 The meat of our presentation is to review  
15 the high points of our application. I thought I would  
16 take a few minutes and give you a little bit of  
17 background on the application. We really -- we  
18 believe we're the first SRP plants to go through  
19 license renewal, and this will begin to put a certain  
20 different spin on things because of the structure of  
21 the materials, the standardization that went into the  
22 Plant design in the beginning. We're the first ice  
23 condenser containment plants to pursue renewal, we've  
24 done steam generator replacement at three of the four  
25 units, and also we're the first second renewal

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1 application and the second two-site applicant with a  
2 couple of new twists and wrinkles.

3 MEMBER ROSEN: Greg, you said three of the  
4 four have had their steam generators replaced. The  
5 fourth is scheduled?

6 MR. ROBISON: No, sir, not yet. Catawba  
7 Unit 2 has not been scheduled because the materials in  
8 Catawba Unit 2 are a little different breed than  
9 McGuire 1 and 2 and Catawba 1. We're trending the  
10 plugging rate, but we're not at a point where we can  
11 foresee replacement yet. Again, for 40 additional  
12 years of operation, you can anticipate the generators  
13 will need replacement, but right now we can't  
14 anticipate when that will be. But we do have a -- as  
15 part of our Aging Management Program, the Steam  
16 Generator Surveillance Program, which would track the  
17 two plugging rates.

18 MEMBER ROSEN: So when did Catawba go into  
19 service?

20 MR. ROBISON: I'm sorry.

21 MEMBER ROSEN: Catawba 2 went into service  
22 what year?

23 MR. ROBISON: Nineteen eighty-six.

24 MEMBER ROSEN: So it's 16 years and it's  
25 not showing signs of needing replacement?

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1 MR. ROBISON: No, sir, not yet.

2 MEMBER ROSEN: What's special about it?

3 MR. ROBISON: I think the -- Mary, do you  
4 know any particulars that you could add on Catawba  
5 Unit 2 steam generator materials?

6 MS. HAZELTINE: I believe it has to do  
7 with the Alloy 600 tubes. You'll also note that  
8 Oconee, which is a much older Plant, is just now going  
9 to be replaced. So if you put it into that  
10 perspective, you look at how much longer the Oconee  
11 generators lasted than the generators at McGuire and  
12 Catawba.

13 MEMBER ROSEN: You said the treatment of  
14 the Alloy 600.

15 MS. HAZELTINE: I believe that it was a  
16 heat treatment process.

17 MEMBER POWERS: The plants with annealed  
18 materials are much more corroded than those that were  
19 heat treated in situ.

20 MEMBER FORD: But the replacement  
21 generators are 690?

22 MR. ROBISON: Yes.

23 MEMBER POWERS: On the Catawba 2 using the  
24 alternate repair criteria?

25 MR. ROBISON: I do not know. I do not

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1 know that detail. Let's see, again, some more  
2 application background. The NRC approved our  
3 exemption request. The reason for the exemption  
4 request and the fact that we have four sister units,  
5 we have McGuire Unit 1 that's over 20 years old, but  
6 we felt like with the collective operating experience,  
7 the fact they were built at the same time and have  
8 exhibited very similar behavior, that we could use  
9 that to be confident in a pursuing a license renewal.  
10 And with McGuire Unit 1 already having reached 20  
11 years, we asked for an exemption for McGuire Unit 2,  
12 Catawba 1 and Catawba 2, and that was the basis of the  
13 exemption request.

14 What that causes on the next bullet is an  
15 interesting twist when it comes to finalizing the  
16 license renewal date, because as it says here, it's 20  
17 years from the expiration of the current license or 40  
18 years from the date of the issuance, which may mean,  
19 depending on when the license is issued, that the  
20 Catawba licenses may be somewhat less than 60 years,  
21 two or three years less than 60 years if you do the  
22 math. And there's some cute phrases that you can say  
23 about the 20 years or 40 years from the point of  
24 renewal.

25 We did ask, however, that the safety

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1 evaluation review and the environmental reviews cover  
2 the 60-year time period. There was no reason to ask  
3 for 57 years to be thought of or 58 years to be  
4 thought of. If you're going to be think the technical  
5 thoughts, think for 60 years, and that was our  
6 request.

7 MEMBER LEITCH: But the exemption request  
8 does not impact the criteria 40 years from the date  
9 issuance of the renewed operating license; is that  
10 correct? In other words, we're still dealing with 40  
11 years from the issuance of the renewed operating  
12 license.

13 MR. ROBISON: Yes. We're still dealing  
14 with 40 years from the issue date of the license, yes.

15 Another little bit of application  
16 background that may also answer some of the questions  
17 that Dr. Bonaca was asking, we began application  
18 preparation in January of 2000. It was May of 2000  
19 when the Oconee application was approved. So we began  
20 this project while we were still finishing Oconee. So  
21 we took our team, our expertise and our procedures and  
22 forms and we moved on to begin McGuire and Catawba.  
23 You see here that in August of 2000 the draft version  
24 of the NRC guidance documents and industry guidance  
25 documents were available to us. In 2001, July, the

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1 final documents were available. So we worked with  
2 draft information and also with our Oconee formats.  
3 so when we produced an application, it was very much  
4 berthed out of the style we used on Oconee. Whereas  
5 the reviewers were more trained to the guidance  
6 documents from mid-2001 and I believe perhaps their  
7 familiarity with the latest and greatest techniques  
8 and guidance documents and here we came with something  
9 that was perhaps a little bit old school. That threw  
10 the reviewers off some.

11 MEMBER LEITCH: I don't really want to  
12 belabor this point, but it still is puzzling to me why  
13 you would go for license renewal with the possible  
14 sacrifice of two to three years of operation at the  
15 end of this period? It almost seems to me like we  
16 would be doing you a favor were we to delay approving  
17 this for three years.

18 MR. ROBISON: Perhaps, but --

19 MEMBER LEITCH: I just don't understand  
20 that rationale.

21 MR. ROBISON: Perhaps, and I won't ask for  
22 that. Part of the rationale, the easy part of the  
23 rationale, was we wanted to keep the team together.  
24 We looked at what it would cost Duke in time and  
25 materials and labor to reconstitute a team five years

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1 from now to do Catawba, and it didn't make any sense  
2 to us to try to recreate a team when in fact if we get  
3 to year 57 on Catawba, we can come in and renew the  
4 license again if we're in good shape and things are  
5 still well with us. So that with the possibility of  
6 another renewal many years out in the future, we're  
7 really not sacrificing those three years, it's just  
8 going to cause us to take additional action just a  
9 smidgeon earlier.

10 MEMBER ROSEN: You mean renew again in 57  
11 years for three years?

12 MR. ROBISON: No, renew for additional 20  
13 years beyond that.

14 MEMBER POWERS: These plants are much  
15 better than those in south Texas.

16 (Laughter.)

17 MR. ROBISON: The --

18 MEMBER ROSEN: This could go on till your  
19 Plant rivals the pyramids --

20 MR. ROBISON: Yes.

21 MEMBER ROSEN: -- in longevity, with your  
22 model.

23 MEMBER POWERS: I have a great deal of  
24 confidence in the ability of neutrons to embrittle  
25 steel. That will bring it to an end.

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1 CHAIRMAN BONACA: It takes time but we'll  
2 get there.

3 MR. ROBISON: Moving on through some of  
4 the highlights of the application, the Integrated Plan  
5 Assessment topics that are housed in the application  
6 are the scoping and screening that we've begun to talk  
7 about today and also the aging management reviews.  
8 The Integrated Plan Assessment we performed along  
9 discipline lines, and that's why when I introduced the  
10 team to you this morning, they're important because  
11 along with the individuals go their responsibilities  
12 for a very large team of mechanical people,  
13 operations, maintenance, system engineering that they  
14 were able to reach into the Plant and tap. So they  
15 really were the managers of each of these areas to  
16 pull the information together that you have in front  
17 of you in the application.

18 Scoping and screening, several slides.  
19 This slide in particular gives you a feel for the  
20 structure of the application itself. Scoping and  
21 screening methodology again, it always helps to define  
22 your procedures. We did provide that in the Section  
23 2.1 of the application. We gave broad Plant-level  
24 scoping results for all of the disciplines, and we  
25 considered RCS a separate area. The Plant-level

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1 scoping results in Section 2.2, and then you can see  
2 how the results fed out into Section 2.3, 2.4 and 2.5.

3 And I will point out in the electrical  
4 area that we used a bounding approach. We've had that  
5 discussion in a number of meetings in industry,  
6 perhaps you've heard of that. The bounding approach  
7 allows us to really take a very broad view of  
8 electrical components, not go inside of cable trays  
9 and pick out which cable, perhaps, is a safety-related  
10 cable, but look at the area, look how aging could  
11 impact the electrical hardware in that area and make  
12 judgments that way. So it's more of a superset or a  
13 broader sweeping type approach but it's conservative  
14 and it served us.

15 The scoping and screening results  
16 continue. The system descriptions are generically  
17 applicable to McGuire and Catawba unless otherwise  
18 stated. Again, four sister units, things are very,  
19 very similar at the functional level. It's the  
20 physical layout level where you begin to get  
21 differences in plants, and that's just a function of  
22 the piping people and the equipment people and how  
23 they laid the plants out. But, certainly, at the  
24 functional level, there's extreme overlap of the two  
25 designs.

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1           The electrical and instrumentation  
2 descriptions are done on a component basis. Again,  
3 when you're doing a superset you don't need to go in  
4 and describe each electrical system if all electrical  
5 systems are going to be included -- safety, non-  
6 safety. Again, we're taking component views in areas  
7 or zones, looking for aging in those areas or zones  
8 and making sure that we can manage the aging of the  
9 hardware. And all discipline screening results are  
10 provided in the Chapter 3 tables. We used, as I'll  
11 show you in just a moment, the six-column table format  
12 for communication purposes. So that's a high-level  
13 overview of scoping and screening.

14           Being an engineer, I have to give you an  
15 equation. The aging management review follows an  
16 equation that we were able to understand many, many  
17 years ago, that if we took a component and its aging  
18 effects and we took that combination and understood  
19 how programmatically to manage it, if that program  
20 happened to exist and we could go into operating  
21 experience and see that it was doing a good job, all  
22 of that collectively then gave us reasonable assurance  
23 that we could carry that exercise forward.

24           MEMBER POWERS: Why is it an additive and  
25 not a multiplicative equation?

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1 MR. ROBISON: I think someone raised that  
2 issue in the past, and I had -- I'm not sure I have a  
3 good answer for that. Perhaps it is multiplicative.

4 MEMBER POWERS: So you show us one  
5 equation and it's wrong.

6 (Laughter.)

7 MEMBER POWERS: I couldn't resist.

8 MR. ROBISON: He made that comment to me  
9 last time I showed this equation. Thank you. So what  
10 this allowed us to do -- it's a very important memory  
11 trigger for us, because we would begin to talk to the  
12 Plant people and they would say, "We have this  
13 particular aspect." We could ask them, "Are we  
14 talking about definition of the component and its  
15 functions? Are we talking about the environment and  
16 materials which would lead us to an aging effect?"  
17 What is it we are talking about, and help us  
18 understand where we are so we could avoid thinking we  
19 had solved a problem but somehow not being able to  
20 communicate. Again, we did a lot of work pulling  
21 Plant records together, pulling operating experience  
22 together, and we wanted to make sure we got it  
23 correctly captured.

24 I just mentioned aging effects  
25 determinations. We found early on that it was very

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1 difficult to go to your metallurgist every single time  
2 you wanted corrosion defined. So what we did was we  
3 looked at the component materials, what is your power  
4 plant built of? How many different kinds of materials  
5 really are in a power plant? How many different kind  
6 of environments are there in a power plant? If you  
7 take those combinations, how many different aging  
8 effects are we talking about here? So rather than  
9 taking a Christian name of a component, working  
10 through its material and trying to say for this  
11 Christian name of the component, here's how it ages,  
12 we said, if they're all carbon steel and they're all  
13 in this environment, won't they exhibit similar  
14 behavior? Let's go and think about the broader  
15 sweeping behavior of things first so we don't lose our  
16 acclamation and then come back and apply operating  
17 experience. And what you see here is we ultimately  
18 documented that in a series of tools that we have had  
19 EPRI publish, and those tools have allowed us to sort  
20 of standardize our perspective so we don't get  
21 confused on definitions of terms. This is a very  
22 valuable piece developed during the Oconee days, and  
23 we've continued to use it on McGuire and Catawba.

24 CHAIRMAN BONACA: That's somewhat the  
25 process that the GALL report uses too.

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1 MR. ROBISON: It is.

2 CHAIRMAN BONACA: To what extent do you  
3 make use of GALL?

4 MR. ROBISON: We're not able to use GALL  
5 at all. We did compare ourselves to it in the end,  
6 but we did not have it available to us in the  
7 beginning to use. And, again, we had our Oconee  
8 experience and also our tools, as we call them, that  
9 we used and were able to consistently apply those.  
10 But there's very few, and I can't think of any  
11 differences with GALL that our tools would bring up.

12 CHAIRMAN BONACA: Okay.

13 MEMBER FORD: Could I ask something that's  
14 been concerning me for a little while? Oconee got  
15 their license from you all just before the CRDM  
16 housing situation arose. And you assure there aren't  
17 aging effects determination, but you're very much  
18 dependent on industry tools coming out of EPRI, and I  
19 guess you're forced to do that. You can't do your  
20 independent research to come up with a proactive aging  
21 management program for your specific Plant, I'm  
22 assuming.

23 MR. ROBISON: The Oconee --

24 MEMBER FORD: So you are at risk, aren't  
25 you?

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1 MR. ROBISON: You are somewhat at risk for  
2 unique materials and things that -- how does the  
3 phrase go, you can't know the unknown. And so as  
4 things are revealed to us and we become aware of them,  
5 we have to make sure we have an opportunity to put  
6 that back into our plant experience.

7 Turns out on Oconee we actually had a CRDM  
8 housing program that we took through license renewal.  
9 What has occurred since we relicensed Oconee is that  
10 program has had to be returned to incorporate the new  
11 knowledge that's come out of the Oconee experiences  
12 and other experiences in industry.

13 MEMBER FORD: Okay. But you have no way  
14 of -- it's an obvious statement -- you have no way of  
15 knowing what's going to happen in the future if you  
16 had imperfect tools.

17 MR. ROBISON: That's correct.

18 MEMBER FORD: And you're depending on EPRI  
19 or some other organizations to perfect those tools.

20 MR. ROBISON: Or your own operating  
21 experience to contribute to your awareness of what may  
22 be out there.

23 MEMBER FORD: Well, that's what worries me  
24 since we're talking about 20 years hence when this  
25 thing goes into operation. You're essentially saying,

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1       although you don't define it, that you will be relying  
2       on living developments of these tools as the industry  
3       comes up with better predictive technologies so you  
4       incorporate them. But they are not in your current  
5       license renewal plan, because they don't exist.

6               MR. ROBISON: They don't exist, we don't  
7       know them. Perhaps --

8               MEMBER FORD: But you are committing to  
9       use it -- obviously, you're going to commit to using  
10      these operator tools as they become available over the  
11      next few years.

12              MR. ROBISON: And in fact, today, in the  
13      Part 50 world today, we're faced with the same  
14      challenge. As new information comes available to us  
15      and we rely on -- we, the industry collective, rely on  
16      things like the generic letter process or  
17      identifications via perhaps our INPO representatives  
18      would provide us with information. So the  
19      infrastructure's in place to provide that information,  
20      we just have to be wise enough to go look. I think  
21      I'll move on.

22              Here's the six-column table, again,  
23      communication style that we used. Very effective for  
24      us to make sure we've communicated things and make  
25      sure that we can do a QC and it makes sense. It

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1 allows some easy bookkeeping. So Chapter 3 of our  
2 application is full of these tables.

3 Program summaries. Some more statistics.  
4 There are 54 total programs -- these are application  
5 numbers -- 54 total programs are credited for the  
6 safety work. Fifty-one of those are aging management  
7 programs, 34 of them exist in the Plant today. Nine  
8 of the programs are new programs for renewal, eight of  
9 them are one-time inspections, and one-time  
10 inspections involve things where we don't believe  
11 aging is occurring but we want to go at some point in  
12 time and validate that feeling or conclusion or  
13 assumption and make sure that before we enter the  
14 extended period that we can indeed say that. Three of  
15 the programs deal with time-limited aging analyses.

16 Commonality of the programs, 48 of the 54  
17 programs are common to both sites, and Caudle, I  
18 believe, mentioned some of that in his discussions  
19 earlier on the inspection. And 31 of the 54 programs  
20 are equivalent to the Oconee programs that we've  
21 already processed through license renewal with the NRC  
22 Staff.

23 MEMBER POWERS: You indicate that eight of  
24 these programs involve one-time inspections and the  
25 balance of them involve multi-time inspections?

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1 MR. ROBISON: Yes.

2 MEMBER POWERS: And surveillances? And  
3 what fraction of those surveillances will be missed  
4 and what fraction will be reported or documented?

5 MR. ROBISON: It's my intention that we  
6 don't miss any more surveillances. It does bring up  
7 an interesting point, Dr. Powers. We have taken the  
8 opportunity in license renewal when we kicked over the  
9 rock and found something that didn't look so great to  
10 say let's fix this and let's also use this as an  
11 opportunity to mature. Let's ask ourselves how we got  
12 here. Many of our programs at the Plant grew up in  
13 their own individual little areas, and they've never  
14 been aggregated like we've done for renewal, where we  
15 have an entire UFSAR chapter, new Chapter 18, where we  
16 put this information. Many of these programs existed  
17 in a notebook on someone's shelf with a line item  
18 commitment in a letter. Well, we've pulled all that  
19 together, made it much more visible so that as we go  
20 forward we hope we can drive maturity into the way we  
21 manage the aging. So I'm sorry that we missed the  
22 surveillances, but on the other hand if we can use it  
23 as an opportunity to learn and grow, which we  
24 certainly are at Duke --

25 CHAIRMAN BONACA: So you enter this

1 finding in your corrective action program?

2 MR. ROBISON: Yes, sir. It goes into the  
3 corrective action program. We make sure we  
4 understand, make sure that it's not broader than just  
5 the few surveillances and the documentation --

6 CHAIRMAN BONACA: I raised an issue before  
7 about the duct work that has been referenced or quoted  
8 in the SER that was on the drawing but is not in the  
9 Plant. Has that issue been entered in the corrective  
10 action program?

11 MR. ROBISON: Do you know?

12 MR. GILL: Doctor, I think the drawing was  
13 an electronic drawing so that it had to use the  
14 symbols of the drawing. What we did was we went back  
15 to the technical manual for that. That was the fan  
16 and the dampers associated with bypass flow and the  
17 like. And it was an RAI and we did send a copy of  
18 that drawing to the Staff so they could see that  
19 physically it's all one unit. There is no duct work  
20 even though the flow diagram indicates duct work. The  
21 dampers and fan are all one compact unit made by the  
22 manufacturer. It sits on the divider barrier between  
23 the upper and lower containment. So what we found out  
24 was the drawing was basically drawn by the tools they  
25 had and they have to have dampers and they have to

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1 have fans and they had to connect them, but really  
2 it's all one unit if you actually physically look at.  
3 So we were able to, I think, resolve that issue  
4 effectively by showing a drawing from a tech manual.

5 CHAIRMAN BONACA: And the issue is  
6 resolved.

7 MR. ROBISON: So the issue would be  
8 resolved for that, yes.

9 MS. FRANOVICH: I also looked at the SER,  
10 Dr. Bonaca, and it's just as what Bob has explained.  
11 The flow diagrams are useful for indicating flow in  
12 the -- where components fall in the flow path, but  
13 they're misleading sometimes in the actual  
14 configuration of the as-built system. So when Duke  
15 responded that these components are really bolted  
16 together, I think it was the fan and the damper  
17 housing, there's no ducting in between them, that was  
18 a satisfactory response to the RAI and the issue was  
19 resolved.

20 MR. GILL: This was heating, ventilating  
21 and air conditioning flow diagram which is typically  
22 used to balance flows and that kind of thing. Is that  
23 what we're talking about?

24 MS. FRANOVICH: Not really. I think the  
25 VX system, which is the hydrogen skimmer and

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1 containment air return system, is an ESF that is not  
2 an HVAC system. It's a ventilation system but it's  
3 for the combustible gas control. It just draws the  
4 hydrogen out of the compartments of the containment  
5 and eliminates the hydrogen to the extent possible by  
6 the system.

7 MR. GILL: It helps to keep the pressure  
8 balanced between upper and lower part of the  
9 containment within the ice condenser. I don't believe  
10 we have a copy of that response, Rani. Maybe we can  
11 --

12 MS. FRANOVICH: It's right there in the  
13 SER. I opened it to the page.

14 MR. GILL: I mean the picture.

15 MS. FRANOVICH: No.

16 MR. GILL: The actual --

17 MS. FRANOVICH: No.

18 MR. GILL: That would just show a  
19 demonstration.

20 MS. FRANOVICH: We can probably get it.

21 MR. GILL: You can do that in a break or  
22 whatever.

23 MS. FRANOVICH: Right.

24 MR. ROBISON: I will add that one of the  
25 things we did do was go beyond the P&IDs when we were

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1 identifying hardware. If it was a very  
2 straightforward piping system where a P&ID could  
3 easily show the hardware, we used predominantly the  
4 P&IDs. But when we got into HVAC or other areas where  
5 the drawings may not be good clear descriptors, we did  
6 pull the tech manuals out, opening up the layout,  
7 physical layout drawings themselves to make sure we  
8 didn't miss any components. So it wasn't like there  
9 was a high-level scoping review by my team and then  
10 they stopped. We actually wrote specifications on  
11 each mechanical system, and I believe between the two  
12 plants it was well over 100 systems, collectively,  
13 that we dug into the details of to make sure that we  
14 had things complete and comprehensive.

15 MEMBER ROSEN: You're answering part of  
16 the question that I asked earlier, and it's helpful,  
17 but did you do, for instance, I&C loops? Did you do  
18 that with I&C loop diagrams?

19 MR. ROBISON: Actually, what we did for  
20 I&C was we took a look at the specification that  
21 install physical taps off the mechanical systems, what  
22 is the material made of, and we included the I&C to  
23 the materials with the mechanical system. So we would  
24 add stainless steel tubing, for example.

25 MEMBER ROSEN: But when you looked at the

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1 I&C loop diagrams, did you see components on them that  
2 are not really visible on the other diagrams?

3 MR. ROBISON: We found some  
4 instrumentation associated with containment, yes, that  
5 was not on the mechanical drawing that we found out  
6 the containment pressures and whatnot, that the  
7 instrument system is there to function to serve. And  
8 we found that information off the I&C type drawings,  
9 yes.

10 MEMBER ROSEN: Is that all you're going to  
11 say about this Specification 16 we heard about?

12 MR. ROBISON: No. I have a slide and some  
13 more discussion on that in just a moment.

14 MEMBER ROSEN: I'll wait.

15 MR. ROBISON: The last area, the other  
16 area to highlight would be the time-limited aging  
17 analysis, and I just have just a moment. I know you  
18 know the definitions of the time-limited aging  
19 analyses. I will point out our results here for -- we  
20 did try to follow the standard review plan for license  
21 renewal as far as presenting the information. The  
22 reactor vessel, of course, has several time-limited  
23 aging analysis. We did resolve those by redoing the  
24 analysis or assuring that the analysis is up to date.

25 In the metal fatigue area, the EQ area and

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1 one other area, we resolved the time-limited aging  
2 analysis by program. For example, in the metal  
3 fatigue area, we've got the Thermal Fatigue Management  
4 Program that has its own way of doing business that  
5 will manage the fatigue cycles of the Plant. EQ, of  
6 course, we have the EQ Program.

7 MEMBER POWERS: So these -- the Thermal  
8 Fatigue Management Program looks at thermal fatigue,  
9 but they don't look at vibrational fatigue or anything  
10 like that?

11 MR. ROBISON: No, sir. Actually, what we  
12 did for vibrational fatigue is we looked at and we  
13 thought about the number of operating hours that it  
14 would take at a certain high number of cycles before  
15 you'd see failure. And we concluded that many years  
16 before you ever went into the extended period of  
17 operation something that was going to break would have  
18 broken. It's almost like a hot function or a  
19 shakedown test. And because of that, because of this  
20 very, very short time duration, you're going to have  
21 operational problems. We couldn't look ahead 20 years  
22 and say we're going to go have a vibrational problem  
23 at that point in time because it would cause us to  
24 have to make a plant change if we believe in endurance  
25 limits and things like that. So somewhat of a

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1 technical philosophy that we used on vibration.

2 Here are the last lists of some Plant-  
3 specific time-limited aging analyses: Reactor coolant  
4 pump flywheel, critical crack size we took a look at  
5 for 60 years, leak-before-break is reanalyzed, and  
6 then the other specific program was the standby  
7 nuclear service water pond volume at Catawba. We have  
8 a program that looks at pond volume periodically to  
9 make sure that the pond can contain enough water for  
10 it.

11 Now we're talking about site  
12 implementation, now we're talking about what caudle  
13 Julian referred to as Spec 16. We've actually even  
14 gone beyond Spec 16. What I've got up here are four  
15 bullets that just hit the highlights of the  
16 implementation area, but let me tell you a little why  
17 we do this. We were as concerned as some of the  
18 questioners this morning of what do we do 20 years  
19 from now when there's no one here to explain the  
20 commitment we've made? And how do we leave this  
21 commitment in good enough shape so we know how to  
22 implement it? And then I sat down with the site  
23 manager that said when do want to begin to implement  
24 some of these commitments? If indeed we wanted to  
25 play legal in licensing games and wait until year 40

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1 to implement things, perhaps we'd miss something,  
2 perhaps the energy level of the staff or the interest  
3 level of the staff that we've just now been in the  
4 Plant three years are peaking, perhaps we have a whole  
5 new generation that wouldn't care about what we were  
6 worrying about.

7 So what we decided to do was begin to  
8 implement as much as we could today, and that led us  
9 to some things we can implement today. For example,  
10 the change to the chemistry program where we go into  
11 the program and make a notation that the chemistry  
12 program is important because of the commitments we've  
13 made for license renewal. Before you make changes to  
14 the chemistry program, be mindful of how the chemistry  
15 program's been used in license renewal. Easy enough  
16 to add that note to the chemistry program. the  
17 chemistry people wanted to go ahead and do it. Why  
18 should I wait 20 more years to do that? So we're  
19 making that change today.

20 In our implementation world, we've  
21 actually gone in and red-marked all the procedures for  
22 McGuire and Catawba. We're finishing that up this  
23 month, as a matter of fact. We're going to red-mark  
24 all the procedures and have everything ready to be  
25 implemented that can be implemented. Things that

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1 cannot be implemented, for example, one-time  
2 inspections that need to be planned for the future, we  
3 will plan them at a certain level of detail with  
4 leading milestones such that the Plant licensing  
5 people, compliance people and the engineering people  
6 will know well in advance of any commitment date to go  
7 ahead and make sure they're planning the work. If,  
8 for example, the inspection requires NRC approval,  
9 that we get it to the NRC in the future, in time for  
10 them to review it and accept our techniques and then  
11 get in the Plant and do the inspections. We decided  
12 to go ahead and do that as part of a comprehensive  
13 implementation effort, and it will be in place at  
14 McGuire and Catawba, and it is in place already at  
15 Oconee.

16 In addition to that, we have written a  
17 specification called EDM-229, which is our engineering  
18 oversight of license renewal aging management  
19 programs. This particular directive allows us to take  
20 information that may come in from operating  
21 experience, from operations, from the NRC, from new  
22 knowledge we gain via EPRI and work it through a  
23 process down to the point of changing the programs  
24 that we have committed to for renewal if there's more  
25 knowledge or better knowledge that needs to be applied

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1 in the Plant.

2 And in addition to EDM-229, we have an  
3 aging management site point of contact, this point  
4 person, this cognizant aging guru that will be on-site  
5 for us. We've actually got one at each location, each  
6 of the three locations, and Mike Semmler from our  
7 License Renewal staff will be our general office site  
8 point of contact, and he will be able to take the  
9 license renewal knowledge and transfer it into the  
10 implementation world with our site people. For those  
11 folks we have written a handbook. We've taken all the  
12 detail level, six-column tables and whatnot and boiled  
13 them down into things that can be a quick reference  
14 guide, so when a question about material applicability  
15 in the system -- I want to replace carbon steel with  
16 a piece of stainless steel, can I do that, and will I  
17 undo a commitment -- we've created a process where  
18 that can be easily be done by our SPOC, or our site  
19 point of contact. And that way we feel like we can  
20 maintain a bit of control rather than hoping that  
21 someone can go and read a commitment list or pull  
22 something out of a database in the future and trying  
23 to true the plant up with it at that point in time.

24 In addition to that, we've actually begun  
25 to train all of the people on-site that will be

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1 associated with all of this work, again, raising the  
2 level of awareness. How that training carries forward  
3 in the future, it will be the single point of  
4 contact's responsibility to make sure that goes  
5 forward and there is a presence maintained in  
6 engineering for this work and for aging management now  
7 that we've gone to all the trouble of constructing  
8 this solution.

9 MEMBER ROSEN: So is that some -- these  
10 "Dr. SPOCs" you've --

11 MR. ROBISON: I was trying to avoid that  
12 term, but go ahead.

13 MEMBER ROSEN: I couldn't resist. They  
14 are now -- there's one in place for Oconee --

15 MR. ROBISON: Yes.

16 MEMBER ROSEN: -- and McGuire and Catawba,  
17 separately?

18 MR. ROBISON: Yes.

19 MEMBER ROSEN: So now they are able to  
20 talk to each other and get the programs in a uniform  
21 way.

22 MR. ROBISON: Yes. Again, that adds a  
23 level of maturity to our effort, and in Mike,  
24 similarly moving over from license renewal, he has  
25 moved actually moved over to the metals and metallurgy

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1 area in our general office, and taking this knowledge  
2 with him, and he can chair a group among the three  
3 sites to continue this awareness, and ability to find  
4 common ways to solve problems.

5 MEMBER ROSEN: Are they pretty young  
6 people?

7 MR. ROBISON: Some of them are.

8 MEMBER ROSEN: I can be accused of ageism,  
9 but --

10 CHAIRMAN BONACA: Let me -- this completes  
11 your presentation, I guess. I have a number of  
12 questions regarding some specifics on scope issues,  
13 and I don't know if the best time is to ask them  
14 during the staff presentation on scoping, or -- and my  
15 sense would be let's take a recess right now, and then  
16 have you still here and we can ask questions regarding  
17 these issues.

18 MR. ROBISON: That's fine.

19 CHAIRMAN BONACA: And it may take more  
20 time, but we will take a recess until quarter-of-  
21 eleven..

22 MS. FRANOVICH: When we resume the meeting  
23 do you want the people from Duke at the table still?

24 CHAIRMAN BONACA: Yes.

25 (Whereupon, the meeting was recessed at

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1 10:28 a.m., and resumed at 10:46 a.m.)

2 CHAIRMAN BONACA: Okay. Let's resume the  
3 meeting, and the way we are going to conduct it  
4 actually, even if we have questions of the applicant,  
5 we will ask them as the staff walks through the  
6 scoping and screening, and so on and so forth, and  
7 some of the answers will be provided by the staff, and  
8 some of them will be provided by the licensee.

9 MS. FRANOVICH: Okay. Bob Gill and I went  
10 back to the original RAI response for the containment  
11 air return exchange and hydrogen skimmer question. I  
12 believe you all have a copy of that now.

13 CHAIRMAN BONACA: Yes.

14 MS. FRANOVICH: And at the back of that  
15 response there is a drawing of the fan and the damper  
16 that indicates that these are one continuous or two  
17 components joined together without any duct in  
18 between, and if there are any questions on this  
19 diagram, I will defer to Bob Gill to answer them.

20 CHAIRMAN BONACA: No, it's just that --  
21 let me just verify that from the text that it sounded  
22 like it was something in the drawing that was  
23 different from the plant. Now, it is a different  
24 issue.

25 MS. FRANOVICH: Okay. Maybe we can

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1 improve on how we characterize this as being resolved  
2 in the SER to make it clearer.

3 MEMBER ROSEN: Did you say we have a copy  
4 of it now?

5 MS. FRANOVICH: Yes. Okay. Shall I go  
6 on?

7 CHAIRMAN BONACA: Sure.

8 MS. FRANOVICH: Okay. the scoping  
9 methodology audit was performed by a team of  
10 headquarters auditors, and Bill Rogers, here to my  
11 left led that team. and he is going to talk a little  
12 bit about how the audit was conducted, and what the  
13 findings and conclusions were.

14 MR. ROGERS: Good morning. I am Bill  
15 Rogers, and I am from the Equipment and Human  
16 Performance Branch. Our branch was responsible for  
17 the review of the scoping and screening methodologies  
18 for the review of the license renewal application.

19 The progress began with the desktop review  
20 of the LRA, and supporting documentation provided by  
21 the applicant. The audit was performed by a team of  
22 three of our branch engineers, a regional inspector,  
23 who was Caudle Julian, and the license renewal project  
24 manager, Rani.

25 We were on site for three full days to perform

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1 the audit. During the audit, we reviewed implementing  
2 procedures, engineering reports, engineering  
3 procedures, design documentation, including system  
4 design basis documents, Q-lists, maintenance rule  
5 matrix, training records of the license renewal staff,  
6 and we had numerous discussions with the applicant's  
7 license renewal staff and management.

8 In addition, the team reviewed examples of  
9 implementation. This was a spot check. It was on  
10 four systems. Systems were chosen on or based on  
11 importance to risk and having a variety of safety  
12 related components within the systems and also in  
13 addition interfacing between non-safety and safety  
14 systems.

15 The applicant's approach is consistent with 10  
16 CFR 55.4, being their consideration of safety related  
17 SSCs, non-safety related SSCs, and the evaluation of  
18 regulated events.

19 Concerning one of the areas which we had a  
20 request for additional information, the one area that  
21 I think might be of interest is the seismic II/I area.  
22 The applicant had taken the approach during the  
23 initial plant design to designate -- actually, to  
24 identify and designate certain non-safety related  
25 piping which could have a potential impact on safety

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1 related SSCs, and they identified this piping as Class  
2 F.

3 They routed the piping into areas with safety  
4 related equipment when possible, and also took a  
5 mitigative approach, which would include things such  
6 as spray shield curves, qualification of the  
7 approximate safety related equipment, and this was  
8 done to prevent potential interaction.

9 As a result for license renewal, all Class F  
10 piping was included in scope in accordance with  
11 54.4(a)(2). Contrasting this with other plants, the  
12 other Duke plant that was done prior to this was  
13 Oconee.

14 The issue of the potential spanning scope of  
15 (a)(2) was actually developed subsequent to that  
16 review of the LRA during the Hatch review. In  
17 contrast to other plants subsequent to the Hatch  
18 review, Duke's approach was somewhat different, in  
19 that they had taken actual steps during the initial  
20 plant design, which actually answered the (a)(2)  
21 question much easier than other plants.

22 Some of the conclusions that we drew during the  
23 audit was that the applicant's methodology and  
24 implementation was robust. The scoping process was  
25 well-defined and proceduralized. The license renewal

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1 team was well trained on the implementation process.

2 And the audit provided confirmation of the  
3 process and implementation. The staff found that  
4 there is reasonable assurance that the applicant's  
5 methodology for identifying SSCs and scope of license  
6 renewal, and SCs that are subject to an AMR, is  
7 consistent with the requirements of 10 CFR 54.4, and  
8 10 CFR 54.21, respectively, and is therefore  
9 acceptable.

10 MS. FRANOVICH: Any questions for Mr.  
11 Rogers? If you think of any, he is not going to be  
12 very far from here. So, thank you.

13 CHAIRMAN BONACA: And this is on  
14 methodology, right?

15 MS. FRANOVICH: Correct. Correct. Okay.  
16 Thank you, Bill.

17 MR. ROGERS: Thank you.

18 MEMBER FORD: I suddenly realized, because  
19 our methodology is not in specifics. To what extent  
20 do you ask the what if questions? And it comes back  
21 to the question that I heard earlier no about the  
22 pressurizer valve support lugs, which is one of the  
23 questions that came out in an RAI, and whether it was  
24 part of the scope or not when it comes to your  
25 methodology.

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1                   And the agreed upon answer from the  
2 applicant was that that particular valve would be  
3 supported by pipe restraints. It should be left into  
4 the concrete of the containment building I seem to  
5 remember, which is a fair enough answer I suppose in  
6 itself.

7                   But is the what if question asked as to what if  
8 the concrete degrades where it is attached to the  
9 containment?

10                   MR. ROGERS: Well, let me try to answer  
11 that.

12                   MEMBER FORD: How deeply do you go into  
13 the what if question?

14                   MR. ROGERS: I understand your question.  
15 To answer the question specifically about the concrete  
16 and the pipe restraints, that would be a level of  
17 detail that we would not get into during the audit.  
18 That would be a very specific question.

19                   And that would be reviewed by another  
20 group of people subsequent to the audit, but in  
21 general, I think this might help. Part of their  
22 consideration of what ifs has to do with the actual  
23 experiences in the field.

24                   And of course not hypothetical situations,  
25 and so the what ifs, at least from our audit point of

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1 view, we would limit our what ifs to things that we  
2 knew had occurred in the field, and would therefore  
3 need to be considered by the applicant during their  
4 scoping and screening.

5 MEMBER FORD: But the experience in the  
6 field might only become evident during an accident  
7 situation, which hopefully is very rare.

8 MR. ROGERS: True.

9 MEMBER FORD: And so we are still sitting  
10 on an unknown.

11 MS. FRANOVICH: Well, there are currently  
12 inspectors and surveillances. For example, the  
13 maintenance rule requires that they monitor the  
14 condition of passive long-lived structures that you  
15 wouldn't know what the condition of those is unless  
16 you are either in an accident or you are looking.

17 So they are taking current actions that  
18 reveal problems, and that is part of the operating  
19 experience that they would tap from, if that answers  
20 your question.

21 MEMBER FORD: Okay. What you are saying  
22 is that that particular potential problem, and how  
23 well the attachments are held into the concrete if you  
24 like, would be covered in other maintenance programs?

25 MS. FRANOVICH: Well, not so much of that.

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1 Another reviewer -- we have the audit team that looks  
2 at the scoping and screening methodology that was  
3 implemented by the applicant.

4 Then the reviewers here in headquarters  
5 review the results of those screening reviews  
6 performed by the applicant. The question that you are  
7 coming up with about the supports and embeddement  
8 into the concrete structure would be addressed by the  
9 headquarters reviewers that are looking at what  
10 structures are in scope, what structural supports in  
11 are scope.

12 MEMBER FORD: And that is you?

13 MS. FRANOVICH: Well, I was the project  
14 manager, and so I have a staff of technical reviewers  
15 who actually did the technical evaluations of the  
16 information in the application.

17 And when we talk about Chapter 2, Scoping  
18 and Screening, I would like to address that question,  
19 because I know that you are eager to get the answer.

20 MEMBER FORD: Well, it is not specific.  
21 I don't doubt that the answer is probably correct. I  
22 am trying to delve into how deep do you go into the  
23 what if questions. That is essentially the question.  
24 I am not doubting your conclusions.

25 MS. FRANOVICH: I think the answer is that

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1 we go as deep as what operating experience will  
2 support, because the statement of considerations for  
3 the license renewal rule indicates that we can't  
4 really ask the applicant to consider hypothetical  
5 failures.

6 It just mushrooms the scope of review to  
7 things that may not be reasonable. So the depth of  
8 our review is, I would say, dictated by operating  
9 experience that we can use to demonstrate that this  
10 really needs to be considered.

11 CHAIRMAN BONACA: My question was very  
12 simple regarding -- well, first of all, yes, in the  
13 application it is clear of the fact that the plants  
14 are recent -- the recent plants, are modern designs.

15 It is helpful, for example, the Class F  
16 piping, allows to have a full category of piping  
17 already identified that goes straight into license  
18 renewal. The bigger question was how easy was it to  
19 go from the genetic methodology to the tables provided  
20 in the application.

21 Did you have to do a lot of questioning in  
22 the other to understand how you would not be getting  
23 through that?

24 MR. ROGERS: Oh, to go to the results  
25 tables?

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1 CHAIRMAN BONACA: Yes. Was there enough  
2 information or did you have some struggle? I mean, I  
3 have --

4 MR. ROGERS: Once again, that would be the  
5 next group on that would have to answer that.

6 MS. FRANOVICH: Let me try to answer the  
7 question. You are absolutely right. When it comes to  
8 understanding the methodology that they applied, and  
9 what you see in the AMR result tables, there is no  
10 nexus.

11 And the drawings are what bridge that gap.  
12 The drawings indicate what the pipe classes are for  
13 the various piping segments, and Duke's methodology  
14 was to include in scope piping that is designated  
15 Class A, B, or C, which falls into the safety related  
16 category, or class F, which falls into the support  
17 (a) (2) criterion for license renewal.

18 So we had to rely on the drawings really  
19 to bridge that gap.

20 CHAIRMAN BONACA: Yes. That is the reason  
21 that I asked these questions, is because I had trouble  
22 going from those statements to those tables, and so I  
23 just picked up from the table. Actually, I had to  
24 rely more on what was out of scope, and I had some  
25 questions about that at some point when we get to

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1 those systems --

2 MS. FRANOVICH: Okay.

3 CHAIRMAN BONACA: -- than anything else,  
4 and then just again struggling for the question that  
5 I think the Commission is interested in, too, is how  
6 effective and efficient is the process becoming.

7 These applications are getting skimpier  
8 and skimpier, and does it mean that we really are  
9 improving, or is it in fact an obstacle to the  
10 reviewers?

11 MS. FRANOVICH: Let me address that in my  
12 presentation, but I think the message that I would  
13 espouse is that when it comes to scoping and  
14 screening, what was provided by Duke was very  
15 beneficial to the staff.

16 But we did have to rely on the drawings,  
17 and focus on areas of the drawings that were not in  
18 scope to determine if the piping and components met  
19 any of the criteria for scoping to see if everything  
20 that should have been in scope was.

21 CHAIRMAN BONACA: But you found that the  
22 drawings provided with the application provided you a  
23 very effective bridge between the methodology and the  
24 tables?

25 MS. FRANOVICH: I believe so.

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1 CHAIRMAN BONACA: Thank you.

2 MS. FRANOVICH: Without the drawings, I  
3 don't see how the staff really could have done that  
4 review.

5 MEMBER ROSEN: And those drawings are of  
6 the piping and instrument documents mainly?

7 MS. FRANOVICH: Correctly.

8 MEMBER ROSEN: Not all the subset  
9 documents?

10 MS. FRANOVICH: Correct. Correct. Thank  
11 you, Bill.

12 MR. ROGERS: Thank you.

13 MS. FRANOVICH: I would like to ask Harold  
14 Walker and Tanya Eaton to come up to the table. We  
15 are going to start talking about the scoping results.  
16 But before we do, I did want to mention that there are  
17 some unique systems and structures associated with  
18 these two plants, because they are ice condenser  
19 plants.

20 They are late vintage Westinghouse four-  
21 loop design. They are what I like to call the  
22 Cadillac of nuclear power plants. They offer some  
23 systems that the staff had never seen before. Of  
24 course, the ice condenser containment structure, the  
25 annulus ventilation system, which draws the annulus

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1 between steel containment in the reactor building to  
2 a vacuum during design basis accidents.

3 And the containment air return and  
4 hydrogen skimmer system, and the containment valve  
5 injection water system, which is a unique system for  
6 ensuring that the containment isolation valves do not  
7 allow leakage, especially the gate valves which were  
8 prone to leakage.

9 So I just wanted to mention those unique  
10 systems, and --

11 DR, LEITCH: I saw another unique system  
12 here that I didn't understand anyway that has been  
13 both McGuire and Catawba systems not within the scope,  
14 and in both cases, there is a system simply called  
15 oxygen system. I don't know what that means, and what  
16 is the oxygen system.

17 MS. FRANOVICH: I am going to take a stab  
18 at this, but then I am going to defer to the Duke  
19 folks. It may be a breathing air system.

20 MR. ROBISON: The oxygen system is a bulk  
21 oxygen system run through the plant for whatever you  
22 want to use oxygen for. It is just routed, and it is  
23 not in scope, and it really serves no function  
24 associated with the renewal scoping, but it is there  
25 for service work or whatever we are going to need it

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1 for in the plant.

2 DR, LEITCH: Okay. Thank you.

3 CHAIRMAN BONACA: Among the systems not  
4 in scope, there are a couple of them that I am curious  
5 about, and I don't know if this is the right time to  
6 ask.

7 MS. FRANOVICH: Sure.

8 CHAIRMAN BONACA: One was the condensate  
9 storage tank. I mean, throughout the application and  
10 the SER there is written that the condensate storage  
11 system is an known safety system whose failure could  
12 prevent satisfactory accomplishment of certain safety  
13 functions.

14 Therefore, it is an (a) (2) kind of system.  
15 So that is in scope. Well, it says that the parts  
16 with system design are in scope. What about or why is  
17 the condensate storage tank not in scope? That is the  
18 one that provides the supply to the system.

19 MS. FRANOVICH: Let me ask a question.  
20 Were you just reading from a previous application or  
21 from our SER?

22 CHAIRMAN BONACA: From the SER.

23 MS. FRANOVICH: From our SER?

24 CHAIRMAN BONACA: Yes.

25 MS. FRANOVICH: And you were reading from

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1 the condensate storage?

2 CHAIRMAN BONACA: Yes, Subsection 2344.

3 MS. FRANOVICH: At the time of McGuire,  
4 they have what is called an auxiliary feedwater  
5 condensate storage tank. They also have a condensate  
6 storage tank, but it is not a primary supply, or maybe  
7 even a secondary supply for the auxiliary feedwater  
8 suction.

9 The insurance supply is the nuclear  
10 surface water system. So that is the safety related  
11 supply for aux feedwater. The aux feedwater  
12 condensate storage system is part of a larger  
13 condensate storage system that provides quality water  
14 to the steam generators, but it is not safety related.  
15 So it doesn't mean --

16 CHAIRMAN BONACA: So what you are telling  
17 me is that a condensate storage system will operate  
18 and will have a supply of water independently of the  
19 condensate storage tank?

20 MS. FRANOVICH: Well, the condensate  
21 storage system consists of a number of tanks. The aux  
22 feedwater condensate storage tank, and the upper surge  
23 tanks, the condenser hot well, they all provide a  
24 volume of condensate grade water, but none of them are  
25 safety related.

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1                   So that system doesn't meet the license  
2 renewal scoping criteria.

3                   MS. HAZELTINE: But really the reason that  
4 part of the system is in is because it is Class F  
5 piping.

6                   CHAIRMAN BONACA: I'm sorry?

7                   MS. HAZELTINE: It is Class F piping,  
8 which falls into the (a)(3) category, the non-safety  
9 that impacts safety.

10                  MS. FRANOVICH: Okay.

11                  MS. HAZELTINE: And that's why -- and in  
12 fact I think it is only at Catawba because of the  
13 routing differences between the plants. It is the  
14 physical layout differences, and that part of the  
15 condensate storage systems are in scope at Catawba  
16 because they are Class F, and they are routed near  
17 safety related equipment so that their failure can't  
18 impact a safety function.

19                  And so it is not for a functional reason.  
20 It is an interaction.

21                  CHAIRMAN BONACA: So you are saying that  
22 the only reason why there are in scope is because  
23 their failure could cause an impact on other systems,  
24 and not because the function of a system has to  
25 perform?

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1 MS. HAZELTINE: That's correct.

2 MS. FRANOVICH: Right.

3 MEMBER ROSEN: Now, let me understand  
4 this. Are you saying that collectively that safety  
5 related supply of auxiliary feedwater is actually  
6 service water?

7 MS. FRANOVICH: Yes.

8 MEMBER ROSEN: What is the quality of that  
9 water?

10 MS. FRANOVICH: It's not very good.

11 MEMBER ROSEN: So that if you have a  
12 reactor plant trip, do you inject this water in that  
13 case or not?

14 MS. FRANOVICH: No. If you have a reactor  
15 trip, then the primary source as such would be the  
16 condensate grade water to preserve the steam  
17 generators. But if you have a design basis accident,  
18 the seismically qualified source is the service water.

19 MEMBER ROSEN: And how many times is that  
20 injected into the steam generators, these machines?

21 MS. FRANOVICH: Not many.

22 MS. NADER: Once at Catawba, and I believe  
23 that's all. Once at Catawba.

24 MS. FRANOVICH: Do you know if that was  
25 Unit 1 or Unit 2, because I know that we have new

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1 steam generators on Unit 1.

2 MS. NADER: And it was prior to steam  
3 generator replacement, but I am not really sure which  
4 unit it was.

5 MS. FRANOVICH: Okay.

6 CHAIRMAN BONACA: Another question I had  
7 was about the control rod drive ventilation. Why is  
8 that not in scope?

9 MS. FRANOVICH: I will take a stab at  
10 this, and you guys can chime in. My understanding is  
11 that that system does not perform an accident  
12 mitigative function at all. It is not a safety  
13 related system, and I think it provides cooling to the  
14 CRDM components during normal operation, but there is  
15 no accident mitigating function of that system.

16 MS. HAZELTINE: That is the consensus over  
17 here as well. That is a normal operating system, but  
18 doesn't function during an event, and so it is not  
19 safety related.

20 CHAIRMAN BONACA: So that means that your  
21 rod insertion was not impacted by that? And then  
22 there is another one that sounds funny to me, and that  
23 was the containment ventilation. What system is that?

24 MS. FRANOVICH: Yes. Now, the containment  
25 ventilation system was the subject of a lot of

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1 discussion when we had our early on conference calls,  
2 and the containment ventilation system is required to  
3 ensure that a certain text spec requirement is met.

4 The tex spec is really containment  
5 temperature. I believe it is 80 to a hundred degrees  
6 in upper containment, and a hundred to 120 degrees in  
7 lower containment. But that is just to ensure that the  
8 initial conditions of the design basis accident are  
9 met.

10 Once the accident occurs the system can go  
11 away. It doesn't mitigate the effects of the  
12 accident. The ice condenser is what controls the  
13 internal temperature and pressure of the containment  
14 post-accident.

15 We had to go back to the text spec basis  
16 to ensure that that was indeed the design basis of the  
17 plant and that is exactly what we have.

18 CHAIRMAN BONACA: And you apparently have  
19 reviewed that. I mean, you are knowledgeable of that.

20 MS. FRANOVICH: Yes.

21 MEMBER ROSEN: Now, while you have the  
22 slide on that you have on now, that shows the unique  
23 systems instruction, and all four of those systems are  
24 in-scope?

25 MS. FRANOVICH: Correct. Of course, the

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1 ice condenser containment is more of a structure than  
2 a system, but it is in scope. Any other questions?

3 DR, LEITCH: I have a question about the  
4 electrical scope. I guess we are going to have an  
5 opportunity to talk about the electrical system later?

6 MS. FRANOVICH: Yes. We are going to go  
7 through the results of each of the sections of their  
8 application.

9 DR, LEITCH: So the question is really out  
10 in the switch yard just exactly where the break is  
11 between in scope and out of scope.

12 MS. FRANOVICH: Okay. I can answer that.

13 MEMBER ROSEN: That's one of our favorite  
14 set of questions, and of course the other set is about  
15 this open contention on severe accident litigation  
16 during station blackout.

17 MS. FRANOVICH: Okay.

18 MEMBER ROSEN: And not unrelated.

19 MS. FRANOVICH: Okay.

20 CHAIRMAN BONACA: And that issue, I mean,  
21 you should address it and tell us if it is a  
22 correlating license basis issue, and that's why it is  
23 separate, or --

24 MS. FRANOVICH: You are talking about the  
25 GSI issue, the SAMA contention?

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1 CHAIRMAN BONACA: Yes.

2 MS. FRANOVICH: I will. I will.

3 CHAIRMAN BONACA: Okay.

4 MS. FRANOVICH: Should I talk about that  
5 now or should we -- because I don't know if there is  
6 a -- why don't we talk about it when we get to the  
7 station blackouts scoping results.

8 CHAIRMAN BONACA: Very good. Let's do  
9 that.

10 MS. FRANOVICH: Okay. The staff's review  
11 process is essentially to review the UFSARs for both  
12 stations, and review the piping and instrumentation  
13 diagrams, and be familiar with the license conditions,  
14 and interim staff guidance or ISGs that the staff has  
15 issued to communicate positions on license renewal  
16 scoping to the industry.

17 And the staff is directed by its review  
18 guidance to focus on out-of-scope systems, structures,  
19 and components, to ensure that nothing that meets the  
20 scoping criteria was omitted.

21 The scoping results have to do with the  
22 staff, or I'm sorry, the applicant's determination of  
23 what systems, structures, and components, meet the  
24 three criterion in 54.4. (a) (1) is for safety related  
25 SSCs, or systems, structures, and components.

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1 (a) (2) is for non-safety related that  
2 support those safety related SSC functions; and then  
3 the third criterion is for regulated events -- fire  
4 protection, ATWS, station blackout, PTS, and  
5 environmental qualification.

6 And then what the staff did was review the  
7 screening results which the applicant performed to  
8 determine which components were passive, and which  
9 components and structures were long lived and not  
10 subject to replacement.

11 For the reactor coolant system, which  
12 consisted of Class One piping valves and pumps,  
13 pressurizer, reactor vessel and CDRM pressure  
14 boundary, steam generators, and the reactor vessel  
15 internals, the staff did not identify any open items.

16 And this would be a good time to address  
17 your question on the pressurizer valve support lugs,  
18 and I am hoping that Muhammad Razzaque is in the  
19 audience, and if he is not, then we may need to come  
20 back to it.

21 I don't see him, and I guess I will come  
22 back to that question as soon as I do see him here.

23 MEMBER FORD: I think you can defer that  
24 question. My question really was as I said before  
25 inquiring into the depth of the issue, because I am

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1 ont questioning the conclusion.

2 MS. FRANOVICH: Okay. And we answered the  
3 question on the depth.

4 MEMBER FORD: Yes.

5 MS. FRANOVICH: Very good.

6 CHAIRMAN BONACA: I have some questions  
7 later on, on the reactor vessel internals. This is  
8 just scoping right now, right?

9 MS. FRANOVICH: Correct.

10 CHAIRMAN BONACA: So we will talk about  
11 that when we get to the ageing management problem?

12 MS. FRANOVICH: Correct. Sure. Sure.  
13 Any questions about this slide? Okay. One thing that  
14 I did want to mention was that the reviewer who  
15 reviewed the RCS scoping results questioned whether or  
16 not the pressurized respray heads should be within the  
17 scope of license renewal.

18 And as a result of an RAI the applicant  
19 agreed that the sprayheads should be in scope because  
20 of a post-fire reliance on auxiliary spray to reach  
21 cold shutdown conditions.

22 So they also brought in a new inspection  
23 or ageing management program that is not in the SER,  
24 and that is the only AMP that was added to the license  
25 renewal application.

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1                   MEMBER ROSEN: And when that happens does  
2 the staff go back and think about what other -- and  
3 maybe this is a broader question for PT, but when the  
4 staff gets a revelation like that, what are the  
5 implications of that to the previously licensed  
6 extended term plans?

7                   MS. FRANOVICH: That is a very good  
8 question and I will take a shot at this PT. The staff  
9 reviewer actually asked this question of the applicant  
10 because he read in the USFARs that they rely on this  
11 auxiliary spray for post-fire events.

12                   So his question was prompted because in  
13 the rigor of his review, he identified this potential  
14 function that may meet the scoping criteria, in  
15 particular (a) (3), for fire events.

16                   The rigor of the staff's review has always  
17 looked at the USFARs, and they have always relied on  
18 the USFARs as a source of what the design basis of the  
19 plants is. So when this came up, it occurred to the  
20 staff that post-fire events had not been a design  
21 basis event that the staff considered reliance on the  
22 pressurized spray for previously.

23                   But at the same time the staff was  
24 reviewing the USFARs and if a prior applicant had  
25 relied on the sprays for a fire event, the staff would

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1 have found that in the USFARs, assuming that that  
2 level of detail was available to the staff.

3 But I believe that what we are doing since  
4 we recognized that this post-fire event is somewhat  
5 obscure, is that we are looking back at the USFARs for  
6 previously renewed plants to see if we find similar  
7 words in there.

8 If we do, we have the 50.109 backup  
9 process that we will follow to address that. Does  
10 that answer your question?

11 MEMBER ROSEN: Oh, eloquently. Now I am  
12 interested in what you find.

13 MS. FRANOVICH: Okay. We will keep you  
14 apprised. We will keep you apprised.

15 MEMBER ROSEN: And I think I am interested  
16 and encouraged by all of this, and that there are  
17 smart people on the staff asking penetrating  
18 questions, and that is a good thing.

19 MS. FRANOVICH: Right.

20 MEMBER ROSEN: And occasionally they will

21 --

22 MS. FRANOVICH: Find something.

23 MEMBER ROSEN: -- find something, and then  
24 what do we do with that when they do is the question.

25 MS. FRANOVICH: Right. And another thing

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1 with this particular reviewer, he did a wonderful job.  
2 He also found that steam generator support structures  
3 were not in scope. Things like the U-bend support  
4 anti-vibration bars, lattice structure support plates,  
5 and as a result of an RAI, they brought those things  
6 in scope as well, and provided the ageing management  
7 review results, and credit their steam generator  
8 surveillance program for them.

9 So it was a good staff review, and there  
10 is my reviewer, but I have already answered his  
11 questions, and so he is off the hook. Hi, Muhammad.

12 MR. KUO: If I might add to what Rani just  
13 said, that in fact we have established what we call  
14 the interim staff guidance process. Whenever we have  
15 a lessons learned like this, we will put that into the  
16 IC process and see if there is any safety concerns,  
17 and then we will apply this 5109 back to the process  
18 of the issue.

19 MEMBER ROSEN: And frontfit.

20 MR. KUO: Right.

21 MEMBER ROSEN: In other words, people who  
22 come after will have the opportunity to answer this  
23 question, too.

24 MS. FRANOVICH: Right. Right. Okay.  
25 Engineered safety features. I have just listed a few

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1 here, but there are quite a number of -- well, I think  
2 there are eight of these systems. The annulus  
3 ventilation system, safety system, residual heat  
4 removal system, and containment valve injection water  
5 system.

6 We have three open items under the ESF  
7 section of the SER that also apply to auxiliary  
8 systems. The applicant did not indicate that fan  
9 housings and damper housings were within the scope of  
10 license renewal.

11 We have not resolved those two open items  
12 yet. Another thing that the staff found was that  
13 structural sealants were not addressed in the  
14 application. So that is something that the applicant  
15 has provided aging management programs, or proposed  
16 aging management programs, for.

17 Programs that are being credited right now  
18 for structural sealants -- and this is for things like  
19 the control pressure boundary envelope, the  
20 containment, and the spent fuel pool-building, and  
21 these are structural sealants that have to provide a  
22 pressure boundary for the structures.

23 And the applicant is proposing some  
24 differential pressure surveillance tests, but the  
25 staff is concerned that those tests really assess the

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1 performance of the fans that are either drawing a  
2 vacuum or pressurizing the structure.

3 And feel that perhaps a visual inspection  
4 of the structural sealant may provide a better  
5 indication of the condition of the sealants. So those  
6 are the three open items under the ESF section of the  
7 SER.

8 CHAIRMAN BONACA: We need to hear more  
9 about fan housing and damper housing. I mean, this  
10 was an issue that was debated with industry, and with  
11 closure on it, and now it is reopened, and what is the  
12 contention?

13 Clearly there are passive components,  
14 although they have fan or reactive components in them.  
15 So what is the issue?

16 MS. FRANOVICH: Let me first update you on  
17 the ISG, and then I will defer to Duke to answer the  
18 question.

19 MEMBER ROSEN: Tell me what ISG is.

20 MS. FRANOVICH: The interim staff  
21 guidance. We issued an ISG, interim staff guidance,  
22 on the staff's position with respect to passive  
23 components, or passive subcomponents of acting --  
24 passive housings really of active components. In  
25 particular, the fans and dampers.

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1 I believe that NEI commented on our ISG,  
2 and we are now revising it to address some industry  
3 concerns that there will be a slippery slope, and the  
4 staff will start looking for instrument housings and  
5 scope.

6 But that ISG is not formal yet. However,  
7 the staff's position on housings is fairly well  
8 established, and it has been fairly consistently  
9 applied. I think for Oconee that there were certain  
10 damper housings that were not included in the scope,  
11 and the staff back then -- and this was only the  
12 second applicant for license renewal -- agreed with  
13 Duke's argument that fan or dampers are active.

14 But that was before we wrote our ISG, and  
15 since then we have consistently applied the position  
16 that housings for active components belong in scope of  
17 license renewal, and with that update, I am going to  
18 let the Duke folks address that contention.

19 CHAIRMAN BONACA: Let me understand now.  
20 If the damper housing or fan housing loses integrity,  
21 you are losing the pressure boundary aren't you?

22 MS. FRANOVICH: That's correct. That is  
23 the staff's position.

24 CHAIRMAN BONACA: And the same issue is on  
25 the building sealant, and let's stay on the housing

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1 now, and try to understand what is the logic behind  
2 this.

3 MR. ROBISON: I'll be glad to offer some  
4 thoughts here. When we read the license renewal rule,  
5 and it excludes fans and dampers, we don't break them  
6 into subcomponents. If a fan has blades, and  
7 connections to a motor, and a housing, it is the fan.

8 We don't go in and begin to subdivide that  
9 piece of hardware. And that was the philosophy that  
10 we used on Oconee. The performance test of the fan  
11 will be the performance test of the fan with its  
12 entire set of components.

13 We didn't try to get cute and make it any  
14 more detailed than that, and when we went back through  
15 the discussions that we had had in industry over the  
16 last 10 years, we had never subdivided those  
17 components that way.

18 CHAIRMAN BONACA: So what you are saying  
19 is that the test of the adequacy of the housing result  
20 from the active test --

21 MR. ROBISON: Of the fan, yes.

22 CHAIRMAN BONACA: Rather than by a visual  
23 inspection of that housing?

24 MR. ROBISON: Yes, and that was the  
25 position that we began with, again consistent with

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1 Ocone's as Rani has pointed out.

2 CHAIRMAN BONACA: And what is wrong about  
3 looking at it, too? I mean, that is not -- this is  
4 not a brainer. I mean, you know, this housing is a  
5 pretty busy boulder.

6 MR. ROBISON: Sure. I mean, I don't --

7 CHAIRMAN BONACA: I mean, you walk by and  
8 you see it completely corroded with bolts falling out,  
9 and you just say, yeah, but the test didn't work. And  
10 will it tell you that maybe you want to do something?

11 I mean, I am just trying to understand,  
12 you know.

13 MEMBER ROSEN: The resting tells you that  
14 it just worked, but it doesn't tell you anything about  
15 the future.

16 CHAIRMAN BONACA: Right.

17 MEMBER ROSEN: Whereas, it might be just  
18 about able or ready to fall apart, and you could see  
19 that if you looked at that.

20 CHAIRMAN BONACA: Exactly. And, you know,  
21 I -- that's right.

22 MR. ROBISON: And if I can add, that Rani  
23 again pointed out that one of the slippery slope items  
24 was what about a motor housing. What about an  
25 instrument housing. It was more -- Duke was not

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1 arguing so much for a particular fan in the plant.

2 It was more of the design of our industry  
3 guidelines that we put together, and at the  
4 philosophical level how many components are we going  
5 to subdivide, and how far will this go.

6 And there was a feeling -- you know, a  
7 general philosophy feeling that there was some  
8 instability being introduced in the process here. And  
9 not to mention at Duke, as you pointed out, we didn't  
10 use this philosophy at Oconee, and we were trying to  
11 be consistent.

12 One of the difficulties that we have with  
13 three sites is to try to remain consistent between the  
14 three sites. This is beginning to cause us to look.  
15 And you are right. It is not that big an issue to go  
16 and take a look at the fans that would be within the  
17 scope of renewal.

18 But again our arguments were more at the  
19 philosophy level and making sure that our guideline  
20 documents and what not were consistent.

21 MEMBER ROSEN: I think your argument  
22 sounds from the philosophical standpoint, but in  
23 practice you do look at the fans, and when they go out  
24 there on the desk, there are people around, and they  
25 look at them, and they are not blind.

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1           And so the amount of additional work is  
2 probably next to nothing. It is a process question,  
3 and maybe my mind has just gone blank. But have we  
4 dealt with a plant and license renewal -- I am asking  
5 really Mario and Graham -- where open items were --  
6 that things were still open when our letter was  
7 requested?

8           CHAIRMAN BONACA: Well, you know, this is  
9 -- yes. all the time. The process has always been  
10 that we receive an SER still with open items.

11          MEMBER ROSEN: Yes.

12          CHAIRMAN BONACA: And then in the early  
13 times when we were looking at each design, we also  
14 wrote an interim letter, you know, discussing that.

15          MEMBER ROSEN: All right.

16          CHAIRMAN BONACA: And we kept discussing  
17 very much the open items there, and just to let them  
18 be resolved, because there was a lot of integration  
19 between the industry and the staff.

20                 And then we wrote a letter for the final  
21 SER when it comes with all the open items closed. We  
22 have taken an approach now whereby we look at what I  
23 call the interim SER with open items, and we don't  
24 write typically a letter unless there is something  
25 that we want to communicate to the staff really, and

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1 then we review again the SER with closed items.

2 MEMBER ROSEN: So we will have an  
3 opportunity again later to write a letter, a final  
4 letter.

5 CHAIRMAN BONACA: Yes.

6 MEMBER ROSEN: So our decision today will  
7 be to listen and then decide if we want to write an  
8 interim letter, and point maybe some views on these  
9 open items perhaps.

10 CHAIRMAN BONACA: Yes.

11 MEMBER ROSEN: But ultimately a clean  
12 application where the staff has resolved the open  
13 items, and we don't have to be guessing about where  
14 they end up.

15 CHAIRMAN BONACA: Right. Now, on this fan  
16 and damper housing, if I remember it was at Hatch that  
17 it was an open item, and it was debated, and then it  
18 was closed.

19 And the industry really took a common  
20 position on that. I mean, there was some concurrence  
21 between NEI and I believe the industry in general, and  
22 the staff. And these housings were included in the  
23 scope of license renewal. It was after Oconee, of  
24 course.

25 And what concerns me is if there is a

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1 position that is accepted by the industry and the  
2 staff at a further point on, we should hold to that,  
3 hold on to that. Otherwise, this process is not going  
4 to become streamlined, effective, and efficient.

5 Now, I understand the concern about a  
6 slippery slope, but I think -- I don't think we are on  
7 that slope, because some of the other issues are not  
8 being reopened, and they are already settled.

9 MS. FRANOVICH: Yes. The only RAIs on  
10 housings for active components that Duke needs to  
11 address are the ones for dampers and fans.

12 CHAIRMAN BONACA: Yes.

13 MS. FRANOVICH: And the staff's position  
14 is that these housings are really no different from  
15 valve bodies and pump casings. And for some of the  
16 ventilation systems that are carrying radioactive  
17 gases, we feel that a breach of the ducting, and a  
18 breach of the housing are equal conditions that are  
19 adverse to quality.

20 CHAIRMAN BONACA: Yes, but the question is  
21 why do you have to wait until you have lots of  
22 functions before you do go and --

23 MS. FRANOVICH: Do corrective action?

24 CHAIRMAN BONACA: -- do something about  
25 it.

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1 MS. FRANOVICH: Right. Right. So those  
2 are the three outstanding open items. We have not  
3 been able to resolve them, but we still have a couple  
4 of weeks.

5 MEMBER ROSEN: Well, you can have a small  
6 amount of degradation, some corrosion, which is  
7 causing some leakage from the housing, which could be  
8 clearly visible, and these are systems that carry  
9 humid air, and they could corrode. It would be  
10 clearly visible to an inspection.

11 Whereas, a fan or damper could still work  
12 on the command to close or open. And the delta p's  
13 that are required for testing could still be apparent  
14 because so much air is being transferred through these  
15 systems compared to the leakage that these systems  
16 could still develop the correct delta p's.

17 But on the other hand, they could be  
18 leaking as Rani pointed out substantially. So there  
19 is two different things that we are talking about  
20 here.

21 CHAIRMAN BONACA: We have supported the  
22 last decision that we had on Hatch of including this  
23 fan housing and damper housing, and my perspective is  
24 that I should report this back to the staff.

25 MS. FRANOVICH: Thank you. Okay. With

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1 that, we will go on to the next slide. And this is a  
2 slide that discusses the scoping and screening results  
3 for auxiliary systems, and these are just examples of  
4 the kinds of systems that fall into the auxiliary  
5 systems category.

6 There were, I believe, 38 of these  
7 auxiliary systems in the application. We identified  
8 two open items that pertained to -- well, actually,  
9 the SER says that we have six open items in fire  
10 protection.

11 We have resolved or made confirmatory four  
12 of those items. The ones that remain unresolved have  
13 to do with whether or not jockey pumps belong within  
14 the scope of license renewal, and manual suppression  
15 capability for potential fire exposure areas.

16 And in particular I think the SER mentions  
17 the turbine building. for the jockey pumps, the  
18 applicant does not believe that they perform a  
19 function to mitigate a fire event. Therefore, they  
20 are not required to be in the scope of license  
21 renewal.

22 The staff's position is that these  
23 components are relied upon to meet requirements of 50-  
24 48. The staff has traced back commitments by the  
25 applicant to have these jockey pumps to maintain

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1 pressure on the fire system header to prevent constant  
2 cycling of the main fire water pumps.

3 And as part of their licensing basis, that  
4 they commit to having these jockey pumps, and  
5 therefore because they are relied on to meet the  
6 requirements of 10 CFR 50-48, they have to be within  
7 the scope of license renewal.

8 Manual suppression capability in fire  
9 exposure areas is one where Duke is going back to do  
10 a little more research into where their fire exposure  
11 areas are. But the applicant's position is that fire  
12 barriers is what they rely on to prevent a spread of  
13 a fire from the turbine building to safety related  
14 structures, like the auxiliary building.

15 The staff believes that they have to have  
16 the fire barrier, but to provide defense in depth  
17 manual suppression capability also is required.  
18 Therefore, the suppression water system, and parts of  
19 that system that protect the turbine building should  
20 be within the scope of license renewal.

21 And that is the status of those two open  
22 items. The confirmatory items, as I indicated --

23 MEMBER ROSEN: Before you get off that, do  
24 we want to ask the applicant at this point to address  
25 those so we understand where you come down on the

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1 question of those two items.

2 MR. ROBISON: Let me preface it by saying  
3 that Caudle Julian mentioned earlier that we had used  
4 our QA 3 designation to identify fire protection items  
5 for license renewal.

6 What we have done to follow up with these  
7 additional questions from the staff is to do a very  
8 detailed licensing and design review. We have gone  
9 beyond labels. We have gone back into the document  
10 set to make sure that we understood the plant.

11 Now, on these particular items, we read  
12 the 54.48 requirements apparently a little differently  
13 than the staff does, at least at this point. We are  
14 still doing some more homework again. We owe our  
15 responses here in a few weeks.

16 The way we have our system designed the  
17 jockey pump failure will not prevent the  
18 accomplishment of what we believe the functions  
19 associated with 50-48 are. Neither will the failure  
20 of a jockey pump lead to cycling of the main pump  
21 because of the way that things are designed in the  
22 system.

23 What we want to avoid here is splitting  
24 hairs on the details of the design of the plant, when  
25 in fact we may get to the end and say, well, it is

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1 just carbon steel with lake water in it. Don't you  
2 already have programmatic oversight of those types of  
3 things.

4 So we don't want again to get down into  
5 the legalities of what meets what function, and  
6 splitting what hair. Up to this point in our plant  
7 design, the jockey points have not held that high a  
8 place as our main pumps and our main fireheaders have  
9 obviously.

10 And so what we want to do is make sure  
11 that we are clear on what our design and licensing  
12 basis today, and we will be going forward, so we don't  
13 take some sort of odd step change for license renewal.  
14 So that is where we are.

15 We have not fully resolved where we are on  
16 the jockey pumps. Now, on the manual suppression,  
17 when we went back and took a look, again we are doing  
18 a detailed licensing review to see exactly how we  
19 answered many of the license renewal, branch technical  
20 positions and what not from years past, not trying to  
21 guess at the top level label level what the answers  
22 are, but really dig down deep, and read all the  
23 letters, and read all the correspondence, and  
24 reconstruct something that we can feel confident in  
25 today, and we can feel confident in, in going forward

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1 in the future.

2 When we met with the staff, a very helpful  
3 meeting on the 1st of October, we did describe  
4 features in our design that were somewhat unique to  
5 our plant the way that things are laid out, and one of  
6 the staff reviewers even pointed out, well, that's not  
7 typically the way it is done in a commercial business,  
8 or in another nuclear plant.

9 They wouldn't lay the piping facility out  
10 the way that you have described it, and perhaps that  
11 is different. Perhaps we need to understand better  
12 your design. Again, we are going to go do some  
13 homework and make sure that we can tell that story.

14 CHAIRMAN BONACA: So essentially the staff  
15 and the licensee are going to work to clarify the  
16 licensee basis of this plant, and then they will live  
17 by that.

18 MS. FRANOVICH: For the second item, Dr.  
19 Bonaca. For the first the staff feels like it has a  
20 thorough understanding of the licensing basis, and  
21 what it comes down to is whether or not the applicant  
22 would acknowledge that what they credit to meet 40-48  
23 is the only criterion that they have to focus on to  
24 bring it within the scope of license renewal.

25 So the licensing basis, we need to

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1 understand a little bit more for the second item. But  
2 for the first one, the staff feels very confident.  
3 And another thing that I would like to mention is that  
4 for the previous applicants, they have all brought  
5 their jockey pumps into scope.

6 Maybe not initially, but after RAIs and  
7 discussions with the staff, and also Oconee included  
8 the jockey pumps in the scope. So we are looking for  
9 consistency.

10 MEMBER ROSEN: It seems like that is what  
11 you want, Duke, consistency.

12 MR. ROBISON: Oconee didn't include the  
13 jockey pumps in the scope.

14 MS. FRANOVICH: I looked at the PNIDs and  
15 saw that they were highlighted for the jockey pump, I  
16 believe, but we will check on that. We will check on  
17 that.

18 MEMBER ROSEN: It seems to be a little bit  
19 of difference as a factual matter that could be  
20 cleared up easily.

21 MR. ROBISON: Yes, and just a technical  
22 point of note. The layout of the system, and the  
23 design of the system from McGuire and Catawba is much  
24 different than many of the other applicants who have  
25 come through renewal.

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1           It has to do with the physical layout and  
2 proximity of equipment, and those types of things as  
3 well. Again, I don't know that we are at an impasse  
4 that can't be bridged. We want to make sure, and we  
5 are not as confident as the staff in our  
6 interpretation of the regulations, and we are doing  
7 our homework.

8           MEMBER ROSEN: I think that is all very  
9 good, but I would say that in the fire protection  
10 area, as well as in many others, but in particular in  
11 the fire protection area, the views that were  
12 expressed by Rani about the defense in depth I share.

13           One has to be very careful when you are  
14 talking about fire and nuclear plants, and that we  
15 don't rely on one aspect of what we put in place;  
16 detection, prevention, mitigation. All of these  
17 things are important.

18           So I would encourage Duke, as the staff  
19 has seemed to have been encouraging you, to think  
20 holistically about fire protection, and not overly  
21 credit one aspect of the fire protection program.

22           MS. FRANOVICH: Thank you. And Tanya  
23 Eaton is the reviewer on my left here, and she is the  
24 lead fire protection reviewer, and she has done an  
25 outstanding job digging through their licensing basis

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1 to identify these things that appear to be excluded.

2 So I would like to commend her on her  
3 effort. Harold Walker, on my right, was the lead  
4 coordinator for the staff's review of scoping and  
5 screening.

6 So I would like to acknowledge his  
7 contribution as well. I would like to go on to the  
8 confirmatory items before we leave this slide. One of  
9 the questions that came up was why were there so many  
10 open items. Is there an efficiency and effectiveness  
11 problem with the staff's review.

12 And if so, is the problem with the  
13 application or is it with the staff's review. Some of  
14 these confirmatory items were items that we probably  
15 could have resolved with a potential open items  
16 letter, which is a letter that the staff issues to the  
17 applicant several weeks, or maybe a month, before the  
18 SER open items is to be issued.

19 It is the last opportunity to get answers  
20 to questions to preclude unnecessary open items in the  
21 SER, and some of these confirmatory items pertaining  
22 to replacement of consumables were identified after  
23 the potential open items letter was issued.

24 So there were four open items and one  
25 confirmatory item that probably could have been

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1 precluded if the staff had recognized that we didn't  
2 have sufficient information from the applicant earlier  
3 to resolve these items.

4 With that, I would like to go on to  
5 scoping and screening of ESS, and auxiliary -- I'm  
6 sorry, we already did ESS. Steam power and conversion  
7 systems. The staff asked a number of questions of the  
8 applicant, and we didn't issue any official RAIs.

9 We just asked some questions preliminary  
10 to find out about flow accelerated corrosion in  
11 certain areas of the secondary system piping, and  
12 concluded based upon our discussions with the  
13 applicant that for the piping segments that met the  
14 scoping criteria, if you looked at the piping and  
15 instrumentation diagrams, the pressure and temperature  
16 ratings for that piping did not present the conditions  
17 that would lead to flow accelerated corrosion.

18 And that was the primary concern that the  
19 staff had. There were some other segments of piping  
20 that was scoped for which they credited the flow  
21 accelerated corrosion programs. So there was no  
22 concerns with what they did credit that program for.

23 The staff just wanted to make sure that  
24 they found all the areas that would cause that adverse  
25 aging effect. So there were no open items for this

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1 section.

2 CHAIRMAN BONACA: The question about the  
3 main steam bypass to condenser, which is not in scope.  
4 I would not see that as a separate system, but I would  
5 like to understand that if you have a load reject,  
6 what is the design in the relief system?

7 MR. ROBISON: Your question is about  
8 pressure settings or --

9 CHAIRMAN BONACA: Well, no. The percent  
10 of --

11 MEMBER ROSEN: The capacity.

12 CHAIRMAN BONACA: The capacity.

13 MS. FRANOVICH: I can share some antidotal  
14 on Catawba. There was a load reject and the turbine  
15 ran back to 12 percent from a hundred percent, if that  
16 is what you are asking for. I think they are designed  
17 to at least run back to 50 percent, if not more.

18 CHAIRMAN BONACA: I am trying to  
19 understand the reliance that they have on the main  
20 stem bypass to the condenser.

21 MS. FRANOVICH: Let me try to give an  
22 answer to that. Unless it meets one of the scoping  
23 criteria, it won't be in scope, and the main steam  
24 bypass is not safety related, and it is not required  
25 to support a safety related function.

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1                   And to my knowledge, it is not credited  
2 for the blackout event or ATWS.

3                   CHAIRMAN BONACA: No, but I was more  
4 curious to understand the logic behind the fact that  
5 for this kind of design it would not be -- well, I  
6 guess generally it is not separately related. All  
7 right. Anyway, if you can get information, and it is  
8 just more for my curiosity than anything else.

9                   MS. FRANOVICH: Okay.

10                  MR. ROBISON: We do understand on the  
11 secondary plant that there are many areas in the  
12 secondary plant that are not in the scope of renewal,  
13 but certainly followed in our accelerated corrosion  
14 program.

15                  Things where you are putting steam back  
16 into a vacuum will cause all kind of havoc as far as  
17 erosion, and we know that, and those are key points in  
18 our program. But that doesn't happen to be something  
19 that falls within the purview of the license rules  
20 scope.

21                  But it is certain something that is  
22 important to us at the plant.

23                  MS. FRANOVICH: So, Dr. Bonaca, this is a  
24 follow-up item, and what you are looking for is --

25                  CHAIRMAN BONACA: Keep it out of the

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1 record. I don't believe it is in scope.

2 MS. FRANOVICH: Keep it out? Okay.

3 CHAIRMAN BONACA: But it is more of my  
4 curiosity to know what is the bypass capacity and if  
5 you have a lot of rejection.

6 MS. FRANOVICH: Okay. We will work with  
7 Duke to get an answer to that question. Mike Semmler,  
8 Duke staff.

9 MS. SEMMLER: The main steam bypass  
10 condenser is about 45 percent of steam capacity. But  
11 we have the system in as main steam vent atmosphere,  
12 which is 55 percent capacity of the steam.

13 So if we have a low rejection to 50  
14 percent that lifts, and that is where it goes, and  
15 then the power operator relief valves are about 10  
16 percent.

17 CHAIRMAN BONACA: So you are really  
18 getting a hundred percent that way?

19 MS. SEMMLER: Yes.

20 CHAIRMAN BONACA: Okay. Thank you.

21 MEMBER ROSEN: So you can have a full load  
22 rejection and keep the reactor on line; is that what  
23 you are saying?

24 MS. SEMMLER: That's the intent, that you  
25 could have a turbine reback and reject. In theory, it

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1 is supposed to work, but it only worked -- I think  
2 only 50 percent full load rejection has really worked,  
3 and a hundred percent doesn't work that way.

4 MS. FRANOVICH: And this is for both  
5 Catawba and McGuire, Mike?

6 MS. SEMMLER: That is my understanding,  
7 yes. I don't think we take credit for a hundred  
8 percent full load rejection. I think it just  
9 automatically trips the plant at that point.

10 MS. FRANOVICH: My recollection on Catawba  
11 is that that is the design. The design is that it can  
12 withstand a 100 percent load rejection, but the  
13 closest that I have seen is when it went down to 12.  
14 the turbine ran back, to 12 percent without --

15 MS. SEMMLER: Right, without a rack trip,  
16 and I think usually when you get past 50 percent, I  
17 think the steam generator level rises too quickly, and  
18 we just end up tripping anyways.

19 MS. FRANOVICH: Okay.

20 MS. SEMMLER: So I know that we had done  
21 a load rejection of 50 percent several times, and it  
22 has been successful to do that.

23 MS. FRANOVICH: Sure. Thank you, Mike.  
24 Okay. On to the next slide. Structures. The staff  
25 reviewed the scoping and screening for structures.

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1 The reactor building included the concrete shield  
2 building, the steel containment building, or vessel,  
3 and reactor building and internal structures.

4 For the other structures, that includes  
5 things like the turbine building, the auxiliary  
6 building, the nuclear service water system, pump, pump  
7 house, pump structure, the standby shutdown facility,  
8 which is credited for fire events, and security  
9 events, and station blackout.

10 Component supports included things like  
11 battery racks, and cable trays, new and spent fuel  
12 storage, platform and grading supports, control boards  
13 and crane rails, et cetera.

14 And there were a number of RAIs, but the  
15 staff was able to have all the RAIs addressed by  
16 Duke's responses. So there were no open items in this  
17 section either.

18 Okay. The results for electrical. Duke's  
19 approach to performing its electrical review was to  
20 identify all passive electrical and I and amp; C  
21 components, and to identify those components that --  
22 I guess at that point they didn't include them all in  
23 the scope.

24 They basically evaluated them all, and  
25 then identified those that didn't meet the scoping

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1 criteria, or actually what Greg describes is probably  
2 more accurate. They did a space ease approach, and  
3 conservative scoped in more than what met the scoping  
4 criteria.

5 I see Paul Colaianni coming up to the  
6 mike, and so I will let him clarify that.

7 MR. COLANIANNI: Paul Colaianni, Duke  
8 Electrical Lead. Yes, we basically took a  
9 conservative approach with all electrical, especially  
10 cables, and that included all cables within the plant  
11 and the switch yard within scope as far as what  
12 materials and environments we consider in the aging  
13 management review.

14 We took all of that and put it together,  
15 and we found where we may have problem areas, and that  
16 became the basis for our program. In the beginning,  
17 we did initially cut out some electrical components,  
18 but we ended up in augmenting our scoping for station  
19 blackout by putting in most of the switcher passive  
20 components back into scope.

21 MS. FRANOVICH: And I think part of the  
22 process, and Paul, correct me if I am wrong, was to  
23 identify those things that were subject to replacement  
24 and that were not long lived, and remove those from  
25 the scope of license renewal as well.

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1 MS. SEMMLER: Right. We did basically  
2 exclude all EQ equipment from the aging management  
3 review as being long lived.

4 MEMBER ROSEN: Because those have been  
5 determined --

6 MS. SEMMLER: That's correct, because they  
7 are replaced based on the qualified life.

8 MS. FRANOVICH: At this point, I would  
9 like to put up a slide to help illustrate the  
10 electrical distribution system for Catawba and  
11 McGuire, and they are very similar for each.

12 One of the staff RAIs was on the recovery  
13 path for station blackout, and Duke brought in, as  
14 Paul indicated, a lot of equipment as a result of that  
15 RAI response. And I just wanted to outline for you  
16 what was brought in that had not been in scope  
17 originally.

18 CHAIRMAN BONACA: All right.

19 MS. FRANOVICH: This is potentially the  
20 switch yard, and you have the PCBs coming into sight,  
21 and the main transformers, and then your step down or  
22 step up transformers, depending on whether we are  
23 producing power or getting power from off-site.

24 Essentially, the path goes from here, down  
25 this way to this breaker, and continues down to this

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1 transformer, a 6.9 kV bus, and all the way down to the  
2 four 4.16 kV potentially bus. Both sides.

3 So what came into scope was the passive  
4 components associated with this power pack. And at  
5 this point, I wanted to check and see if there are any  
6 questions about the station blackout recovery path,  
7 and the scoping and screening for license renewal.

8 MEMBER ROSEN: Well, let's be sure that we  
9 understand when you talk about passive components.  
10 Which ones are passive by your definition?

11 MS. FRANOVICH: Well the cables  
12 connection, and things that would be active would be  
13 things like breakers, which actually move.

14 MEMBER ROSEN: But not transformers?

15 MS. FRANOVICH: Transformers? No.

16 MR. COLANIANNI: The transformers are  
17 active.

18 MEMBER ROSEN: Right.

19 MR. COLANIANNI: And to answer that more  
20 fully, in addition to that power path, what specific  
21 amounts were added that are passive are phase bussing.  
22 There were some isolated phase buss in the 22 kV  
23 system that you see there, and that was an isolated  
24 phase bus that connects those transformers and the  
25 generator.

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1           And then there is also between -- going  
2 down to the 6900 buses, there is segregated phase bus,  
3 or excuse me, non-segregated phase bus, where there is  
4 three phases within one housing, versus the isolated  
5 phase bus, where there is just one phase within a  
6 housing.

7           And so it did add phase busing to the  
8 scope, and then out in the switch yard, of course, it  
9 added the transmitter conductors, the bare conductors  
10 that you normally see on transmission lines, those  
11 types of conductors, connecting the plant to the  
12 switch yard.

13           And the large insulators that hold that  
14 conductor in place for that connection to end within  
15 the switch yard itself. And we also added the -- you  
16 see the 2.30 kV there, and that is on what would be  
17 the switch yard bus.

18           There are two long buses that we added to  
19 the scope of the license renewal review, and that  
20 comprises the additional passive components.

21           MS. FRANOVICH: Thank you, Paul. Any  
22 other questions?

23           DR, LEITCH: I am still a little confused  
24 about the switch yard. Everything, all passive  
25 components of the drawing that we see are in scope, or

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1 does the scope end at the -- at where the high side of  
2 the transformer ties into the switch yard?

3 MS. FRANOVICH: I think that this is the  
4 evaluation boundary, right; the first active component  
5 from the switch yard?

6 MR. COLANIANNI: Take that one breaker  
7 below that.

8 MS. FRANOVICH: Right here?

9 MR. COLANIANNI: Yes. That breaker and  
10 the one right below it are called the bus line PcVs,  
11 and so those two breakers, which is the connection to  
12 the plant, is called the bus line. Those are the  
13 boundaries of what actually is in scope.

14 DR, LEITCH: Okay. Thank you.

15 MEMBER ROSEN: What does the relay house  
16 fall in your mind?

17 MR. COLANIANNI: The relay house as far as  
18 the scoping comes into the controls that would be  
19 needed to close those breakers, the bus line breakers.  
20 So the controls, the batteries, that may be needed to  
21 function those breakers, would be in scope, and not  
22 pulled into the relay house.

23 MEMBER ROSEN: So the relay house and all  
24 the components in it are in scope?

25 MR. COLANIANNI: Yes.

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1 MR. COLANIANNI: Well, all the --

2 MS. FRANOVICH: Passive.

3 MEMBER ROSEN: All the passive components.

4 MR. COLANIANNI: Yes, all the components  
5 needed to open or needed to close those breakers  
6 again, and the structure to support those electrical  
7 components, like the batter supports, and then the  
8 physical structure itself.

9 The cable trenches going between or that  
10 held the control cables between those four breakers  
11 and the relay house, and the controls, would also be  
12 in scope, along with the cables in the trench.

13 MEMBER ROSEN: Now is this the time to  
14 talk about the open contention or is this just  
15 background for it?

16 MS. FRANOVICH: We can talk about that  
17 contention now. How about if you ask me what you need  
18 to know, what you would like to know, and I will try  
19 to answer it.

20 MEMBER ROSEN: I don't know if we have  
21 time before lunch. When do you want to take lunch?

22 CHAIRMAN BONACA: The schedule says 12:15,  
23 and so let's keep going.

24 MEMBER ROSEN: All right. The open  
25 contention is about whether there is power to the fans

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1 in containment in the station blackout. Is that my  
2 understanding?

3 MS. FRANOVICH: Not exactly. The  
4 contention as it was originally framed was that Duke  
5 failed to consider information in the Sandia report  
6 addressing direct containment heating.

7 And the Sandia report has some -- I  
8 believe it is failure probabilities, or risk estimate,  
9 that the petitioner's felt were not used by Duke, and  
10 that these should have been used by Duke.

11 The question was should Duke have used the  
12 information in this report in developing its severe  
13 accident mitigation alternatives for license renewal,  
14 which is really in the environmental review portion of  
15 the staff's review, and not the safety review.

16 So that is the contention, but it is  
17 related to GSI-189, in that combustible gas control is  
18 the concern. If you don't have a means of mitigating  
19 hydrogen concentrations, then you are susceptible to  
20 large early failure of your containment.

21 So the GSI-189 issue is related, but that  
22 is a current operating issue that was not in the scope  
23 of license renewal. So we have really informed the  
24 petitioners that we are addressing that generically  
25 with the GSI.

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1                   It's not just a Catawba-McGuire specific  
2 issue. If you are interested in the status of the  
3 GSI-189, I really cannot speak to that. But we can  
4 make arrangements to have someone brief you.

5                   MEMBER ROSEN: We are always interested in  
6 the status of GSIs, and particularly 189.

7                   MS. FRANOVICH: Okay. Okay. Then we will  
8 take that back.

9                   MEMBER ROSEN: They keep showing up and  
10 here it is again. If it only could get resolved way  
11 one or the other, then we could count on it in a lot  
12 of different ways.

13                   MS. FRANOVICH: Yes.

14                   MEMBER ROSEN: And on that resolution,  
15 whatever the Agency's resolution is.

16                   MS. FRANOVICH: Yes, and I think Duke  
17 would like to speak to where they are in addressing  
18 the GSI. Bob Gill.

19                   MR. GILL: Yes. This is Bob Gill again.  
20 The original environment reports that we put on last  
21 summer had the SAMA reviews. We used our plant  
22 specific PRAs, one from McGuire and one for Catawba,  
23 and came up with an initial conclusion that there were  
24 no cost beneficial plant modifications that met the  
25 criteria.

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1 We received RAIs late last year and  
2 answered them, and several of them related to  
3 considering redoing the analysis considering certain  
4 values contained in the new reg, the Sandia new reg on  
5 the direct containment heating.

6 We did that, and we answered those RAIs in  
7 January, January 31st/February 1st, actually. In  
8 parallel with that, we had the contention going on  
9 that said that we should include the results in our  
10 environmental review.

11 By submitting the responses to the RAIs on  
12 the docket, we in fact supplemented or augmented our  
13 original environmental review. The staff subsequently  
14 in the May time period issued the draft supplement  
15 EIS's, one from McGuire and one from Catawba.

16 And concluded that there may be cost  
17 beneficial modifications, SAMAs, to address this issue  
18 under certain assumptions. And the assumptions have  
19 to do with core damage frequency, and containment  
20 failure probability, and a number of things.

21 We even provided some additional  
22 information on potential modifications, and what they  
23 would cost in doing that. So subsequently, and I  
24 forget exactly when we did it, but I think it was July  
25 or August, we responded and commented on the draft

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1 SEIS's and provided some additional information to the  
2 staff.

3 And they are in the process now of  
4 collecting all the comments that were received, and we  
5 will issue the final SEISS in the January time period,  
6 I believe, is what is scheduled. In parallel with  
7 that, Duke's -- each site sent in a letter committing  
8 to monitor, and follow, and support the staff's effort  
9 in the research of GSI-189.

10 As a footnote, I will put another  
11 commitment we put in on Catawba, was that one of the  
12 contributors to lost off-site power was flooding of  
13 some switch gear in the basement of Catawba, and we  
14 committed in a separate letter there to go ahead and  
15 put in a flood wall at Catawba to reduce the frequency  
16 of that event from occurring.

17 So in parallel, and the letters were  
18 signed specifically by the site vice presidents as  
19 commitments to do work. So those went in and those  
20 are really a Part 50 issue.

21 Subsequent to that, we contacted research  
22 and offered to provide any assistance we could in more  
23 PRA numbers, sensitivity studies, uncertainty values,  
24 estimates of modifications that they might be  
25 interested in.

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1           And we have provided that to them, and  
2           that should be in the package that you all are  
3           receiving very shortly here. We understand that the  
4           staff is going to provide something soon, and you all  
5           are to discuss it next month, I believe.

6           And we are very interested in assisting as  
7           we move forward and refining what the real cost  
8           benefits are, and what the rage might be, and the  
9           various assumptions, and also what the potential plant  
10          modifications might be in this area.

11          And in fact I had the opportunity to go to  
12          Catawba and do a brain storming session to kind of  
13          figure out what the costs might be for a particular  
14          MOD of cross-connecting one unit to the other as a  
15          backup.

16          And the particular scenario that we are  
17          talking about is extending the station blackout well  
18          beyond the four hours, and you would have no AC power,  
19          and you have to provide power. And we believe that  
20          you need power to the fans, as well as the igniters,  
21          and of course that changes the costs associated if you  
22          bring in a new power source.

23          But if you are able to cross-connect from  
24          one unit to the other, you don't need to worry about  
25          the power source, because you are just going from

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1 Train A of Unit 2 to Train A of Unit 1.

2 MEMBER ROSEN: So your igniters and fans  
3 will work even under those circumstances?

4 MR. GILL: Yes, sir. And we did provide  
5 that cost estimate, and not only just providing power  
6 to the fans. There is some dampers that have to be  
7 repositioned, and igniters, and then we provided  
8 subsequently a cost estimate just with providing power  
9 to the igniters.

10 So again you have a range of SAMA, of  
11 costs, and then there will be a range of a varied cost  
12 benefits, and the question is going to be where do  
13 they overlap.

14 And I think that the package that you will  
15 be getting shortly, if you haven't already received  
16 it, will be or would have all of that in there  
17 hopefully.

18 MEMBER POWERS: Will the package that we  
19 receive describe this flood wall?

20 MR. GILL: Excuse me, sir?

21 MEMBER POWERS: Will the package that you  
22 are talking about describe this flood wall?

23 MR. GILL: I don't think so.

24 MEMBER POWERS: I would be interested if  
25 you have any information on it.

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1 MS. FRANOVICH: I have a copy.

2 MR. GILL: It is just a concrete wall.

3 MS. FRANOVICH: I have a copy of the  
4 letter from Gary Peterson, and I can provide that to  
5 you now.

6 MEMBER POWERS: I would like to see that.

7 MR. GILL: The letter describes it  
8 briefly. It is just a wall around this to prevent  
9 damage and it is a relatively simple modification.

10 MEMBER POWERS: My interest has nothing to  
11 do with the generic issue, or the license renewal. It  
12 has to do with the potential for a MOX application.

13 MR. GILL: Yes, sir, and we appreciate  
14 that.

15 MEMBER ROSEN: Well, I think that is a  
16 very comprehensive answer. I think Duke, and Mr.  
17 Gill, and Mr. Robison, for that. It is very helpful,  
18 and understand that we are involved very passionately  
19 in these issues, the GSIs, and then they keep popping  
20 up in licensing actions that come before us, and there  
21 are matters that are related to it.

22 And it is hard to separate our interests  
23 from one topic to another. They are always  
24 overlapping, and integrated, and so I think what you  
25 have said now importantly is that the issue is getting

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1 some real engineering review, at least in the context  
2 of these particular plants, ice condenser plants, and  
3 we will have some resolution.

4 So for the point, Mario, the present  
5 matter in front of us, I think we can -- I feel  
6 comfortable in saying that the open contention on  
7 severe accident mitigation analysis on station  
8 blackouts will get resolved in due course  
9 appropriately, and the related matters that we just  
10 discussed will as well.

11 CHAIRMAN BONACA: That's right, and  
12 clearly it is a core license issue, and --

13 MEMBER ROSEN: And not specifically a  
14 license renewal issue for these plants.

15 CHAIRMAN BONACA: Very good. Yes.

16 MS. FRANOVICH: Okay. I have this off-  
17 site power path characterized as a confirmatory item  
18 because we have asked the applicant to provide a  
19 simplified line diagram. This is hand-drawn by the  
20 staff based on its understanding.

21 But we are waiting for a simplified line  
22 drawing from the applicant to characterize as a  
23 resolved item. One of the things that we found in the  
24 AMR results provided for the structures and components  
25 that were brought in from the off-site power path is

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1 that some of them are concrete structures that are the  
2 subject of an existing open item and that these just  
3 fall in as additional examples of that open item.

4 And we will talk about that open item when  
5 we talk about aging management review results for  
6 structures.

7 MEMBER ROSEN: Now, the thing that you  
8 just mentioned about waiting for a line item  
9 simplified diagram from the applicant, goes back to  
10 this question of site points of contact, and the long  
11 term preservation of knowledge base that would be  
12 necessary to make sure that Duke is able to implement  
13 the commitments that they make.

14 It seems to me that Duke would want to  
15 carefully and not just hand you back an envelope, or  
16 a napkin, and say here is what it really looks like,  
17 a drawing. You would want to do an engineering  
18 drawing of this, and put it in the docket not just for  
19 the staff's purposes, but for your own purposes within  
20 the plant so that you can be sure that you treat all  
21 this stuff, and get it properly scoped to make sure  
22 that your document is correct.

23 MS. FRANOVICH: And in all fairness to  
24 Duke, when we met with them several weeks ago, they  
25 brought beautiful, large diagrams of the electrical

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1 distribution and highlighted those things that are now  
2 in scope for the staff.

3 The staff is asking for the simplified  
4 line diagrams so that the staff's understanding of  
5 this power path is transparent to the public. We want  
6 to make sure that public confidence is addressed, and  
7 it is not in their response, and it may not be clear  
8 to the public, and they didn't have access to the  
9 drawings that we saw in the meeting.

10 MEMBER ROSEN: Very good clarification.  
11 That's a great reason to go to simplified drawings,  
12 but I was worried about the other piece of it, which  
13 is that in the other plant, and not in the public, but  
14 making sure that the commitments are followed, it  
15 takes a level of engineering accuracy and drawing that  
16 is different from a --

17 MR. ROBISON: Just to add, Steve, we have  
18 in the electrical area also a specification. We have  
19 structural specs for license renewal, and we call them  
20 license renewal basis documents, where all of this  
21 level of detail is captured.

22 So that way it doesn't get lost somehow in  
23 the correspondence files. I mean, these are easily  
24 retrievable document controlled type engineering work.  
25 So just for that very reason, so that the

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1 specifications are clear.

2 MEMBER ROSEN: Good.

3 MS. FRANOVICH: Okay. Next slide.

4 DR, LEITCH: Before you leave this scoping  
5 area, I had a question about the raw water supply to  
6 these two plants. I guess we have heard that one of  
7 the plants seems to have a problem with silting.

8 I guess my question really is, or I guess  
9 as I understand it, these are both lake-fed plant  
10 plants, and where do the circulating water pumps take  
11 suction from, and where do the service water pumps  
12 take suction from?

13 Could we hear a little description of just  
14 what is the ultimate heat sync in each case?

15 MS. FRANOVICH: Sure. I will take a stab  
16 at this, and Duke can keep me straight if I need to be  
17 corrected. The nuclear service water system is the  
18 ultimate heat sync for both McGuire and Catawba. The  
19 standby or nuclear -- standby nuclear service water  
20 pond is the seismically assured source for the nuclear  
21 service water system.

22 The condenser circulating water pump at  
23 Catawba, I know, are beside the turbine building, and  
24 right outside the condenser, and the cooling towers  
25 are out in the yard several hundred feet away.

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1           There is raw water going through these  
2 systems, and they do have a silting problem. One of  
3 the things that they are required to address for  
4 license renewal is fouling and heat transfer loss as  
5 a result of that aging effect for those SSCs that are  
6 within the scope of license renewal, which would  
7 involve the nuclear service water system, and with  
8 that, I will turn it over to Duke to see if I did not  
9 cover something that they would like to speak to.

10           DR, LEITCH: I guess my question is that  
11 pond from which those nuclear service water pumps draw  
12 sucking, how do we monitor that it has the required  
13 volume?

14           MS. FRANOVICH: Volume? That is a TLAA,  
15 a time limited aging analysis that we are going to  
16 cover when we address Chapter 4 of our SER.

17           DR, LEITCH: Okay.

18           MS. FRANOVICH: So can we address it then?

19           DR, LEITCH: Sure.

20           MS. FRANOVICH: Okay.

21           DR, LEITCH: Now, does one of these plants  
22 have a greater silting problem than the other, and if  
23 so, why?

24           MR. ROBISON: Lake Wiley is downstream  
25 from Lake Nolan, but Lake Wiley is also a major

1 dumping ground for a lot of steams from the City of  
2 Charlotte, and plus their sanitary.

3 So the lake is a very poor quality water  
4 compared to Lake Nolan, which is of much higher  
5 quality water.

6 DR, LEITCH: And Wiley is associated with  
7 which plant?

8 MS. FRANOVICH: Catawba.

9 MR. ROBISON: Catawba. A lot more  
10 suspended solids, and clay, and other debris in Lake  
11 Wiley; and it is also a much shallower lake, and it  
12 has not had as much time to settle out like it does at  
13 Lake Norman, and at McGuire, and so just in general  
14 the water quality is much poorer.

15 It has a higher level of suspended solids  
16 in the water, and to which again the plant just  
17 settles out in the piping and heat exchanges.

18 DR, LEITCH: And that sediment not only  
19 impacts the circulated water pumps, but is it also --  
20 as I understand it, is there a separate reservoir from  
21 the nuclear service water pond?

22 MR. ROBISON: Yes, each site has a standby  
23 nuclear service water pond which they use in case they  
24 lose the lake at McGuire. And they have to monitor  
25 the ponds at Catawba because there is this higher

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1 level of sediment in the water, and it settles out.

2 And as Rani said, they will talk about  
3 that later, and there is a TLA. They don't seem to  
4 have that problem at McGuire as such, because the  
5 water quality is just that much better.

6 DR, LEITCH: And is there any filtration,  
7 or any settling kind of process that takes place  
8 between the big lake and the pond from which the  
9 nuclear service water pond takes consumption, or is it  
10 basically the same water quality?

11 MR. ROBISON: At McGuire now the safety  
12 related nuclear service water system takes their  
13 suction directly off the condenser circulating water  
14 system, which is directly from the lake.

15 So there is no filtering process. Now, at  
16 Catawba, their condensing circulating water system is  
17 -- I hate to use the word treated, but there is some  
18 treatment done to it to take some out because it  
19 recirculates around and around.

20 But it is not like a filtering system that  
21 removes all of the stuff out of it.

22 DR, LEITCH: Okay. Thank you.

23 MS. FRANOVICH: Okay. We are running  
24 quite a bit behind schedule, and I would like to start  
25 on Chapter 3 if I may.

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1 CHAIRMAN BONACA: Sure.

2 MS. FRANOVICH: And then we will take our  
3 lunch break after I complete the discussion of the  
4 ESFs.

5 CHAIRMAN BONACA: Good.

6 MS. FRANOVICH: Okay. The staff's review  
7 process for evaluating aging management programs  
8 involves following the standard review plan for  
9 license renewal, and that the staff is directed by the  
10 review guidance to evaluate 10 attributes of every  
11 program.

12 We have a number of conference calls with  
13 the applicant to address staff questions or concerns, a  
14 nd we also wrote a number of requests for additional  
15 information.

16 In the application, these numbers differ  
17 a little bit from what Greg indicated earlier, and  
18 Greg's numbers are probably more accurate because they  
19 didn't really characterize their programs as being  
20 existing, new, or augmenting the application.

21 But they had according to this slide 30  
22 existing programs, 5 augmented programs, and 13 new.  
23 I think the numbers were different from Duke, but  
24 there were eight one-time inspections, and the one-  
25 time inspections credited by Duke were really not

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1 intended to provide an indication of the effectiveness  
2 of an existing aging management program.

3 They are really credited to verify that an  
4 aging effect that they have not identified in their  
5 operating experience is not occurring, or if it is  
6 occurring, it is a very slow progressing phenomenon  
7 that does not require an aging management program.

8 So that is the intent of the one-time  
9 inspections that Duke proposes to manage aging.

10 CHAIRMAN BONACA: Yeah, I think you both  
11 agree on the number of new programs, but we will have  
12 an opportunity to ask questions as we go through them.

13 MS. FRANOVICH: Sure. The new aging  
14 management programs are indicated on this slide and  
15 the next slide. And with an asterisk, I have  
16 indicated those that are the one-time inspections.

17 CHAIRMAN BONACA: Go back to the previous  
18 slide. I was looking at the Alloy-600 aging  
19 management review. And there seems to be a new  
20 procedure for license renewal, and so the question I  
21 had was didn't you have already an Alloy-600 aging  
22 management program? I mean, today, being with Alloy-  
23 600?

24 MR. ROBISON: We don't have a  
25 comprehensive Alloy-600 program in place.

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1 CHAIRMAN BONACA: Okay.

2 MR. ROBISON: What this is doing is taking  
3 in addition to the steam generator work, and in  
4 addition to the CRD end nozzles, it is taking a  
5 comprehensive view of all of the Alloy 600, and  
6 bringing it together, and understand the  
7 susceptibility, and then making sure that we properly  
8 and programmatically manage it from there.

9 This particular view was to get our arms  
10 around all of the 600 material, and then from there  
11 take the appropriate next steps.

12 CHAIRMAN BONACA: But it seems to me that  
13 you would want to use this program now, and not 20  
14 years from now, because when I looked at it, it is  
15 significant, and it pulls together the other programs  
16 and it tries to inter-tie the activities that you have  
17 and it is very significant.

18 MR. ROBISON: You are correct, and in fact  
19 we are doing it now. And this is one of the  
20 definitional anomalies for license renewal. It is new  
21 for license renewal, and it was birthed somewhere here  
22 over the past year or so, as our industry issues began  
23 to get higher and higher visibility.

24 But in fact we have proceeded well on the  
25 way with this review, and are even beyond that have

1 begun to take other actions to add some things to the  
2 CRDM program, and all of that is happening in the Part  
3 50 world right now, even in parallel with what we are  
4 doing with license renewal.

5 MEMBER FORD: Now, when you say you are  
6 going to add things to the current program that you  
7 have given Appendix B, I think it is, those are in  
8 addition to those which are being proposed by EPRI and  
9 the MRP program?

10 MR. ROBISON: I can't speak in detail to  
11 the whole MRP. We are actively involved in the MRP  
12 effort, and I know that the additional things that we  
13 are doing are in conjunction with all of the  
14 discussions, and we are very active in that work.

15 But I can't speak to the details of it.

16 MEMBER FORD: Okay.

17 MS. FRANOVICH: Okay. I will go on. This  
18 is slide two of the new aging management programs, and  
19 as I indicated earlier, the last program on this  
20 slide, the pressurizer spray head examination, is a  
21 new aging management program proposed by the applicant  
22 in response to a staff request for additional  
23 information.

24 Section 3 of our SER provides the staff's  
25 evaluation of all the common aging management programs

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1 of which Greg has indicated there are quite a number,  
2 and this is just a list of those common aging  
3 management programs, or some of those aging management  
4 programs, and it is not comprehensive.

5 But a combination aging management program  
6 is in the aging management program that the applicant  
7 credited for more than one system. We have one open  
8 item still under Section 3.0, or the common aging  
9 management programs of the SER.

10 This open item pertains to the sample of  
11 small bore class one pipe that Duke proposes to  
12 inspect to ensure that cracking is effectively managed  
13 by the chemistry control program. The volumetric  
14 examination that Duke proposes to use as a risk-  
15 informed, involves a risk-informed sampling process,  
16 and we recognize that part of the risk-informed  
17 criteria is to look at those locations which will have  
18 a significant consequence in the event of a crack.

19 What the staff has tried to determine is  
20 whether or not susceptible locations are also part of  
21 the criteria used to risk inform one's sample.

22 CHAIRMAN BONACA: Is this a one-time  
23 inspection?

24 MS. FRANOVICH: No, this is an ongoing  
25 inspection.

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1 CHAIRMAN BONACA: And that was reflecting  
2 on that one, and it seems to me that if you want to  
3 have a one time inspection, looking at a risk-informed  
4 approach is not appropriate. I mean, you want to look  
5 at the most susceptible area, because you are trying  
6 to find indications somewhere whether or not this is  
7 an issue.

8 MS. FRANOVICH: Correct.

9 CHAIRMAN BONACA: And if it is an issue,  
10 then you can use a risk-informed approach maybe.

11 MS. FRANOVICH: Correct.

12 CHAIRMAN BONACA: But first of all you  
13 want to ensure that. But I found that this is an  
14 actual program, and it is part of the in-service  
15 inspection plan.

16 MS. FRANOVICH: That's true, and I  
17 indicated that.

18 CHAIRMAN BONACA: And they do have routine  
19 inspection of small bore pipes.

20 MS. FRANOVICH: Right.

21 CHAIRMAN BONACA: So --

22 MS. FRANOVICH: Yes, and I indicated that  
23 they verify the effectiveness of the chemistry control  
24 program, and that is not incorrect. The truth is that  
25 they credit both of these programs for a lot of

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1 components.

2 So this is not a one-time inspection, and  
3 they just credit a couple of on-going aging management  
4 programs for some of the components.

5 MEMBER ROSEN: Now, the staff's concern as  
6 to whether or not they look at piping, not just from  
7 the placement of piping failures that have  
8 consequence, but also piping failures that are likely  
9 in fact if there is an active degradation mechanism --

10 MS. FRANOVICH: Correct.

11 MEMBER ROSEN: -- of some kind understood  
12 to be present.

13 MS. FRANOVICH: Or locations that --

14 MEMBER ROSEN: I think that is a  
15 fundamental precept of the risk-informed ISI programs.

16 MS. FRANOVICH: It could be. We are  
17 trying to verify that, and we are trying to verify  
18 that the risk-informed approach does consider  
19 susceptible locations, as well as those yield the  
20 highest consequence.

21 And the staff is looking to make sure that  
22 certain phenomena, like penetration turbulence, and  
23 fatigue, are addressed by that risk-informed  
24 criterion. We have received some information from  
25 Duke and we are evaluating it, and we just need to be

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1 sure.

2 CHAIRMAN BONACA: We have to look at the  
3 positive aspect as to whether they have a visible  
4 examination in the program, and some other plants  
5 don't have it. So this is a good initiative on the  
6 part of Duke.

7 MS. FRANOVICH: Yes, the staff would agree  
8 with that.

9 CHAIRMAN BONACA: But certainly there is  
10 still the issue of susceptibility to be clear.

11 MS. FRANOVICH: Right.

12 CHAIRMAN BONACA: And maybe -- and I know  
13 that other plants just simply identified some of the  
14 more susceptible locations and said why don't you just  
15 look there, you know. So that could be a minimum  
16 commitment from the staff.

17 MS. FRANOVICH: Right. And my  
18 understanding from the staff is that for Oconee, what  
19 Duke proposed is a volumetric examination of small  
20 bore class one pipe, but Oconee provided what they  
21 would propose as a representative sample based on some  
22 of those worst case conditions.

23 And that the staff found that to be  
24 acceptable. For this, they have just proposed the  
25 Westinghouse endorsed risk-informed process, and we

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1 just want to make sure we understand the underlying  
2 tenants of that process. So the remaining items --

3 DR, LEITCH: Excuse me, but I thought the  
4 open issue concerning class one small bore piping also  
5 related to the method of examination. as well as what  
6 was to be examined.

7 MS. FRANOVICH: You are absolutely right,  
8 and in the SER, as it was originally written, that was  
9 a question that the staff had, and the staff has since  
10 gotten clarification from the applicant that they do  
11 propose volumetric examination.

12 DR, LEITCH: All right. Thank you.

13 MS. FRANOVICH: So we have six  
14 confirmatory items, and three have to do with SR  
15 supplements that we are looking for some updated  
16 information, additional detail, governing tech spec  
17 standards or guidelines. And the other three have to  
18 do with information that the staff requested the  
19 applicant to provide on weld material for their  
20 reactor coolant system piping, and their actions to  
21 address the operating experience at V.C. Summer.

22 And the applicant has provided that  
23 information. We characterized the weld cracking issue  
24 as a current operating issue, and is really quite  
25 beyond the scope of licensing renewal.

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1           However, it does involve aging effects  
2 that are addressed in the staff's review process. But  
3 we are relying on the current Part 50 process to  
4 resolve the issue as it pertains, particularly to  
5 plants in the industry that have field welds, such as  
6 I believe are Harris in North Carolina, the Harris  
7 plant, and is susceptible to the V.C. Summer event.

8           And with respect to the heat exchange or  
9 PM acceptance criteria, the applicant has provided  
10 some codes and standards that they will reference in  
11 their program, and in the SR supplements that will  
12 help guide them in determining what the acceptance  
13 criteria will be.

14           The staff has confidence in that, and for  
15 the service water piping corrosion program, and this  
16 is something that the committee was interested in  
17 during the North Anna and Surry license renewal  
18 presentation, the staff has accepted two kinds of  
19 programs.

20           One is where the applicant proposes to  
21 excavate buried piping and components, and perform a  
22 visual inspection of the external surface to ensure  
23 that the coating is not degraded, and the underlying  
24 piping is not degraded.

25           For Ocone what Duke proposed was a visual

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1 inspection of the internal surface of very large  
2 diameter piping associated with the condenser  
3 circulating water system, and they would identify  
4 signs of degradation of the external surface through  
5 blistering of the coating, or signs of wetting of the  
6 internal surface, and they would use that as an  
7 indication of the condition of the external piping  
8 surface.

9 MEMBER ROSEN: Wait a minute. You said  
10 signs of wetting of the internal surface. Oh, when it  
11 is dry you mean?

12 MS. FRANOVICH: Correct, when it is  
13 drained and somebody is actually standing in it  
14 looking around.

15 CHAIRMAN BONACA: Yes, then it goes  
16 through.

17 MS. FRANOVICH: And the sample size that  
18 they proposed at Oconee was, I believe, 80 percent of  
19 the buried piping that was credited by this particular  
20 aging management program. For Catawba and McGuire,  
21 Duke is proposing the same program, except the sample  
22 sizes is around 90 percent of the population of piping  
23 and components credited by this program.

24 And the staff feels that that is adequate,  
25 and that it avoids unnecessary risks to the buried

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1 components and piping if you excavate it just to do  
2 this inspection.

3 And for the codings susceptible locations  
4 are really hard to predict because presumably your  
5 coating is in good shape when you install it, and it  
6 is only those areas that have nicks that are going to  
7 be susceptible.

8 And you wouldn't know what those areas are  
9 at this point in time.

10 CHAIRMAN BONACA: Although, I mean, for  
11 the programs that they are committed to an external  
12 inspection, typically wasn't that they would just go  
13 after it.

14 MS. FRANOVICH: That's right.

15 CHAIRMAN BONACA: You know, just when the  
16 opportunity comes, and that they would essentially  
17 excavate that particular area.

18 MS. FRANOVICH: That's correct.

19 CHAIRMAN BONACA: And so it was not really  
20 a burden on the licensee in the sense that they did  
21 not have to say, oh, today is the day that we have to  
22 go and dig.

23 MS. FRANOVICH: Although I believe for  
24 North Anna and Surry they did commit to the staff,  
25 because the staff was concerned that you may not have

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1 an opportunity to really do a representative sampling.

2 And I believe for North Anna and Surry,  
3 and I could be wrong, that they committed to ensuring  
4 that before the extended period of operation that they  
5 would have a representative sample of buried piping,  
6 and that they would have had an opportunity to look  
7 at. And if not, they would go and proactively look at  
8 it.

9 CHAIRMAN BONACA: And the reason that this  
10 was an open item, and your concern or the concern of  
11 the staff, was that you may have significant pitting  
12 in an area and that under normal conditions that you  
13 would just expect to find your problem under design  
14 basis condition for the failure.

15 MS. FRANOVICH: That's right, and that is  
16 for the nuclear service water piping program.

17 CHAIRMAN BONACA: That's right, and that  
18 is open that way.

19 MS. FRANOVICH: Correct. Correct. For  
20 that one, that is not resolved, and in fact I think I  
21 may have been confusing the result item, which is the  
22 condenser circulating water internal coating  
23 inspection with the one that you just mentioned.

24 For the service water piping corrosion  
25 program, what we are looking for from the applicant,

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1 and I believe they provided this in their October  
2 response, or October 2nd response to the SER, and it  
3 is an interim letter, is that UT will be credited for  
4 identifying those areas where you have significant  
5 pitting before loss of intended function could be  
6 precipitated after a design basis event.

7 So the staff found that to be acceptable  
8 and that is now a confirmatory item. But you are  
9 right. That's why we opened that item, and at first  
10 the applicant appeared to be crediting leakage  
11 detection, where they would visually identify leakage  
12 from the pitting corrosion.

13 And the staff was concerned that that was  
14 not proactive enough, and I think what Duke has come  
15 back with is when we identify signs of leakage, we are  
16 going to do a UT do determine the extent of condition  
17 and take corrective actions as needed.

18 CHAIRMAN BONACA: So you don't have a  
19 broader area?

20 MS. FRANOVICH: So you don't have a  
21 broader area where you have a structural integrity  
22 concern.

23 CHAIRMAN BONACA: I would almost be like  
24 a leak before break?

25 MS. FRANOVICH: Yes, I guess.

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1 CHAIRMAN BONACA: Because you identify it  
2 as an early time. And how frequently do you have to  
3 make your inspections?

4 MR. ROBISON: the program that Rani is  
5 describing, we do sample points each outage.

6 CHAIRMAN BONACA: Okay.

7 MR. ROBISON: So the program has a sample  
8 set defined and frequencies for the samples that are  
9 done, and we do so many per outage. This is a  
10 perpetual program that will go on.

11 CHAIRMAN BONACA: Okay. That's good.  
12 Thank you.

13 MS. FRANOVICH: Sure. And that is all of  
14 the open items for the aging management program.

15 CHAIRMAN BONACA: Before we move forward  
16 -- oh, I'm sorry, go ahead.

17 DR, LEITCH: I was just a little confused  
18 by the last bullet there if you were going to move on,  
19 the condenser circulating motor internal coating  
20 inspection.

21 I thought there was an issue with regard  
22 to the external inspection of the circulating water  
23 pipe.

24 MS. FRANOVICH: Correct. This open item  
25 was identified during the review and concurrence phase

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1 of the SER's issuance. And there were certain staff  
2 who were concerned that -- and in fact management --  
3 that we were applying our determination of what was  
4 acceptable inconsistently across the plants.

5 So we wanted to make sure that we were  
6 treating this aging management program consistent with  
7 previously determined acceptabilities. And what we  
8 found was that indeed we had credited this, or we had  
9 accepted this program for Oconee.

10 We wanted to make sure that the same  
11 sample size was going to be used or better for Catawba  
12 and McGuire.

13 And once we were confident that the  
14 program was as good or better than what was proposed  
15 for Iconee, we decided to resolve this item without  
16 any additional information from Catawba from Duke. So  
17 we opened it up conservatively to make sure that we  
18 were being consistent, and then found that we were  
19 being consistent.

20 DR, LEITCH: I am still a little confused.  
21 Are we requiring external inspection of the  
22 circulating water pipe?

23 MS. FRANOVICH: No.

24 CHAIRMAN BONACA: Before we move forward,  
25 in the previous slide, you were talking about reactor

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1 vessel internal inspections, and I wanted to ask a  
2 question about that. Those inspections are for, I  
3 believe cask components, and identification of  
4 critical crack size, and acceptance criteria, and I  
5 think that was an open item. I believe that has been  
6 closed? I don't know, but anyway the other thing was,  
7 of course, for swelling, void swelling.

8 MS. FRANOVICH: Void swelling, right.

9 CHAIRMAN BONACA: And I was looking at the  
10 program, and then it seems to me that it talks about  
11 all these inspections. But then when you come down to  
12 it, really the inspection is being done at Oconee. So  
13 we are still crediting the Oconee-1 inspection for  
14 crediting it for six plants, or for seven plants.

15 MS. FRANOVICH: Right.

16 CHAIRMAN BONACA: And the first question  
17 that comes to mind is why Oconee-1 representative of  
18 all these kinds of plants? I could understand it for  
19 the void swelling where Oconee may be ahead of the  
20 plant than McGuire or Catawba, but I don't know. I  
21 would like to know if that is the case.

22 I mean, there are different manufacturers,  
23 and different components, and maybe different  
24 materials. There is no explanation anywhere of why  
25 Oconee-1 inspections of internals would be applicable

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1 to all these other units.

2 MS. FRANOVICH: The staff had the same  
3 concerns, and when we met with representatives from  
4 Duke in September, we found a path to resolution on  
5 this item, and the path was that they were going to do  
6 an examination of the McGuire-1 internals at or around  
7 year 40, and then do another examination of the  
8 McGuire-2 internals at or around year 50.

9 And they provided some basis for why at  
10 McGuire there were some design differences that caused  
11 stresses that exceeded stresses that one would be  
12 exposed to, whether the internals were exposed to at  
13 Catawba, McGuire 1 and 2, who have operated for  
14 longer.

15 So the staff is characterizing this as a  
16 confirmatory item. There will be more discussion of  
17 this when we talk about the AMR results for reactor  
18 coolant systems in a few minutes here. But in short  
19 that is my understanding of how we have resolved that  
20 open item.

21 CHAIRMAN BONACA: Okay. So that's why I  
22 wanted to go back to the issue of a sell point, and to  
23 have a location where all these modification changes  
24 and responses are documented so we can understand what  
25 the comprehensive program is, you know.

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1 MS. FRANOVICH: Right.

2 CHAIRMAN BONACA: I have all of the  
3 program descriptions and problems that they had, and  
4 this information is all there.

5 MS. FRANOVICH: Right. And when we resolve  
6 an open item for an aging management program, one of  
7 the things that accompanies that resolution is an  
8 update to the SR supplement, which will be the SR  
9 description of that program once the license renewal  
10 project is over.

11 So that is the mechanism by which we  
12 ensure that these changes are captured in their  
13 licensing basis documents.

14 CHAIRMAN BONACA: Okay. I would like to  
15 invite Jim Medoff of the staff to the table to present  
16 the staff's results of its evaluation for Section 3.1.

17 CHAIRMAN BONACA: And then, Rani, you will  
18 give us --

19 (Whereupon, at 12:30 p.m., a luncheon  
20 recess was taken until 1:32 p.m.)

21 CHAIRMAN BONACA: All right. Let's resume  
22 the meeting now, and starting again with Chapter 3,  
23 AMR Results.

24 MS. FRANOVICH: Okay. For Chapter 3, and  
25 this is the same process that the Staff used for all

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1 the sections in Chapter 3, the Staff reviewed the  
2 materials, the environments and the aging affects.  
3 The Staff was looking for whether or not all  
4 applicable aging affects were identified, and whether  
5 or not the aging affects listed were appropriate for  
6 the materials and environments that were listed in the  
7 application. And the Staff was seeking to, with  
8 reasonable assurance, conclude that intended functions  
9 will be maintained consistent with the CLB in the  
10 renewal period. And that's essentially the focus of  
11 the Staff's review for the AMR results on Chapter 3 of  
12 the license renewal application. And with that, I'm  
13 going to turn my presentation over to Mr. Jim Medoff,  
14 who is the Lead Reviewer for Section 3.1 of the  
15 license renewal application. Jim.

16 MR. MEDOFF: Good afternoon, ACRS Members  
17 and Members of Duke Power, and members of the public,  
18 and fellow Staff Members. My name is Jim Medoff. I'm  
19 Materials Engineer with the Materials and Chemical  
20 Engineering Branch of NRR. I was the Lead Reviewer  
21 for the Aging Management Reviews of the reactor  
22 coolant system. That included appropriate reviews of  
23 time limiting aging analyses for the reactor vessels,  
24 as well as reviews of appropriate Aging Management  
25 Programs that were accredited for managing aging

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1 affects that were identified for the components of the  
2 RCS.

3 The scope of my review included the Class  
4 1 piping pumps and valves, including supports and  
5 nozzles, and applicable safe-ends, pressurizers and  
6 their sub-components, the reactor vessel in the CRDM  
7 pressure boundary, including the CRDM housings, as  
8 well as the CRDM nozzles to the reactor vessel, the  
9 reactor vessel internal components, and the steam  
10 generators.

11 For the reviews of the steam generators,  
12 I'd like to identify the left-hand side of the table,  
13 Mr. John Tsao, who is the Lead Reviewer for the steam  
14 generator ARMs and Aging Management Programs. And he  
15 will answer any questions that you may have to do with  
16 the Aging Management Reviews and Aging Management  
17 Programs for the steam generators.

18 In review of the reactor coolant system,  
19 we really evaluated each sub-system separately, but  
20 since the materials and environments are pretty much  
21 similar across the board, we're going to discuss them  
22 pretty much as a commodity group here.

23 Included in our review was appropriate  
24 industry documentation, NRC guidelines. Included in  
25 these were the standard review plan for license

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1 renewal, appropriate staff NUREG reports, regulatory  
2 guides, application information notices, generic  
3 letters and bulletins in summary of critical events  
4 whose impact we needed to assess in relation to the  
5 license renewal application, as well as branch  
6 technical positions and interim staff guidelines  
7 issued by the license renewal branch.

8 For the RCS components, the materials are  
9 mainly Carbon Steel, Stainless Steel, including Cast  
10 Austenitic Stainless Steel materials, as well as some  
11 Precipitation-Hardened Stainless Steels for bolting,  
12 as well as Inconel Alloys, and specifically Alloy 600,  
13 and Alloy 82/182 filler metal materials.

14 The applicable environments for the RCS  
15 were the borated reactor coolant, reactor building  
16 air, and as well as steam for the pressurizers. We  
17 basically evaluated the materials under each  
18 environment that was applicable to them, and  
19 identified the aging affects that were applicable to  
20 these materials.

21 Collectively, there were five main aging  
22 affects associated with these materials, cracking. A  
23 number of mechanism can cause that, including fatigue  
24 and stress corrosion, loss of material. Primary  
25 mechanisms are general corrosion, pitting, crevice

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1 corrosion, wear, as well as potential wastage from  
2 Boric Acid leaks, reduction of fracture toughness to  
3 main mechanisms, thermal aging of casks and  
4 precipitation-hardened steels, as well as for the  
5 reactor vessel materials and reactor vessels internals  
6 potential loss of fracture toughness due to  
7 irradiation embrittlement.

8 MEMBER LEITCH: Jim, there's one section  
9 here. It's on page 3-88, where the licensee describes  
10 a problem with loss of fracture toughness had an  
11 applicable affect only for McGuire Unit 1 primary  
12 nozzle, one particular elbow. Why is that? Is that  
13 elbow of a different material?

14 MR. MEDOFF: The McGuire cold leg elbow is  
15 a cask component. Basically, the Staff has provided  
16 the industry with interim Staff guidance on cask  
17 materials, and specifically whether the cask materials  
18 are -- the Staff considers them to be subject to  
19 thermal aging. There are certain parameters that go  
20 into these that may or may not affect the  
21 susceptibility of thermal aging, including the  
22 Molybdenum content, the Ferrite content of the  
23 material, as well as the fabrication method for  
24 casting materials, and specifically whether the  
25 material has been statically cast or centrifugally

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1 cast. And we performed our review of the cast  
2 materials based on the interim Staff guidelines that  
3 the Staff issued to the industry.

4 MEMBER LEITCH: So the other three  
5 nozzles, the elbows on the other three use the same  
6 relative elbows, are not cast, or they're not  
7 statically cast?

8 MR. MEDOFF: In Chapter 3.0 of the  
9 application, the applicant clearly identified its  
10 method for determining whether a given cast material  
11 is subject to thermal aging. With regard to the cast  
12 materials, it identified the cold leg elbow as meeting  
13 the threshold for thermal embrittlement. The CRDM  
14 latch housing did not meet the threshold for thermal  
15 embrittlement in accordance with the guidelines, so we  
16 didn't really have any basis for questioning that, and  
17 telling the applicant that they didn't have a valid  
18 basis. So since the applicant was using the interim  
19 Staff guidelines to evaluate the cast materials, we  
20 basically took their description in the application on  
21 face value, because they used interim Staff  
22 guidelines.

23 MEMBER LEITCH: But the same relative  
24 elbow on the other three units, is it -- this just  
25 happened to be the most limiting one?

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1 MR. MEDOFF: No. It has to do with the  
2 Ferrite content during fabrication, so in their -- in  
3 fact --

4 MEMBER LEITCH: On page 3-90, it describes  
5 this as being statically cast, and contains Niobium.  
6 I don't know if that's what makes the difference or  
7 not.

8 MR. MEDOFF: Bear with me for one second,  
9 please.

10 MEMBER LEITCH: Sure.

11 MR. MEDOFF: Okay. If you look on page  
12 3.1.2 and 3.1.3 of the license renewal application,  
13 not the SER --

14 MEMBER LEITCH: Okay. I'm sorry. Give me  
15 those page numbers again.

16 MR. MEDOFF: 3.1-2 and 3.1-3 of the  
17 application. The applicant clearly defines what they  
18 used for determining whether thermal embrittlement was  
19 applicable for the cast materials.

20 MEMBER LEITCH: Okay.

21 MR. MEDOFF: Okay. So our SER was based  
22 on those pages of the application. And because the  
23 applicant did a very good job of defining their  
24 process for either determining a given component was  
25 susceptible, for eliminating it from the

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1 susceptibility criteria, we didn't have any real  
2 reason to question them on the identification of cast  
3 materials.

4 MEMBER LEITCH: Very good. Thank you.

5 CHAIRMAN BONACA: Now this is susceptible  
6 material. I mean, that's the --

7 MR. MEDOFF: Right.

8 CHAIRMAN BONACA: And they are committing  
9 to a VT-1 at the 10 years. Why is it adequate? I'm  
10 sorry. Yeah. They are committing to VT-1 every 10  
11 years, and to a VT-2 ever outage.

12 MR. MEDOFF: Right.

13 CHAIRMAN BONACA: VT-2 is really a  
14 leakage.

15 MR. MEDOFF: Right.

16 CHAIRMAN BONACA: So VT-1, it's the only  
17 visual, you know, detailed visual of the welds.

18 MR. MEDOFF: Well, I --

19 CHAIRMAN BONACA: Why so -- I mean, if it  
20 is susceptible --

21 MR. MEDOFF: I think that is accordance  
22 with the current Section 11 criteria that they  
23 proposed that.

24 MS. FRANOVICH: We're kind of getting  
25 ahead of Jim's presentation. Do you want to go back

1 and address what the Aging Management Programs are,  
2 Jim? We're kind of still on this slide.

3 CHAIRMAN BONACA: I thought this was the  
4 right time to ask.

5 MR. MEDOFF: No, I'm prepared to address  
6 that. Based on the criteria for the examinations of  
7 the elbow, we didn't see any basis to challenge them,  
8 since they were meeting the Section 11 rules.

9 CHAIRMAN BONACA: So essentially, the  
10 causation would be that you do a visual at every  
11 outage.

12 MR. MEDOFF: Right. That's for leakage.

13 CHAIRMAN BONACA: And that should give you  
14 sufficient warning --

15 MR. MEDOFF: Right.

16 CHAIRMAN BONACA: -- if you do have a  
17 problem, develop a problem.

18 MR. MEDOFF: Right.

19 CHAIRMAN BONACA: And then every 10 years  
20 --

21 MR. MEDOFF: And the VT-1s are to detect  
22 surface cracks. We concluded that that combination of  
23 visual examinations provided us with reasonable  
24 assurance for detecting cracks in the elbows.

25 MEMBER FORD: Jim, maybe I'm jumping ahead

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1 of the gun here too. All of these aging affects are  
2 covered in the current Aging Management Programs, many  
3 of which are industry, or most of them are industry  
4 derived, and most of them have been approved to a  
5 certain extent by the NRC already. So the presumption  
6 is, therefore, that right now we are managing these  
7 aging problems.

8           However, the plant is going to go into  
9 operation into the license-renewal period about 20  
10 years from now. If you look at all the current  
11 managing programs, they are reactive. They were based  
12 on things that have occurred in the past, and now  
13 you're trying to manage them now. There are many  
14 things that have occurred, however, like CRDM housing  
15 cracking, cracking of replacement materials that might  
16 be used for CRDM in 6/1982 - 52 rather. Sorry, 1952,  
17 which will occur undoubtedly in the future.

18           What recourse does the NRC have to come  
19 back and say hey, not good enough. WE've got to do  
20 yeah, yeah, yeah, in the license-renewal period.

21           MR. BATEMAN: This is Bill Bateman,  
22 Division of Engineering. The answer to that question  
23 is we followed the processes that we're following  
24 right now. If we have an issue that comes up and it  
25 rises to the threshold of issuing a bulletin to try

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1 and determine additional information in order to make  
2 some regulatory decisions, then that's what we'll do.  
3 The process in the license-renewal term will remain  
4 the same as it is right now for those types of issues  
5 that we had not expected to occur.

6 CHAIRMAN BONACA: So what you're saying,  
7 for example, the CRDM cracking is an example of how  
8 you just are implementing the requirements based on  
9 the new experience.

10 MR. BATEMAN: Yes.

11 CHAIRMAN BONACA: And I think you'll do  
12 the same when applying for license-renewal, even  
13 though that degradation mechanism is not yet  
14 recognized.

15 MR. BATEMAN: Exactly. I don't anticipate  
16 there's going to be any change in how we do business  
17 in terms of regulating licensees in the current  
18 period, as opposed to the license-renewal period. We  
19 use our same processes.

20 MR. KUO: Well, once they are in the  
21 renewal period, the current regulatory process will be  
22 carried forward into license-renewal period, so  
23 whatever the process, just like Bill said, is doing  
24 now, what we are doing now, we'll be doing later in  
25 the renewal period. That's the regulatory process,

1 you know, that we carried forward.

2 In addition to that, I also want to  
3 mention that when the Staff reviews the Aging  
4 Management Program, although there are existing  
5 programs today, all the programs are subject to our  
6 ten attributes of the evaluation. That includes the  
7 scope, the detection of aging, the mitigation and all  
8 that, so when you see this -- that existing programs  
9 are being used, in our sense of license-renewal Aging  
10 Management Program, it is not only reactive. It is  
11 also proactive.

12 MR. MEDOFF: And that's pretty much what  
13 I was just going to tell you.

14 MEMBER ROSEN: Word for word.

15 MR. MEDOFF: I guess we can go onto Aging  
16 Management Programs that were used to manage the  
17 affects that I've identified on the previous slide.  
18 Collectively, the applicant used a group of -- a  
19 combination of common Aging Programs which Rani talked  
20 about before, which are Aging Management Programs that  
21 are common to more than one system in the plant, as  
22 well as some system-specific Aging Management Programs  
23 to manage the affects that I've talked about  
24 previously.

25 MEMBER FORD: I'm sorry. My brain has

1       been going since Bill's -- the only one that we need  
2       to be concerned about would be one time inspections.  
3       Therefore, even if we -- you're still going to be  
4       reactive. If something fails in the system between  
5       now and 20 years, which you said, the licensee said  
6       that they're going to do a one-time inspection, if by  
7       their engineering judgment only inspect it once, if it  
8       does fail, then that's all, obviously, null and void.  
9       This is coming to a new --

10               MS. FRANOVICH: Let me address that. The  
11       intent of the one-time inspections for Duke, in  
12       particular, is to either verify that aging affects,  
13       their operating experience indicates they don't have  
14       are not occurring, or they're occurring at a very slow  
15       progressing phenomenon. If their one-time inspection  
16       program, before they even do their inspection, if  
17       there is some operating experience that indicates that  
18       there is an aging affect based on some event, some  
19       equipment failure, then their one-time inspection will  
20       lead to additional inspections, because they will have  
21       evidence that there is an aging affect that they need  
22       to monitor and trend.

23               MEMBER FORD: So it becomes null and void.

24               MS. FRANOVICH: Right.

25               MEMBER FORD: It's no longer applicable.

1 MS. FRANOVICH: They may come up with a  
2 whole new inspection program to address that aging  
3 affect. The scope of the program will be defined at  
4 that point in time. Frequency of inspections will be  
5 determined, so the one time inspections are not a  
6 stagnant entity. Based on the results of the one-time  
7 inspections, or if they have indications before they  
8 perform the inspections, that there are aging affects  
9 that need to be monitored, they will take actions to  
10 do that. Does that answer your question?

11 MEMBER FORD: Yes, it does. Thank you.

12 MS. FRANOVICH: Sure.

13 MR. MEDOFF: The four common aging affects  
14 that were pretty much common to the RCS sub-systems  
15 were the Chemistry Control Program. They credit that  
16 program a lot for their RCS, for managing affects in  
17 their RCS sub-systems. The in-service inspection  
18 plan, the fluid leak monitoring program, which  
19 actually includes monitoring for potential wastage  
20 that may result from potential leaks of the reactor  
21 coolant onto Ferritic or low alloy components, and the  
22 flow assisted corrosion program for some of the steam  
23 generator components.

24 The next slide provides the majority of  
25 the RCS specific AMPs that they've credited, as well.

1 Not listed here is the RCS Operational Leakage  
2 Program, but they did credit that as one of the  
3 programs, RCS-specific programs.

4 I want to clarify a couple of things, and  
5 actually one of the things I want to clarify is that  
6 with regard to the Alloy 600 review, during our review  
7 of the AMPs, the applicant did not provide the ten  
8 attributes for the question. We did ask an RAI on  
9 this, and what the applicant clarified is that this is  
10 not an inspection-based program. What the applicant  
11 does is they use the review, they use the Alloy 600  
12 review to look at all Inconel locations in the RCS.  
13 They do a susceptibility ranking of those components,  
14 and then they use the results of the review to  
15 determine whether they need to augment inspection-  
16 based programs that they credit for managing cracking  
17 in the Alloy 600 components, or the other Inconel  
18 components.

19 CHAIRMAN BONACA: You should add the  
20 thermal fatigue management program. Right? That's  
21 part of the -- well, it's not RCS-specific.

22 MS. FRANOVICH: It's really a TLAA. We'll  
23 talk about that.

24 CHAIRMAN BONACA: But that's a problem.  
25 Right?

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