

# **Official Transcript of Proceedings**

## **NUCLEAR REGULATORY COMMISSION**

**Title:** Draft Environmental Impact Statement  
Catawba Nuclear Station License Renewal  
Evening Session

**Docket Numbers:** 50-413 and 50-414

**Location:** Rock Hill, South Carolina

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**Pages 1-73**

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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DRAFT ENVIRONMENTAL IMPACT STATEMENT

DUKE ENERGY CORPORATION

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

LICENSE RENEWAL

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PUBLIC MEETING

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THURSDAY, JUNE 27, 2002

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ROCK HILL, SOUTH CAROLINA

The above entitled matter came on for public meeting pursuant to Notice at 7:00 p.m. Rock Hill City Hall, City Council Chambers, Rock Hill, South Carolina, Chip Cameron, Moderator, presiding.

APPEARANCES OF NRC STAFF:

CHIP CAMERON	RICHARD EMCH
RANI FRANOVICH	ANDREW KUGLER
JIM WILSON	JARED HECK
MARY ANN PARKHURST	
ROBERT PALLA	

I-N-D-E-X

1

2 Rani Franovich ..... 7

3 Mary Olson ..... 12; 16; 34; 45; 55

4 Peter Fox Sipp ..... 13; 61

5 Gregg Jocoy ..... 14; 19; 31; 68

6 Jim Wilson ..... 20; 49

7 Mary Ann Parkhurst ..... 24

8 Tina Carlson ..... 34

9 Andrew Kugler ..... 37

10 Tony Jenetta ..... 39

11 Bob Palla ..... 40

12 Joe Troutman ..... 51

13 Rich Emch ..... 52

14 Greg Robison ..... 53

15 Sherry Lorenz ..... 63

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

(7:00 p.m.)

1  
2  
3 MR. CAMERON: Good evening, everyone. My name is Chip  
4 Cameron, I'm the special counsel for public liaison at the Nuclear Regulatory  
5 Commission and I want to welcome you here tonight and thank you for being  
6 with us tonight.

7 It's my pleasure to serve as your facilitator tonight to try to  
8 make sure that we all have a productive meeting.

9 It's nice to be back here in Rock Hill. I said that this afternoon  
10 and it still applies tonight -- it's nice to be back here with all of you. We were  
11 here last year to talk about scoping. In other words what information should be  
12 considered in the environmental impact statement on Duke Energy  
13 Corporation's application to renew the licenses at the Catawba Nuclear Station  
14 for Units 1 and 2, down there.

15 We're back tonight. We have a draft environmental impact  
16 statement completed and what we want to do tonight is to make sure that we  
17 clearly describe what's in that statement and what the license renewal process  
18 is and what the schedule is for evaluating these applications that we received  
19 to renew the licenses. We also want to hear from all of you, both in the  
20 question and answer session, but also to hear your comments on a little bit  
21 more formal basis, your comments or concerns on these particular issues.

22 As with scoping, we are going to be taking written comments  
23 on the draft environmental impact statement. We wanted to be here with you  
24 tonight to not only listen to you, but also to provide information to you that may  
25 either stimulate you or help you with any written comments that you want to

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1 submit. But I want to emphasize that anything you say here tonight is going to  
2 carry the same weight as any written comments that we receive.

3 In terms of the format for tonight's meeting, we're going to  
4 do the meeting in basically two parts. One is going to be to provide you with  
5 background information on what's happening with the evaluation of these  
6 applications. That's going to consist of a few brief NRC presentations, and  
7 after each of those presentations, we're going to go out to you to see if there's  
8 any questions that you have on those topics or other related topics.

9 The second segment is to ask anybody who wants to speak --  
10 and we have a number of people signed up -- to come up here and to give us  
11 their comments and we'll be in a listening mode then. We want to listen what  
12 you have to say. The staff takes these comments back and evaluates them in  
13 terms of the draft environmental impact statement.

14 Ground rules are real simple. If you have anything you want  
15 to say during the interactive first part of the meeting, just signal me and I'll bring  
16 you this talking stick. And please give us your name and affiliation, if  
17 appropriate, so that we can get that on the record. We are taking a transcript.  
18 Bill, our stenographer is over here, is doing that. That'll be the record for  
19 tonight's meeting and it will be on the NRC website and that transcript will be  
20 available.

21 As usual, we want to only have one person speaking at a time  
22 so that we can give our full attention to whomever has the floor at the moment.

23 We're not operating under any severe time constraints tonight  
24 because we always want to make sure that everybody who wants to talk has  
25 an opportunity to talk. And I guess we'll find out whether we're under severe

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1 time constraints as we get more into the meeting, depending on how many  
2 questions there are. But just try to be concise. There's a real fuzzy guideline...  
3 When you do your formal statements, try to keep it to five or seven minutes,  
4 but we can be forgiving on that, at least a little bit forgiving.

5 Those are the ground rules, how we're going to do the  
6 meeting. We thank you for being here today, taking the time to come down  
7 and talk to us, some of you from far distances. So we appreciate that. If you  
8 haven't signed up out front on the blue cards, please do that so that we can  
9 send you any information that we develop out of this meeting. There's also an  
10 NRC evaluation of the meeting that helps us to try to improve on what we do  
11 with public meetings, so if you have comments for us, please do that.

12 I want to introduce you to the NRC staff who are going to be  
13 doing the presentations and also at the same time go over the agenda for  
14 tonight.

15 We're going to start out and give you the overview of the  
16 license renewal process and tell you where we are in that process too. To do  
17 that, we're going to go to Rani Franovich, who is right here. She's the project  
18 manager on this license renewal application, the project manager for the safety  
19 evaluation.

20 Rani was the resident inspector at the Catawba plant, so she  
21 knows the plant well. She's back with us in headquarters now in Rockville and  
22 she's doing this project management job on this application. She's been with  
23 NRC for about 11 years.

24 In terms of her educational background, she has a Master's  
25 degree from Virginia Tech -- and in a minute I'll tell you what it's in -- Rani, why

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1 don't you tell us what it's in. What is your master's degree in?

2 MS. FRANOVICH: It's in industrial and systems engineering.

3 MR. CAMERON: Thanks, Rani. We're going to get really  
4 interactive now. We'll go to you for questions on that overview.

5 Then we're going to go to Mr. Jim Wilson who is right here,  
6 and he's the project manager on the environmental side, the environmental  
7 review on the license applications for renewal of the Catawba applications.  
8 Jim, like Rani, is in our Office of Nuclear Reactor Regulation back in  
9 headquarters. He'll give you that overview of the environmental review  
10 process.

11 Jim has been with the agency seemingly forever, but about  
12 27 years and he has a Master's in zoology, again like Rani, from Virginia Tech.

13 After that, we're going to get to the real heart of the draft  
14 environmental impact statement and we're going to go to Mary Ann Parkhurst,  
15 who's right over here.

16 Mary Ann is the team leader for the expert scientists that we  
17 have doing the environmental review, gathering the data, doing the analysis for  
18 the NRC. Mary Ann is from Pacific Northwest National Laboratory. She'll be  
19 talking a little bit about some of the other disciplines that are involved.

20 She has a Master's in ecology from Washington State  
21 University and also a Master's in radiological sciences from the University of  
22 Washington. And she's been working on environmental science issues for  
23 about 25 years.

24 She's the team leader, she's going to tell you what is in the  
25 draft environmental impact statement. We'll go back out to you for questions

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1 and then we're going to go to a short subject, so to speak, but an important  
2 subject.

3 Also part of the draft environmental impact statement is  
4 something called -- its an analysis of severe accident mitigation alternatives.  
5 We have Bob Palla right over here from NRC headquarters, again Office of  
6 Nuclear Reactor Regulation. He's in the NRC in the Probabilistic Safety  
7 Assessment Branch, he's a senior reactor engineer. He's going to describe  
8 that severe accident analysis that was done as part of the draft environmental  
9 impact statement.

10 He's been with the agency for 21 years working on severe  
11 accident reviews at various nuclear power plants and he has a Master's in  
12 mechanical engineering from the University of Maryland.

13 We're going to go back to Jim Wilson at the end to give us  
14 the overall conclusions in the draft environmental impact statement and also  
15 give you some ideas on where to submit comments.

16 I just wanted to introduce the program manager for license  
17 renewal at the NRC, and this is over the safety review, the environmental  
18 review. And this is Dr. P.T. Kuo, who is right here, who has come down to be  
19 with us tonight. Thank you, P.T.

20 I'm going to turn it over to Rani at this point.

21 MS. FRANOVICH: Thank you, Chip.

22 Good evening. As Chip indicated, I'm Rani Franovich, I'm the  
23 project manager for the safety review of the application for license renewal for  
24 Catawba Nuclear Station.

25 Before I talk about license renewal process and the staff's

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1 safety review, I'd like to talk about the Nuclear Regulatory Commission, the  
2 NRC, what we do and what our mission is.

3 The Atomic Energy Act of 1954 authorizes the NRC to  
4 regulate the civilian use of nuclear materials. The NRC's mission is three-fold:  
5 to ensure adequate protection of public health and safety; to protect the  
6 environment; and to provide for the common defense and security.

7 The NRC consists of five Commissioners, one of whom is the  
8 NRC's Chairman, and the staff.

9 The regulations enforced by the NRC are issued under Title  
10 10 of the Code of Federal Regulations, commonly referred to as 10 CFR in the  
11 nuclear industry.

12 The Atomic Energy Act provides for a 40-year license term  
13 for power reactors, but it also allows for renewal. That 40-year term is based  
14 primarily on economic and antitrust considerations, rather than safety  
15 limitations. Major components were initially expected to last for up to 40 years,  
16 however, operating experience has indicated that they don't realistically last  
17 that long all the time. For example, steam generators are often replaced in the  
18 initial 40 years. A number of utilities have replaced major components such as  
19 steam generators and because components and structures can be replaced  
20 or reconditioned, plant life is really determined primarily by economic factors.

21 Applications for license renewal are submitted years in  
22 advance, for several reasons. If a utility decides to replace a nuclear power  
23 plant, it could take up to 10 years to plan and construct new generating  
24 capacity to replace that nuclear power plant. In addition, decisions to replace  
25 or recondition major components can involve significant capital investment. As

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1 such, these decisions involve financial planning many years in advance of the  
2 extended period of operation.

3 Duke Energy Corporation has applied for license renewal  
4 under 10 CFR Part 54, and requests authorization to operate the Catawba  
5 Nuclear Units for up to an additional 19 years. The current operating license  
6 for Catawba Units 1 and 2 will expire in 2024 and 2026, respectively.

7 Next slide, please. Now I'm going to talk about license  
8 renewal, which is governed by the requirements of 10 CFR Part 54, or the  
9 license renewal rule. That rule defines the regulatory process by which a  
10 nuclear utility, such as Duke Power, applies for a renewed operating license.  
11 The license renewal rule incorporates 10 CFR Part 51 by reference. And 10  
12 CFR Part 51 provides for the preparation of an environmental impact statement  
13 or EIS. The license renewal process defined in 10 CFR Part 54 is very similar  
14 to the original licensing process in that it involves a safety review, an  
15 environmental impact evaluation, plant inspections, and review by the Advisory  
16 Committee on Reactor Safeguards, or the ACRS.

17 The ACRS is a group of scientists and nuclear industry  
18 experts who serve as a consultant body to the Commission. The ACRS  
19 performs an independent review of the license renewal application and the  
20 staff's safety evaluation report, and they report their findings and  
21 recommendations directly to the Commission.

22 Next slide, please. The next slide illustrates two parallel  
23 processes -- the safety review process and the environmental review process.  
24 These processes are used by the staff to evaluate two separate aspects of  
25 license renewal.

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1                   The safety review involves the staff's review of the technical  
2 information in the application for renewal, to verify with reasonable assurance  
3 that the plant can continue to operate safely during the extended period of  
4 operation. The staff assesses how the applicant proposes to monitor or  
5 manage aging of certain components that are within the scope of the license  
6 renewal rule. The staff's review is documented in a safety evaluation report  
7 and the safety evaluation report is provided to the ACRS for review. In return,  
8 the ACRS generates a report to document their review of the staff's evaluation.

9                   The safety review process also involves two to three  
10 inspections, which are documented in NRC inspection reports. These  
11 inspection reports are considered with the safety evaluation report and the  
12 ACRS report in the NRC's decision to renew a nuclear unit's operating license.

13                   If there is a petition to intervene, sufficient standing can be  
14 demonstrated and an aspect within the scope of license renewal has been  
15 identified, then hearings may also be involved in the process. These hearings  
16 will play an important role in the NRC's decision to renew an operating as well.

17                   At the bottom of the slide is the other parallel process for the  
18 environmental review, which involves scoping activities, the preparation of a  
19 draft supplement to the generic environmental impact statement, solicitation of  
20 public comments on the draft supplement and then the issuance of a final  
21 supplement to the generic environmental impact statement. This document  
22 also factors into the agency's decision on the application.

23                   During the safety evaluation, the staff assesses the  
24 effectiveness of existing or proposed inspection and maintenance activities to  
25 manage aging effects applicable to a defined scope of passive structures and

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1 components. Part 54 requires the application to also include an evaluation of  
2 time limited aging analyses, which are those design analyses that specifically  
3 include assumptions about plant life, which is typically 40 years.

4 Current regulations are adequate for addressing active  
5 components such as pumps and valves, which are continuously challenged to  
6 reveal failures such that corrective actions can be taken. Current regulations  
7 also exist to address other aspects of the original license, such as security and  
8 emergency planning. These current regulations will also apply during the  
9 extended period of operation.

10 In August 2001, the NRC issued a Federal Register notice to  
11 announce its acceptance of Duke Energy's application for renewal of the  
12 operating licenses for Catawba and McGuire Nuclear Stations. The notice also  
13 announced the opportunity for public participation in the process. The NRC  
14 received two petitions to intervene. One from the Nuclear Information and  
15 Resource Service and the other from the Blue Ridge Environmental Defense  
16 League.

17 An Atomic Safety and Licensing Board, or ASLB, was  
18 established to preside over the proceedings. In an order issued on January 24,  
19 2002, the ASLB granted both petitions for hearing and admitted two  
20 contentions, pertaining to (1) the impact of anticipated mixed oxide, or MOX,  
21 fuel on aging and environmental issues. And (2) the completeness of the  
22 severe accident mitigation alternatives, or SAMA, analysis for station blackout  
23 events at ice condenser plants.

24 A third issue concerning terrorism was forwarded to the  
25 Commission for review.

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1 This concludes my summary of the license renewal process  
2 and the staff's safety review. Are there any questions I can answer at this  
3 time?

4 MR. CAMERON: We have one right here. And Mary, just  
5 please give us your name for the record.

6 MS. OLSON: May Olson, Nuclear Information and Resource  
7 Service. I haven't had a chance to stay up on things and so this is an honest  
8 question on my part.

9 How many hearings besides the Duke hearing have been  
10 granted across the fleet of license renewals so far?

11 MS. FRANOVICH: I'm going to answer that question and let  
12 somebody correct me if I'm wrong, but I believe that Duke is the first license  
13 renewal application for which petitions have been granted a hearing.

14 MS. OLSON: And I personally am aware of at least six  
15 attempts to get hearings. Do you know if there have been any others over that  
16 number?

17 MS. FRANOVICH: I do not, but I'm not sure if I'm prepared  
18 to answer that -- I don't have a means of really knowing, off the top of my head.

19 MR. CAMERON: Jared, do you have any information on  
20 this? This is Jared Heck from our Office of General Counsel.

21 MR. HECK: I can't answer to night how many have been filed  
22 and I'm not familiar with how many have been granted or denied to this point,  
23 but if you would like afterwards, you know, you can give me your information  
24 and I can get those numbers for you.

25 MS. OLSON: Thank you.

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1 MS. FRANOVICH: Do you want us to get back to you on  
2 that, Mary?

3 MS. OLSON: Yes.

4 MS. FRANOVICH: Okay.

5 MR. CAMERON: I think we know informally that there was  
6 a petition on Calvert Cliffs, on Oconee, on Turkey Point, and on McGuire -- is  
7 that right?

8 MS. FRANOVICH: That's the same project.

9 MR. CAMERON: So it's considered the same --

10 MS. FRANOVICH: Same application.

11 MR. CAMERON: Okay. But anyway, we'll get together and  
12 clarify that for you.

13 Any other questions? We know that some of this information  
14 you know very well, but in terms of updates or whatever. Peter, just give us  
15 your full name.

16 MR. SIPP: My full name is Peter, my middle name is Fox and  
17 my last name is Sipp, S-i-p-p.

18 Ms. Franovich, I want to ask you, would you read the  
19 beginning of the statement about -- when you first started off, you talked about  
20 the statement from -- I'm not remembering exactly, but at the beginning when  
21 you read the statement about what the NRC is about.

22 MS. FRANOVICH: Our mission?

23 MR. SIPP: Yeah.

24 MS. FRANOVICH: You want me to re-read that?

25 MR. SIPP: Yeah, if you would. And when you get to a

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1 certain point, I want to ask you to stop -- that's why I'm asking you to read it.

2 MS. FRANOVICH: Okay. The mission is three-fold -- to  
3 ensure adequate protection of public health and safety, to protect the  
4 environment --

5 MR. SIPP: That's the point I want to mention to you. I didn't  
6 really get this word until I left home and started doing my laundry and I read the  
7 box and it said this doesn't contain phosphorus, so it won't spoil our lakes and  
8 streams. Ah-ha. So I started to really see that word and when you say right  
9 there, "the environment," when the word "the" used, it implies separation, but  
10 when we say "our," ah-ha, it means I've got to have it to live, and that's true, we  
11 can't live very long without clean air and without clean water. And I wondered  
12 if you considered changing or going through the process, I don't know how long  
13 it would take, but if you would consider changing that. It takes the same  
14 amount of space in the sentence, take the "the" out of there and put "o-u-r" in  
15 its place.

16 MS. FRANOVICH: Sure.

17 MR. SIPP: Okay, thank you.

18 MR. CAMERON: Thank you, Peter.

19 Gregg, did you have a question?

20 MR. JOCOY: I'm Gregg Jocoy, that's G-r-e-g-g J-o-c-o-y.

21 I am about as ignorant about most of these matters as one  
22 can possibly be. I hear Mary say I'm not quite sure about something and I'm  
23 like, I'm totally not sure about most things. But you did mention a couple of  
24 things that I wanted to ask you about.

25 First of all, when Pete asked you about the mission

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1 statement, it's my understanding -- and correct me if I'm wrong -- that the part  
2 of the challenge that the Nuclear Regulatory Commission faces is that you  
3 have the responsibility both to regulate and promote nuclear energy. Is that no  
4 longer the case?

5 MS. FRANOVICH: No, it is not.

6 MR. JOCOY: Was it not the case at one time?

7 MS. FRANOVICH: At one time -- P.T. can correct me if I'm  
8 wrong -- but the Department of Energy had a role to promote and regulate and  
9 I think the NRC was established to separate those functions. So the NRC's  
10 sole role is to regulate the industry and make sure that nuclear materials are  
11 used safely.

12 MR. CAMERON: And we can't emphasize that enough. We  
13 only have regulatory responsibilities by statute. We do not have any  
14 promotional -- and I just want to make sure everybody understands that.

15 MR. JOCOY: And I didn't. I'm glad you cleared that up.

16 The other thing that I wanted to mention was you indicate that  
17 Duke has been -- has come forward with this application now, even though  
18 they're not even halfway through their current 40-year license, because they  
19 need ample opportunity to prepare for an application if they're going to put a  
20 new nuclear power plant on line to replace one that's decommissioned after the  
21 year 2024 or 2026.

22 That 10-year window is really irrelevant at this point. It takes  
23 two years to go from the thought, why don't I believe a gas power plant in my  
24 backyard, to having it back there generating electricity. So the fact that there's  
25 a 10-year window for the process of building a nuclear power plant does not

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1 impact the supply of electricity, because you can go, as I say, from thought to  
2 producing electricity in two years.

3 Do you guys have an opportunity to evaluate those kinds of  
4 questions in the process of --

5 MS. FRANOVICH: The kinds of questions about how quickly  
6 would it take to build replacement generating capacity?

7 MR. JOCOY: Alternative sources, right -- not nuclear  
8 sources.

9 MS. FRANOVICH: Jim, is that part of the environmental  
10 review?

11 MR. CAMERON: Yes, Jim is --

12 MS. FRANOVICH: I think he's going to talk about that in his  
13 -- don't steal Jim's thunder.

14 (Laughter.)

15 MR. WILSON: I think in the environmental review, we look  
16 at alternatives to replacing the baseload generating capacity. I don't think we  
17 look at time scales or how long it takes to implement them or how much time  
18 is required to plan. We just evaluate what alternatives could be used on the  
19 same economic scale. I think there are technologies that are not mature yet  
20 and we discount them.

21 But if you look in Section 8 of our draft environmental impact  
22 statement, you can see the alternatives that we did consider for this license  
23 renewal application.

24 MR. CAMERON: Let's go back and revisit that when Mary  
25 Ann Parkhurst talks to us, because we do that. But I want to clear up one

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1 perhaps misimpression that Rani's statement about the time needed to plan for  
2 replacement power wasn't the time needed to provide replacement power  
3 necessarily by a nuclear energy source, but for any energy source. In other  
4 words, if a license isn't renewed, then there needs to be a long lead time to  
5 figure out how are you going to deal with that energy need by whatever way  
6 you do it.

7 MS. FRANOVICH: Exactly.

8 MR. JOCOY: Which is exactly my point, Chip. Today, we've  
9 gotten to the point to where that lead time is two years. So the rush to do this  
10 before they're even halfway through their current license is no longer valid. If  
11 part of what you're concerned about is we're going to need a long lead time for  
12 nuclear stuff, there are alternatives to nuclear that can be done in two years,  
13 we can have generating capacity right away.

14 MR. CAMERON: Okay. And I just want to emphasize that  
15 even though we're doing questions now, comments that flow from those  
16 questions are fine and we will consider those as comments. In other words, it's  
17 not just during that second part of the meeting. So we heard that comment.

18 And Gregg, did you have another part?

19 MR. JOCOY: No.

20 MR. CAMERON: Sherry, did you have anything that you  
21 wanted to ask?

22 MS. LORENZ: I'll have later comments, yes.

23 MR. CAMERON: Later, all right.

24 And let's go to Mary for another question to Rani. Mary.

25 MS. OLSON: This is one of those areas where I understand

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1 we're speaking about your employer, but I still have a question about it.

2 As you mentioned, the Atomic Safety and Licensing Board  
3 admitted a contention for consideration on the mixed oxide fuel issue and,  
4 forgive me that I was a little bit distracted and I don't remember whether you  
5 stated that Duke appealed that decision by the Atomic Safety and Licensing  
6 Board and the Commission upheld the Duke appeal and that that's no longer  
7 a current contention before the hearing process.

8 So my question is what the precedent or regulatory basis  
9 since they are regulators, not promoters, that the Nuclear Regulatory  
10 Commission has used in order to make that decision to override the ASLB.

11 MS. FRANOVICH: And I'm going to defer to my legal counsel  
12 to answer that question, but I believe it's in Part 2. Jared, if you can field that  
13 one.

14 MR. CAMERON: Yeah, Jared, are you ready for that one?

15 MR. HECK: Yes.

16 MR. CAMERON: All right.

17 MR. HECK: There are provisions in Part 2 for appealing  
18 decisions of the Licensing Board to the Commission, any party may do that  
19 under certain circumstances. And that's the process that Duke used for their  
20 appeal.

21 The Commission's decision, as I recall, was based on  
22 standards in Part 54 which limit consideration of issues in license renewal to  
23 issues related to aging of certain components and structures. The Commission  
24 determined that MOX fuel use was outside the scope of license renewal.

25 And if you would like, afterwards, I can refer you to the

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1 Commission's decision and we can get together and I can give you a copy --  
2 point you to a copy of that.

3 MS. OLSON: The question is whether or not there's any sort  
4 of precedent. I mean, to some degree, one could say that rewriting Part 70  
5 should have triggered a programmatic EIS.

6 MR. CAMERON: But when you say precedent, I think that  
7 Jared needs to understand whether you mean precedent for the procedural  
8 mechanism that allowed the Commission to consider that, or whether you're  
9 talking about precedent in terms of ruling on whether the use of MOX was  
10 relevant to the license renewal proceeding. Which one are you talking about?

11 MS. OLSON: You succinctly stated it in (b), whether the use  
12 of MOX is relevant to the aging issues, which was the bone of our contention.

13 MR. CAMERON: Okay, Jared.

14 MR. HECK: To my knowledge, this is the first time that  
15 question has been squarely addressed by the Commission, so there's no prior  
16 decision where that was addressed.

17 The authority for the decision drawn upon by the Commission  
18 comes from a rule in Part 54.

19 MR. CAMERON: Thank you, Jared. Jared obviously is with  
20 our Office of General Counsel, if we didn't say that before.

21 Are we ready to go to the environmental process?

22 (No response.)

23 MR. CAMERON: Okay. And Jim Wilson, as I mentioned  
24 before, is the key staff person on the environmental review for this particular  
25 license renewal application. Jim.

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1 MR. WILSON: Thank you, Chip.

2 My name is Jim Wilson, I'm the environmental project  
3 manager for the Catawba license renewal project. I'm responsible for  
4 coordinating the efforts of the NRC staff and our contractors from the national  
5 laboratories to conduct and document the environmental review associated with  
6 Duke Energy's application for license renewal at Catawba.

7 NEPA, the National Environmental Policy Act, was enacted  
8 in 1969. It's one of the most significant pieces of environmental legislation  
9 that's ever been passed in this country. It requires all federal agencies to use  
10 a systematic approach to consider environmental impacts during certain  
11 decision-making proceedings regarding major federal actions. NEPA requires  
12 that we examine the environmental impacts of a proposed action and consider  
13 mitigation measures, which are things that can be done to decrease  
14 environmental impact, when impacts are severe. NEPA requires that we  
15 consider alternatives to the proposed action and that the impacts of those  
16 alternatives also be evaluated. Finally, NEPA requires that we disclose all of  
17 this information and that we invite public participation to evaluate it.

18 The NRC has determined that it will prepare an environmental  
19 impact statement associated with the renewal of an operating license for an  
20 additional 20 years. Therefore, following the process required by NEPA, we  
21 have prepared a draft environmental impact statement that describes the  
22 environmental impacts associated with operation of the Catawba Nuclear  
23 Station units for an additional 20 years. That environmental impact statement  
24 was issued last month, and the meetings here this afternoon and this evening  
25 are being held to receive your comments on it.

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1                   This slide describes the objective of our environmental  
2 review. Simply put, we were trying to determine whether the renewal of the  
3 Catawba licenses is acceptable from an environmental standpoint. If license  
4 renewal is a viable option.. Whether or not that option is exercised -- that is,  
5 whether the plants actually operate for an additional 20 years will be  
6 determined by others, such as Duke Energy and state regulatory agencies, and  
7 will depend in large measure on the outcome of our safety review.

8                   This slide shows in a little more detail the environmental  
9 review process associated with license renewal for Catawba. We received the  
10 application for renewal last June. We issued a notice of intent in the Federal  
11 Register in September, informing the public that we are going to prepare an  
12 environmental impact statement and inviting the public to participate and  
13 provide comments on the scope of the environmental review.

14                   Last October, during the scoping period, we held two public  
15 meetings here in Rock Hill to receive public comments on the scope of issues  
16 that should be included in the environmental impact statement. Also in  
17 October, we went to the Catawba site with a combined team of NRC staff and  
18 personnel from four of our national laboratories with backgrounds in the  
19 specific technical and scientific disciplines required to perform this  
20 environmental review. We familiarized ourselves with the site, met with staff  
21 from Duke to discuss the information submitted in support of the license  
22 renewal application, and we reviewed the environmental documentation  
23 maintained at the site. We also looked at Duke's evaluation process for new  
24 and significant information.

25                   In addition, we contacted federal, state and local officials as

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1 well as local service agencies, and sought to obtain information on the area  
2 and on the Catawba plants.

3 At the close of the scoping comment period, we gathered up  
4 and considered all of the comments that we had received from the public and  
5 from state and federal agencies and many of these comments contributed  
6 significantly to the document that we're here today to discuss.

7 Last December, we issued requests for additional information  
8 to assure that any information that we relied on and that had not been included  
9 in the original application, was submitted on the docket.

10 Last month, on May 13, we issued a draft environmental  
11 impact statement for public comment -- this is Supplement 9 to the generic  
12 environmental impact statement -- because we rely on the findings of the  
13 generic environmental impact statement for part of our conclusions. The report  
14 is a draft, not because it is incomplete, but rather because we are at an  
15 intermediate point in the decision-making process. We're in the middle of a  
16 public comment period to allow you and other members of the public to take a  
17 look at the results of the report and provide any comments that you may have  
18 on it.

19 After we gather the comments and evaluate them, we may  
20 decide to change portions of the environmental impact statement based on  
21 those comments. The NRC will then issue a final environmental impact  
22 statement related to license renewal at the Catawba in January of 2003.

23 Are there any questions?

24 MR. CAMERON: Okay, and while I'm going over to Mary...  
25 Jim, the requests for additional information, you did mention it but I take it that

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1 those were requests to the license renewal applicant, is that correct?

2 MR. WILSON: Yes, they were requests from the staff to  
3 Duke to get information on the docket that we would need to include in our  
4 environmental impact statement that had not been provided in their initial  
5 application. We issued an RAI on SAMA and we issued an RAI on the rest of  
6 the environmental review.

7 MR. CAMERON: Okay, thanks. Mary.

8 MS. OLSON: This is a process question really. Again, I'm  
9 behind, I admit it. Capacity issues are catching up with us.

10 I saw something in my incoming mail recently about a  
11 meeting that wouldn't constitute formal public participation but which I believe  
12 will be open to the public when NRC is going to be meeting with Duke in  
13 Charlotte. Could you please share with us present about that meeting, if  
14 anybody in the room knows about it?

15 MR. WILSON: I'm not resonating to your reference. Can you  
16 give me --

17 MR. CAMERON: Let's fine out if this is on the safety -- it may  
18 be on the safety side rather than the environmental side. Rani.

19 MS. FRANOVICH: There is to be an NRC inspection at the  
20 Catawba plant, at the McGuire plant.

21 MS. OLSON: It's at headquarters at Duke in July and it's on  
22 renewal. So if you don't know about it, maybe I imagined it. But could  
23 somebody get back to me?

24 MS. FRANOVICH: Well, I'll tell you what, if you want to give  
25 me a call Monday, if you can find what you may have seen, we'll figure it out.

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1 MS. OLSON: I'll find it in the next few minutes, I take it's in  
2 my backpack.

3 MS. FRANOVICH: Okay, yeah, let me know.

4 MR. CAMERON: All right. Other questions for Jim,  
5 environmental review process, before we go to the draft EIS itself?

6 (No response.)

7 MR. CAMERON: Okay, thanks, Jim.

8 And we basically have two followup items here. One is the  
9 item on the -- sort of the history of adjudicatory activity on license renewal  
10 applications and the second is what this meeting may have been in regard to  
11 license renewal. Okay?

12 MS. OLSON: I know it's not formal public participation, it's  
13 an opportunity, however, for the public to attend.

14 MR. CAMERON: Sure, sure, we understand that and we'll  
15 find out.

16 Mary Ann, would you like to come up and tell us about the  
17 draft environmental impact statement? Then we'll go back out to you for  
18 questions.

19 MS. PARKHURST: I'd like to talk a little bit about out  
20 information gathering process, the composition of the review team, the  
21 analytical process we used and the results of the draft supplemental  
22 environmental impact statement.

23 While developing the draft environmental impact statement,  
24 we talked to federal agencies, including the Fish and Wildlife Service, state  
25 offices that handle such things as water discharge permits and cultural and

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1 historic resources and local officials. We also talked to local social service  
2 agencies. We invited the public to provide comments, as some of you did,  
3 during our public scoping meetings, and worked with that information to draw  
4 up the document.

5 For the license renewal, we established a team made up of  
6 members of the NRC staff and supplemented by experts in various fields from  
7 the national laboratories. This slide gives you an idea of the area of the  
8 expertise that we included. From the atmospheric sciences, hydrology,  
9 ecologies or various sorts, socio-economics, regulatory compliance, some land  
10 use, water, archeology and so on. I think you can see in on there, but in any  
11 case, it was a fairly comprehensive group that we used for this analysis.

12 The generic environmental impact statement for license  
13 renewal, which we call NUREG-1437, identifies 92 environmental issues that  
14 are evaluated for license renewal. Sixty-nine of these issues are what we call  
15 generic or Category 1 issues. And those are listed here on this slide. Now the  
16 Category 1 issues are those in which the impacts are pretty much the same  
17 across the board for all the plants or for plants that have certain specific  
18 features, like those with cooling towers are grouped together because they  
19 have similar levels of impacts in various areas.

20 For the other 23 issues, these are referred to as Category 2  
21 issues, and they'll follow this line of approach. The NRC figured for these  
22 impacts, the issues were not the same at all the sites and that we would have  
23 to go through a site-specific analysis in order to understand what the issues  
24 were and if any additional analysis needed to be done.

25 About 30 of the issues reviewed in the GEIS were not

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1 applicable to Catawba because of its design, location and its decision not to  
2 undertake major refurbishment activities.

3 For the remaining Category 1 issues that are applicable to  
4 Catawba, we assessed if there is any new information related to the issue that  
5 might change the conclusions in the GEIS. If there's no new information, then  
6 the conclusions of the GEIS are adopted for that issue. If new information is  
7 identified and determined to be significant, then a site-specific analysis is  
8 performed.

9 For the Category 2 issues, or the site-specific issues, related  
10 to Catawba, a site-specific analysis was performed by this multi-disciplinary  
11 team.

12 And during the scoping period, the public was invited to  
13 provide information on potential new issues.

14 The team reviewed the comments provided by the public to  
15 see if there were any issues that needed to be evaluated.

16 For each issue identified in the GEIS, an impact level is  
17 assigned. This is described in Chapter 1 of the report. These impact levels are  
18 consistent with the Council on Environmental Quality guidance for NEPA  
19 analysis.

20 To be categorized as a small impact, the effect would not be  
21 detectable or would be too small to destabilize or noticeably alter any important  
22 attribute of the resource. For example, a plant may cause the loss of adult and  
23 juvenile fish at the intake structure. If the loss of fish is so small that it cannot  
24 be detected in relation to the total population in the lake, the impact would be  
25 small.

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1 To be categorized as a moderate impact, we would have to  
2 show that the effect is sufficient to alter noticeably but not destabilize important  
3 attributes of the resource. Using the fishing example again, if losses at the  
4 intake cause the population to decline and then stabilize at a lower level, the  
5 impact would be considered moderate.

6 And finally, for an impact to be considered large, the effect  
7 must be clearly noticeable and sufficient to destabilize important attributes of  
8 the resource. So if losses at the intake cause the fish population to decline to  
9 the point where it cannot be stabilized and continually declines, then the impact  
10 would be considered large.

11 In Chapter 2 of the draft supplemental environmental impact  
12 statement, we discuss the nuclear plant and the environment around the plant.

13 In Chapter 3, we briefly discuss that the licensee has not  
14 identified any plant refurbishment activities that were necessary for extended  
15 operations.

16 In Chapter 4, we look at the potential environmental impacts  
17 for an additional 20 years of operation at the Catawba Nuclear Station. The  
18 issues that we looked at are many, but some primary categories are listed here.  
19 We've got the cooling system, which also includes the aquatic ecology aspects;  
20 we've got transmission lines which includes terrestrial ecology in those  
21 sections; radiological impacts; the socio-economics: groundwater use and  
22 quality and impacts to threatened or endangered species.

23 I'll take a few minutes to identify the highlights of our review.  
24 If you have any additional questions, I'll attempt to answer them for you or let  
25 one of the team members that's here today assist on that.

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1                   One of the issues we looked at closely and discussed in  
2                   some length in Chapter 4 is the cooling system for Catawba Nuclear Station.

3                   During our site review last October, and during our review of  
4                   the information, we specifically looked at both the Category 2 site-specific  
5                   issues as well as the Category 1 generic issues, which are those that were  
6                   determined to have the same significance for all plants.

7                   We did not identify any new and significant information for the  
8                   Category 1 issues, during the scoping process by the applicant, or by the staff  
9                   during our review of the issues.

10                  The Category 2 issues related to the cooling system that the  
11                  team looked at on a specific basis, included water use conflicts and the  
12                  potential for detrimental public health impacts from heat loving microorganisms  
13                  that might grow in the lake as a result of the plant's presence.

14                  Potential impacts were determined to be small and additional  
15                  mitigation is not warranted.

16                  The radiological impacts are a Category 1 issue, but because  
17                  it's so often a concern to the public, I wanted to take a few minutes and discuss  
18                  how we determined that there was no new and significant information related  
19                  to radiological impacts.

20                  We looked at the effluent release and monitoring programs  
21                  during our site visit, we looked at how the gaseous and liquid effluents were  
22                  treated and released as well as how the solid wastes were treated, packaged  
23                  and shipped. This information is part of Chapter 2 in the document. You can  
24                  see -- unfortunately, there's not a whole lot of detail here, but the items where  
25                  you've got identified spots, those are all monitoring sites in and around the

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1 plant facility.

2 We looked at how the applicant determines and  
3 demonstrates that they're in compliance with regulations for releases of  
4 radiological effluents. So this is showing you the near site and the on site  
5 locations that the applicant monitors for air-borne releases and direct radiation.  
6 There are a number of other monitoring sites beyond the site boundary,  
7 including locations where milk, water, fish and food products are sampled.

8 The releases from the plant and the resulting off-site potential  
9 doses are not expected to increase on a year-to-year basis during the 20 year  
10 license renewal term. No new and significant information was identified during  
11 the staff's review, the scoping process or the evaluation of other available  
12 information.

13 The last issue I'd like to discuss, of those evaluated in  
14 Chapter 4, is that of threatened and endangered species. A description of the  
15 terrestrial and aquatic ecology of the area and the potential for endangered and  
16 threatened species at the site is given in Chapter 2. There are no federally  
17 listed aquatic species that occur at the Catawba site. The only federal or state-  
18 listed threatened and endangered aquatic specie with the potential to inhabit  
19 waters near Catawba is the Carolina heelsplitter, which is a mussel. All known  
20 occurrences of this species in the Catawba River system are limited to small  
21 tributary streams downstream of Lake Wiley. It has not been found to be  
22 present in the vicinity of the plant, as it occurs in streams rather than  
23 impounded waters like Lake Wiley.

24 Bald eagles are known to nest in Lake Wiley or at Lake  
25 James, which is upstream, and they are known, from the Catawba River area.

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1 They are rarely observed, however, as transients at the Catawba site or along  
2 transmission line right-of-ways.

3 Except for the bald eagle, there are no federally or state-listed  
4 terrestrial species known to occur within the Catawba exclusion area or  
5 associated with transmission rights-of-way.

6 Now the dwarf flowered heartleaf, which is threatened, and  
7 the Georgia astor which is a candidate species for listing, are found in the  
8 vicinity of the Catawba site or the transmission line rights-of-way, but neither  
9 of these species have been observed in these areas during field surveys.

10 For all of the issues the team reviewed, we judged the license  
11 renewal impacts are small for Category 1 and 2 issues and determined there  
12 was no new and significant information during the scoping process in which the  
13 public participated, identified by the licensee or identified by the staff.

14 We also reviewed uranium fuel cycle and solid waste  
15 management and decommissioning issues. All issues for uranium fuel cycle  
16 and solid waste management as well as decommissioning are considered  
17 Category 1 issues, these are generic, and are discussed in Chapters 6 and 7.  
18 No new and significant information was identified.

19 As part of the EIS process, we evaluated the potential  
20 environmental impacts associated with Catawba if it were to discontinue  
21 operation at the end its current licensing period. This and other alternatives are  
22 discussed in Chapter 9. We looked at the no action alternative, which is the  
23 scenario in which the Catawba operating licenses are not renewed and then the  
24 plant ceases operation and Duke would decommission the facility.

25 We also looked at new generation from coal-fired and oil and

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1 natural gas-fired plants, new nuclear power, purchased electrical power, fuel  
2 cells, alternative technology such as power from wind, solar, hydropower,  
3 geothermal energy, wood waste, municipal solid waste or other biomass  
4 derived fuels. We looked at delayed retirements of other existing facilities as  
5 well as utility-sponsored conservation. And then we looked at combinations of  
6 alternatives.

7 For each alternative, we considered whether the technologies  
8 could replace the baseload capacity of Catawba and whether they would be a  
9 feasible alternative to renewal. If they appeared to have potential, we looked  
10 at the same types of environmental issues -- land use, ecology, socio-  
11 economics and so on -- that we reviewed for the license renewal term.

12 What we found in our preliminary conclusions for the  
13 alternatives that are considered feasible is that these alternatives, including the  
14 no-action alternatives, may have an environmental effect that is at least in  
15 some impact category reaches moderate or large significance.

16 Questions?

17 MR. CAMERON: Okay, let's go to Gregg, and Gregg, you  
18 had a question related to this last part before, but go ahead.

19 MR. JOCOY: Forgive me if it sounds like this is a done deal  
20 to me, but it sounds like it's a done deal. You guys have decided this is hunky-  
21 dory.

22 Am I misunderstanding? Everything you've just said says  
23 we've decided this thing is cool.

24 MS. PARKHURST: We made a very serious evaluation of  
25 the issues and we did not --

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1 MR. JOCOY: Oh, I'm not questioning that, I'm just saying  
2 that you are telling us that as far as the staff of the NRC is concerned, there  
3 are no environmental problems with relicensure.

4 MS. PARKHURST: That there is not sufficient -- Jim, what  
5 is the exact quote on that?

6 MR. WILSON: You're right, we concluded that the impacts  
7 of license renewal at Catawba were acceptable from an environmental  
8 standpoint.

9 MR. CAMERON: But I guess let me just make sure  
10 everybody understands that this is a draft environmental impact statement.  
11 Secondly, there is another piece, safety review, that has to be done. The third  
12 piece, inspection findings, and finally, don't under-estimate the fact that there  
13 is an adjudicatory hearing going on where people have raised contentions. So  
14 I don't think you could say it's a done deal, but I mean everybody can have their  
15 own opinion on that, of course.

16 MR. JOCOY: Well, actually, I want to thank you, Chip,  
17 because I don't mean to imply undue criticism in saying that. I just want to  
18 make sure that we were clear that the NRC staff feels that there is no -- that  
19 the options of not relicensing are worse than the option of relicensing. You  
20 guys have made that basic decision, is the way I understand what you're  
21 saying.

22 I wanted to ask three real quicky questions. What is the  
23 baseload capacity of the Catawba reactors?

24 MS. PARKHURST: Megawatts thermal or electric?

25 MR. JOCOY: Electric.

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1 MS. PARKHURST: Electric?

2 MR. JOCOY: How much electricity do they produce?

3 MS. PARKHURST: I think it's 1129 megawatts electric and  
4 3411 megawatts thermal.

5 MR. JOCOY: Well, the thermal just gets dumped into the  
6 lake, doesn't it?

7 MS. PARKHURST: There's a cooling tower.

8 MR. JOCOY: Well, I mean it doesn't do anything for me -- it  
9 doesn't turn on a light bulb for me or anyone.

10 MS. PARKHURST: 1121 megawatts electric.

11 MR. JOCOY: Okay. The power plant they're proposing for  
12 Fort Mill is 980 megawatts.

13 Anyway, I gather from what you said that this monitoring is  
14 self-monitoring done by Duke, is that right? In the radiological impact section  
15 that you were doing?

16 MS. PARKHURST: There's quite a process on what they  
17 have to supply and so on, and there are state measurements made as well.  
18 It's not just Duke, but Duke does its own self-monitoring and there are outside  
19 sources that also monitor this.

20 MR. JOCOY: Okay, do they do that under contract to Duke?

21 MS. PARKHURST: No.

22 MR. JOCOY: Do they do that under contract to the NRC?

23 MS. PARKHURST: No, the state regulators.

24 MR. JOCOY: Oh, oh, oh, like DHEC in South Carolina.

25 MS. PARKHURST: Yes.

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1 MR. JOCOY: All right, last question. what about the spider  
2 lily? I understood what you said about one of these endangered species --  
3 thank you so much, that's a pretty picture -- I think it was the little flower thing,  
4 the little plant there, you said is like not in Lake Wiley, it's in tributaries further  
5 down, but it could potentially be in Lake Wiley if it were brought in, something  
6 like that?

7 The mussel, that's the one, yeah. Is the same not true for the  
8 spider lily? Could it not be brought from Lansford Canal State Park and, you  
9 know -- since it's in tough straits, is that not a consideration too?

10 MR. CAMERON: Let's see if Tina wants to explain the  
11 differentiation between that. Tina, give your full name and all that.

12 MS. CARLSON: Hi, I'm Tina Carlson, I'm an ecologist with  
13 Lawrence Livermore National Laboratory. I worked with the terrestrial  
14 ecologist, Ted Doerr, from Los Alamos, who did this analysis. Now the spider  
15 lily does not occur, you know, on the transmission lines or at Lake Wiley, but  
16 they were identified as some potential habitat that could. The spider lily is a  
17 species of concern, it's not a listed species. But it hasn't been identified at the  
18 site. But with their ongoing monitoring programs and their work with the  
19 transmission lines, it's on their list to watch for.

20 So genetic material does move around with plants and so it  
21 is something you do have to keep in mind, but at least at this point, it hasn't  
22 been identified there.

23 MR. CAMERON: Okay, thank you, Tina. Any other  
24 questions on this part? Let's go over to Mary.

25 MS. OLSON: Mary Olson, Nuclear Information and Resource

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1 Service.

2 I'd like to ask you a series of simple questions. They're not  
3 intended to be trick questions, but I really want this on our transcript.

4 What type of fuel does Catawba use right now, 1 and 2,  
5 Catawba 1 and 2?

6 MS. PARKHURST: You mean uranium?

7 MS. OLSON: Uranium -- fuel, thank you. And what is the  
8 requirement for a reactor to qualify for Category 1 consideration, particularly in  
9 radiological and off-site radiological analysis?

10 MS. PARKHURST: What was the first part of that analysis?

11 MS. OLSON: There's a qualifying condition in order for  
12 Category 1 issues to apply to a nuclear reactor, there's an exclusionary clause  
13 in the GEIS. Do you know what it is?

14 MS. PARKHURST: I'm sure I have been through it. Right off  
15 the top of my head, I'm not sure I remember, but is there somebody else that  
16 can --

17 MR. CAMERON: Let me borrow that back from you, Mary.  
18 I think Mary is talking about what's the standard for opening up a Category 1  
19 issue to apply to a specific plant. You're talking about the new and significant  
20 information standard?

21 MS. PARKHURST: Actually in the document, there's a  
22 number of times we go through what causes, what allows something to be  
23 considered Category 1 or Category 2. I would have to refer to it and read it out  
24 here, but let's see -- we've got small significance --

25 MR. CAMERON: We're hoping we're answering the right

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1 question.

2 MS. OLSON: I'll be quite patient and --

3 MS. PARKHURST: Like I say, I know it's in here several  
4 times and I think that I've got it right here but --

5 MS. OLSON: I'll tell you what it is and then maybe you could  
6 tell me that I'm right or you could get back to me somehow.

7 MS. PARKHURST: Sure.

8 MS. OLSON: For radiological impacts and off-site  
9 radiological impacts particularly, GEIS says that they only apply to light water  
10 reactors using low enriched uranium fuel.

11 MS. PARKHURST: Right, okay.

12 MS. OLSON: Categorically.

13 MS. PARKHURST: That's what we're dealing with.

14 MS. OLSON: So you don't disagree with me on that point.  
15 So I'll reserve the rest of what I have to say about that for my comments  
16 because I don't want to ask you to make comments in an area that's been put  
17 off the table by the Commission.

18 But finally, I do want to ask you, when it comes to radiological  
19 impacts, the Commission chooses to regulate in terms of millirems and I'd like  
20 you to tell me how I know how many millirems I got today.

21 MR. CAMERON: Health physicist question. Mary Ann?

22 MS. PARKHURST: How much you got today, if you had a  
23 device on you -- if you were working in a nuclear facility and were expected to  
24 be receiving some radiation as a result of that -- exposure as a result of that  
25 work, then you would be wearing a dosimeter which can detect the radiation

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1 there.

2 As far as what you receive in a day as a person in the public,  
3 you're receiving radiation from cosmic and solar radiation, you're receiving it  
4 from the radon from uranium in the soils that are naturally here, from the bricks  
5 in your home if you have them, granite and so on --

6 MS. OLSON: Beyond that.

7 MS. PARKHURST: Okay, beyond that. There's -- I suppose  
8 if a person wanted to know how much they got in a day, they could pay one of  
9 the manufacturers -- one of the services that makes thermo-luminescent  
10 dosimeters and you could probably find a way to purchase and wear this as  
11 know actually how much you're getting. As far as the facilities like in a nuclear  
12 plant, we know how much it is at the boundaries. These things are measured,  
13 so we know how much would be at that point, but I don't know that that's your  
14 question.

15 VOICE: You may want to talk about how we estimate also.

16 MR. KUGLER: I would just going to say the licensees are  
17 also required to estimate the dose to the maximally exposed individual based  
18 on releases from the plant, and any member of the public would be expected  
19 to receive less than that because they make some very conservative  
20 assumptions when they do that calculation.

21 So we may not be able to tell you exactly what you got, but  
22 we can tell you that it's no more than that amount. And that's in their annual  
23 reports and we talk about it in the environmental impact statement, I think in 2-  
24 27?

25 MS. PARKHURST: 2-27 and -41...

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1 MR. KUGLER: So there is information on that in the  
2 environmental impact statement. Is that what you were asking?

3 MR. CAMERON: Okay.

4 MS. OLSON: So it's fair to say, however, that averages are  
5 used and models are used and that we don't really know when it comes to the  
6 general public, how much we each get.

7 And finally, is that maximally exposed individual an infant or  
8 an adult?

9 MR. CAMERON: I take it's important that we answer this  
10 question so that people clearly understand what the situation is, and I don't  
11 know who wants to do it. Why don't you start and Mary Ann might complete.

12 MR. KUGLER: I'm Andy Kugler, for the record, NRC.

13 The reason we use the term "maximally exposed individual"  
14 is it's a person -- using some very conservative assumptions, it would be the  
15 maximum dose that somebody could get. It's not an average. And that's what  
16 I'm saying, that the actual dose to any individual would be lower than that. And  
17 what they try and do is they assume, you know, somebody stays in the worse  
18 place they could possibly stay, all the time, and therefore, they get a maximum  
19 exposure. And realistically, nobody would do that or could do that.

20 So it's a conservative number that, you know, estimates the  
21 dose higher than what any individual would actually receive, and therefore it's  
22 basically a bounding sort of calculation.

23 So the actual dose that any person will have received from  
24 the plant will be some number lower than that. So, you know, once you look  
25 at that number, you know, you're somewhere below that. How far below that

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1 is hard to say.

2 MS. OLSON: Adult?

3 MR. KUGLER: That I'm not entirely sure about. Do you  
4 know?

5 MS. PARKHURST: They do a lot of modeling of adult and  
6 infant because certainly the infants are more critical. However, what they're  
7 looking at is what is the exposure level here and then they convert it to dose.  
8 And so they understand again what the maximum could be to anybody at the  
9 fence line of the facility.

10 As far as annual doses, people in the U.S. get something  
11 along the lines of an average of 300 millirem a year. This is through, again, the  
12 solar, the cosmic, the indoor radon. Actually radon is a pretty strong  
13 component of that, but we have a pretty good feel for what the variation is. And  
14 from nuclear plants, the numbers that you're looking at on these lines, it's so  
15 low -- and you look at Page 2-26 in the document, it kind of goes through  
16 what's from the gaseous, the liquid and critical organ doses and so on from the  
17 releases from the plants as a result of that. So that might be a place to look at  
18 it. But again, it's about 300 millirem is considered average in this country.

19 MR. CAMERON: Okay, let's go to this gentleman back here.  
20 Hi. Just tell us again who you are.

21 MR. JENETTA: Tony Jenetta. In regards to the dosimeter  
22 readings of the individual receiving it away from the plant, who in addition would  
23 have authority to measure that within the county? Would the York County  
24 Emergency Preparedness agency have a role in that?

25 MS. PARKHURST: Have authority or be able to help you get

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1 access to dosimetry?

2 MR. JENETTA: Would there automatically be a procedure  
3 to measure this in addition to Duke measuring it on their own perimeter. Would  
4 Duke measure it beyond their perimeter or is there another agency that will  
5 constantly monitor to dosage for the individual citizen?

6 MS. PARKHURST: Again, there are state agencies that --  
7 Ms. Mr. Gandy -- okay, unfortunately -- we had probably just the person to  
8 respond to that one, who is the state radiation protection officer from that  
9 organization, but yes, they do their own monitoring and they require Duke to do  
10 monitoring of the facility as well. So there's a cross check of some of these off-  
11 site, in particular, types of facilities. And the state will look into like the milk --  
12 well, dairy products and fish and so on. So these things are again monitored  
13 by the state as well.

14 MR. CAMERON: Okay, let's go to the severe accidents,  
15 which I think there'll be some interest in. But thank you very much, Mary Ann.

16 Bob Palla, are you ready?

17 MR. PALLA: Thank you, Chip.

18 My name is Bob Palla, I'm a senior reactor engineer in the  
19 Probabilistic Safety Assessment Branch of the Nuclear Regulatory  
20 Commission. I'm going to be discussing severe accident mitigation alternatives  
21 for the Catawba plant.

22 Briefly, the license renewal rule requires a license renewal  
23 applicant to consider alternatives to mitigate severe accidents if the staff has  
24 not previously evaluated SAMAs for the applicant's plant.

25 Now since SAMAs had not been previously assessed for the

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1 Catawba plants, we assessed them as part of the environmental review. Our  
2 review is described in Section 5.2 of the EIS supplement for Catawba.

3 The purpose of the SAMA evaluation is to ensure that plant  
4 changes with the potential for improving severe accident safety performance  
5 are identified and evaluated. These improvements include hardware  
6 modifications, procedure changes, training program improvements. These  
7 types of fixes. The scope includes SAMAs that may either prevent core  
8 damage, which we term preventive SAMAs, and SAMAs that improve  
9 containment performance, given that core damage may occur. These are  
10 termed mitigative SAMAs.

11 Now the evaluation is conducted in several steps of the  
12 process and I'll just describe briefly, it's a four-step process, the first of which  
13 is to characterize the overall plant risk and the leading contributors to the risk.  
14 This involves extensive use of the plant-specific probabilistic safety assessment  
15 study, also known as PRA. This PRA identifies the different combinations of  
16 system failures and human errors that would be necessary for an accident to  
17 progress to either core damage or to containment failure.

18 The second step of the process is to identify potential  
19 improvements that can further reduce risk. The information from the PRA,  
20 such as the dominant accident sequences, is used to help identify plant  
21 improvements that would have the greatest impact in reducing risk.  
22 Improvements identified in other NRC and industry studies are also considered  
23 in this process. This includes similar type analyses performed -- the SAMA  
24 analyses performed, for example, by Tennessee Valley Authority for the Watts  
25 Bar plant, which is an ice condenser similar to Catawba, and also

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1 improvements that were identified in the PRAs performed for other plants.

2 The third step is to quantify the risk reduction potential and  
3 the implementation costs for each improvement. Now the risk reduction and  
4 implementation costs are typically estimated in a bounding fashion. Risk  
5 reduction is generally over-estimated by assuming that the plant improvement  
6 is completely effective in eliminating accident sequences that it's intended to  
7 address. The implementation costs are generally under-estimated by  
8 neglecting certain cost factors such as maintenance costs or surveillance costs.

9 Then these risk reduction and cost estimates are used in the  
10 final step to determine whether implementation of any of the improvements can  
11 be justified. And in determining whether an improvement is justified, we look  
12 at three factors.

13 The first is whether the improvement is cost-beneficial;  
14 specifically, do the estimated benefits -- are they greater than the estimated  
15 implementation costs.

16 The second factor is whether the improvement provides a  
17 substantial reduction in total risk. For example, does this improvement  
18 eliminate a sequence or a containment failure mode that contributes a large  
19 fraction of the plant risk.

20 And thirdly, we look at whether the risk reduction is  
21 associated with aging effects during the period of extended operation.

22 The preliminary results of the SAMA evaluation are  
23 summarized on the next slide. Fourteen candidate improvements were  
24 evaluated for Catawba. This included six SAMAs that were related to reducing  
25 the frequency of core damage, and eight SAMAs related to improving

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1 containment performance in a severe accident.

2 The costs and benefits of installing a dedicated power line  
3 from the Wiley hydroelectric station were also evaluated, effectively increasing  
4 the number of SAMAs evaluated to 15.

5 Although Duke did not find any of the candidates to be cost-  
6 beneficial, the NRC staff concludes that two of these are cost-beneficial when  
7 evaluated in accordance with NRC regulatory analysis guidelines.

8 The first cost-beneficial SAMA involves installing a water-tight  
9 wall around an electrical transformer located in the turbine building basement.  
10 This SAMA would prevent certain internal flooding events from proceeding to  
11 a station blackout due to a failure of the transformer. It appears to be cost-  
12 beneficial based on the risk reduction and cost information provided by Duke  
13 when evaluated in accordance with our regulatory analysis guidelines. This  
14 SAMA does not relate to adequately managing the effects of aging during the  
15 period of extended operation and therefore, it need not be implemented as part  
16 of license renewal pursuant to 10 CFR Part 54. However, the staff intends to  
17 pursue this matter as a current operating license issue and a possible plant-  
18 specific backfit.

19 The second cost-beneficial SAMA involves providing a  
20 backup source of electric power to the hydrogen igniter system. The igniter  
21 system is an AC-dependent system and would be unavailable in a station  
22 blackout event. This SAMA would permit the igniter system to be operated  
23 during station blackout, thereby reducing the likelihood of containment failure  
24 due to hydrogen combustion. The SAMA appears to be cost-beneficial if only  
25 the hydrogen igniters need to be powered from the backup power source.

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1 However, it might be necessary to also supply the containment air return fans  
2 from a backup power source in order to ensure adequate mixing within the  
3 containment. If both the igniters and air return fans need to be supplied from  
4 backup power, the SAMA becomes more expensive and may not be cost-  
5 beneficial.

6 This SAMA does not relate to adequately managing the  
7 effects of aging during the extended period of operation, and therefore, it would  
8 not need to be implemented as part of license renewal, pursuant to the  
9 regulations. However, the need for plant changes related to hydrogen control  
10 are currently being assessed by NRC as a formal generic safety issue. And as  
11 part of that issue, the NRC staff is carefully considering whether the air return  
12 fans are needed to also be provided off of backup power and whether plant  
13 improvements should be required at all plants with ice condenser containments,  
14 including the Catawba plant.

15 Any improvements that are required through the resolution  
16 of this generic safety issue will be addressed under the current operating  
17 license.

18 So to summarize on the next slide, our overall conclusion is  
19 that additional plant improvements to further mitigate severe accidents are not  
20 required at Catawba as part of license renewal; however, improvements to  
21 hydrogen control and installation of a water-tight wall, are being further  
22 evaluated as current operating license issues.

23 Any questions on that?

24 MR. CAMERON: Questions for Bob on severe accidents.

25 Mary.

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1 MS. OLSON: First, I take my hat off to NRC staff for getting  
2 out a fine comb on this.

3 My question though is there's a recent release -- I haven't  
4 actually read the report yet, but from the National Academy of Sciences on the  
5 issue of the vulnerability of the electric grid to terrorist attack. And I know we're  
6 getting into safeguard issues here, so let me talk for a moment into a question  
7 that might or might not be answerable.

8 We were really worried about Y2K and we were really thrilled  
9 that the National Electric Reliability Council was right and the grid did not go  
10 down. And we certainly don't want to see the grid go down now. At the same  
11 time, when and at what point will these cost/benefit analyses begin to be  
12 impacted by new information like the National Academy of Science's report  
13 saying that the grid is highly vulnerable to attack and at what point does, you  
14 know, something like the dedicated line become cost effective?

15 MR. PALLA: Well, okay, this study was done today without  
16 any consideration of these potential events. The numbers that we generate for  
17 purposes of the cost/benefit comparison obviously don't include that. I'm not  
18 sure if you -- you know, just how much the data would change as a result of  
19 that.

20 But this is, I think, a fair consideration when one looks at the  
21 merits of making these kinds of improvements for these kinds of containments.

22 So I don't have a good answer to your question about to what  
23 level would this change --

24 MS. OLSON: No one has a good answer to questions about  
25 what ifs, but I'm putting it on the table because I take it's real important and I

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1 also think that -- I mean it's not very often I go out of my way to try and help a  
2 nuclear utility, okay? But my other question I'd give you is can you reflect on  
3 when these cost/benefit analyses are done? You know, you balancing against  
4 potential fatalities, well, what's the number? What's the cost of a death?

5 MR. PALLA: That's a different question, but if you wanted to  
6 know how close are we to making a decision whether or not to do something,  
7 as documented in the environmental impact supplement for Catawba, this  
8 improvement appears to be cost beneficial just taking the case where igniters  
9 alone need to be supplied. That looks to be cost beneficial. And it also looks  
10 very close to being cost beneficial to supply both the igniters and the air return  
11 fans. This is separate from even considering these additional events that  
12 you're referring to. So you may not even have to go further than we've done  
13 already, to justify doing the improvement.

14 MS. OLSON: Glad to hear it.

15 MR. CAMERON: Not to belabor this, but I think that Mary's  
16 question, the heart of it goes to what's the equation that we use -- it may not be  
17 in loss of life or cancers or whatever. What equation do we use under the  
18 regulatory analysis guidelines?

19 MR. PALLA: We use the regulatory analysis guidelines. Now  
20 within the guidelines, values are assigned to person-rem, and certain numbers  
21 of person-rem are needed to result in a loss of life. And values for a loss of life  
22 are assigned within the methodology. So there is a conversion. It's all implicit  
23 within the formula, so --

24 MR. CAMERON: Could we give Mary -- I don't know if you  
25 need a citation or anybody needs a citation to the regulatory analysis

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1 guidelines.

2 MR. PALLA: The regulatory analysis guidelines is NUREG/  
3 BR-0184.

4 MR. CAMERON: NUREG/BR-0184.

5 MS. OLSON: Thank you.

6 MR. CAMERON: Great. Any other questions before we go  
7 to Jim and the overall conclusion, again, draft environmental impact statement  
8 overall conclusion.

9 Yes, Gregg.

10 MR. JOCOY: Yeah, thank you very much.

11 Tell me something -- you folks went in, if I understand the  
12 process you went through correctly, you went in and said let's screw up here,  
13 and if it's something that we can screw up that we can identify, how much  
14 would it cost to keep it from screwing up and then is it worth paying that cost?

15 MR. PALLA: Yeah, that's basically it.

16 MR. JOCOY: That being the case, since this power plant has  
17 been in operation for some period of time, how is it that you just now came to  
18 the conclusion that hydrogen control and installation of water tight wall being  
19 further evaluated as a current operating license issue was something that  
20 should be addressed? Didn't this kind of work go on before? Didn't someone  
21 throw up a red flag somewhere down the line and say, you know what, there's  
22 one of these generators out here that doesn't even have a water-tight wall  
23 around it? I mean, can you see how that creates some skepticism?

24 MR. PALLA: Yeah, well, my explanation of that would be that  
25 the type of information that we used to reach these kinds of conclusions may

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1 have been there before. For example, Duke had identified previously that a  
2 water-tight wall could reduce the impacts of some of these internal flooding  
3 events. But they did not put this through a systematic cost/benefit analysis and  
4 even if they did, some of the basic assumptions that we make in the regulatory  
5 analysis guidelines are not the same assumptions that a licensee or utility  
6 might make.

7           So we basically ran this through the NRC set of assumptions,  
8 which give additional -- it considers additional factors that a utility may not tend  
9 to look at because they may only look at certain economic factors and we bring  
10 in some additional factors, like replacement power costs, for example. When  
11 you put some of these other factors in, this frequently makes the difference  
12 between the improvement being cost beneficial or not beneficial. But the  
13 example of a water-tight wall, this was actually something that Duke had looked  
14 at before and didn't make that decision to install it.

15           MR. CAMERON: Bob, maybe we've left the impression too  
16 that this SAMA evaluation is only something that occurs in license renewal. But  
17 don't we have a program outside of license renewal?

18           MR. PALLA: Okay, well, there's another -- well, historically,  
19 looking back, there was a program where every plant was required to do an  
20 individual plant examination, which is essentially a PRA, Level 1 and 2 PRA.  
21 It doesn't go to calculating off-site consequences, but it looks at basically ways  
22 that you could lead -- accidents could lead to core damage and ways that  
23 releases could occur from containments. These are typically called Level 1 and  
24 Level 2 PRA. We call this the IPE. The IPE was done I guess in the late '80s,  
25 early 1990s. Many improvements were identified and implemented as a result

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1 of that, and this was separate from renewal.

2 And our assessment here basically started from that point  
3 and took -- we took insights from some of these IPEs and subjected them --  
4 you know, a licensee when they looked at potential improvements, put some  
5 of the potential improvements identified in the IPE into this process here. so  
6 it's not like this is the first time we've seen these, but it is really the first time  
7 that we've systematically crunched them through this regulatory analysis  
8 process, these guidelines.

9 Okay, let's have a final word from Rani on this and then let's  
10 go to Jim. Rani.

11 MS. FRANOVICH: I just think it might be important to clarify  
12 that even without these improvements to risk, they're meeting all of the current  
13 requirements to operate even now. And what we've done is we've gone from  
14 a deterministic mode of regulating these plants to a risk-informed process. And  
15 that's a fairly new -- within the last four years or so -- new way of regulating.  
16 So this is another way of improving safety at the plants by looking not so much  
17 at what they're doing to meet the regulations, but what else can they do to  
18 make it even safer than it already is, by meeting current existing regulations.

19 So I just wanted to clarify that a little bit too.

20 MR. CAMERON: Okay, thanks, Rani, that's a good  
21 conclusion to that. And let's go to Jim Wilson for a wrap up here and then  
22 questions again.

23 MR. WILSON: To summarize, the impacts of license renewal  
24 at Catawba are small for all impact areas. This is in comparison with our  
25 preliminary conclusion in the draft environmental impact statement, that the

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1 impacts of alternatives to license renewal at Catawba range from small to, in  
2 some cases, large. Therefore, the staff's preliminary conclusion is that the  
3 adverse impacts resulting from license renewal are acceptable from an  
4 environmental standpoint.

5 A quick recap of current status. We issued the draft  
6 environmental impact statement for Catawba license renewal on May 13.  
7 Currently we're in the middle of a public comment period that is scheduled to  
8 close on August 9 and we expect to address any public comments and make  
9 any necessary revisions to the draft environmental impact statement for license  
10 renewal at Catawba and to issue a final environmental impact statement in  
11 January of 2003.

12 This slide provides information on how to access the Catawba  
13 environmental impact statement. You can contact me directly at the phone  
14 number provided and I'll mail you a copy. You can view the document at the  
15 public library here in Rock Hill and the document is available on the web at the  
16 address given. We also have a number of copies in the side room at the back  
17 and we'd be glad for you to take copies home with you.

18 This last slide gives details on how to submit comments on  
19 the draft Catawba environmental impact statement after this meeting is over,  
20 up until the 9th of August. You can submit comments in writing or by e-mail to  
21 the addresses given or you can bring them, if you wish, to Rockville and  
22 present them in person at our headquarters, Maryland.

23 That concludes our presentations at today's meetings. Any  
24 comments, any questions?

25 MR. CAMERON: Before we go to questions, I don't know if

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1 there are any, but Rani, can you tell us -- Jim's told us when the environmental  
2 review piece is going to be done. When is the safety review piece going to be  
3 done, so people know what to anticipate about when there might be a decision?

4 MS. FRANOVICH: Right. Right now, we're involved in some  
5 hearings. If the hearings progress through and go to fruition, we're looking at  
6 a decision in December of '03, December of next year.

7 So if the hearings do not proceed, then it'll be sometime  
8 before, I'd say probably June next year.

9 MR. CAMERON: Thank you. Do we have questions on this  
10 last part before we go out to listen to some more from everyone here?

11 (No response.)

12 MR. CAMERON: Okay. Just give us your name, please.

13 MR. TROUTMAN: My name is Joe Troutman, I represent  
14 several of the owners at the Catawba Nuclear Station. I believe this would be  
15 for Mary Ann, and I probably should have asked it earlier but I didn't really think  
16 about it.

17 I recently had a nuclear stress test done in Rock Hill here at  
18 a doctor's office. They injected several radioactive isotopes into my blood while  
19 I was exercising and took pictures with special equipment and so forth. But I  
20 work at the Catawba station, I don't, as you might understand, deal with  
21 radiation, I don't go inside the radioactive areas. However, I was talking to  
22 some of the folks that administer the people that do, and just in conversation  
23 it came up that I received the number of micro-curies that's really almost  
24 equivalent to the number of curies that would be allowed to be released by the  
25 Catawba station in a year, they injected it into my body for this test.

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1 I was quite radioactive after this. I had to go by a monitor that  
2 they use at the plant for monitoring radioactivity, and I kind of thought it was  
3 going to jump off the wall and chase me down.

4 But my question is would you be surprised to say that that  
5 would be accurate, that that number probably was fairly comparable to the  
6 limits that the Catawba station operates under?

7 MR. CAMERON: Okay, thanks, Joe. Mary Ann, can you talk  
8 to that for us?

9 MS. PARKHURST: I'm going to have to plead ignorance on  
10 that particular procedure. However, one of the things about it is that it was a  
11 very short term exposure, the way they administer it, so that it's not like it's  
12 hanging around for a long time.

13 But a lot of the exposures are much -- the radiotherapies or  
14 radiodiagnostics, I didn't mention as far as the average a person gets in a year.  
15 If you've got some of those medical treatments or therapies, the numbers can  
16 get very large.

17 MR. CAMERON: And Rich, do you want to say anything  
18 more on that in terms of comparative aspects of a -- obviously we don't know  
19 what treatment Joe got, but in terms of --

20 MR. TROUTMAN: It wasn't really treatment, it was a test.

21 MR. CAMERON: A test, I'm sorry.

22 MR. EMCH: Hi, I'm Rich Emch, I'm environmental project  
23 manager with the Nuclear Regulatory Commission.

24 Most of my experience and knowledge is with reactors similar  
25 to what Mary Ann was saying, but I mean, I guess basically what you've said

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1 highlights the fact that the amount of radioactive material that's released from  
2 Catawba in a year is a very small number, okay? and they do monitor what's  
3 released in the liquid and gaseous pathways, and it is very small and it does  
4 provide to the maximum individual we were talking about earlier, a very small  
5 dose. And we're happy that you're still with us and I'm glad the test went well,  
6 or at least I hope it did.

7 MR. CAMERON: And we hope that the meeting doesn't add  
8 to your stress levels.

9 We're going to start off public comment, more formal  
10 comment, by asking Duke Energy Corporation to just provide us with a little bit  
11 of information, their perspective on license renewal, and we have Greg Robison  
12 with us, who is the project manager for license renewal for Catawba. Is that  
13 correct, Greg? Please come up and talk to us and then we're going to go to  
14 the rest of the people.

15 MR. ROBISON: Thank you, Chip. I'm Greg Robison, I am  
16 the project manager for license renewal for Catawba.

17 What I'd like to do is just take a few minutes to thank some  
18 people and to recognize some people for some hard work. This evening, I'm  
19 speaking on behalf of both Duke and our co-owners at Catawba.

20 I'd like to start by recognizing and thanking the foundation of  
21 the folks that really made this possible, and that's our employees at Catawba.  
22 For over 17 years they've stayed focused and dedicated and I'm absolutely  
23 certain they'll remain that way for the entire time we will be in license renewal.  
24 It is because of their foundation, because of their work, that we're allowed to  
25 pursue renewal. And I'm happy to be associated with them.

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1 I in particular want to thank our environmental staff, who put  
2 together the environmental information that we did provide to the NRC and that  
3 the NRC has used to prepare their environmental impact statement. And also  
4 thank our staff for the support that they've given the staff and also the national  
5 labs in your site visits.

6 The second group I'd like to recognize is the NRC  
7 themselves. The national labs and the NRC have put a lot of hard work into  
8 this report and as Rani Franovich pointed out, it's the stable and predictable  
9 process that the NRC gave us that allowed us to feel comfortable going into  
10 license renewal and really spending our energies to put our materials together  
11 and have been able to work in a very predictable fashion questions and  
12 answers in a very stable manner with the NRC that has led to the report that  
13 you're looking at tonight.

14 And speaking of the report, we have taken a look at the draft  
15 environmental impact statement, and from our initial review from our specialists,  
16 we agree with the conclusions of the report. As Bob Palla had pointed out,  
17 there were some detailed discussions that we did have with the NRC staff and  
18 we are in the process now of doing detailed comments and we will provide  
19 those to the staff by August 9.

20 The last group that I'd like to thank and recognize are our  
21 community and our neighbors. They have provided ongoing support for us and  
22 demonstrated their confidence in our ability as nuclear professionals. We  
23 interact with our neighbors often daily, we have our communications staff here  
24 with me tonight, who have continued to let me know of the number of times that  
25 they've worked with our neighbors and the strong support our neighbors have

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1 given us.

2 As license renewal shows you, we will continue to stay  
3 focused on nuclear safety as our number one priority, and that's because we  
4 want to continue to be a good neighbor here in the Rock Hill area and in the  
5 York County area.

6 And with that, I thank you for your time.

7 MR. CAMERON: Okay, thank you very much, Greg.

8 We're going to next go to Mary Olson, Nuclear Information  
9 and Resource Service and then we're going to go to Peter Sipp after Mary.  
10 Mary.

11 MS. OLSON: Do we have a time limit tonight? I won't be real  
12 long, but -- I'm just trying to stay honest, Chip.

13 MR. CAMERON: No, I know. Five to seven minutes, but, you  
14 know, take seven.

15 MS. OLSON: My name is Mary Olson, I'm the Director of the  
16 Southeast Office of Nuclear Information and Resource Service. We're a  
17 national organization based in Washington, D.C. and we represent  
18 approximately 1000 local grassroots activist groups across the country, that are  
19 primarily concerned with commercial nuclear power and its radioactive waste.

20 I want to mention briefly that NIRS finds that with the passage  
21 of the generic environmental impact statement on license renewal that what the  
22 Nuclear Regulatory Commission refers to as a stable and reliable -- is that the  
23 words that were used -- process -- predictable and reliable process -- stable  
24 and predictable? I'm mangling this, forgive me. Is largely because of the  
25 number of issues that the public is categorically excluded in bringing up in the

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1 process. And therefore, we have not prioritized it as an opportunity for our  
2 membership to be active. So I just want to note that the participation that you  
3 see in this room this afternoon and this evening is fully due to the Nuclear  
4 Regulatory Commission's outreach efforts.

5 Having said that, I want to step back and say I'm genuinely  
6 pleased and surprised by the results of this process in bringing up issues that  
7 I hear tonight the Nuclear Regulatory Commission staff is interested in  
8 pursuing, whether they are part of license renewal or not. That gives me, as  
9 a career professional in this field, some confidence and some renewed respect  
10 for the Nuclear Regulatory Commission. These issues are that of hydrogen in  
11 ice condensers, hydrogen ignition, whether they should have backup power  
12 and whether the mixing of hydrogen and other gases in the atmosphere by fans  
13 and the backup power in the event of station blackout.

14 I am putting this down because the history is that well  
15 intentioned NRC staff are not always backed by their organization. And I  
16 sincerely hope that that will not be the case and that we will see new  
17 regulatory basis for increasing the security and safety and health of the people  
18 of this area, because I believe they are at elevated risk due to the potential for  
19 ice condenser failure because of hydrogen.

20 Now, having said that, I want to say a few other things.  
21 When I look in the mirror, my necklace reminds me of baby teeth -- it's not, I  
22 have no children, but they're freshwater pearls. And you know, baby teeth  
23 reminds me of the strontium 90 that's building up in the teeth of children in this  
24 area most likely. The tooth fairy project undertaken by Jay Gould and others  
25 has shown that children who live down wind of nuclear reactors in the United

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1 States do in fact have more strontium 90 than children who live in other areas,  
2 even though atmospheric bomb testing is over.

3 But we're not allowed to bring that issue to the question of  
4 whether Catawba 1 and Catawba 2 should continue to operate in this  
5 neighborhood. We're not allowed to bring that issue because it would be  
6 challenging current regulations. So again, I take off my hat to the NRC for  
7 finding some issues where they must challenge their own regulations and  
8 consider changing them.

9 But I cannot accept -- and I have said before and I will say  
10 again -- that the NRC's own finding that the 20 years of operation of each of  
11 these reactors, when only considering the off-site does, when considering  
12 routine releases, routine operations and no accidents, perfect -- Duke  
13 delivering perfection -- will result in 12 excess cancer deaths per 20 years of  
14 operations. That, when you do the math, results in 24 people for two units for  
15 20 additional years, and when you add the fact that each of these units already  
16 has 40 years of license, a total of 36 cancer deaths each. So now we come up  
17 with a total of 72, since there's two units. And then, because there's one non-  
18 fatal cancer for every fatal cancer generated with no accidents, with no  
19 problems, we're talking about 144 cancers from these two units in their 60  
20 years of operations. And this doesn't even include handling the high level  
21 waste.

22 And can we talk about that waste, the fact that 20 more years  
23 of generation of electricity for two units is effectively a whole new 1000 -- or we  
24 heard earlier 1129 megawatt -- electrical generation reactor? Because, you  
25 know, 40 more years, that's like a whole new unit. That's going to be a whole

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1 new unit's worth of high level waste either staying here or traveling somewhere.  
2 But we can't bring that up.

3 And we also can't bring up the fact that Catawba is currently  
4 under contract with the Department of Energy -- and I'm going to hand this over  
5 to our transcript in a moment, because I'd like it to go in the record, excerpts  
6 from the contract signed by Duke-Cogema-Stone & Webster, that names  
7 Catawba 1 and 2 as mission reactors for the irradiation of weapons grade  
8 plutonium in MOX fuel. And by the way, I just want to read a very short portion  
9 of the contract. It says "The contractor may only propose to replace a mission  
10 reactor if (1) the reactor has been shut down for economic reasons or (2) the  
11 Nuclear Regulatory Commission or the utility company has required the reactor  
12 to be shutdown for safety...and in either case, the shutdown will preclude  
13 accomplishment of the plutonium disposition mission schedule."

14 That's very tight language saying that under only the NRC  
15 rejecting the safety of MOX fuel will this reactor not use it, if that fuel is  
16 produced. And yet, we are told that this very same time period, the studies that  
17 have been done on uranium fuel are all that will be considered.

18 Where and when will the National Environmental Policy Act  
19 be applied to the use of this contractually obligated irradiation of plutonium?  
20 The answer is in a process by NRC staff, an environmental assessment, which  
21 may or may not ever be opened to a complete public access like this process  
22 for people who live in this community, unless they're willing to litigate, unless  
23 they're willing to either join up with the likes of me and go into court under the  
24 banner of an environmental organization or they're able to hire their own  
25 attorney and step in at that point.

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1                   So I'm basically wanting to put on record a few of the  
2 concerns that we have about the impacts that MOX would have, that are not  
3 reflected in the current document that we're looking at tonight.

4                   Increased health hazards to the worker and public, both from  
5 routine and accident conditions; the reworking of that committed off-site dose  
6 that is responsible for 144 cancers for Catawba 1 and 2, what's the difference  
7 with MOX fuel; the socio-economic impacts of asking those people in this area  
8 to pay for this increased hazard with their own tax dollars; the increased rate  
9 of aging that may result to the reactor pressure vessel and internals from the  
10 use of this different type of fuel; elevated thermal impacts impacting not only  
11 operations, but also the environment and also waste storage in handling and  
12 disposal including impacts on decommissioning which are not covered by the  
13 contract, by the way, and would be borne by who? Increased fission products  
14 in all forms of emissions and waste; increased plutonium in all emissions and  
15 all types of waste; impacts, as I said, on decommissioning; and finally, impact  
16 on security.

17                   And my final comments, I do want to make on security  
18 tonight. Nuclear Information and Resource Service intervened on the license  
19 renewal issues. Our petition to intervene was due on September 14. Needless  
20 to say, our application was deeply impacted by the events of September 11.  
21 We respect the fact that the Nuclear Regulatory Commission is in the review  
22 of security issues, we respect the fact that we probably will never know if any  
23 of our contentions were addressed. And yet, at what point does the public  
24 have the right to continue to assess these concerns in the context of public  
25 decision-making processes?

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1                   Catawba 1 and 2 are currently sitting there on line. If, heaven  
2 forbid, they were attacked while on line, there would be a Chernobyl type event  
3 if the core was breached and containment was breached. The International  
4 Atomic Energy Agency said that a week at September 11, that that would be  
5 the type of consequence. And yet, calculations have been done, have been  
6 published in the open press, that if a reactor is turned off for only 30 days,  
7 because such a large portion of the radioactivity is transient, is like that medical  
8 radioactivity that decays very quickly in seconds, minutes, hours, days, weeks  
9 -- in 30 days, half of the radiological impact is gone if the same attack occurs --  
10 half.

11                   Now it does level out, we don't see it go away in a couple of  
12 decades, we know that. You still have a big problem on your hands if irradiated  
13 fuel is attacked, but to look at the cost/benefit to this region in an era of  
14 terrorism is something that people have a right to know, whether those  
15 considerations have been made.

16                   I already mentioned earlier that the National Academy of  
17 Science has come out with a new report that basically says the grid in the  
18 United States cannot be safeguarded and so this doubles my appreciation of  
19 NRC staff for identifying station blackout issues as primary for ice condenser  
20 reactors, Catawba in particular.

21                   And all I can say is that I offered in very good faith to Duke  
22 the idea of using hydroelectric generation on the site of the reactor as an  
23 ultimate form of insurance, as long as that dam is there, that the reactor could  
24 be cooled in the event of station blackout. And I think it's time to take that  
25 teeter-totter and put the full weight of the national security issues on the other

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1 end of whether it is cost effective to back up Catawba 1 and 2 with its own on-  
2 site dedicated line to the electric generation that is also on site.

3 So having said that, we are still in litigation on some of these  
4 issues, we'll see how it all comes out. I wish Duke the very best with the Fourth  
5 of July coming up, we're all deeply concerned about the kinds of things we're  
6 reading in a paper, and we encourage both the NRC and Duke Energy to do  
7 the utmost to secure and ensure public health and safety.

8 Thank you.

9 MR. CAMERON: Thank you, Mary. We're going to go to  
10 Peter Sipp next. Okay?

11 MR. SIPP: Thank you, Chip.

12 I want to know from anyone that would know this, how much  
13 money does Catawba receive in subsidies. Does anybody know?

14 MR. CAMERON: That's a pretty broad question here.

15 MR. SIPP: Okay, but does Catawba receive tax dollars to be  
16 there?

17 MR. CAMERON: I don't know. Why don't you proceed with  
18 --

19 MR. SIPP: Is Greg Robison still here? Do you know that,  
20 Greg?

21 MR. ROBISON: I don't know.

22 MR. SIPP: Okay, when I was in the sixth grade in 1959,  
23 something we had to do in our class was to bring an article once a week, and  
24 I think I talked to you about it in Savannah, but it's appropriate that I mention  
25 it now because there's others that didn't hear it. But my particular article that

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1 one day was about the NS at Savannah, and the NS stands for nuclear ship,  
2 and it was commissioned in 1959. I found out from an article in the Sandia  
3 National Lab that it was decommissioned in 1972 and it was decommissioned  
4 because it could not compete with the oil burners. And that's a well kept secret  
5 by the nuclear industry and I ain't keeping it a secret. It can't compete, it  
6 couldn't compete, that's why there's only one nuclear commercial ship ever  
7 built, it wasn't getting this tax dollars, it's parked in Charleston.

8 So you folks that are trying to push nuclear power, it's dead.  
9 You smile at me, Joe, but it's dead, buddy -- it's dead.

10 I understand that the containment for Catawba is only three-  
11 quarters of an inch plate. That's not very much. That's a real easy target for  
12 somebody who wants to make a mess in South Carolina. I wouldn't be  
13 bragging on that I worked there.

14 Nuclear power is a great thing, but the waste, what are we  
15 going to do with it? Nobody wants it -- oh, well. What are we going to do with  
16 it? Nobody wants it. Nevada sure doesn't want it, they don't even have a  
17 reactor in that state and oh, we're going to put it out there. We'll get it out of  
18 my yard, I don't want it, put it somewhere in Nevada. No, it's a dead horse,  
19 sorry.

20 We are just the right distance from the sun. If you think about  
21 Mercury, the closest planet to the sun, it's very hot, and then go to the other  
22 extreme, Pluto, very cold. We're the right distance. That was in my fourth  
23 grade child's science book, it reminded me of that -- very basic.

24 I appreciate all you're doing to keep it from having a  
25 meltdown and all this stuff in your generic environmental impact statement

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1 book on Page 8-47. So much depends on how we look at things. It says in  
2 here that Catawba site receives approximately four to five kilowatt hours of  
3 direct normal solar radiation per square yard -- thank you very much -- per day,  
4 of solar radiation. And then at the end it says implementation of solar  
5 generation on a large scale, enough to replace Catawba's generating capacity,  
6 would likely result in large -- and you had to emphasize the word large --  
7 environmental impacts. Well, I thank you, but there's no waste with making  
8 electric on somebody's roof, there's no waste at all. Thank you very much.

9 When you say that you're not pro-nuclear, but when you say  
10 -- you just don't look at it right.

11 So I'm in favor of no new license. Sorry, but that's not good  
12 enough, it really isn't.

13 MR. CAMERON: Okay, thank you, Peter. Let's go to Sherry  
14 Lorenz, Sierra Club, right now and then we'll go to Gregg Jocoy. Sherry.

15 MS. LORENZ: Good evening, ladies and gentlemen. My  
16 name is Sherry Lorenz, and I live in Fort Mill.

17 Tonight I'm standing before you, not as an expert, but as a  
18 common citizen who deeply cares about family, friends, neighbors, animals,  
19 nature and the general wellbeing and future of this planet.

20 I have all the scientific information on weapons grade  
21 plutonium, but I left it at home. I plan to talk to you as a friend and as a  
22 concerned citizen.

23 Ladies and gentlemen, I am pained that I have to stand up  
24 here and talk and convince you of something that shouldn't even be an issue,  
25 something that everyone should know is wrong, disastrous, outright insane and

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1 may very well one day spell the end of this entire planet as we know it. Why?  
2 Why would you or you or you or you want to endanger your children, your wife,  
3 your husband, your mother, your father, your sisters and brothers, your  
4 grandparents, your friends and neighbors, with a threat that will and can wipe  
5 everyone out? But worse yet, will cause immense pain and suffering first  
6 before death finally sets in.

7 Ladies and gentlemen, I am talking about the threat of a  
8 nuclear fallout from a reactor, a reactor that has exploded on its own, a terrorist  
9 attack, or an attack anywhere in the U.S. Terrorists confiscating plutonium  
10 from the sites it is stored or even holding up the trucks that are supposed to be  
11 transporting this lethal chemical across the roads of our cities, towns and  
12 neighborhoods. You know as well as I know that for terrorists, nothing is an  
13 obstacle. Their motto is we will kill, no matter how, what, where, or when. They  
14 have proven it and they will prove it again. It's just a matter of time.

15 We may one day fry from our own invention, from the  
16 plutonium and uranium, we have so proudly created ourselves. Wouldn't this  
17 be the ultimate reward for our smarts, our state of the art power generation and  
18 advanced technology? It just may be that one day, we will all have to swallow  
19 our own medicine -- a very deadly one in this case.

20 Ladies and gentlemen, I don't want to see my children and  
21 grandchildren suffer. I don't want to see my friends and neighbors suffer. I  
22 don't want to see the world suffer. I don't want to suffer and die myself.  
23 Everybody, everybody deserves a decent life on this earth. We are here for  
24 just a very short time and we deserve to have a good time, good quality time  
25 during our limited stay here on this planet. Ladies and gentlemen, people are

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1 suffering as it is, the world is already awash in pain and suffering. Why add to  
2 the misery, why make it worse? Why not be intelligent and utilize better ways  
3 to produce power, to create safe and clean industry, industry that would really  
4 verify our intelligence and technology that is good and safe for us and our  
5 world.

6 Ladies and gentlemen, the knowledge is already available, it's  
7 all here to be grabbed, to be utilized, to be taken advantage of. I'll be glad to  
8 obtain any type of information for you on clean and safe energy, including the  
9 latest copy of the Sierra Club magazine called Sierra.

10 Ladies and gentlemen, wind, solar and hydrogen can and will  
11 end our dependency on nuclear power plants and other dangerous polluting  
12 plants. Why ignore safe and clean technology if it's good for the good of Man?  
13 Why? I don't understand it. Is it because of corporate greed, because of the  
14 fact that it is less profitable for big industry? I think I may be right. Isn't this all  
15 about money? I think I may be right. Is corporate America truly concerned  
16 about our health and even the health of our own families and friends? Maybe  
17 not. I think I may be right as well.

18 Why then don't we all stand up to them and say no more, no  
19 more deadly chemicals, no more playing with our future? Ladies and  
20 gentlemen, I am asking you why are you ready to throw your lives away for  
21 profits? Even the profits of a foreign country, a country that is hundreds and  
22 hundreds of miles away and doesn't give a rip whether you're dying of cancer  
23 or you're blown into 1000 pieces. And by this, I mean France.

24 Ladies and gentlemen, we don't need plutonium on our roads,  
25 whether it's in South Carolina or anywhere else, because in essence, anywhere

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1 else is here too. A nuclear disaster has no borders, no boundaries, it will swiftly  
2 sicken and eventually exterminate everyone in its path, every human, every  
3 animal, every tree and every blade of grass.

4 The accidents at Chernobyl and Three Mile Island have  
5 proven the worst fears and nightmares about nuclear fallout. Thousands have  
6 died, many thousands more are suffering right now as we speak. Children are  
7 stricken with rare cancers, leukemias, lymphomas, tumors and other hellish  
8 diseases that are so terrible, it's almost better to die than to suffer in total  
9 agony without hope of recovery.

10 Ladies and gentlemen, even if we don't have a disaster of any  
11 kind, in our lifetime, the waste from nuclear power plants and weapons  
12 production will stay with us for hundreds and thousands of years. These deadly  
13 chemicals are already causing more cancers and disease, birth effects and  
14 death that we shouldn't even be suffering.

15 Where is the end of this? When will we wake up and stop the  
16 insanity? I thought that we considered ourselves to be civilized people. I'm  
17 sorry, I'm sorry to say that this is not the case. In my opinion -- how could we  
18 call ourselves civilized if we self-destruct? Nuclear power, plutonium, uranium  
19 and other deadly chemicals cannot be considered progress or intelligent  
20 inventions. If something doesn't promote health, happiness and a safe world,  
21 it is neither intelligent, nor progress.

22 Ladies and gentlemen, let's see the light, let's stop before it's  
23 too late, let's do the right thing. We may still have a chance now. However,  
24 when we start transporting MOX fuel over our highways and start burning it in  
25 our reactors, we may be crossing a point of no return. Let's do the right thing

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1 now, let's save our species from extinction. We already have enough  
2 plutonium and uranium to blow this planet to pieces many times over. Let's  
3 start disposing of these hellish chemicals, let's start making plans for a safe  
4 and good future.

5 We should be meeting here today to discuss how to undo our  
6 mistakes, not make more of them. Let's meet somewhere soon and discuss  
7 what's really good for all of humanity. This shouldn't be us versus you, this  
8 should be us working together to make this world a better place. Ladies and  
9 gentlemen, let's rise to the occasion. You say it's not that easy? Well, I have  
10 news for you. There is power in numbers and where there's a will, there's a  
11 way. If we all stand up and demand the same thing, to have a safe world, then  
12 the others will follow, because even the greedy, the rich and the mighty, can't  
13 do it alone, after all. If they become the minority, they too will have to follow  
14 suit. They will have to do the right thing as well. They will have no choice.

15 Ladies and gentlemen, I ask that you look deep into your  
16 soul. I know that you know the right answer to all of this.

17 Ladies and gentlemen, let's stop the insanity now, let's stop  
18 it today. And let's meet real soon to discuss a beautiful and safe future for us  
19 and our children.

20 Ladies and gentlemen, please nix MOX.

21 Thank you.

22 (Applause.)

23 MR. CAMERON: Thank you very much, Sherry. Could we  
24 attach that to transcript?

25 MS. LORENZ: Pardon?

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1 MR. CAMERON: Could we attach that to the transcript?

2 MS. LORENZ: Yes.

3 MR. CAMERON: Great. If you have an extra copy or we can  
4 get a copy. Okay, thank you very much.

5 We're going to go to Gregg Jocoy at this point. Gregg is with  
6 the Blue Ridge Environmental Defense League.

7 MR. JOCOY: Good evening, folks. Boy, that was great,  
8 Sherry. I heard a fellow on the radio today, who trains people in public  
9 speaking and so on like that, and he said if you don't have butterflies in your  
10 stomach when you stand up to speak, you're probably in trouble. So  
11 apparently I'm not in trouble because I've got the butterflies.

12 I'm here today representing the Board of Directors of the Blue  
13 Ridge Environmental Defense League and I'm simply going to read the  
14 statement. I want all of you folks who are on the NRC staff to understand once  
15 again I have to reiterate, this is my own personal opinion here, okay? This is  
16 not BREDL, this is Gregg's opinion.

17 And I have to reiterate once again, don't be persuaded by  
18 Duke Energy's reputation in the community. Of course, they're well-liked, they  
19 employ a lot people, they pay a lot of tax money. That doesn't mean that the  
20 technical questions that you folks are supposed to be investigating are any less  
21 serious because Duke Energy has the support of the public. You have to get  
22 down to the brass tacks and make a decision about whether or not the things  
23 that are proposed are safe and sound for us and for our families. I know that  
24 you all take that responsibility very seriously, but I want you to understand too  
25 that the folks from Duke Energy have literally hundreds of people who are on

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1 staff, paid whatever wages they're paid, and I sell nuts and bolts for a living,  
2 Sherry sells something for a living, I'm not really quite sure that I understand  
3 what it is. You know, Mary and Pete, these are just average people who are  
4 really concerned that Duke Energy plans to screw up our lives.

5 You know, take the resources that Duke has available to it,  
6 take the resources that the opposition has available to it, and use that as you  
7 weigh things. Sit there and say okay, Duke has given me 10,000 pages of why  
8 this is safe and over here from NIRS, I've got two pages that says there's a  
9 problem. Maybe instead of spending my time going through those 10,000  
10 pages, I need to spend some of my time doing those two pages that NIRS has  
11 offered and find out if there's something there, because if they've identified a  
12 potential problem, maybe it's real and Duke has simply made an effort to hide  
13 those real concerns from you folks.

14 Now on behalf of the Blue Ridge Environmental Defense  
15 League, I submit these comments on NUREG-1437, Supplement 9 for  
16 Catawba Nuclear Station.

17 The document offered for comment strains and ultimately  
18 exceeds the limits of comprehension in order to avoid assigning a single  
19 significance level of large in its analysis of environmental impacts of high level  
20 waste. The efforts of the staff and/or Commission to resist admitting that high-  
21 level waste and spent or irradiated fuel have a large impact on the environment  
22 and public health must not be permitted to obscure the facts. The contortions  
23 evident in this document are a testament to the inability of the Commission and  
24 its staff to admit the nuclear power plant impacts are not small. Regarding  
25 postulated accidents and hydrogen explosions during loss power, the SAMA

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1 should be implemented as a part of a license renewal.

2 Section 5 -- Environmental Impacts of Postulated Accidents...

3 In the report, the staff concluded that the SAMA that would establish hydrogen  
4 control in SBO events by providing backup power to igniters must be cost  
5 beneficial. But the staff does verbal double back flip to avoid applying the  
6 analysis to license renewal, saying:

7 "However, this SAMA does not relate to adequately  
8 managing the effects of aging during the period of extended  
9 operation. Therefore, it need not be implemented as part of  
10 the license renewal pursuant to 10 CFR Part 54." [Page  
11 5-29].

12 The invocation of GSI-189 in the report notwithstanding, the  
13 logic here is akin to "However, the SAMA, the seatbelt alternative for mitigating  
14 auto accidents, does not relate to adequately managing the effects of tire and  
15 battery replacement. Therefore, it need not be implemented as part of the  
16 driver's license renewal." So no seatbelt is required?

17 The severe accident mitigation alternative should be  
18 implemented as a requirement in the Catawba license renewal process.

19 Section 6 -- Environmental Impacts of the Uranium Fuel  
20 Cycle... Supplement 9 reports that the Duke Energy and NRC staff have found  
21 no information which is new or significant enough on any issue to alter  
22 conclusions found in the general environmental impact statement. The report  
23 states the following:

24 "For each of these issues, the GEIS conclusion is  
25 that the impact is of small significance" {except for collective

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1           offsite radiological impacts from the fuel cycle and from high-  
2           level waste from spent fuel, which were not assigned a single  
3           significance level). [Emphasis was added.] That's from  
4           abstract page iii.

5                         Later in Chapter 6, the report again makes exceptions for  
6           assigning single significance levels for collective off-site radiological impacts  
7           from the fuel cycle and from high level waste on pages 6-1 and 6-3.

8                         "For all those issues, the staff concluded in the  
9           GEIS that the impacts are small except for collective off-site  
10          radiological impacts from the fuel cycle and from HLW and  
11          spent fuel disposal, as discussed below." [Again, emphasis  
12          added][pg 6-3].

13                        The report makes two more exceptions, one for nuclear fuel  
14          and one for high level waste. However, despite the detailed exploration of the  
15          uncertainties of such estimates, both of these issues are swept off the  
16          Category 2 table, relegating them to Category 1 limbo.

17                        "Accordingly, while the Commission has not  
18          assigned a single level of significance for the collective effect  
19          of the fuel cycle, this issue is considered Category 1." [Page  
20          6-4.]

21                        Accordingly, while the Commission has not  
22          assigned a single level of significance for the impacts of  
23          spent fuel and high level waste disposal, this issue is  
24          considered Category 1."

25                        Nowhere in Section 6.1 does the NRC analyze the actual

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1 impacts of the fuel cycle and its waste products. Instead of investigating and  
2 quantifying the impacts of the fuel cycle and waste, the report merely  
3 recapitulates regulatory dose limits. Dose limits are an unreliable means of  
4 analysis because they are subject to change and have no meaning in the time  
5 frames necessary for the determination of long term radionuclide impacts of  
6 geological repositories. Moreover, regulatory limits for some important aspects  
7 of waste disposition do not exist.

8 Before license renewal proceeds, the Commission must  
9 resolve important questions about future impacts of the fuel cycle and high  
10 level waste. The draft report states that EPA performance standards "are  
11 expected to result in releases and associated health consequences in the  
12 range between 10 and 100 premature cancer deaths with an upper limit of  
13 1000 premature cancer deaths worldwide for a 100,000 metric ton repository."  
14 [Page 6-5] "The impacts of license renewal -- twenty years of additional  
15 operation, a 50-percent increase -- will unquestionably increase these  
16 estimates.

17 If and when a geological repository is built, these questions  
18 may be easier to resolve, but because of the insoluble nature of the problem  
19 and the large impacts of high level nuclear waste, the Commission must  
20 suspend or eliminate license renewal.

21 MR. CAMERON: Thank you very much, Gregg, and we'll put  
22 that on to the end of the transcript.

23 That's the final speaker for tonight and we would just thank  
24 all of you for being here tonight, first of all. Thank you for our questions about  
25 various aspects of the process and thank you for your heartfelt comments

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1 tonight that we heard, and suggestions.

2 And with that, I think we're probably adjourned. The staff is  
3 available, our experts are available if you have time to talk about various  
4 issues. Thank you.

5 (Whereupon, the public hearing was adjourned at 9:21 p.m.)

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