

# **Corrected Transcript of Proceedings**

## **NUCLEAR REGULATORY COMMISSION**

Title: H.B. Robinson Steam Electric Plant  
Draft EIS Public Meeting - Evening Session

Docket Number: 50-261

Location: Hartsville, South Carolina

Date: Wednesday, June 25, 2003

Pages 1-36

U.S. NUCLEAR REGULATORY COMMISSION

+ + + + +

H.B. ROBINSON STEAM ELECTRIC PLANT, UNIT 2

LICENSE RENEWAL DRAFT EIS

PUBLIC MEETING

+ + + + +

Wednesday, June 25, 2003

+ + + + +

The meeting was held at 7:00 p.m. at the Davidson Hall, CW Coker Auditorium, 300 E. College Avenue, Hartsville, South Carolina, Chip Cameron, Facilitator, presiding.

PRESENT:

CHIP CAMERON, FACILITATOR

S. K. MITRA

RICHARD EMCH

MARY ANN PARKHURST

BOB PALLA

BARRY ZALCMAN

DAN TANO

DUKE WHEELER

LANCE VAIL

SUE SARGEANT

SHELLY COLE

ALICIA WILLIAMSON

		2
1	A-G-E-N-D-A	
2		<u>Page</u>
3	Welcome - Facilitator Cameron	3
4	Richard Emch	7
5	Overview of license renewal process	
6	S. K. MITRA	10
7	Overview of Environmental review process	
8	Richard Emch	14
9	Results of Environmental Review	
10	Mary Ann Parkhurst	18
11	Severe Accident Mitigation Alternatives	
12	Bob Palla	27
13	Wrap-Up	
14	Richard Emch	33
15	Public Comments	
16	(None)	
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		



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

(7:00 p.m.)

FACILITATOR CAMERON: Good evening, everyone.

My name is Chip Cameron, I'm the Special Counsel for Public Liaison at the Nuclear Regulatory Commission, and I want to welcome all of you to the NRC's public meeting this evening.

Our topic is the draft environmental impact statement, that the Nuclear Regulatory Commission has prepared to help it evaluate a license application request that we received from Carolina Power & Light to renew the operating license for the Robinson nuclear power plant unit 2.

And it is my pleasure to serve as your facilitator for tonight's meeting, and in that role I will try to help all of you have a productive meeting.

The Staff is going to tell you in more detail why we are here tonight but, basically, it is to give you some information on the license renewal process, and also the findings in the draft environmental impact statement, and also to hear from any of you who have comments or recommendations on what we are doing.

Our format is going to be a number of brief NRC presentations on various topics to set the context for you, and we will go out to you for any questions that you might have after each of those presentations.

We do have time reserved, during the meeting, for any formal comments that people might want to make on the issues, and that will be the second segment of our meeting.

1           The ground rules are real simple. If you have anything  
2           that you want to say, just give me a signal, and I will bring you this talking  
3           stick, as we like to call it, and please give us your name and affiliation,  
4           if appropriate, and we will try to answer your questions.

5           And, obviously, this is an important meeting, but we  
6           would like to keep it as informal as possible. So if you do have  
7           questions, please ask them. If you do have comments please tell us.

8           I wanted to do a more detailed introduction of the  
9           speakers, NRC speakers, and our expert consultants who are going to  
10          talk tonight before we get started, and this will allow me to go through the  
11          agenda for you, also.

12          We usually start out these meetings by having a brief,  
13          but more formal, welcome from the NRC manager who is in charge of  
14          the meeting. And we did have the branch chief of the license renewal  
15          branch, scheduled to come, Mr. P.T. Kuo, who could not make it,  
16          unfortunately.

17          So we are going to have Mr. Richard Emch start us out  
18          with a short welcome. Now, Rich is also going to be doing a  
19          presentation for you on the environmental review process, NRC's  
20          environmental review process, for license renewal applications.

21          So he will be coming up to do that, because he is the  
22          project manager for the environmental review on the Robinson nuclear  
23          power plant. And Rich is in our Office of Nuclear Reactor Regulation,  
24          where all of these license renewal applications are handled.

25          And Rich is a health physicist, he has a bachelor's in  
26          engineering physics from Louisiana Tech University, and he has been

1 with the agency for about 28 years. And his master's in health physics  
2 was from Georgia Tech University.

3 So, as I said, he will be doing the environmental review  
4 process, and a welcome for us. We want to make sure that you have  
5 the complete picture on the license renewal process, so we've asked Mr.  
6 S.K. Mitra, who is right over here. I think most people know him.

7 S.K. is the project manager for the safety review on the  
8 Robinson license renewal application. He has been with the NRC for  
9 about 13 years, and before that he was with private industry, with the  
10 General Electric Company.

11 And he has a bachelor's in electrical engineering, and  
12 he has a master's degree in nuclear engineering.

13 Then we are going to go to Mary Ann Parkhurst, who is  
14 right here. And Mary Ann is from the Pacific Northwest National Lab,  
15 and that is in the state of Washington. And she is the team leader for a  
16 team of experts that the NRC has tasked with doing the environmental  
17 review.

18 And Mary Ann is going to give you the meat of the draft  
19 environmental impact statement, the findings that have been made. And  
20 she is a staff scientist at Pacific Northwest Lab. She has worked on  
21 three other license renewal projects, doing the environmental reviews on  
22 those license renewal applications.

23 And she has a master's in ecology, and a master's in  
24 radiological science, as well. So we have a very, very qualified team  
25 working on this project, and with that I think that I will ask Rich to come  
26 up, and we will get underway with the meeting. Thank you.

1 MR. EMCH: Everybody welcome. My name is Richard  
2 Emch, I'm a senior environmental project manager with the Nuclear  
3 Regulatory Commission, I'm the lead project manager for the  
4 environmental review for the license renewal application by Carolina  
5 Power & Light for the H.B. Robinson Steam Electric Plant, Unit 2, that is  
6 the nuclear unit.

7 S.K., as we already said, is the safety project manager,  
8 and I'm in charge of the environmental review. And we welcome you  
9 here today, and hope that we will have a good meeting, and hope that  
10 you will give us lots of good input, that can be of use to us as we  
11 continue on with the review.

12 The application, CP&L made their application for license  
13 renewal in June of 2002, and we are continuing on down the process,  
14 which we will talk about a little bit as we go.

15 Here is what we are going to be talking about tonight.  
16 First we are going to have a broad look at the license renewal process,  
17 the overall process. S.K. Mitra is going to do that.

18 Then I'm going to come back up and talk a little bit, in  
19 broad terms, about the environmental review process, and then we are  
20 going to ask Mary Ann Parkhurst to come up, and she is going to talk  
21 about the details, the nuts and bolts, the meat as Chip said, of the  
22 environmental review.

23 She is going to be talking about what review we did, how  
24 we went about doing it, and what kinds of results came out of that  
25 review. Then I'm going to come back up and talk about where we are in  
26 the review process, in the review schedule, talk to you about how you



1 can make comments, and how you can get in touch with us, and that is  
2 kind of what we are going to run through tonight.

3 Next slide, please. The H.B. Robinson Plant was  
4 originally licensed for 40 years of operation under the Atomic Energy Act  
5 of 1954, and the NRC Regulations. The regulations also allow a nuclear  
6 power plant to apply for an extension, or renewal of their license, and  
7 that is why we are here today, because Carolina Power & Light has  
8 applied for a 20 year renewal for the H.B. Robinson Plant.

9 Their current license would expire in 2010. And they  
10 have, as I said, they have made an application for an additional 20  
11 years, and that is the process we are in, that review is under way, the  
12 safety review is underway, the environmental review is underway, their  
13 application, which we received in June of 2002, and that is the real  
14 purpose that we are here tonight, mainly, is the environmental part of the  
15 situation. We will be concentrating on that.

16 Some of you, or many of you, may have been here back  
17 in September of 2002, when we held the scoping meetings, at the  
18 beginning of this review process. And if you were you will remember that  
19 at that time we asked you, as people who live in this area, and are  
20 familiar with the plant and the environs, we asked you to be sort of our  
21 environmental experts, and to give us input about issues that we need  
22 to be looking at, and any information that we need to include in our  
23 review process.

24 And, in fact, you folks did highlight a couple of the  
25 environmental issues that we needed to pay particular attention to, as  
26 part of our review. So that was a very useful meeting for us.

1                   Tonight we will be sharing with you the results of what  
2 we got in our draft document, and you can -- we are looking for you to be  
3 our most informed critics, and look at that document and let us know if  
4 there is something that you think needs to be changed, or fixed, or  
5 whatever.

6                   With that I think we are ready to get started. Chip, S.K.?

7                   FACILITATOR CAMERON: Thank you, Rich. And S.K.  
8 Mitra is going to tell us about the license renewal process, generally now.  
9 But before S.K. gets started I made a significant omission when I was  
10 introducing people, and telling you about the agenda.

11                  And since Rich also did it, I think that Bob Palla is  
12 probably feeling like Rodney Dangerfield, over here. But a significant  
13 part, an important part of the environmental impact statement is NRC's  
14 analysis of severe accident mitigation alternatives.

15                  And Bob Palla, from the NRC Staff, is right here, and he  
16 is a probabilistic risk expert. He is in the probabilistic safety branch,  
17 again, within the office of Nuclear Reactor Regulation.

18                  But Bob and his colleagues help the license renewal  
19 people out by looking at severe accident mitigation for any license  
20 renewal request that we review.

21                  So he is going to be talking to you about that analysis  
22 after Mary Ann is done talking about the other findings in the draft  
23 environmental impact statement.

24                  And Bob has a bachelor's of science, and a master's in  
25 mechanical engineering from the university of Maryland. And with that,  
26 S.K., let's go to you for the overview.

1 MR. MITRA: Thank you, Chip, good evening. My name  
2 is S.K. Mitra, and I am the project manager for the review of the H.B.  
3 Robinson Steam Electric Plant, Unit 2, license renewal application.

4 Before discussing the license renewal process, and the  
5 Staff's safety review, I would like to talk about Nuclear Regulatory  
6 Commission and its role in licensing, and regulating the nuclear power  
7 plants.

8 The Atomic Energy Act of 1954 authorizes the NRC to  
9 regulate the civilian use of nuclear material. The mission is three-fold,  
10 to ensure adequate protection of public health and safety, to protect the  
11 environment, and to provide for common defense and security.

12 The NRC consists of five commissioners, one of whom  
13 is the NRC's chairman, and the NRC Staff. The regulations, enforced by  
14 NRC, are issued under Title 10 of Code of Federal Regulations,  
15 commonly called 10 CFR.

16 The Atomic Energy Act provided for a 40 year license  
17 term for power reactors, but also allows renewal of licenses. The 40  
18 year term is based primarily on economic and/or antitrust considerations,  
19 other than safety limitations.

20 Major components were initially expected to last for 40  
21 years. However, operating experience has demonstrated that some  
22 major components, such as steam generators, will not last that long.

23 For that reason a number of utilities have replaced major  
24 components, since components and structures can be replaced, or  
25 reconditioned, plant life is really determined, primarily, by economic  
26 factors.

1 License renewal applications are submitted years in  
2 advance for several reasons. If a utility decides to replace a nuclear  
3 power plant it can take up to ten years to plan and construct new  
4 generating capacity to replace that nuclear power plant.

5 In addition to the decision to replace, or recondition,  
6 major components can involve significant capital investment. As such,  
7 this decision involves financial planning many years in advance of the  
8 extended period of operation.

9 The Carolina Power & Light Company has applied for  
10 license renewal under 10 CFR Part 54, and requests authority to operate  
11 H.B. Robinson Unit 2 for up to an additional 20 years.

12 The current operating license of H.B. Robinson Unit 2  
13 expires July 31st, 2010. Now, I would like to talk about license renewal,  
14 which is governed by the requirement of 10 CFR Part 54, the license  
15 renewal rule.

16 This part of the Code of Federal Regulations defines the  
17 regulatory process by which a nuclear utility, such as Carolina Power &  
18 Light, applies for license renewal.

19 The license renewal rule incorporates 10 CFR Part 51  
20 by reference. This part provides for the preparation of the environmental  
21 impact statement.

22 The license renewal process defined in Part 54 is very  
23 similar to the original licensing process in that it involves safety review,  
24 and environmental impact evaluation, plant inspections, and review by  
25 the Advisory Committee on Reactor Safeguards, known as ACRS.

1           The ACRS is a group of scientists, and nuclear industry  
2 experts, who serve as a consulting body to the Commission. The ACRS  
3 performs an independent review of the license renewal application, and  
4 the Staff's safety evaluation, and reports its findings and  
5 recommendations directly to the Commission.

6           This slide illustrates two parallel processes. You will see  
7 one at the top of the slide, and the other at the bottom of the slide. The  
8 two parallel processes are the safety review process and the  
9 environmental review process.

10           These processes are used by NRC Staff to evaluate two  
11 separate aspects of the license renewal application. The safety review  
12 involves the Staff's review of technical information in the application of  
13 renewal to verify, with reasonable assurance, that the plant can continue  
14 to operate safely during extended period of operation.

15           The Staff assess how the applicant proposes to monitor  
16 and manage the aging of certain components that are within the scope  
17 of license renewal.

18  
19           This review is documented in a safety evaluation report,  
20 which is provided to the ACRS. The ACRS reviews the safety evaluation  
21 report then holds public meetings, and prepares a report to the  
22 Commission documenting its recommendations.

23           The safety review process also involves two or three  
24 inspections, which are documented in NRC inspection reports. In its  
25 decision to renew the operating license the NRC considers the safety

1 evaluation report, the ACRS report, the NRC regional administrator's  
2 recommendation, and the inspection reports.

3 At the bottom of the slide is the other parallel process,  
4 the environmental review, which involves scoping activities, preparation  
5 of a draft supplement to the Generic Environmental Impact Statement,  
6 solicitation of public comments on the draft supplement, which we will be  
7 doing now, and then the issuance of final supplement to the Generic  
8 Environmental Impact Statement.

9 This document also factors into the agency's decision  
10 on the application. In the safety evaluation report the Staff's document  
11 is the assessment of the effectiveness of the application's existing, or  
12 proposed, inspection and maintenance activities to manage aging effects  
13 applicable to passive, long-lived structures and components.

14 Part 54 requires the application to reevaluate those  
15 design analyses that assume 40 years of plant operations. The  
16 reevaluation extends the assumed operating period of 60 years. These  
17 requirements in the evaluation are called time limited aging analyses.

18 Current regulations are adequate for addressing active  
19 components such as pumps and valves, which are continually  
20 challenged to review failures and degradation, such that corrective  
21 actions can be taken.

22 Current regulations also exist to address other aspects  
23 of the original license, such as security and emergency planning. These  
24 current regulations will also apply during the extended period of  
25 operation.

1 In August 2002 the NRC issued a Federal Register  
2 Notice to announce its acceptance of Carolina Power & Light Company's  
3 application for renewal of the operating license for H.B. Robinson. The  
4 notice also announced the opportunity for public participation in the  
5 process. No petitions to intervene were received.

6  
7 This concludes my summary of the license renewal  
8 process, and the Staff's safety review.

9 Any questions?

10 FACILITATOR CAMERON: Thank you, very much, S.K.  
11 Does anybody have a question for S.K. about the overall process,  
12 particularly the safety evaluation that he is in charge of?

13 (No response.)

14 FACILITATOR CAMERON: Okay, great. Thank you,  
15 S.K., and we are going to go to Rich Emch, again, for the environmental  
16 review.

17 And I might note that we are transcribing the meeting.  
18 Ed Johns is our stenographer, and there will be a transcript publicly  
19 available, of the meeting tonight. Rich?

20 MR. EMCH: Thank you, Chip. Now we are going to  
21 start to talk about what we are really here for tonight, which is  
22 environmental impact.

23 The National Environmental Policy Act of 1969, is  
24 generally regarded as one of the most significant of environmental  
25 legislation, pieces of legislation in the United States.

1 And, basically, it lays requirements on federal agencies  
2 to use a systematic approach to consider environmental impacts. It  
3 requires federal agencies to prepare an environmental impact statement  
4 to address any major federal action that might have the potential to  
5 impact the quality of the human environment.

6 The regulation, in addition to the systematic approach,  
7 it says that we need to examine impacts, we have to look at possible  
8 ways to mitigate impacts, if those impacts are anything but small. It talks  
9 about how we need to evaluate alternatives to the proposed action, such  
10 as, in this case it is a nuclear power plant, maybe an alternative would  
11 be a coal power plant, or something like that.

12 We need, it is a disclosure, it says we have to disclose  
13 information. So basically what this is all about is we are finding out  
14 whatever information we can, and we disclose it. We do that in our  
15 environmental impact statement, we do it in meetings such as this.

16 And the last thing it does is it says that we need to get  
17 the public to participate in the process. Again, that is what we are doing  
18 here. We did it in the scoping meeting back in September, and now we  
19 are further involving you folks in our process today by talking to you,  
20 discussing with you what we found in our review, asking you for your  
21 comments.

22 From the environmental impact review the decision that  
23 we have to reach, if you will, is in this statement up here. This is the  
24 legal version, if you will. It says we are trying to determine whether or  
25 not the adverse environmental impacts of license renewal for H.B.



1 Robinson unit 2 are so great that preserving the option of license  
2 renewal, for energy planning decision makers, would be unreasonable.

3 I always have to turn and read that statement, because  
4 I have a hard time remembering it, because I'm a health physicist, and  
5 not a lawyer. My version of that statement says, is the environmental  
6 impact of operating this plant, for an additional 20 years, okay, is the  
7 environmental impact okay? And that is what we are going to be talking  
8 about tonight.

9 Next slide, please. What we talk about, it preserves the  
10 option. In other words, when the NRC is finished with its review, both  
11 the environmental review, the safety review, the inspections, all of that  
12 sort of stuff that S.K. was talking about earlier, a decision will be made  
13 about whether or not to issue a new license for this plant.

14 But the real decision process, basically, all it does is  
15 maintain the option for this plant to operate for that additional 20 years.  
16 The real decision process is one that the utility will make, as a business  
17 decision. It is one that they will make in conjunction, or in consultation  
18 with the state regulators, and it will have, probably, a lot to do with the  
19 economy, the economic conditions, the need for power in the area, and  
20 those sorts of issues.

21 So, basically, what we are doing with this decision is we  
22 are just preserving the option for them to operate for an additional 20  
23 years.

24 Now let's talk about the environmental review process.  
25 This slide is a sort of a more detailed version of the bottom of the slide  
26 that S.K. showed you.

1           The application was actually submitted in June of 2002.  
2           In August we put out a notice, in the Federal Register, what we call a  
3           Notice of Intent, that says we are going to be doing an environmental  
4           review, we are going to be doing scoping, holding scoping meetings.  
5           That notice was in August of 2002.

6           In September we came here, we met with you folks,  
7           here in this same room in September, and held the scoping meetings,  
8           and had participation by a number of people, and a number of issues  
9           were highlighted for us in that meeting.

10           Also, during that same week, we conducted a site audit.  
11           The members of the Nuclear Regulatory Commission, and various  
12           experts, technical experts from three national laboratories were here.

13           We toured the site, and the environs, and the plant. We  
14           reviewed documentation, we spoke with experts from the licensee, we  
15           spoke with public officials, state and local officials. We talked to local  
16           public service organizations, just gathering whatever information we  
17           could in the various areas that are important for the review.

18           And then, of course, we held the public scoping meeting  
19           that week. In October of 2002, we published the request for additional  
20           information, to the licensee. All those questions were related to the  
21           SAMA review, that is the severe accident mitigation alternatives review.

22           We published our draft environmental statement in May.  
23           There are copies available outside the door. It is a draft supplement,  
24           which means that there is going to be a final, there is more to be done.  
25           There are comments from you folks to be considered, to be included.

1                   And we refer to it as a supplement to the GEIS, to the  
2 generic environmental impact statement. Several years ago the NRC,  
3 in preparation for the various license renewal applications decided to  
4 look at a wide spectrum of potential environmental impacts, and to  
5 assess them, and to the maximum extent possible, try to figure out which  
6 ones of those impacts could be dealt with as generic.

7                   In other words, it is the same impact for all 104 plants in  
8 the United States, and it is a small impact, or whatever. So in those  
9 cases, for a fairly large number of the issues, a generic conclusion was  
10 drawn, in this GEIS, that we will rely on, as part of our document.

11                   What we've issued is supplement 13 to the GEIS, and  
12 supplement 13 deals specifically with the Robinson site.

13                   After we take the comments that you folks give us, and  
14 consider them, and make whatever changes need to be made in the  
15 document, we will then issue the final supplement in December of this  
16 year.

17                   With that I think we are ready, unless anybody has any  
18 questions, I think we are ready for Mary Ann Parkhurst to get into the  
19 details of the environmental impact review with you.

20                   FACILITATOR CAMERON: Thank you, Rich. Anybody  
21 questions on the environmental review process?

22                   (No response.)

23                   FACILITATOR CAMERON: Mary Ann, why don't you  
24 come up and tell us what you and your team have found.

25                   MS. PARKHURST: Thank you, Chip. I'd like to tell you,  
26 now, about our information gathering process, the composition of our

1 review team, the process we use to review the applicant's environmental  
2 review report, and the results of our draft SEIS, the supplemental  
3 environmental impact statement.

4 While developing the draft environmental impact  
5 statement, we reviewed Carolina Power & Light's environmental report,  
6 which was part of their license application.

7 For their application, they had an environmental report  
8 as part of that, and we reviewed that. We visited the plant during the site  
9 audit. We talked to federal agencies, like Fish and Wildlife Service, with  
10 regard to some of the environmental species, especially the endangered  
11 and threatened species, aspects of the overall process.

12 We talked to state agencies, including state offices that  
13 handle water discharge permits, and cultural-historical resources, and  
14 local officials, as well.

15 We also contacted tribal representatives, and local  
16 social service agencies. So we talked to many people, and we had  
17 public comment, the public scoping meeting, to hear your comments.

18 For the license renewal review we established a team  
19 made up of NRC staff, supplemented by experts on various fields from  
20 the National Laboratories.

21 This slide gives you an idea of the types of expertise we  
22 needed for this project, and we specifically used those from  
23 environmental science, those experts in land use, aquatic and terrestrial  
24 ecology, radiation protection, hydrology and water quality,  
25 socioeconomics, and historic and cultural resources.

1                   Next slide, please. Our analytical approach to the  
2 license renewal process is based in the guidance in the generic  
3 environmental impact statement that Rich just mentioned. We call it the  
4 GEIS, just because it is a mouthful to say it over and over, otherwise.

5                   This document identifies 92, could we have the next  
6 one, this identifies 92 issues to be evaluated for the license renewal. Of  
7 these issues 69 are considered generic, or what we call category 1  
8 issues.

9                   So here we have the GEIS, and now we are going to talk  
10 about the category 1 issues, and this portion of this draft. The category  
11 1 issues are those issues that where the impacts are essentially the  
12 same for all plants, or for all plants with a certain type of design, for  
13 example, those with cooling towers would have similar issues.

14                  For the other 23 issues, referred as category 2 issues,  
15 the NRC found that the impacts were not the same at all sites and these,  
16 therefore, required a site-specific review.

17                  Those are the category 2 issues here, and we will talk  
18 about those here in a second. Category 1 generic issues that are  
19 applicable to Robinson were addressed. We looked at them in terms of  
20 is there any new and significant information that pertains to these issues.

21                  And so, for example, we looked at the many issues that  
22 fall into the category 1 heading, looked at is there any new information,  
23 and is that information, if there is any that exists, significant?

24                  If we found anything that was new and significant, then  
25 we went on to perform a site-specific analysis. If not we went on to -- if  
26 there was no specific new and significant information, we went on to

1 adopt the GEIS conclusion, so that we didn't additionally consider the  
2 site-specific information, like starting from scratch.

3 For the category 2 options we have to actually do a site-  
4 specific analysis for the many different impacts, different types of  
5 impacts that we look at in the environmental review process.

6 Finally, during the scoping period, the public then was  
7 invited to help us with this track, where we were looking for, is there any  
8 information out there we don't have, that you may have, that we need to  
9 analyze and determine whether it is significant or not.

10 So we went through this process looking for new issues,  
11 identifying whether any of them were significant, and if there was no  
12 significant information that came out of there, then we do no further  
13 analysis on that particular issue.

14 Next one, please. For each issue, identified in the GEIS,  
15 an impact level is assigned. This is described in chapter 1 of our draft  
16 SEIS document. These impact levels are consistent with the Council of  
17 Environmental Quality Guidance for NEPA analysis.

18 To be categorized as a small impact the effect would not  
19 be detectable, or would be too small, to destabilize or noticeably alter  
20 any important attribute of the resource.

21 For example, the plant may cause the loss of adult or  
22 juvenile fish at the water intake structures. If the loss of fish is so small  
23 that it can't be detected in relation to the total population in the whole  
24 lake, the impact would be considered a small one.

25 To be categorized as moderate the effect must be  
26 sufficient to alter noticeably but not destabilize important attributes of the

1 resource. Using the fish example, again, if losses at the intake cause the  
2 population to decline, and then stabilize at a lower level, the impact  
3 would be considered moderate.

4 And, finally, for an impact to be considered large, the  
5 effect must be clearly noticeable and sufficient to destabilize important  
6 attributes of the resource.

7 So if losses at the intake cause the fish population to  
8 decline, to the point where they cannot sustain their own population, and  
9 they essentially disappear from the vicinity, we consider that a large  
10 impact.

11 Next one, please. Regarding the organization of the  
12 draft SEIS, in chapter 2 we are looking at some general attributes about  
13 the nuclear plant, and the environment around the plant.

14 In chapter 3 we briefly discuss that the licensee has not  
15 identified any plant refurbishment activities that would be necessary for  
16 extended operations.

17 In chapter 4 we looked at the potential environmental  
18 impacts for an additional 20 years of operation at the H.B. Robinson  
19 Nuclear Plant, and the team evaluated the items specifically listed here.

20 We looked at the cooling system, transmission lines,  
21 radiological aspects, socioeconomics, which also includes historic and  
22 cultural resources, as well as environmental justice.

23 We looked at ground water use and quality, and  
24 threatened or endangered species. I will take a few minutes now to  
25 identify the results of our review. And at the end of my presentation, if  
26 you have any questions, please let me know, and I will try to answer

1       them, or have those members of my team, that are here in the audience,  
2       try to answer them for you.

3               Next one, please. One of the issues we looked at,  
4       closely, is the cooling system for the Robinson nuclear plant. This view  
5       of H.B. Robinson shows the unit 2 here on the left, and it shows the coal  
6       plant on the right, that is unit 1, Robinson, of course, the water body just  
7       above it.

8               Lake Robinson was formed by impounding Black Creek,  
9       in 1958, to cool the unit 1 coal plant. The lake was constructed with  
10      additional capacity for future power generation needs. And since 1970s  
11      it has been the cooling source for the Robinson nuclear plant.

12              Water from both units is discharged through a four mile  
13      cooling canal, and that cooling canal runs just this side of the lake shore.  
14      And it goes out four miles, and then enters the lake.

15              And in addition to functioning as a cooling pond, which  
16      this lake really was intended for, initially, this lake supports recreational  
17      use, and modest fishing.

18              During our site visit, last September, and during our  
19      review of the information we obtained, we specifically looked at both the  
20      category 2, the site-specific issues, as well as the category 1 generic  
21      issues, to get a better feel for the environmental aspects of this plant.

22              We listened to the scoping meeting comments, relating  
23      to the cooling system, and further evaluated some concerns regarding  
24      the temperature of the water in the warm season, in Lake Robinson.

25              The water quality of the water entering the lake from the  
26      cooling canal is regulated by the South Carolina Department of Health



1 and Environmental Control, through the national pollution discharge  
2 elimination system, which is otherwise known as NPDES system.

3 Thermal limits are regulated through this permit, and the  
4 plant discharge is operated within these limits. We did not identify any  
5 new and significant information for any of the category 1 issues, during  
6 scoping process, by the applicant or through our review process.

7 Next one, please. The radiological impact is a category  
8 1 issue, a generic issue. But because it is often a concern to the public,  
9 I want to take just a minute and discuss how we determine that there is  
10 no new and significant information that was related to the radiological  
11 impacts for the plant.

12 We looked at the radiological effluent release and  
13 monitoring program during our site visit. We looked at how the gaseous  
14 and liquid effluents were treated, and released, as well as how the solid  
15 wastes were treated, packaged, and shipped for disposal. This  
16 information is found at chapter 2 in the draft SEIS document.

17 We also looked at how the applicant determines and  
18 demonstrates that they are in compliance with the regulations for release  
19 of these effluents. And the releases from the plants, and the resulting  
20 off-site potential doses are not expected to increase on a year to year  
21 basis during the 20 year renewal term. Therefore no new and significant  
22 information was identified during the Staff's review, or in the scoping  
23 process, or the evaluation of other available information.

24 Next one, please. The last issue I would like to discuss,  
25 of those evaluated in chapter 4, is that of threatened or endangered  
26 species. A description of the terrestrial and aquatic ecology area, and

1 the potential for endangered and threatened species in a site is given in  
2 chapter 2.

3 There are no Federally listed aquatic species that  
4 currently occur at the Robinson site, or along the transmission rights of  
5 way. The only Federally, or state listed, threatened and endangered  
6 aquatic species with a potential to inhabit waters near Robinson, is the  
7 Carolina heelsplitter, a mussel, which is historically known in the PeeDee  
8 River system.

9 According to intensive Fish and Wildlife surveys, the  
10 population nearest the plant is found at the Lynches river, along the  
11 western boundary of Chesterfield county.

12 Short-nosed sturgeon are listed as endangered by the  
13 Fish and Wildlife Service, as well, and the Atlantic sturgeon is listed as  
14 a candidate species for Federal listing in South Carolina. However,  
15 neither sturgeon species is known to occur in Black Creek.

16 Bald eagles have been sighted near the Robinson site,  
17 or on the transmission line rights of way. Other Federally listed terrestrial  
18 species with potential habitat at the site included the red-cockaded  
19 woodpecker, and they have a picture of that up here, and Canby's  
20 dropwort.

21 None of these species is known to occur at the Robinson  
22 site, or along the associated transmission rights of way.

23 Next one, please. For all of these issues, that the team  
24 reviewed, we judged that the license renewal impacts are small. This is  
25 both for the category 1 and category 2 issues, and determined there was

1 no new and significant information identified during the scoping, in which  
2 the public participated, by the licensee, or by the Staff.

3 Next one. And we also reviewed two other  
4 environmental impacts. All issues for the uranium fuel cycle, and solid  
5 waste management, as well as decommissioning, are considered  
6 category 1 issues and are discussed in chapter 6 and 7, respectively.  
7 No new and significant information was identified related to these issues.

8 Next one, please. As an important part of the EIS  
9 process we evaluated the potential environmental impacts associated  
10 with Robinson, if it were to discontinue operation after its current license  
11 period. These, and other alternatives, are discussed in our chapter 8.

12 We looked at the no-action alternative. This is a  
13 scenario where the Robinson operating license is not renewed, and  
14 when the plant ceases its operation, Carolina Power & Light would  
15 decommission the facility.

16 We also looked at new power generation options,  
17 including coal fired plants, natural gas fired plants, coal fired, and new  
18 nuclear plants, and power through purchase power options.

19 We also evaluated alternative technologies such as  
20 wind, solar, hydropower, fuel cells, geothermal, wood waste, municipal  
21 solid waste, and other biomass derived fuels.

22 We looked at delayed retirement, utility-sponsored  
23 conservation, and then we looked at a combination of alternatives. For  
24 each alternative we evaluated whether the technology could replace the  
25 baseload capacity provided by Robinson, and whether it would be a  
26 feasible alternative to renewal.

1                   If it appeared to have the same potential, we looked at  
2                   the same types of environmental issues, as I've just described for  
3                   Robinson, including land use, ecology, socioeconomics that we reviewed  
4                   for the license renewal term.

5                   Next one, please. What we found, in our preliminary  
6                   conclusions of the alternatives, that are considered feasible, is that the  
7                   alternatives, including the no-action alternative, may have environmental  
8                   effects in at least some impact areas that reach moderate, or large  
9                   significance. For comparison the license renewal impacts were of small  
10                  significance. Chip?

11                  FACILITATOR CAMERON: Any questions for Mary Ann  
12                  on the environmental review?

13                  (No response.)

14                  FACILITATOR CAMERON: Thank you very much, Mary  
15                  Ann. And in the draft environmental impact statement you are going to  
16                  find an analysis of severe accident mitigation alternatives, and Bob Palla  
17                  is here to tell us about that. Bob?

18                  MR. PALLA: Hello, my name is Bob Palla, and I'm with  
19                  the probabilistic safety assessment branch of NRC. I'm going to be  
20                  discussing the environmental impacts of postulated accidents.

21                  Section 5 of the generic environmental impact statement  
22                  is entitled: Environmental Impacts of Postulated Accidents. The GEIS  
23                  evaluates two classes of accidents, design basis accidents, and severe  
24                  accidents.

25                  Design basis accidents are those accidents that both the  
26                  licensee and the NRC Staff evaluate to ensure that the plant can safely

1 respond to a broad spectrum of postulated accidents without risk to the  
2 public.

3 The environmental aspects of design basis accidents are  
4 evaluated during the initial licensing process and the ability of the plant  
5 to withstand these accidents has to be demonstrated before the plant is  
6 granted a license.

7 Most importantly a licensee is required to maintain an  
8 acceptable design and performance capability throughout the life of the  
9 plant, including any extended life operation.

10 Since the licensee has to demonstrate acceptable  
11 performance throughout the life, the Commission has determined that  
12 the environmental impact of design basis accidents are of small  
13 significance.

14 Neither the licensee, nor the NRC, is aware of any new  
15 and significant information on the capability of the Robinson plant to  
16 withstand design basis accidents therefore the Staff concludes that there  
17 are no environmental impacts related to design basis accidents, beyond  
18 those discussed in the generic environmental impact statement.

19 Now, with regard to severe accidents, the second  
20 category of accidents, these accidents are, by definition, more severe  
21 than design basis accidents, because they could result in substantial  
22 damage to the reactor core.

23 The Commission found, in the generic environmental  
24 impact statement, that the risk of a severe accident, atmospheric  
25 releases falling onto open bodies of water, releases to groundwater, and  
26 societal impacts, are small for all plants.

1                    Nevertheless the Commission determined that  
2 alternatives to mitigate severe accidents must be considered for all  
3 plants that have not done so. We refer to these alternatives as severe  
4 accident mitigation alternatives, or SAMA, for short.

5                    The SAMA evaluation is a site-specific assessment, and  
6 it is a category 2 issue, as explained earlier by Mary Ann. The SAMA  
7 review for Robinson is described in section 5.2 of the GEIS supplement.

8                    And let me just give some background on what we are  
9 doing in the SAMA review. The purpose of performing the SAMA  
10 evaluation is to ensure that the plant changes, with the potential for  
11 improving severe accident performance, are identified and evaluated.

12                   The scope of potential improvements that are  
13 considered include hardware modifications, procedure changes, training  
14 program improvements, as well as other changes, basically a full  
15 spectrum of potential changes are considered.

16                   The scope includes SAMAs that would prevent core  
17 damage, as well as SAMAs that improve containment performance,  
18 given that core damage were to occur.

19                   Now, the evaluation process consists of four major  
20 steps. The first step is to characterize the overall plant risk, and the  
21 leading contributors to risk.

22                   This, typically, involves the extensive use of the plant-  
23 specific probabilistic risk assessment study. The probabilistic risk  
24 assessment study is also known as the PRA. This PRA is a study that  
25 identifies the different combinations of system failures and human errors

1 that are required in order for an accident to progress to either core  
2 damage, or to containment failure.

3 The second step in the evaluation is to identify potential  
4 improvements that could further reduce risk. The information from the  
5 PRAs, such as dominant accident sequences, is used to help identify  
6 plant improvements that would have the greatest impact in reducing risk.

7 Improvements identified in other NRC studies, as well  
8 as SAMA analyses performed for other plants, are also considered in this  
9 step.

10 The third step in the evaluation is to quantify the risk  
11 reduction potential in the implementation costs for each improvement.  
12 The risk reduction and implementation costs for each SAMA are typically  
13 estimated using a bounding approach.

14 The risk reduction is generally overestimated by  
15 assuming that the plant improvement is completely effective in  
16 eliminating the accident sequences it is intended to address.

17 And the implementation costs are generally  
18 underestimated by neglecting certain cost factors, such as maintenance  
19 costs, and surveillance costs, associated with the improvement.

20 The risk reduction and cost estimates are used in the  
21 final step to determine whether implementation of any of the  
22 improvements can be justified.

23 In determining whether an improvement is justified the  
24 NRC staff looks at three factors. The first is whether the improvement  
25 is cost beneficial. In other words, is the estimated benefit greater than  
26 the estimated implementation cost of the SAMA.

1                   The second factor is whether the improvement provides  
2 a significant reduction in total risk. For example, does it eliminate a  
3 sequence, or a containment failure mode, that contributes a large  
4 fraction of the plant risk.

5                   And the third factor is whether the risk reduction is  
6 associated with aging effects during a period of extended operation. In  
7 which case, if it was, we would be looking at implementation of the  
8 SAMA as part of the license renewal process.

9                   The preliminary results of the Robinson SAMA  
10 evaluation are summarized on this slide. Two hundred and sixty six  
11 candidate improvements were identified for Robinson, based on review  
12 of the plant-specific PRA, relevant industry and NRC studies on severe  
13 accidents, and SAMA analysis performed for other plants.

14                   Two hundred and eighteen of these SAMAs were  
15 eliminated during an initial qualitative screening, leaving 48 SAMAs for  
16 further evaluation. Factors considered during this initial screening  
17 included whether the SAMA has already been implemented at Robinson,  
18 is not applicable to Robinson due to design differences, or addresses  
19 sequences, or failure modes, that are not risk significant at Robinson.

20                   In the next phase of the evaluation a preliminary cost  
21 estimate was prepared for each of the 48 remaining SAMAs. The  
22 estimated costs were compared with the maximum attainable benefit for  
23 the plant.

24                   This maximum attainable benefit is a calculated dollar  
25 amount associated with completely eliminating severe accidents at



1 Robinson. All but 10 of the SAMAs were eliminated in this step because  
2 of their estimated costs exceeding the maximum attainable benefit.

3 A more detailed assessment of the conceptual design  
4 and cost estimate was developed for each of the remaining 10 SAMAs.  
5 None of these 10 SAMAs were found to be cost beneficial when  
6 evaluated in accordance with NRC guidance for performing regulatory  
7 analysis.

8 Now, although CP&L did not identify any cost beneficial,  
9 the NRC staff performed an independent review of the dominating  
10 contributors to risk, and identified two additional improvements that  
11 appeared to be cost beneficial.

12 The first cost beneficial SAMA involves modifying two  
13 valves in the residual heat removal system to increase their seismic  
14 capacity. Failure of these valves in a large seismic event could lead to  
15 core damage, and containment bypass.

16 This SAMA would increase the seismic capacity of the  
17 valves, and reduce their potential for failure in a large seismic event.

18 The second cost beneficial SAMA involves installing a  
19 radiant heat shield along the electrical conduit from the dedicated  
20 shutdown diesel. A transformer fire in the switchyard could damage this  
21 electrical conduit and lead to a station blackout.

22 This SAMA would protect the electrical cable and  
23 prevent the loss of electric power from the shutdown diesel. Neither of  
24 these SAMAs relate to adequately managing the effect of aging during  
25 the period of extended operation and, therefore, need not be  
26 implemented as part of license renewal pursuant to 10 CFR Part 54.

1 However, CP&L is further evaluating potential implementation of these  
2 improvements.

3 To summarize, the NRC staff's preliminary conclusion  
4 is that additional plant improvements to further mitigate severe accidents  
5 are not required at Robinson as part of license renewal.

6 Potential improvements to RHR valves and electrical  
7 conduit heat shielding are being further evaluated as part of current  
8 operating license issues.

9 And this concludes my presentation, and I could take  
10 any questions, if you have them.

11 FACILITATOR CAMERON: Thank you, Bob. Questions  
12 on the severe accident mitigation analysis, from anyone?

13 (No response.)

14 FACILITATOR CAMERON: Okay. Thank you, Bob.  
15 And, Rich, can you do a summary for us?

16 MR. EMCH: This brings us to the preliminary  
17 conclusions of our review. The first one, as Mary Ann already told you,  
18 that the impacts of all the various areas of the environmental review, they  
19 were found all to be small for the Robinson review.

20 For the alternatives the environmental impacts range  
21 from small to large, and this brings us back to our favorite statement  
22 from earlier in the presentation, this is the conclusion, the  
23 recommendation that we need to be able to reach.

24 And that is, as you can see, is that the adverse  
25 environmental impacts of license renewal for H.B. Robinson unit 2 are

1 not so great that preserving the option of license renewal, for energy  
2 planning decision makers would be unreasonable.

3 In my parlance the environmental impacts are okay for  
4 an additional 20 years of operation. Let's recap the process a little bit.  
5 This is where we are at.

6 We've issued the draft environmental statement, as we  
7 talked about, in May. We are in the comment period now, we will be  
8 accepting comments through the end of July, July 30th. Any comments  
9 that we get during that period of time we will consider, and evaluate, and  
10 make any changes that we deem necessary in the environmental  
11 statement.

12 And then we expect to issue the final environmental  
13 statement in December of this year. Points of contact, how can you get  
14 in touch with us, how can you get the copies, or where can you find the  
15 environmental statement so that you can review it?

16 First point of contact is myself, it is the phone number up  
17 there. If you are having trouble finding the document you can call me,  
18 I will make arrangements for you to get it, we may send it to you in the  
19 mail, we may help you find it on the internet.

20 The documents are also located at the Hartsville  
21 Memorial Library, which is a few blocks from here. If you are having  
22 trouble finding it ask the manager of the facility, Rose Roseveare.

23 Also it can be found on the NRC's website, there in red,  
24 and actually the better way to find it is the one in white down there, it is  
25 a long URL, but it will take you directly to the draft statement, I've  
26 checked it a few times myself.

1 I want you to go look, because we want you to provide  
2 us comments. There are several ways to give us those comments. One  
3 of them is by mail to this address, another one is in person, if you  
4 happen to be in the Washington, D.C. area you can stop by our offices  
5 in Rockville, Maryland, and give them to us.

6 Probably the ones that make the most sense for people  
7 who live here in Hartsville are to email it to us at [robinsoneis@nrc.gov](mailto:robinsoneis@nrc.gov),  
8 or when you go to look at the draft statement online, at that previous  
9 URL there is an online comment form that is included with it, and you can  
10 do it through that.

11 So those are the ways you can provide us comments.  
12 We hope you will all review the document, and give us comments. As  
13 I said, you folks who live here near the site provide us the most informed  
14 critics that we can find. And so that is what we are looking for.

15 I want to thank everybody for coming out tonight and  
16 participating with us in this process. And I guess with that, unless there  
17 are some questions, I will close.

18 FACILITATOR CAMERON: Thanks, Rich. Let's just  
19 make sure that we don't have any final comments, questions, or  
20 recommendations on the draft environmental impact statement.

21 Does anybody have anything that they would like to add  
22 tonight, before we adjourn?

23 (No response.)

24 FACILITATOR CAMERON: Well, let me add my thank  
25 you for being here tonight, and you have the contact information, and we  
26 hope you have a good evening. Thank you.

1 (Whereupon, at 8:00 p.m. the above-entitled matter was  
2 concluded.)  
3  
4  
5