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PUBLIC MEETING
RE: DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR BRUNSWICK STEAM ELECTRIC PLANT,
UNITS 1 AND 2,
LICENSE RENEWAL APPLICATION

Heard on:
OCTOBER 18, 2005
1:30 p.m.

Heard At:
CITY HALL
SOUTHPORT, NORTH CAROLINA

FACILITATOR:
Mr. Lance Rakovan

PERSONS MAKING PRESENTATIONS ON BEHALF OF NRC:

- Mr. Richard Emch
- Mr. Robert Palla
- Ms. Rani Franovich

I-N-D-E-X

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2 Welcome and Purpose of Meeting.....3

3 Overview of License Renewal Process.....6

4 Results of the Environmental Review.....13

5 Results of the Severe Accident Mitigation

6 Alternatives Review.....29

7 Closing/Availability of Transcripts.....36

8

9

10

11

12

PROCEEDINGS

(1:30 p.m.)

1
2
3 MR. RAKOVAN: We are ready to get
4 started. I'd like to thank you all for coming this
5 afternoon to this meeting. My name is Lance Rakovan. I am
6 a Communications Assistant at the Nuclear Regulatory
7 Commission. It is my pleasure to serve as facilitator for
8 this meeting.

9 For those of you who don't know the U.S.
10 Nuclear Regulatory Commission, we're going to be calling it
11 the NRC today, just to make sure everybody is aware of
12 that.

13 The subject today is the environmental review
14 that the NRC has conducted as part of its evaluation of an
15 application received from Carolina Power and Light to renew
16 the operating license for Units 1 and 2 of the Brunswick
17 plant.

18 What I'm going to do is quickly go through
19 what the meeting format will be today and the agenda. Then
20 I'll go through a few ground rules of what to expect.
21 We're going to use kind of a two-part format today. First,
22 NRC is going to come up and give a few brief presentations,
23 clearly explain the process for the license renewal, go
24 through a little bit on the analysis and conclusions that
25 are found in the draft Environmental Impact Statements. We

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1 will, of course, allow some time for questions after each
2 of the presentations.

3 There is one added presentation that somehow
4 got dropped from the agenda. That is results of the severe
5 accident mitigation alternatives review. That's going to
6 get stuck in after the results of the environmental review.
7 So I just wanted to make sure everybody was aware of that.

8 The second part, although we have no speakers
9 currently signed up, this is going to be turned over to the
10 public to make any comments. We ask that you keep them to
11 about five minutes. Normally we'll allow everyone to talk.
12 But I don't think that's going to be a problem today. I
13 know there's a few members of the public here. So if you
14 change your mind and would like to come make some comments,
15 we will certainly allow that.

16 We will be taking written comments I believe
17 until December 2nd. Anything that is said during the
18 meeting will have the same weight as the comments that we
19 receive written. I think Rich is going to go through a
20 little bit on that.

21 I will go over the ground rules. During Q's
22 and A's, just give me a signal. I do have a wireless mic
23 that I'm probably going to be using later. So if there are
24 any questions, I will bring the mic out to you. Make sure
25 you identify yourself and if you have any group

1 affiliation.

2 We do have a stenographer today; Ms. Suzanne
3 Thornton. So we want to make sure that we only have one
4 person speaking at a time so she can get a full transcript
5 and a good idea of what everyone is saying. If we start
6 having people talk over each other, that makes that a
7 little more complicated.

8 Again, we ask you to be as concise as
9 possible when making your questions or your comments. One
10 other thing, make sure that your cell phones are at least
11 turned off or set to vibrate. I know I made sure mine was
12 earlier. The last thing I wanted to have happen is for my
13 cell phone to go off in the middle of a meeting that I'm
14 trying to facilitate. But it can be distracting.

15 So with that, I'm going to introduce Ms. Rani
16 Franovich. Rani is going to be talking or going to be
17 giving a quick intro on the license renewal process. Rani
18 is the Chief Engineer of the Review Section for License
19 Renewal. She's been with the NRC for about 14 years. A
20 few of the things that she's done while she's been at the
21 NRC, she was a Resident Inspector at the Catawba plant.
22 She's also been Project Engineer for the McGuire plant.
23 She has a BS in psychology and a Masters in industrial
24 systems engineering, both from Virginia Tech, which she is
25 very proud of. So I'm going to turn things over to Rani

1 after I introduce our two other speakers.

2 Our speaker after Rani will be Mr. Richard
3 Emch. Rich is the Project Manager for environmental review
4 on the Brunswick license renewal application. He's been
5 with the NRC for about 30 years and has also been involved
6 with emergency planning and radiological protection. Rich
7 has a Bachelors from Louisiana Tech in physics and a
8 Masters from Georgia Tech in health physics. He's going to
9 be going over the environmental impact evaluation process,
10 public opportunities for comments, and the results of
11 postulated accidents.

12 Then the presentation that somehow got
13 dropped from the agenda will be given by Mr. Bob Palla who
14 is a Senior Reactor Engineer. He's been with the NRC for
15 about 25 years. He's been involved with severe accident
16 analysis, safety assessment, and containment analysis. He
17 has both a BS and an MS in mechanical engineering from the
18 University of Maryland. He'll be going over, again, the
19 severe accident mitigation alternatives.

20 So if there are no other questions, I'm going
21 to turn things over to Rani Franovich.

22 MS. FRANOVICH: Thank you, Lance.
23 Thank you all for coming. I took a little tour of the
24 community yesterday. It's been a long time since I've been
25 in Southport. I grew up in Wilmington, so 30 years or so

1 ago we used to come to Southport and buy shrimp for \$4 for
2 a bushel. Those days are long gone. But it's good to be
3 back.

4 I'd like to thank you all for coming to this
5 meeting and taking the time to be here. I hope the
6 information we provide will help you understand the process
7 we're going through in license renewal and help you
8 understand what we've done so far and the role you can play
9 in helping us to make sure that the final Environmental
10 Impact Statement for the Brunswick plant is accurate.

11 I'd like to start out by briefly going over
12 the purpose of today's meeting. We'll explain the NRC
13 license renewal process for nuclear power plants, with
14 emphasis on the environmental review process. We're going to
15 present the preliminary findings of our environmental
16 review, which assesses the impacts associated with
17 extending the operating licenses of the Brunswick Steam
18 Electric Plants, Units 1 and 2, for an additional 20 years.
19 Actually I said extending, but it's really an entirely new
20 license.

21 Then really the most important part of
22 today's meeting is for us to receive any comments that you
23 might have on our draft Environmental Impact Statement. We
24 will also give you some information about the schedule for
25 the balance of our review and let you know how you can

1 submit comments in the future.

2 Before I talk about license renewal for
3 Brunswick, I'd like to provide some general contacts for
4 the license renewal process. The Atomic Energy Act gives
5 the NRC the authority to issue operating licenses to
6 commercial nuclear power plants for a period of 40 years.
7 The Brunswick Steam Electric Plant, Units 1 and 2, have
8 operating licenses that will expire in 2016 and 2014
9 respectively. Our regulations also make provisions for
10 extending those operating licenses for up to an additional
11 20 years. Carolina Power and Light has requested license
12 renewal for both units.

13 As part of the NRC's review of that license
14 renewal application, we perform an environmental review to
15 look at the impact of an additional 20 years of operation
16 on the environment. We've actually completed that review
17 and documented it in our draft Environmental Impact
18 Statement.

19 We held a meeting here last January to seek
20 your input regarding the issues we needed to evaluate. We
21 indicated at that earlier scoping meeting that we would
22 return to Southport to present the preliminary results
23 documented in our draft Environmental Impact Statement.
24 That is the purpose of this meeting.

25 At the conclusion of the staff's

1 presentation, we will be happy to answer any questions or
2 receive any comments you may have on our draft document.

3 Before I get into a discussion of the license
4 renewal review process, I'd like to take a minute to talk
5 about NRC in terms of what we do and what our mission is.
6 As I mentioned earlier, the Atomic Energy Act is the
7 legislation that authorizes the NRC to issue operating
8 licenses and to regulate civilian use of nuclear materials
9 in the United States. In exercising that authority, the
10 NRC's mission is three-fold: to insure adequate protection
11 of public health and safety, to protect the environment,
12 and to provide for a common defense and security. The NRC
13 accomplishes its mission with a combination of regulatory
14 programs and processes such as inspections, enforcement
15 actions, assessment of licensee performance, and evaluation
16 of operating experience from nuclear power plants across
17 the country and internationally.

18 Turning now to license renewal in particular,
19 the NRC license renewal review is similar to that of the
20 original licensing process in that it involves two parts:
21 an environmental review and a safety review.

22 This slides gives a big picture overview of
23 the license renewal process. As far as you can see from
24 the slide, the process involves two parallel paths: the
25 safety review and the environmental review. You might ask

1 what exactly does the safety review consider. The license
2 renewal safety review focuses on aging plant operating
3 issues. However, the NRC also monitors and addresses
4 current operating issues such as security, emergency
5 planning, and safety performance on an ongoing basis.
6 Under the current operating license, the NRC's regulatory
7 oversight process deals with current safety issues. We do
8 not wait for a plant to come in for license renewal to
9 require them to address those current safety issues.
10 Because the NRC is dealing with those current operating
11 issues on a continuing basis, they are not re-evaluated
12 under license renewal.

13 Instead, as I have mentioned, the license
14 renewal safety review focuses on plant aging and the
15 programs that the licensee has already implemented or plans
16 to implement to manage the effects of aging. The safety
17 review involves the NRC staff's review and assessment of
18 the safety application and that's the information provided
19 in the license renewal application submittal.

20 There's a team of about 30 NRC reviewers and
21 contractors who are conducting the safety review at this
22 time. Let me introduce Mr. S.K. Mitra, the Safety Project
23 Manager. He is in charge of the safety review. The safety
24 review includes technical evaluations, plant inspections,
25 and audits. These inspections are conducted by a team of

1 inspectors from both headquarters and NRC's Region 2
2 office. The results of the inspections are documented in
3 separate inspection reports, and the staff documents the
4 results of the safety review and the safety evaluation
5 report.

6 This report is then independently reviewed by
7 the Advisory Committee on Reactor Safeguards, known as the
8 ACRS. The ACRS is a group of nationally recognized
9 technical experts in nuclear safety that serve as a
10 consulting body to the commission. They review each
11 license renewal application and the safety evaluation
12 report, form their own conclusions and recommendations on
13 the requested action, and report those conclusions and
14 recommendations to the regulatory commission.

15 I'd like to point out that the symbols in
16 yellow on this slide and the previous slide indicate
17 opportunities for public participation. Also the ACRS
18 meeting to discuss the results of the safety review will be
19 open to the public.

20 The second part of the review process
21 involves an environmental review. The environmental
22 review, which Rich will discuss in more detail in a few
23 minutes, evaluates the impacts of license renewal on a
24 number of areas including ecology, hydrology, cultural
25 resources, and socioeconomic issues, among others. The

1 environmental review involves scoping activities and the
2 development of a draft supplement to the Generic
3 Environmental Impact Statement for license renewal of
4 nuclear power plants, also referred to as the GEIS. The
5 draft Environmental Impact Statement has been published for
6 comment, and we are here today to briefly discuss the
7 results of our review and to receive your comments.

8 In April of next year, we will be issuing the
9 final version of this Environmental Impact Statement which
10 will address the comments that we receive here today at
11 this meeting or in the future any written comments.

12 So the final agency decision on whether or
13 not to issue or renew operating licenses depends on several
14 inputs. The safety evaluation report, which documents the
15 safety review. The final Environmental Impact Statement,
16 which documents the results of the environmental review.
17 The inspection report document results of regional
18 inspections, and the independent review by the ACRS.

19 Again, the symbols in the yellow on the slide
20 indicate opportunities for public participation. The first
21 opportunity was during the scoping period and the meeting
22 held back in January. Many of you may have attended that
23 meeting. This meeting on the draft Environmental Impact
24 Statement is another opportunity. No one requested a
25 hearing for this proceeding, so that's not applicable here.

1 Now I'd like to turn things over to Rich Emch
2 to discuss the environmental review in more detail.

3 MR. RAKOVAN: Rani, before we do
4 that, I just want to make sure that there's no comments or
5 no questions from the audience. Does anyone have any
6 questions on what Rani presented?

7 (Negative response.)

8 MR. RAKOVAN: Okay. Thank you
9 very much, Rani.

10 MR. EMCH: Hi, I'm Rich Emch,
11 the Environmental Project Manager from the Nuclear
12 Regulator Commission for the Brunswick review, reviewing
13 the environmental review which is part of the overall
14 review that Rani told you about for the application for
15 license renewal for Brunswick.

16 Some of you, well, maybe even most of you,
17 were probably here in January when we held our scoping
18 meeting. Those of you who were here will remember at that
19 time that I asked you to be my environmental experts, my
20 local environmental experts. Some of you took me up on
21 that and gave me comments during the meeting. So we're
22 back here to talk to you about the review that we did do
23 and the preliminary conclusions that we have come to and
24 the issues that we've looked at.

25 The National Environmental Policy Act of 1969

1 is sort of the guidebook for what we do here. It discusses
2 -- it lays out a process, a disclosure process, where we
3 evaluate impacts. We disclose them. We involve the public
4 in helping us evaluate those issues. And in scoping, what
5 we were here to do was to find out what kinds of issues you
6 thought we needed to look at and provide us information
7 about anything that you thought we needed to include in our
8 review, things that we might not be able to find out during
9 our regular review process.

10 The Commission has determined that an
11 Environmental Impact Statement will be developed for each
12 of the license renewal applications, and that's indeed what
13 we have done here. A few of you probably picked it up.
14 You either got it sent to you in the mail, or you were able
15 to pick it up downstairs, a copy of the draft Environmental
16 Impact Statement. It's Plant Specific Supplement 25 to the
17 overall GEIS.

18 One of the things that we do in the process,
19 we assess impacts. We look at the possibility of whether
20 there is any need for mitigated measures on those impacts.
21 We also look at alternatives to the proposed action. One
22 of the alternatives we look at is the no-action
23 alternative. All of that is designed to get us to the
24 point where we can make the kind of assessment, the kind of
25 preliminary conclusions that we need to make. As Rani

1 said, we are here tonight to get comments from you folks
2 who have looked at that draft document.

3 This is the decision standard that we operate
4 on. You can read it. I won't go through the whole
5 legalistic version that's up here. You can read that for
6 yourself. I guess in Richard Emch's words, what it amounts
7 to is the issue is whether or not the environmental impact
8 of an additional 20 years for operation in Brunswick is
9 acceptable, is okay. That's what we were here doing during
10 the environmental audit and all the other activities that
11 we've been undergoing.

12 As you can see, the application was submitted
13 back in October of 2004. We were here in January 2005 for
14 the scoping meeting. Since then we have also done the
15 environmental audit and talked to a lot of different
16 people. We sent requests for additional information to the
17 licensee in February, received responses, and we have
18 drafted the document that we're here tonight to discuss.
19 And that was sent out to everybody in August of 2005.

20 The splashes, the splash marks or explosion
21 marks, indicate the opportunities for public participation
22 in the process. We will gather the comments that we
23 receive from you folks tonight plus anything that's said in
24 writing or via electronic messages. We will review any
25 additional information that we get, and we will come up

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1 with a final -- publish the final supplement to this
2 document in April of 2005 [sic].

3 We look at a wide range of environmental
4 issues in the course of this review. This pretty picture
5 up here is intended to give you an example of the kinds of
6 things we look at. As you can see, we do look at
7 terrestrial and aquatic ecology. We look at air quality,
8 water quality, regulatory compliance, hydrology, my
9 personal favorite radiation detection, and historic and
10 archeological resources. We also look at socioeconomic
11 impacts. There's a piece of that that some of you may not
12 have heard of called environmental justice, which we
13 examine, as well.

14 Earlier Rani mentioned the GEIS; the Generic
15 Environment Impact Statement that was developed. What the
16 GEIS does is it looked at, when we first started the
17 process, we looked at 92 environmental issues or aspects of
18 the environmental impact, if you will. And it looked at
19 all of the plants in the United States, and decided that
20 for approximately 69 of those issues, they were what we
21 call Category 1 issues. What that means is that they
22 examined the impact, and the impact was essentially the
23 same at all nuclear power plants in the United States or in
24 all plants that have a particular kind of design like the
25 once thru cooling water. And they all have the same

1 level of impact. Based on that, they labeled them as
2 Category 1 issues.

3 What that means is, if you look at this
4 analysis approach up here, what that means is that we don't
5 do a complete plant specific review of Category 1 issues.
6 An example of a Category 1 issue is salinity gradients,
7 changes in salinity levels. The generic impact is
8 assessed on all plants and published in this Generic Impact
9 Statement. What we do is we look for any new and
10 significant information. The licensee will do that as
11 well. And if we don't find any new and significant
12 information, then we will assume that the conclusion that
13 was made by GEIS is still appropriate for this plant. You
14 can see that the line down on the left side of the chart
15 there. We adopt the GEIS conclusion.

16 If for the approximately 23 issues that are
17 what we call Category 2 issues, meaning a plant specific
18 analysis does need to be made, then we go into the second
19 line there. We analyze at each site such as Brunswick. We
20 do an analysis of those issues. I'm going to talk later
21 about which of those issues we did look at for the
22 Brunswick site. We do a plant specific analysis, and
23 that's presented in the document.

24 Off to the side is the issue of, is there new
25 and significant information. If it turns out that if there

1 had been any new and significant information, we would
2 examine it to see if it caused us to want to change or call
3 into question the conclusions that we made in the Generic
4 Impact Statement. And we found no such -- the licensee
5 found no such information, and we found no such
6 information. So there were no analyses that needed to be
7 changed from Category 1 to Category 2.

8 In this plant, there's 23 issues that are
9 essentially what we reviewed; 21 referred to as Category 2.
10 There are two issues that don't really have a category.
11 One of them is called environmental justice, and the other
12 one, because it came up, it wasn't one of those issues
13 because it didn't exist as an issue for us at the time that
14 we did the generic statement. The other one is the chronic
15 effects of exposure to electromagnetic
16 fields around transmission lines. I'll talk a
17 little bit more about that later.

18 There were 11 Category 2 issues that we
19 assessed on a plant specific basis for the Brunswick plant.
20 Six of the 23 issues that are in the GEIS did not apply
21 to Brunswick because of the Brunswick design, and four of
22 them did not apply because Brunswick is not going to need
23 to do any refurbishment activities specifically for the
24 purposes of allowing license renewal. So you add those all
25 up, six, four, and 11, and you get the 21 that we referred

1 to as the Category 2 issues.

2 Now let's talk about how we assess or how we
3 quantify the impacts. You will see up here we have small,
4 moderate, and large. Small basically means in looking at
5 it, that the impact such as it is, is not detectable or is
6 too small to destabilize the impact or to noticeably alter
7 it. An example of this would be, we often use the fish.
8 Whatever loss of fish, for instance, in population, it
9 would be so small that nobody would even notice that
10 there's any decrease in the fish population. The fishermen
11 will still catch as many fish as they ever caught.

12 The second one is the moderate impact. Here
13 we are talking about if it is detectable and it is noted
14 to alter, alter the impact noticeably, but it does not
15 destabilize the resource. This would be an example again
16 with the fish population. It might reduce the fish
17 population say 10 percent or something like that.
18 It might reduce it in such a way that we notice it.
19 The fishermen would notice they're catching
20 fewer fish or whatever, but the population, the fish
21 population, would stabilize at a smaller level, and
22 everything would be fine. That's the moderate.

23 Large is clearly a noticeable and a
24 significant impact, one that may destabilize the resource.
25 And that would be the loss of fish in the fish population

1 became so large that it might endanger or destabilize
2 the fish population.

3 We gather information for our review from a
4 number of different places. We've talked about the fact
5 that we did an audit at the site in January. While we were
6 here, we also talked to a large number of other people. We
7 talked to state agencies. We do consultation with federal
8 agencies. We take public comments that you guys give us,
9 and we talk to the permitting agencies such as the state
10 permitting agency that reviews and issues the national
11 pollutant discharge elimination system permit for the plant.
12 That tells the plant how much heat they're allowed to
13 release in the water, and it also talks about what
14 chemicals they're allowed to release in the water. We also
15 looked at the Department of Social Services, the Chamber of
16 Commerce, and the people who can talk to us about the
17 socioeconomic impacts of the plant.

18 Now we're going to start to talk a little bit
19 about what we actually saw and what we actually found and
20 what we've discussed in the Environmental Impact Statement.
21 I'm going to talk about some of the areas, not all of them.
22 We are going to talk about the cooling system, the
23 transmission lines, the radiological impacts, threatened
24 and endangered species, cumulative impacts, and then after
25 I'm done talking, Bob is going to share with you the

1 severe accident mitigation alternatives.

2 This is the cooling system. In this area,
3 there was a large number of what we call Category 1 issues.
4 But these are the three Category 2 issues that we
5 evaluated. The entrainment of fish or shellfish in their
6 early life stage; the larvae stage for instance, eggs and
7 larvae. Impingement of fish and shellfish on the screens
8 of the plant, and then the possibility of heat shock. We
9 did plant specific analyses of all of these issues.

10 Basically just a quick overview. Water is
11 diverted into the cooling canals to the plant from the Cape
12 Fear River, upstream of the plant. It is brought in
13 through what is called a diversion structure that has
14 plates on it that have screening mesh in them with three-
15 eighths inch mesh. So anything that's larger than three-
16 eighths of an inch in diameter will not come into the
17 structure. This stops most fish. It certainly stops
18 turtles and manatees and anything else. Most things. Very
19 small fish can get through. Larvae, eggs, they go through
20 the cooling canal, and they get up to the plant.

21 At the intake structure of the plant there is
22 another set of screens. These screens are what we call
23 small mesh screens. They are about one millimeter. All
24 the water that goes to the plant does not necessarily go
25 through these particular screens but most of it does. The

1 large majority of it does. These screens stop even smaller
2 organisms from getting into the plant. But again, still
3 not everything. Eggs can get through, for instance, in
4 some cases.

5 These screens are washed off with sprays, and
6 any fish that made it to there are going to get washed off
7 the screen and washed into the sluice pipe that carries them
8 back into a pond that connects with Walden Creek and
9 eventually connects with the river. The idea is that a
10 very large portion of what would have been on the
11 screens would have survived by getting washed off and sent
12 back to the river.

13 Then the issue of heat shock. If for
14 whatever reason suddenly you put a bunch of hotter water
15 into a cooling canal or into a lake or in this case the
16 ocean where there's fish. The conclusion on all three of
17 these was the impact of this plant was small, and no
18 additional mitigation was required.

19 Transmission lines. This plant has
20 approximately 390 miles of transmission lines that cover
21 4,600 acres of land for eight transmission lines. Here the
22 Category 2 issue, we looked at is electromagnetic shock, the
23 acute effects. We also looked at the chronic effects of
24 electromagnetic fields.

25 For the shock issue, the acute effects, what

1 we looked at is whether or not these lines were designed to
2 the National Electric Safety Code. And we found that these
3 lines were indeed designed within those criteria, which is
4 that they can only produce a shock of a current greater
5 than five milliamps per line.

6 The National Institute of Environmental Health
7 Science, as I mentioned earlier, are the people who have
8 evaluated and continue to evaluate the chronic effects of
9 the electromagnetic fields such as around the transmission
10 line. It is indeterminate simply, but there is no -- the
11 data does not suggest that there is a problem. Therefore,
12 we assessed an impact of small here. But that is
13 something that is still under study and is always being
14 looked at to see if there is any new information in that
15 area. Again, these areas of impact are considered to be
16 small, and no additional mitigation was required.

17 Radiological impacts are a Category 1 issue,
18 but we mention it here because it is an issue that at
19 almost every meeting we go to we find that it is one that
20 is usually on people's minds. Let's face it, folks, if it
21 wasn't for radiation, we wouldn't even have to worry about
22 nuclear power plants. We could run them just like coal
23 plants.

24 In this case we looked at exposure to the
25 public. We looked at exposure to the workers. And what we

1 found is no new and significant information. Therefore, we
2 decided that the assessment of small impact by the GEIS was
3 correct.

4 I'll go a little further in detail there. We
5 looked at the environmental monitoring reports and the
6 effluent reports from the plant and we discussed the
7 issues of the environmental monitoring program
8 with the State. What we found is that the
9 actual doses, the maximum doses from this plant,
10 are well less than one millirem per year, which is
11 well within NRC regulations and is a very small part of the
12 approximately 360 millirems that we all receive each
13 year by living on Planet Earth and getting dental x-rays
14 and things like that.

15 Threatened and endangered species. There are
16 30 terrestrial and aquatic species, 16 terrestrial, 14
17 aquatic. We interacted with the Fish and
18 Wildlife Service and with NOAA Fisheries, the National
19 Oceanic and Atmospheric Administration, National Fisheries,
20 to find out which endangered species are likely in the
21 vicinity of the Brunswick plant, and we came up with this
22 list. Here's a picture of a few of them. I didn't have
23 room on the slide for all 30 of them. But they include, as
24 you might well imagine, sea turtles. Pretty much the whole
25 range of sea turtles are on the list. A number of whales

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1 are on the list. The manatee, the short nosed sturgeon,
2 and the Waccamaw, I hope I said that right, Silverside fish
3 is on the list, as well.

4 On the terrestrial side there is the bald
5 eagle. There was the American alligator, the Eastern
6 Cougar, and the red cockaded woodpecker. I always have
7 trouble saying that, the wood stork and a long list of
8 plants some of them I can't even pronounce. So we
9 looked at all these, and we did a biological assessment. We
10 discussed it. We gave this biological assessment to the
11 Fish and Wildlife Service and to the National Marine Fishery
12 Service, and we are still talking with them. But our
13 assessment is that the plant would have either no effect or
14 is not likely to have any adverse effect on any of these.

15 Earlier on that other slide I was in the
16 process of talking about Category 1 issues and how we
17 looked at new and significant information. This is a
18 discussion of that. Basically during the scoping
19 session, we discussed environmental items. We got a few folks
20 who went to the site. We talked to the licensee. The
21 licensee showed us the program that they use to determine
22 whether there was any new and significant information.
23 Then we met with state authorities, national authorities,
24 local authorities. We went out and did a lot of looking
25 around on our own and came up with the conclusion -- well,

1 we also did an internet search. And we came to the
2 conclusion there was no new and significant information.
3 So we stayed with all the Category 1 issues, the
4 conclusions on the Category 1 issues.

5 In addition, we looked at cumulative impacts.
6 In other words, what this means is we took a look to see,
7 this isn't just a plant. This is a plant in its
8 environment. For instance, are there other things that are
9 nearby that are operating or impacting the environment
10 along with Brunswick that might cause us to say, well, even
11 though Brunswick's impact is small, if you look at it in
12 concert with these other things, maybe it's bigger. We
13 looked at that, and we looked at a lot of different areas.
14 We looked at the cooling water, transmission lines,
15 radiation protection, socioeconomic issues, ground water use
16 and quality, endangered species, the cooling system. We
17 found that in each case the area of consideration may be
18 different. For instance, transmission lines obviously go
19 out 390 miles, and you have to look pretty far out to
20 encompass all of that. The radiation protection is usually
21 pretty nearby. But the environmental radiological
22 monitoring would pick up radioactive materials
23 released not only from the plant but from all sources.
24 So there's ways to look at each of these kinds of
25 things. And the conclusion in

1 all cases was the cumulative impact was small.

2 We looked at the uranium fuel cycle and solid
3 waste management and decommissioning. Again, we looked at
4 radiation doses, waste management, air quality, water
5 quality, ecological resources, socioeconomics. The
6 determination was again that the impacts for license
7 renewal of the plant would be small.

8 Alternatives. We looked at a range of
9 alternatives. The first one is the no-action alternative.
10 That says don't do anything, don't approve this, and the
11 plant shuts down at the end of their regular licensing. We
12 also looked at a number of other alternatives. The three
13 major alternatives that we looked at are new generation by
14 coal, natural gas, and nuclear power.

15 A lot of attention was focused on these three
16 because these three are really the only three sources of
17 what I will call power generation large enough to replace
18 the base load capability of two nuclear power units. What
19 I'm talking about here is a little less than 2,000
20 megawatts electric power generated by Brunswick. So it
21 takes fairly large generation to cover that kind of loss.
22 That's why we looked at coal, natural gas, and nuclear.

23 We did also look at purchased power. We
24 looked at a wide range: wind, solar, energy conservation,
25 wood waste, delayed retirement and bio-mass derived

1 fuels. And we looked at all these as possible resources.
2 And what we did is we set up a scenario where it was sort
3 of a combination of a number of these things since wind and
4 solar, for instance, can't provide 2,000 megawatts of
5 electric.

6 They can provide some power, so we put
7 together a scenario where some of each of these were
8 included. We looked at all these things, and the
9 assessment was that for all those, the no-action
10 alternative would have just about the same impact, small
11 impacts. But the other kinds of alternatives, we found
12 alternatives that could reach into the higher impacts.

13 Postulated accidents. This is where Bob
14 Palla comes up here. Do I want to take questions at this
15 point? Hold on, Bob. Are there any questions?

16 MR. RAKOVAN: Got to get you on
17 the record, please state your name.

18 MS. SOLTIS: Vicki Soltis. I'm
19 just wondering if any renewal application has been denied
20 based on an Environmental Impact Statement.

21 MR. EMCH: No. I forget the
22 exact number of, but none have been denied. However,
23 adjustments have been made in almost every case to some of
24 the operating procedures for the plant. It had management
25 programs, aging management programs put in place at almost

1 every plant. So there have been adjustments in the way
2 they operated at other plants, although none of them have
3 been denied. We have examined and actually discussed
4 mitigated features with some plants. But no plant has
5 actually been denied on the basis of environmental impact.

6 Let's remember that with the assessment we're
7 doing, almost in every case, with maybe one or two
8 exceptions, we have always determined that the impact was
9 small. Therefore, there's not a whole lot to discuss about
10 mitigation issues, when you're talking about a small impact
11 to start with. No, none have been denied.

12 MS. SOLTIS: So there's not
13 (inaudible) has reviewed. (Inaudible)

14 MR. EMCH: That's correct. Not
15 for the plant itself.

16 MS. SOLTIS: Thank you.

17 MR. EMCH: We just finished a
18 review where the entrainment of flounder was assessed as
19 moderate.

20 MR. RAKOVAN: Thanks, Rich. Any
21 other questions from the audience?

22 (Negative response.)

23 MR. RAKOVAN: Okay, Bob?

24 MR. PALLA: Good afternoon. My
25 name is Bob Palla, and I'm with the Probablistic Safety

1 Assessment Branch at NRC. I'm going to be discussing the
2 environmental impacts of postulated accidents. These
3 impacts are discussed in Section 5 of the Generic
4 Environmental Impact Statement commonly called the GEIS.

5 The GEIS evaluates two classes of accidents:
6 design-basis accidents and severe accidents. Design-basis
7 accidents are those accidents that both the licensee and
8 the NRC staff evaluate to insure that the plant will
9 respond safely to a cross section of postulated accidents
10 without risk to the public. The ability of the plant to
11 extend these accidents has to be demonstrated before the
12 plant is initially granted a license. And the licensee has
13 to demonstrate acceptable plant performance through these
14 design-basis accidents throughout the life of the plant.
15 Because of that, the Commission has determined that the
16 environmental impact of design-basis accidents are of small
17 significance. Neither the NRC nor the licensee is aware of
18 any new and significant information on the capability of
19 the Brunswick plant to withstand design-basis accidents.

20 Therefore, the staff concludes that there are
21 no impacts related to design-basis accidents beyond those
22 that are discussed in the GEIS.

23 The second category of accidents is severe
24 accidents. These are by definition more severe than
25 design-basis accidents because they can result in

1 substantial damage to the reactor core. The Commission
2 found in the GEIS that the risk of a severe accident is
3 small at all plants. And when I say that, I mean
4 probablistically, innate consequences of severe accidents
5 are small.

6 Nevertheless, the Commission determined that
7 alternatives to mitigate severe accidents must be
8 considered for all plants that have not done so. This is
9 the severe accident mitigation alternative analysis that
10 I'll be speaking of. SAMA is the site specific assessment,
11 and it's a Category 2 issue as described earlier by Rich.

12 The SAMA review for Brunswick is summarized
13 in Section 2 of the GEIS supplement. It is described in
14 more detail in Appendix G of the supplement.

15 Now, the purpose of performing the staff
16 analysis is to insure that plant changes with the potential
17 for improving severe accident safety performance are
18 identified and evaluated. The scope of the potential
19 improvements that are considered include hardware
20 modifications, procedure changes, training program
21 enhancements, basically a full spectrum of potential
22 changes. The scope includes SAMAs that would prevent core
23 damage, as well as SAMAs that improve containment building
24 performance given that a core damage event would occur.

25 The SAMA evaluation consists of a four-step

1 process. The first step is to characterize the overall
2 plant risk and leading contributors to the risk. This
3 typically involves extensive use of the plant specific
4 probabilistic safety assessment study, which is also known
5 as the PSA. The PSA is a study that identifies different
6 combinations of system failures and human errors that would
7 be required to occur if the accident is to progress to
8 either core damage or containment failure.

9 The second step in the process is to evaluate
10 potential improvements that could further reduce risk. The
11 information from the PSA such as the dominant accident
12 sequences is used to help identify plant improvements that
13 have had the greatest impact in reducing risk.
14 Improvements identified in other NRC and industry studies,
15 as well as SAMA analyses performed for other plants are
16 also considered.

17 The third step in the evaluation was to
18 quantify the risk reduction potential and the
19 implementation costs for each improvement. The risk
20 reduction and implementation costs are typically estimated
21 using an accounting approach. Risk reduction is generally
22 overestimated by assuming that the plant improvement is
23 completely effective in eliminating the accident sequences
24 it was intended to address. And conversely, the
25 implementation costs are generally underestimated by

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1 neglecting certain cost factors such as maintenance costs
2 and surveillance costs, things of that sort. Ongoing
3 costs.

4 The risk reduction and cost estimates are
5 used in the final step to determine whether implementation
6 of any other improvements can be justified. In determining
7 whether an improvement is justified, the NRC staff looks at
8 three factors. The first is whether the improvement is
9 cost beneficial. In other words, is the estimated benefit
10 greater than the estimated implementation costs of the
11 SAMA.

12 The second factor is whether the improvement
13 provides a significant reduction in total risk. For
14 example, does it eliminate a sequence for a containment
15 failure mode that contributes to a large portion of the
16 plant risk.

17 And the third factor is whether the risk
18 reduction is associated with aging effects during a period
19 of extended operation, in which case if it was, it would
20 require implementation as part of the license renewal
21 process.

22 The preliminary results of the Brunswick SAMA
23 analysis are summarized on the slide. Forty-three
24 candidate SAMAs were identified for Brunswick based review
25 of the plant specific PSA dominant contributors at

1 Brunswick, as well as SAMA analyses performed for other
2 plants. The licensee reduced the number of candidate SAMAs
3 to 27 based on a multi-step screening process. Factors
4 considered during the screening included whether the SAMA
5 is applicable to Brunswick due to design differences,
6 whether it has already been addressed in the existing
7 design procedures or training program and whether the SAMA
8 would involve extensive plant changes that would clearly be
9 in excess of the maximum benefit associated with completely
10 eliminating all severe accident risk at the plant.

11 A detailed cost/benefit analysis was
12 performed on a plant-specific basis for the 27
13 remaining SAMAs. This is described in
14 detail in Appendix G of the GEIS supplement. Detailed
15 cost/benefit analysis shows that 15 of the SAMAs are
16 potentially cost beneficial when evaluated individually in
17 accordance with NRC guidance for performing regulatory
18 analysis. Seven of these SAMAs were cost beneficial in the
19 baseline analysis. Eight additional SAMAs were potentially
20 cost beneficial when alternative discount rates assumed in
21 the cost benefit are used or when analysis uncertainties
22 are considered on the conservative end of the range of cost
23 estimate analyses we just looked at.

24 It's important to know that some of these
25 SAMAs address the same risk contributors but in a different

1 way. For example, there's a SAMA that is described in the
2 GEIS. It's identified as SAMA Number 1. It involves the
3 use of a portable generator to supply backup power to the
4 DC busses or switchboards. This would improve the ability
5 to cope with failures of DC chargers in station blackout
6 conditions. Several other SAMAs also address DC buss
7 failures in station blackouts.

8 So as a result, implementation of one of
9 these SAMAs could reduce the residual risk to a point that
10 one or more of the related SAMAs would no longer be cost
11 beneficial. Because of this interrelationship between
12 SAMAs, we would not expect the implementation of all 15
13 SAMAs would be justified on a cost/benefit basis. But
14 rather, the implementation of a carefully selected subset
15 of the 15 SAMAs could achieve much of the risk reduction
16 and would be more cost effective than implementing all of
17 the SAMAs.

18 In summary, the results of the SAMA
19 evaluation indicate that several SAMAs are potentially cost
20 beneficial at Brunswick. However, none of the cost
21 beneficial SAMAs are related to managing the effects of
22 plant aging during the period of extended operation.
23 Therefore, the SAMAs are not required to be implemented as
24 part of license renewal pursuant to 10 CFR Part 54, the
25 regulation that governs our license renewal application.

1 Notwithstanding this, CP&L has committed to
2 further evaluate the potentially cost beneficial SAMAs for
3 possible implementation as a current operating licensing
4 activity. The focus of this evaluation will be on SAMA 1,
5 which I described briefly before, which involves a portable
6 generator used to supply DC power during station blackout
7 events. They also will look at those SAMAs that remain
8 cost beneficial after SAMA 1 is implemented. Completion of
9 these evaluations is being tracked in the Brunswick plant
10 action tracking system.

11 That concludes my presentation. Are there
12 any questions?

13 (Negative response.)

14 MR. RAKOVAN: Does anyone have any
15 questions?

16 (Negative response.)

17 MR. RAKOVAN: I guess not. Rich,
18 you're going to take the mic again and let us know how to
19 make public comments; is that correct?

20 MR. EMCH: Yes. What we have
21 here is the preliminary conclusions of the evaluation. As
22 you can see, the impacts in all areas were small. The
23 impacts, which we talked earlier about the impacts of
24 alternatives, the impacts for the alternatives range from
25 small to large. Therefore, the staff's preliminary

1 conclusion/recommendation is that the impacts of operation
2 would not be so great as to preclude issuing a new license.

3 It's important to note at this point that
4 what that means is it holds open the option to
5 continue to operate the plant for an additional 20
6 years. It isn't the final decision. That doesn't mean
7 that they will. The decision about how long the plant
8 actually operates, whether they do any part of it or the
9 whole 20 years, are conclusions or decisions that will be
10 made by the licensees themselves in concert with local and
11 state authorities such as the Public Utility Commission, if
12 they have one. It will also be determined by the economics
13 that are in place at the time, whether or not it's
14 appropriate or economically feasible for them to continue
15 to operate the plant, those sorts of issues.

16 Just a few of the milestones. We issued the
17 draft at the end of August as you know. We're here today to
18 receive comments. The comment period ends on December 2,
19 2005. And we plan to issue the final Environmental
20 Statement in April of 2006.

21 Now let's talk about how somebody gets in
22 touch with the Nuclear Regulatory Commission or finds the
23 documents. My name is Rich Emch as I said earlier, and my
24 phone number is there, and you can contact me directly if
25 you need to. The documents, the draft Environmental

1 Statement, is available to be seen at the William Madison
2 Randall Library at the University of North Carolina at
3 Wilmington. It's there, I know. I saw it yesterday, and I
4 talked with the assistant librarian about it. Also the
5 Impact Statement can be viewed on the NRC web site. The
6 whole web site is up there. I'm not even going to attempt
7 to read that right now.

8 Earlier somebody asked me today about the
9 local library. The document is not available in printed
10 form at the local library, but it is available through the
11 computer systems at the local library. I sat with the
12 librarian there and showed her how to access it.

13 How do you submit comments if you wish to?
14 The most common method is to actually come to the meeting
15 and make comments here. The second most common method is
16 to send them in by mail to this address. Also a very
17 common method is to send them in by e-mail to the address
18 that's shown there, the Brunswick EIS web site. Also on the
19 inside, I believe it's inside of the first page of the
20 document, there is an e-mail address there where you can
21 access the document and send in any comments, as well.
22 Then the last and least commonly used method is to actually
23 come to the Nuclear Regulatory Commission in Rockville,
24 Maryland, walk in the door and hand us the comments.

25 And with that, I'm finished with my

1 presentation. I want to thank everybody for coming out
2 tonight. I appreciate you folks spending your time to help
3 us with this review. I'm sure Lance will point this out,
4 but if any of you still have questions after we finish with
5 the comment session, I will be hanging around, along with
6 other members of the NRC staff. And we'll be happy to talk
7 with you if you have anything else you want to talk to us
8 about.

9 MR. RAKOVAN: Thanks, Rich.
10 Again, one more time before we open up for public comments,
11 if anyone has any questions. We went through a lot of
12 material.

13 (No responses.)

14 MR. RAKOVAN: Okay. At this point
15 we have no speakers signed up to make comments. So I will
16 open up the floor if anyone would like to come up to the
17 podium or I can bring the mic to you if you have any
18 comments that you'd like to make. Again, I'm not trying to
19 put you on the spot here. You can certainly take the time
20 and submit your written comments the several ways that Rich
21 indicated was available to you. And again, we'll be
22 hanging out after the meeting is over if you have any
23 questions or want to discuss any matters afterwards. But
24 any public comments?

25 (No responses.)

1 MR. RAKOVAN: Okay, I guess not.
2 Rich, Rani, do you want to --

3 MS. FRANOVICH: I have a couple
4 closing comments. I just wanted to thank everyone again
5 for coming out to our meeting today. Your participation is
6 an important part of our process. One of the items that
7 we'd like feedback on is how we conducted the meeting. I
8 think when you came into the building this afternoon you
9 received many handout forms. So if you have any
10 suggestions on how we might be able to improve our meeting,
11 please fill that out and send it to us. I think the
12 postage is prepaid.

13 If you have a comment on our draft EIS, as
14 Rich mentioned, we are accepting those comments through
15 December 2, 2005, and Rich is the point of contact for
16 that. As Rich and Lance have mentioned, the NRC staff will
17 be hanging out around here for a few minutes after the
18 meeting. So if you have any questions or comments that
19 you'd like to give us after the meeting, we will be happy
20 to talk with you. So thank you again very much for
21 attending our meeting.

22 MR. RAKOVAN: Thank you, Rani. I
23 also would point out that we are going to have another
24 meeting identical to this at 7:00 tonight. Our pre-meeting
25 starts at 6:00. So if by some chance you want to go

1 through all these presentations, you can see it all again
2 live and in person.

3 Having said that, I believe we will close the
4 meeting. Thank you all for coming.

5 (The meeting concluded at 2:28 p.m.)

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