

1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION
3 Corrected Transcript

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6 PUBLIC MEETING TO DISCUSS
7 THE SUPPLEMENTAL ENVIRONMENTAL IMPACT
8 STATEMENT FOR THE LICENSE RENEWAL
9 OF ARKANSAS NUCLEAR ONE, UNIT 2

10 -----x

11 Thursday, October 21, 2004

12
13 Nebo Room
14 Holiday Inn
15 2407 N. Arkansas Avenue
16 Russellville, Arkansas

17 The meeting convened at 7:00 p.m.

18 PANEL MEMBERS:

19 ANDY KUGLER, Facilitator

20 PRESENTERS:

21 GREGORY SUBER
22 TOM KENYON
23 DUANE NEITZEL

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P R O C E E D I N G S

1
2 MR. KUGLER: Good evening, everyone, and thank
3 you for coming to the NRC's meeting this evening on the
4 environmental review for Arkansas Nuclear One, Unit 2.

5 My name is Andy Kugler, and I'm a Section Chief
6 at the Nuclear Regulatory Commission, and I'll be your
7 facilitator this evening.

8 In that role, I hope to help you have a
9 meaningful interaction with the staff, and to provide you
10 with information that you will find useful, and give you
11 an opportunity to provide us with any information you feel
12 we may need.

13 The subject tonight, again, is Entergy
14 Operations Application for License Renewal, for Arkansas
15 Nuclear One, Unit 2. And in particular, we're going to be
16 discussing the environmental review that we've performed.

17 In terms of the format, this evening's meeting
18 will have two parts. In the first part, the NRC staff
19 will be presenting information, first about the license
20 renewal process in general, and then in particular about
21 the environmental review process, and finally discussing
22 the results of our review, which are preliminary at this
23 time: our draft report has been issued.

24 As part of the presentation, there will be
25 opportunities for you to ask questions of the staff.
26 We'll break at certain points in the presentation and give

1 you that opportunity.

2 The second part of the meeting is going to be
3 your part of the meeting, where you have the opportunity
4 to present comments to us or to ask other questions
5 regarding this review, and to give us any comments on our
6 conclusions.

7 You can take this opportunity tonight to share
8 your views on the record, or as we'll discuss later,
9 you'll have an opportunity to provide your comments in
10 writing.

11 All the comments that the staff receives, both
12 tonight and any that we receive in writing, will be
13 treated in the same way, and they will be considered as we
14 prepare the final environmental impact statement.

15 There will be a written transcript of tonight's
16 meeting. We have Penny here, this evening. She will be
17 recording for us. The transcript will have all the
18 comments in it, and it will be made available to the
19 public once we've reviewed it.

20 In terms of the ground rules of the meeting,
21 they're fairly simple: when we get to the question and
22 answer portions, if you could just signal to me, and I'll
23 either bring you this microphone or you can come up to
24 this other microphone and ask your question of the staff.

25

26 We ask that only one person speak at a time.

1 This will allow us first of all to get a clean transcript,
2 but also allows the person who is speaking to be heard by
3 everybody and we all want to respect each person as
4 they're speaking.

5 Also, one thing I would ask is that if you have
6 a cell phone or a pager, if you could either turn it off
7 or mute it, so we're not interrupted during the meeting.

8 During the second part of the meeting when we
9 have any persons who wish to make comments, first I'll
10 provide an opportunity for anybody who has signed up to
11 speak -- pre-registered -- and I don't believe we have any
12 at this point.

13 Barring that, or in that case, what I will do
14 is at the end of the presentations, I will give folks an
15 opportunity, if they've decided they do want to make any
16 comments, to make comments at that time. If you haven't
17 pre-registered, that's okay, we're not going to not listen
18 to you.

19 If you do come up to speak we do ask you to try
20 to be brief and to the point. In terms of a guideline,
21 maybe five to seven minutes for comments.

22 If you do have any written remarks to provide,
23 if you could give us a copy, we can hand it to Penny then,
24 and it helps us to ensure that we get a good record of
25 what you were saying. And we would include that as part
26 of the summary of the meeting.

1 If you do want to provide comments, we'll
2 probably ask you to come up here to the podium so that
3 everybody can see you as you're speaking. If you're not
4 comfortable with that, just let me know and I'll bring you
5 this microphone, but we do want you to speak into a
6 microphone, so that we get a transcript.

7 And when you speak, I'll ask you to identify
8 yourself by name, and if you have an affiliation, provide
9 your affiliation, as well. And again, that gives us a
10 better record.

11 Next slide, please?

12 In terms of the agenda, and the presenters
13 tonight, everyone should have received a printed copy at
14 the registration desk from Alicia. If you don't have an
15 agenda, if you could raise your hand, we'll get you one.
16 Is there anybody who needs an agenda? Okay.

17 So once again, the staff is going to provide a
18 brief overview of the process. The overall license
19 renewal process first, and then specifically the
20 environmental review process, which is the focus of our
21 meeting tonight.

22 The staff will then present our preliminary
23 results and conclusions, assessing the impact of an
24 additional twenty years of operation for this unit,
25 Arkansas Nuclear One, Unit 2.

26 After that, the staff will give you some

1 information on the schedule for the balance of our review,
2 and also some information on how you can provide written
3 comments after the meeting.

4 I'd like now to introduce the NRC speakers to
5 you. Our first speaker will be Mr. Gregory Suber. Mr.
6 Suber is the project manager for the safety portion of the
7 review, and he'll explain more about that when he comes
8 up.

9 He works for the office of Nuclear Reactor
10 Regulation at the NRC, and he leads a team of technical
11 reviewers who are evaluating the effects of aging on
12 certain components, and also aging management programs
13 that the applicant either has in place already or will
14 have in place for license renewal.

15 He'll discuss the overall license renewal
16 process, and then the safety portion of the review.

17 Mr. Suber did his undergraduate work in
18 mechanical engineering at Howard University. He also has
19 a Master's Degree in civil and environmental engineering
20 from Howard University, and a Master's Degree in
21 environmental science from Duke University.

22 He has over ten years of experience, including
23 work at Bechtel, where he was a mechanical design
24 engineer, and work at the NRC where he's been both an
25 environmental project manager and now a safety project
26 manager.

1 After Mr. Suber is done, we'll go to Mr. Thomas
2 Kenyon. Mr. Kenyon will provide a discussion about the
3 environmental review process. He is the project manager
4 for the environmental review, leading a team of experts
5 who are evaluating the impacts of an additional twenty
6 years of operation.

7 He has a technical background in nuclear
8 reactor safety and environmental project management, and
9 he completed his Bachelor of Science in nuclear
10 engineering from the University of Michigan.

11 He worked for the Navy at the shipyard in
12 Norfolk, and at the NRC he's work as a project manager on
13 a number of projects, such as licensing of new plants back
14 in the '80s, design certification of new designs, more
15 recently, license renewal, and for one of the three early
16 site permits that the staff currently has under review.

17 So you can see he's got a very broad background
18 in project management.

19 After he's done, we'll have Mr. Duane Neitzel
20 make a presentation. He'll be talking about the results
21 of the review of the environmental impacts. He leads the
22 technical resources that make up most of the environmental
23 review team, out at Pacific Northwest National Laboratory.

24 He's a staff scientist in the natural resources
25 division there, and has a technical background in biology.

26 He holds a Bachelor of Science degree in

1 zoology from the University of Washington, and a Master's
2 of Science in biological sciences from Washington State
3 University.

4 He's got over 30 years of experience working on
5 environmental issues.

6 We'll then have a short presentation by Mr.
7 Kenyon again, talking about one important element of the
8 environmental review, and he'll then wrap things up and
9 provide information on how to get more information
10 regarding the review, and also how to provide comments
11 after this meeting.

12 I'd like to thank you all for being here this
13 evening: for taking the time out to come. And with that,
14 I'd like to turn it over to Mr. Suber, to begin the
15 staff's presentations.

16 MR. SUBER: Thank you, Andy. Is it on? Now it
17 is. Thanks a lot for the introduction, Andy, appreciate
18 it. Good evening and everyone welcome to this meeting.
19 Glad that you took the time to come out this evening to
20 participate in our process. We really appreciate that and
21 we thank you for it.

22 My name is Gregory Suber. I am the NRC Project
23 Manager for the safety review for the Arkansas Nuclear
24 One, Unit 2 license renewal program. And on behalf on the
25 NRC, once again, I'd like to thank you guys for coming out
26 today and participating in our process.

1 I'd like to take a minute or two to briefly go
2 over the purpose of this meeting, and to talk about why
3 we've come here today.

4 First of all, we'd like to give you a brief
5 overview of the entire license renewal process, which
6 includes, as Andy has stated before, the safety review
7 process and then the environmental review process, and the
8 environmental review process, of course, is the main focus
9 of today's meeting.

10 We will discuss some of the areas that we have
11 reviewed and assessed the environmental impacts for. And
12 we will discuss the results of our review, and we'll also
13 talk about the schedule for license renewal, and discuss
14 how you, the public, can participate in our process.

15 At the conclusion of the staff's presentation,
16 we'll be happy to receive any questions or comments that
17 you may have today, particularly dealing with the
18 environmental aspects of our review.

19 But let me first provide you with some general
20 background information on the entire license renewal
21 program.

22 The Atomic Energy Act provides for a 40 year
23 license term, and also allows for license renewal. The 40
24 year term deals with the current operating license and was
25 based not on safety issues, but on economic and anti-trust
26 issues.

1 The current operating term for ANO-2 expires on
2 July 17, 2018, and if license renewal is granted, that
3 would be extended, of course, to July 17 of 2038.

4 The environmental review process for ANO-2 is
5 currently scheduled to be completed in April of 2005, and
6 at that point, a decision will be made whether or not to
7 issue a renewed license for the ANO-2 nuclear plant.

8 As part of the NRC's review for the
9 application, we've prepared an environmental impact
10 statement which was issued this past August.

11 We've come here to discuss the preliminary
12 conclusions of that EIS, and to take comments that you may
13 have on our draft document, which as I stated was issued
14 in August of this year, to evaluate and maybe modify our
15 conclusions, based on your comments, and then issue a
16 final document: the final EIS.

17 Next slide, please.

18 Okay, with that brief introduction, I'm going
19 to take a few minutes to talk about each portion of the
20 NRC process, and basically introduce you to the NRC
21 mission.

22 The NRC mission is three-fold. The first step
23 of our mission is to ensure adequate protection of public
24 health and safety.

25 Secondly, we endeavor to protect the
26 environment, and thirdly we provide for common defense and

1 security.

2 The NRC accomplishes its missions through a
3 combination of programs and processes, such as
4 inspections, enforcement actions, assessment of licensee
5 performance, and evaluating operating experience at
6 nuclear power plants across the country.

7 The NRC license renewal process is similar to
8 the original licensing process that it involves, as we
9 stated before, a safety review and an environmental
10 review.

11 To briefly explain what we consider in the
12 safety review, we talk about two safety issues. The first
13 are what we call current operating issues, and these
14 current operating issues are handled through what we call
15 the reactor oversight process.

16 The second part of our safety considerations
17 are aging management issues, and these aging management
18 issues are what we deal with in the license renewal
19 process.

20 The NRC's regulatory oversight under the
21 current operating basis, deals with those current issues,
22 and we segregate the two, and restrict the consideration
23 of license renewal to aging management programs.

24 Because the NRC does not -- deals with the
25 current operating issues as they occur, we do not postpone
26 the development and analysis of those issues, such as

1 security and emergency planning, until we enter the
2 license renewal process.

3 Therefore those two elements of the NRC
4 oversight are covered under our current operating license.

5 For license renewal, what we do is we focus on
6 the aging management issues, and aging management
7 programs, that the licensee has implemented to maintain
8 the safety of structures and components.

9 We complete our safety review when we issue our
10 safety evaluation report, which is independently reviewed
11 by the advisory committee on reactor safeguards, also
12 known as the ACRS.

13 The ACRS is a group of academic and industry
14 experts that look at the application and results of our
15 safety review, which are recorded in the SER, and directly
16 provides the commission with their findings and
17 recommendations, independent of the rest of the NRC staff.

18 Now, I'm going to talk about the environmental
19 review. The environmental review evaluates the impact of
20 license renewal on a number of areas.

21 To just briefly describe some of these areas,
22 they include ecology, hydrology, cultural resources, and
23 socioeconomic issues.

24 Part of the environmental review is the comment
25 period, and that's the main reason for this meeting today,
26 to receive comments on the draft environmental impact

1 statement.

2 And Mr. Tom Kenyon will continue to talk more
3 on that process. Next slide, please.

4 As you can see from this slide, the review
5 process follows a parallel path, as we've talked about
6 earlier. The safety review and the environmental review.

7 The upper path describes the safety review,
8 which involves the NRC's review staff, and the assessment
9 of technical information that's contained in the ANO-2
10 license renewal application.

11 We have a team of about 30 NRC technical
12 experts, along with contractors, back at the NRC
13 headquarters in Rockville, who are conducting the safety
14 review. All of whom bring a lot of experience and
15 knowledge to this review effort.

16 The safety review focuses on the effectiveness
17 of a proposed aging management program contained in the
18 license renewal application.

19 The NRC safety reviews -- the NRC staff, excuse
20 me, reviews these aging management programs to ensure that
21 they will be adequate throughout the period of extended
22 operation.

23 Okay, the safety process also involves audits
24 and on-site inspections. These inspections are conducted
25 by an inspection team, which pulls resources both from the
26 NRC staff at headquarters and from the regional offices.

1 The results of these inspections are documented
2 on a separate inspection report.

3 The results of the safety review will be
4 documented as we spoke in the SER, which will be issued in
5 November of this year. At least the draft form will.

6 The lower path shows how we perform the
7 environmental review, and how that review involves the
8 scoping activities which are used to develop the draft
9 supplement to the GEIS, also -- which stands for the
10 Generic Environmental Impact Statement, which documents
11 the result of our environmental review.

12 The draft report was published in August of
13 this year, in comment -- and the comment period is
14 ongoing, and the final version of the EIS will be issued
15 after those comments on the draft have been addressed.

16 So as you can see from this slide, the final
17 agency decision on whether to approve or deny the
18 application will factor in a number of things.

19 The safety review, which is a result -- it's
20 going to be the safety evaluation report, which is a
21 result of a safety review, and the final supplement to the
22 GEIS, which is the result of the environmental review,
23 inspection reports, which will be factored in, and the
24 independent report issued from the ACRS.

25 All of these documents will be used in
26 consideration of the agency's final decision.

1 The splash marks that you see on the slides,
2 represent opportunities for public participation.

3 The first opportunity was during the scoping
4 process that was conducted last winter. During the
5 scoping process, members of the public can provide their
6 insights and views on relevant issues that need to be
7 considered during the environmental review.

8 The next opportunity for input on the
9 environmental review is now, as we are presenting our
10 draft EIS.

11 Separately, if a petition had been filed, to
12 intervene in this process by an individual or group, then
13 if they had adequate standing -- in other words, if their
14 request for a hearing is granted by either the atomic
15 safety licensing board or the NRC Commission, itself, then
16 a hearing may also have been involved in this process.

17 For the ANO-2 review, we did not receive a
18 request for hearing, and because there was no request for
19 hearing, the license renewal process should take 22
20 months.

21 Okay, that concludes my comments on the review
22 process, and I'll hand the rest of the presentation over
23 to Mr. Tom Kenyon.

24 MR. KENYON: Thank you, Greg. As Greg
25 mentioned, my name is Tom Kenyon and I'm the environmental
26 project manager for the ANO-2 project.

1 I'm going to spend a few minutes talking about
2 our overall environmental review process, then we're going
3 to talk about the specific results of our review of the
4 ANO-2 environmental impacts, and then finally we're going
5 to talk about how -- discuss how members of the public can
6 provide us with your comments.

7 Now, NEPA was -- the National Environmental
8 Policy Act, or NEPA, was enacted in 1969, and requires all
9 federal agencies to use a systematic approach to consider
10 environmental impacts during certain decision-making
11 proceedings.

12 Now, it's a disclosure tool that involves the
13 public. It involves a process in which information is
14 gathered by federal agencies to make informed decisions on
15 a particular activity, and then as part of that process,
16 we evaluate it and then we document the results of our
17 findings, and then we invite the public to evaluate it and
18 provide us with any comments they might have.

19 Now, the NEPA process for license renewal
20 results in an environmental impact statement, as Greg has
21 mentioned earlier.

22 Now, that environmental impact statement, which
23 we refer to as a EIS, describes the results of the
24 detailed review that we did to evaluate the impact of any
25 proposed action that has the potential to significantly
26 impact the quality of the human environment.

1 Now, in preparing an environmental impact
2 statement as part of the ANO-2 review, as Greg mentioned,
3 we conducted the scoping process last winter, where we
4 invited -- where we had a meeting here, and invited public
5 comments during that period, and we came out to the site
6 during the scoping process, and we interviewed federal and
7 other state and local authorities to get information.

8 We documented that -- we've evaluated that
9 information and have documented it in the draft SEIS for
10 which we've issued in August of this year. Next slide.

11 Now, this slide describes the decision standard
12 for our environmental review. I'm just going to read it.

13 The staff is just trying to determine whether
14 the adverse environmental impacts of license renewal for
15 the ANO-2 project are so great that preserving the option
16 of license renewal for energy planning decision makers
17 would be unreasonable.

18 Now, that's what it says in the regulations,
19 but to simplify it, we're really trying to determine
20 whether or not renewing the ANO-2 license for an
21 additional 20 years is acceptable from an environmental
22 standpoint.

23 Now, I want to emphasize that if we were to
24 decide in the end that license renewal is appropriate from
25 an environmental perspective, all that means is it will be
26 okay for the licensee to decide whether or not to operate

1 for an additional 20 years.

2 The NRC doesn't make the decision as to whether
3 or not it will continue operation. That decision is made
4 by the licensee in conjunction with state regulators.

5 So it's possible that the licensee could
6 determine that even after going through this process, they
7 may determine it's not economically feasible to continue
8 operations. But that's their choice: we're not the ones
9 who make that decision.

10 Now, this slide gives a little more detail
11 about the lower part of the graph that Greg had showed you
12 earlier about our license renewal process, the
13 environmental portion.

14 The application was received in October of
15 2003. We issued a notice of intent to develop an
16 environmental impact statement and conduct scoping in
17 December. As I said earlier, we went through the scoping
18 process, we came out to the site and performed our review,
19 and we put together a draft supplement to the GEIS or the
20 environmental impact statement that was issued on August
21 30, 2004.

22 When we -- now we're currently on a 75 day
23 comment period, which ends on November 4 -- I'm sorry,
24 November 24 of this year, and once we've received all the
25 comments and we've determined whether or not we need to
26 modify our environmental impact statement, then we're

1 planning on publishing the final environmental impact
2 statement in April, 2005.

3 So that completes my general overall
4 presentation. Maybe this is a good time to ask if there
5 are any questions on just the general process, and then
6 Duane can go into more detail as to the results of our
7 review.

8 MR. KUGLER: Okay, thank you, Tom. Are there
9 any questions concerning either the overall environment or
10 the overall licensing rule process or the environmental
11 review process in particular?

12 Seeing none, I guess we'll proceed then.

13 MR. NEITZEL: Thank you, Tom. As Andy said
14 earlier, I work at the Pacific Northwest National
15 Laboratory that's in Richland, Washington, and the NRC has
16 contracted us to provide the expertise necessary to
17 evaluate the environmental impacts of license renewal at
18 ANO-2.

19 The PNNL team consists of people and
20 individuals that are experts in each of these areas that
21 you see here on this slide. There are atmospheric
22 scientists, economists, archeologists, terrestrial
23 ecologists, and the rest of this list.

24 On the next slide.

25 The approach we use has been detailed and
26 discussed in the draft -- the environmental impact

1 statement, and I'm going to briefly go through this.

2 There are a list of issues that NRC has been
3 considering for a long time. They considered them in the
4 generic environmental impact statement, license renewal,
5 and they've considered this same list each time they go to
6 a power plant and look at these environmental issues.

7 There's 92 of these issues, and we look at them
8 each time. They've been put into two different
9 categories: a Category 1 issue and a Category 2 issue.

10 Category 1 issues are those that the commission
11 has looked at and said, we can make a generic statement
12 related to these issues for all power plants, and then
13 these other issues, of which there's 23, these are more
14 site specific: we can't make a generic statement, and
15 you'll have to go out to each site and look at those.

16 Look at the generic ones, and first determine
17 whether or not there's any new information -- new and
18 significant information. If there is, you have to look at
19 this issue on a site-specific basis, or can you still
20 adopt the generic statement that the commission has
21 already provided.

22 We analyzed these impacts, at the site,
23 especially the Category 2 ones, and look and see if there
24 is any new issue, and carry that down to whether or not we
25 need further analysis or not, and it's at that point we
26 take the information that we've gathered for the site

1 about the generic -- about all these issues, and make an
2 impact statement.

3 The next slide.

4 The impact statements are either small,
5 moderate, or large. For small impact, the effect -- and
6 these are very specific definitions that have been
7 defined. They're used at every site, and we're -- a lot
8 of work goes into the staff that works on these and within
9 NRC to make sure we're consistent on this.

10 The small impact, the effect is not detectable,
11 or it's too small to destabilize, or noticeably alter the
12 attributes of the particular resource that we're looking,
13 at whether it be aquatic or terrestrial, air quality,
14 socioeconomic.

15 And for example, the operation of ANO-2 may
16 cause loss of adult or juvenile fish at the intake
17 structure, and if the loss of fish is so small that it
18 can't be detected in relation to total population in the
19 river, the impact would be small.

20 But also the next Category of the impact would
21 be moderate. Here the definition says the effect is
22 sufficient to alter noticeably but not destabilize
23 important attributes of the resources.

24 For example, if the losses would cause a
25 population decline and then stabilize at a lower level,
26 the impact would be moderate.

1 And for impacts that are considered large, the
2 effect must be clearly noticeable and sufficient to
3 destabilize the important attributes of the resource.

4 Again, an example with the fish -- I use fish
5 for examples because I'm a fisheries biologist. They're
6 easiest for me to talk about. But, again, this is just an
7 example if the intake structure would cause fish
8 populations to decline to the point where it cannot be
9 stabilized and it continues to decline, then that would be
10 a large impact.

11 And for each resource we go through and discuss
12 those.

13 The next slide.

14 We go through a lot of information gathering to
15 do this. This is the environmental impact statement, but
16 we get information from the licensee. They prepare a
17 renewal application, and we get public comments that Tom
18 and -- talked about. We talk to the staff, the staff that
19 we've put together goes to the site and does a site audit.

20 They talk to the people that work at the site
21 and look at -- and talk to the fisheries biologist there,
22 the air -- the meteorologist, the air quality specialist,
23 the people that are there for the radiation monitoring,
24 the people in the community for the social services.

25 People ask about employment, about
26 transportation, housing, taxes. We gather that kind of

1 information. Talk to the permitting authorities and then
2 state and local agencies.

3 Other state and federal agencies that have
4 regulatory issues related to operation of the plant, and
5 take all that information, and from that is what we
6 evaluate then to make these impact statements.

7 The impact statement that you'll see -- the
8 draft impact statement that most of you already have or
9 that you can get, addresses issues related to the cooling
10 system, transmission lines, radiological, socioeconomic,
11 ground water use and quality, threatened and endangered
12 species, and accidents.

13 And they are in specific chapters of -- or each
14 section of the EIS.

15 So now I'll go through and give you the
16 conclusions that at this point are preliminary. We're
17 waiting for comments before we finalize those impact
18 statements, but we have made impact statements related to
19 each of these areas.

20 The first set of issues I'm going to talk to
21 relate to the cooling system for ANO-2. There are a
22 number of Category 1 issues, for example scouring,
23 eutrophication, discharge of chlorine. The Category 1
24 issues meet all of the conditions for the generic impact
25 statement, and there was no new information presented
26 during scoping of the site audit or any phase of the

1 assessment, therefore the NRC staff concludes that there
2 are no impacts beyond those identified in the generic
3 impact statement.

4 Issues the team looked at on a site-specific
5 basis included water use conflict and microbiological
6 organisms. We found the potential impact in these areas
7 to be small, and additional mitigation is not warranted.

8 The next area -- then we went and looked at the
9 transmission lines. Here again there are some Category 1
10 issues. Some examples are bird collisions, the right-of-
11 way management plan, the air quality. The Category 1
12 issues all meet the conditions for the generic impact
13 statement, and there was no new information presented
14 during the assessment process, and therefore the NRC staff
15 concludes that there are no impacts beyond those
16 identified in the generic impact statement.

17 The issues that we looked at specifically for
18 the ANO-2 site are the electromagnetic fields, that is the
19 acute effects from electric shock, and another issue, the
20 electromagnetic fields' chronic effects related to -- here
21 again these issues, we found the potential impact in these
22 areas are small and again no mitigation is warranted.

23 Next.

24 We did look at radiological impact.

25 Radiological impacts are a Category 1 issue, and NRC has
26 made a generic determination that the impact of

1 radiological release during nuclear power operation during
2 the 20 year license renewal period are small, but because
3 those releases are a concern, I'm going to discuss them in
4 a little more detail here.

5 Nuclear plants are designed to release
6 radiological effluents into the environment. ANO-2 is no
7 different than other plants that we've been to and that
8 we've looked at, where we've done the assessment, and ANO-
9 2 does release radiological effluents into the
10 environment.

11 During our visit, we looked at the effluent
12 release monitoring program. We looked at the
13 documentation for those programs. We looked at how the
14 gaseous and liquid effluents were treated and released,
15 and how -- as well as how solid wastes were treated and
16 packaged.

17 We looked at how the applicant determines and
18 demonstrates that they are in compliance with the
19 regulation for release of these effluents.

20 We also looked at the data from off-site, and
21 near-site locations, that the applicant monitors for
22 airborne releases and direct radiation and other
23 monitoring stations beyond the site boundary, including
24 where they look at water, milk, fish, food products, where
25 and how these are sampled and the results of those.

26 We found that the maximum calculated dose for a

1 member of the public are well within the annual limits.
2 Now, there's a near unanimous consensus within the
3 scientific community that these limits are protective of
4 human health, and since the releases from the plant are
5 not expected to increase on a year-to-year basis during
6 the 20 year license renewal term, and since we found no
7 new or significant information that relate to this issue,
8 we adopted the generic conclusion that the radiological
9 impact on human health and the environment is small.

10 Socioeconomic impacts. Here again there are
11 some Category 1 issues, some examples include public
12 safety, education, aesthetic impacts. The Category 1
13 issues meet all of the conditions for the generic impact
14 statement. There was no new or significant information
15 presented during scoping, the site audit, or any phase of
16 the assessment, and therefore the NRC staff concluded that
17 there was no impact beyond those identified in the generic
18 impact statement.

19 The team looked at these Category 2 issues at
20 ANO, housing, public services, which is the public
21 utilities, off-site land use, public services and
22 transportation. The historic and archeological resources
23 and the environmental justice issue, which is not a
24 Category 1 or 2 issue, but it hasn't been categorized yet,
25 but we did look at that specifically at ANO-2.

26 The issues that the team looked at on a site-

1 specific basis were assessed as small, and again, no
2 additional, or no mitigation is required there.

3 Groundwater, another one of the issues. There
4 are some Category 1 issues here. It's groundwater
5 conflicts with plants that use more than a hundred gallons
6 per minute, and there's no groundwater use at ANO-2, so
7 again, that meets all of the conditions and meets the
8 statement for no impact beyond those identified in the
9 generic impact statement.

10 The Category 2 issue we looked at was the
11 groundwater use conflict, especially related to the use --
12 or specifically related to the use of cooling towers.

13 The team looked at the site specific issues
14 there, and we found that the potential impacts in this
15 area were small, and additional mitigation is not
16 warranted.

17 Threatened, and endangered species. There are
18 four species, three terrestrial and one aquatic species
19 listed as threatened, endangered, or candidate species in
20 this part of Arkansas.

21 We went to the Fish and Wildlife Service, which
22 is the management agency that keeps track of these birds,
23 mammals, and fish. There are two birds, a mammal, and a
24 fish, and asked them about the potential impacts of an
25 additional 20 years of operation, and we gave them the
26 following information, that I'll discuss now, for each one

1 of these animals.

2 First, the -- yes, the first one I have here is
3 the gray bat. It was listed as federally endangered in
4 1976. Its range includes the area near ANO-2, where it
5 resides in caves upstream of the lock and dam. However,
6 these caves are ten miles and further from ANO-2, and no
7 one habitat is more than two miles from the transmission
8 right of ways, therefore NRC determined that the proposed
9 action will have either no effect or not likely adversely
10 affect Gray Bats.

11 For the Bald Eagle, Arkansas rates in the top
12 ten states in the number of winter Bald Eagle sightings.
13 I thought that was an interesting bit of trivia. More
14 than a thousand Bald Eagles are counted each winter,
15 nearly triple the 370-something or -60-something that were
16 reported in 1979, and nests have been reported at several
17 locations around Lake Dardanelle, but none of these are
18 within ten miles of ANO-2 or near the transmission line
19 right-of-ways, and therefore NRC staff has determined that
20 the proposed action will have either no effect or will not
21 likely effect adversely Bald Eagles.

22 The next bird on the list is the interior Least
23 Tern. He is present in the Arkansas and Red Rivers from
24 April through August, and they are -- they nest in small
25 colonies on exposed salt flats, reservoir beaches, river
26 sand bars, along most of the larger rivers.

1 The conditions that they use for nesting
2 habitat is not found near the ANO-2 site, and the nearest
3 known or documented sites are 22 and 24 miles up and down
4 river from the site, and the nesting locations are beyond
5 the ten mile radius from ANO-2 and its transmission line
6 right-of-ways, therefore NRC has determined that the
7 proposed action will either -- will have either no effect
8 or will not be likely to adversely affect interior Least
9 Terns.

10 Lastly, we have the Arkansas River Shiner, that
11 formerly occurred throughout the main stem and major basin
12 for the Arkansas River. This fish is extremely dependent
13 on flood flows during the summer to successfully spawn.
14 Declining stream flows have now restricted its probable
15 range to a few stream reaches in Kansas, Oklahoma, and
16 Texas. They are over ten miles from the site. In fact,
17 it's over 180 miles from the site.

18 The designated critical habitat for the
19 Arkansas Shiner does not occur in Arkansas, therefore NRC
20 staff determined that the proposed action will have either
21 no effect, or will likely -- will not likely affect -- is
22 not likely to adversely affect the Arkansas River Shiners.
23 We have sent this information and a biological assessment
24 to the Fish and Wildlife Service, and they have sent us a
25 letter back saying they agree with us.

26 Okay, we looked at all that -- those impacts

1 from each one of those different areas, and then we looked
2 at cumulative impacts of operation of the power plant for
3 an additional 20 years.

4 Cumulative impacts were those impacts that
5 might be so minor that when they're considered
6 individually they're not significant or they're not a
7 reportable impact, but when you look at these in -- when
8 you cumulate all these impacts and look at them with other
9 past, present or foreseeable future actions, regardless of
10 what agency or what person takes those actions, this
11 action might cumulate to the point where you do have a
12 significant impact.

13 So we went through that exercise for each one
14 of these resource areas, and the operation of the cooling
15 water system, transmission lines, the release of
16 radiological materials, the sociological impacts,
17 groundwater use, all the threatened or endangered species.
18 These impacts were evaluated to the end of the 20 year
19 license renewal term, and I'd like to note the
20 geographical boundary of the analysis, that was dependent
21 on the resource.

22 The socioeconomic resources included the area
23 where more workers occur, where taxes are paid, where
24 roads go for people to come to and from the plants, those
25 kind of things. For that geographic area, you can imagine
26 that in your mind.

1 For the cooling water, it was focused on the
2 reservoir and the river. For the transmission lines you
3 have different geographical area: you have a line that
4 runs from the power plant to Mayfield, and that line, so
5 the temporal component of this analysis was the same. The
6 geographical component is specific to the resource.

7 These impacts are preliminary determinations,
8 determinations that's in the draft, is in -- the
9 cumulative impact resulting from the operation of
10 ANO-2 during the license renewal period will be small.

11 There's two other areas that are addressed
12 during the environmental impact assessment for
13 relicensing. They deal with the uranium fuel cycle and
14 follow the waste management and decommissioning. These
15 impacts are looked at in other areas by NRC and all the
16 issues that are related to relicensing for the uranium
17 fuel cycle and solid waste management, as well as
18 decommissioning are considered Category 1 issues.

19 During scoping, audit, and during our
20 assessment process, there were no new -- there was no
21 significant information identified and we have accepted
22 the impact statement conclusion that is in the generic
23 impact statement.

24 Lastly, we went back and we looked at all of
25 these resource areas from license renewal relative to
26 other alternatives. Alternatives to license renewal.

1 First we looked at no action, which is essentially not
2 renewing the license. What will that mean to fish, to
3 birds, to the public, to housing, to transportation, to
4 cultural resources, air quality, water quality,
5 groundwater use.

6 Went through each one of those things. How
7 would that relate. All the impacts were related then
8 they're compared to the no action. We looked at some
9 alternative energy sources, saying well, if that power's
10 not available, where might other sources of power, where
11 might other sources of power come from.

12 New generation from a coal plant or a natural
13 gas plant or another nuclear plant. Purchasing the power
14 from outside the ANO-2 area and then other alternatives:
15 oil, wind, solar, conservation. We looked at those.

16 Then we looked at a combination of these: a
17 little bit of this, a little bit of that, you know, maybe
18 some wind, some purchase, some conservation, some other.
19 So we looked at those in a combination.

20 When you look at those, the environmental
21 effects of the alternatives, in at least some of the
22 impact categories reached the moderate or large
23 significance, so for each alternative that we looked at
24 had the same types of issues: they were all greater than
25 the continued -- or the re-licensing or the extending the
26 license for an additional 20 years for ANO-2.

1 So finally here, I'd like to quickly go back
2 through the approach again, how we did that, just to kind
3 of go back through what we did.

4 We looked at these Category 1, Category 2
5 issues for ANO-2. For the Category 1 was there new and
6 significant information or could we adopt the statement
7 that's in the generic impact statement.

8 For the others we looked at -- we performed a
9 site audit, was there, again, any new issues -- potential
10 issues, and then completed the analysis.

11 Okay, I believe this is the final slide. A
12 quick summary the conclusions that are in the draft
13 environmental statement for the 69 Category 1 issues
14 presented in the generic EIS that relate to ANO-2, we
15 found no information that was new and significant, and
16 therefore we preliminarily adopted the conclusion that the
17 impact of these issues was small.

18 The team analyzed the remaining Category 2
19 issues in this, and we found that the environmental
20 effects resulting from the issues were also small.

21 During our review, we found no new issues that
22 were not already known, and last, we found that the
23 environmental effects of alternatives, at least in some of
24 the categories, reached moderate or large significance.

25 So, Tom? Thank you, and back to you Tom. Or
26 Andy. Is it Tom or Andy? Tom. Thank you.

1 MR. KENYON: I'm going to discuss one more
2 issue that we take a look at. We look at the
3 environmental impact of postulated accidents. In the
4 generic environmental impact statement, the staff
5 evaluated two types of accidents, the design-basis
6 accidents and the severe accidents.

7 Now, design-basis accidents are those accidents
8 that have been evaluated to ensure that the plant can
9 respond to a broad spectrum of postulated accidents
10 without risk to the public.

11 The environmental impacts of design-basis
12 accidents were evaluated during the initial licensing of
13 the ANO-2, during which it was demonstrated that the plant
14 had the ability to withstand these accidents.

15 Because the licensee has continued to
16 demonstrate acceptable plant performance for design-basis
17 accidents throughout the life of the plant, the commission
18 has determined that the environmental impact of design-
19 basis accidents is small.

20 So neither the licensee, and as a result of our
21 review, the NRC, is aware of any new and significant
22 information on the capability of ANO-2 to withstand the
23 design-basis accidents any differently than had been
24 determined during the licensing process, and therefore the
25 staff concludes that there are no impacts related to the
26 design-basis accidents that are beyond those that are

1 discussed in the generic environmental impact statement.

2 Now, the second category of accidents is severe
3 accidents, which are by definition, more severe than
4 design-basis accidents, because they could result in
5 substantial damage to the reactor core.

6 The commission found in the GEIS that the risk
7 of a severe accident are considered small for all plants.
8 But nevertheless, the commission also determined that
9 alternatives to mitigate such severe accidents must be
10 considered for any plant for which it hadn't been
11 considered in the past.

12 ANO fit into that category, and so we were
13 required to take a look at alternatives for severe
14 accidents, and we call this severe accident mitigation
15 alternatives or SAMA, and although we don't like to use
16 acronyms, this makes my life a lot easier just to call it
17 a SAMA, so I will.

18 Next slide, please.

19 Now, briefly, the SAMA evaluation is a four
20 step process. The first step is to characterize the
21 overall plant risk. And what could be the leading
22 contributors to that list. This typically involves the
23 extensive use of the plant specific probabilistic safety
24 assessment that was done, that we refer to as the PSA.

25 Now, that plant probabilistic safety assessment
26 is a study that identifies the different combinations of

1 system failures and possible human errors that would be
2 required to occur and lead you to progress to either core
3 damage or containment failure.

4 And the second step is to identify what
5 potential improvements could be implemented to further
6 reduce the risk of such an accident.

7 This is done by taking a look at the
8 probabilistic safety assessment. They also look at other
9 NRC and industry studies, and we're also looked at other
10 SAMAs that have been done. We've done over 20 SAMA
11 reviews now. And these were all considered.

12 The third step in the evaluation is to quantify
13 the risk reduction potential implementation cost. In
14 other words we kind of do a bounding analysis to come up
15 with kind of a cost/benefit assessment.

16 And then finally the risk reduction and cost
17 estimates are used in the final step to determine whether
18 or not implementation of any of the improvements can be
19 justified.

20 And to determine whether or not it's justified,
21 we look at three factors. One is whether or not the
22 improvement is cost beneficial. The second is whether the
23 improvement provides a significant reduction in the total
24 risk, and then the third factor is whether or not the risk
25 factor is associated with the aging effects during the
26 period of the extended operation.

1 Now, this slide gives you the preliminary
2 results of our review, the ANO-2 SAMA review evaluation.

3 Entergy started out with identification of 192
4 candidate improvements that were based on the
5 probabilistic safety assessment, the other studies that
6 have been done, as well as the other SAMAs that have been
7 looked at.

8 Now, Entergy reduced those to a set of 93
9 potential SAMAs, based on a multistep screening process,
10 and basically they've looked at whether or not it was not
11 applicable to ANO-2 specifically, or that it had already
12 been addressed in the design of ANO-2.

13 And then Entergy did a more detailed assessment
14 of the conceptual design, and costs were then estimated
15 for the remaining of the 93 remaining SAMAs.

16 Now, from this evaluation, Entergy concluded
17 that there were no cost-beneficial SAMAs.

18 Now, the staff evaluated Entergy's methodology,
19 and we concluded that their implementation of that
20 methodology was sound, but there were certain
21 uncertainties that were involved, and as a result of our
22 own independent review in considering these uncertainties,
23 the staff identified four SAMAs that could potentially be
24 cost-beneficial.

25 Two of the SAMAs involved procedural changes
26 and two involved diversifying equipment to reduce common

1 cause failure issues.

2 But other -- next slide, please.

3 But as I mentioned earlier, the cost beneficial
4 consideration is just one of the things that we look at to
5 determine whether or not an improvement is justified. We
6 also look at whether the improvement provides a
7 significant reduction of the total risk, and whether those
8 SAMAs are related to managing the effects of plant aging.

9 And when we look at those other two factors,
10 the staff concluded that the additional plant improvements
11 to further mitigate severe accidents were really not
12 required as part of the ANO-2 license renewal.

13 Now, this is a overall summary of the entire
14 review. As Duane had mentioned, the impacts of license
15 renewal are small, for all the impact areas. For when we
16 look at relicensing ANO-2. And when we look at the
17 alternatives to the relicensing, some of the impacts can
18 range anywhere from small to large.

19 And so it's the staff's preliminary
20 recommendation that the adverse -- recommendation to the
21 commission would be that they find that the adverse
22 environmental impacts of license renewal for ANO-2 are not
23 so great that preserving the option of license renewal for
24 energy planning decision-makers would be unreasonable.

25 Now, this slide just recaps some of the key
26 milestones that are left in the review process. As we've

1 mentioned the draft to the environmental impact statement
2 was issued in August, we're in the middle of a 75 day
3 comment period that ends on November 24.

4 All comments that are received by November 24
5 will be considered, and we may decide as a result of that
6 review that we may have to modify that draft environmental
7 impact statement. Once we do that, then we expect to
8 issue the final environmental impact statement in April of
9 2005.

10 Now, this identifies me as the point of contact
11 for the environmental review, and it gives you my phone
12 number if you have any questions after we leave today, and
13 want to discuss any other issues that you may think of
14 after we leave.

15 I also wanted to mention that you can see hard
16 copies of the documents at the Ross Pendergraft Library at
17 Arkansas Tech University. They've been gracious enough to
18 give us a little shelf space to include the application,
19 they're going to include Greg's SER, as well as include
20 drafts and our final environmental impact statement.

21 And finally, you can view and download the
22 documents off of our website at this address.

23 In addition to this, I may have mentioned to
24 some of you folks, we brought a few extra copies of the
25 draft environmental impact statement. I don't know -- I
26 see three of them might be left. We really don't want to

1 take them back with us; if you want extra copies, feel
2 free to take only the ANO-2 specific information off the
3 table, and if we run out, we will -- just give us your
4 name and address and we will be more than happy to send
5 you an extra copy.

6 And finally, now in addition to providing any
7 comments you might have during today's transcribed
8 meeting, these are the ways most people provide us
9 comments. Either by mail by sending it to the Chief of
10 the Rules and Directives Branch at that address.

11 Those of you who may be in Rockville can hand
12 them to us in person. Somebody asked me earlier if that
13 ever happened, and it hasn't, to my knowledge, but you
14 just never know. And finally, we've established a special
15 email address at our website, and you can just send your
16 comments to the ANOEIS@nrc.gov.

17 And that really completes our presentation for
18 now. As I said earlier, all comments that are collected
19 by November 24 will be considered, and while we develop
20 the final environmental impact statement, and with that, I
21 guess we're going to open up the floor to any comments or
22 questions you might have, and I'll turn it back over to
23 Andy.

24 MR. KUGLER: Thank you, Tom. Are there any
25 questions for Tom or for Duane on the results of our
26 review or on how you can submit comments after this

1 meeting?

2 Does anybody have any questions? Okay, no
3 questions. Is there anybody who wishes to make any
4 comments at this point? We didn't have anybody register,
5 but is there anybody who has decided in the meantime that
6 they would like to say something?

7 I guess not. Alright, a couple of things
8 before I turn it back to Tom to close. I did want to
9 mention that in the package you received when you came in,
10 there's a meeting feedback form. We'd really appreciate
11 it if you'd fill that out. You can either fill it out and
12 drop it off at the back, or you can fill it out and mail
13 it in. It's pre-paid postage. But if you have any
14 comments on the way we ran the meeting or how we could do
15 it better, we would certainly appreciate that, and finally
16 as Tom mentioned, we do have materials over here --
17 anything you don't take, we have to carry back, so if
18 there's anything over there that interests you at all,
19 please feel free to take it.

20 The only things that are exceptions are a few
21 that are marked, these copies are documents that we'd
22 rather you not take, we need to bring those back, but any
23 other materials you're interested in.

24 And with that, I'll turn things back to Tom,
25 just for a very brief closing.

26 MR. KENYON: Well, once again I want to thank

1 you all for coming. I understand you've had an arduous
2 week, some of the folks have been involved in some other
3 activities, and other people are here, I'm sure, it's
4 after work, and I appreciate your coming and spending your
5 time with us. Thank you very much, and if you have any
6 questions afterwards feel free to stop any one of us and
7 we're willing to talk to you today.

8 And with that I guess we close the meeting.

9 (Whereupon, at 8:05 p.m., the meeting was
10 concluded.)

11