Official Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

Title: Public Meeting to Discuss Draft Environmental Impact Statement for Palisades Nuclear Plant License Renewal Application

Docket Number: (Not applicable for meetings)

Location:
South Haven, Michigan

Date: Wednesday, April 5, 2006

Work Order No.: NRC-956 Pages 1-147

NEAL R. GROSS AND CO., INC.
Court Reporters and Transcribers
1323 Rhode Island Avenue, N.W.
Washington, D.C. 20005
(202) 234-4433

1 UNITED STATES OF AMERICA

2 + + + + +

3 NUCLEAR REGULATORY COMMISSION

4 + + + + +

5 PUBLIC MEETING TO DISCUSS

6 DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR

7 PALISADES NUCLEAR PLANT

8 LICENSE RENEWAL APPLICATION

9 + + + + +

10 WEDNESDAY

11 APRIL 5, 2006

12 + + + + +

13 SOUTH HAVEN, MICHIGAN

14 + + + + +

15

16 The Building Public Trust and

17 Confidence Session met at Lake Michigan College, 125

18 Veterans Boulevard, South Haven, Michigan, (Chip) F.

19 Cameron presiding.

20

21

22

23

24

25

1 PRESENT:

2

3 (CHIP) F. CAMERON

4 RANI FRANOVICH

5 BO PHAM

6 DR. DAVID MILLER

7 ROBERT PALLA

8 BOB SCHAAF

9 VIKTORIA MITLYNG

10 JOHN ELLEGOOD

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

I N D E X

1 P R O C E E D I N G S

2 (7:05 P.M.)

3 MR. CAMERON: Good evening everyone. My
4 name is Chip Cameron and I'm the special counsel for
5 public liaison at the Nuclear Regulatory Commission,
6 the NRC.

7 And it's my pleasure to serve as your
8 facilitator for tonight's meeting and in that role
9 I'll try to help all of you have a productive meeting
10 tonight.

11 And our subject tonight is the
12 environmental review that the NRC is conducting as one
13 part of this evaluation of an application that we
14 received from the Nuclear Management Company to renew
15 the license for the Palisades Nuclear facility.

16 I just want to cover a couple of points
17 about the meeting process before we get into the
18 substance of tonight's meeting.

19 I'd like to tell you about the format for
20 the meeting, some very simple ground rules and to
21 introduce our speakers tonight.

22 In terms of the format it's going to be a
23 two part format. The first part of the meeting is for
24 the NRC staff to provide you with some information
25 about what we look at when we evaluate an application

1 to renew a license for an operating reactor.
2 And specifically to tell you about what
3 the conclusions are in a draft environmental impact
4 statement that has been prepared. And there's going
5 to be a few presentations, try to get them short, and
6 we will go on to you for questions on those
7 presentations.
8 And it's important to realize that this is
9 a draft environmental impact statement. It will not
10 be finalized until any concerns, recommendations,
11 advice that we hear from you tonight are evaluated by
12 the NRC staff. Not only comments from this meeting
13 but we're also requesting written comments. And we
14 had a meeting this afternoon where we heard comments.
15
16 Well, we're going to evaluate all that
17 before we finalize the environmental impact statement.
18 So the second part of the meeting is an
19 opportunity for us to hear from you and we're going to
20 ask people who want to comment to come up to the front
21 and talk to us. And I think that you might have had
22 an opportunity to fill out one of those yellow cards
23 out there that indicates that you want to make a
24 comment.
25 If you didn't fill a yellow card out and

1 you decide that you want to speak that's fine just
2 tell me.
3 In terms of the weight that's given to
4 comments tonight is going to be the same as for
5 written comments. And also if you speak tonight you
6 can follow up with a written comment if you would
7 like.
8 In terms of ground rules during the
9 question and answer period, in other words after the
10 NCR presentations if you have a question just signal
11 me and I'll come out to you with this little
12 microphone and please introduce yourself to us and if
13 you have a group or an organization that you're with
14 tell us that and we'll try to answer your question.
15 I would ask that only one person speak at
16 a time so that we can give our full attention to
17 whomever has the floor at the moment. And also so
18 that we can get a clean transcript. We have Mr. Ron
19 LeGrand with [us] tonight who is our stenographer, our
20 court reporter who is taking a transcript. That
21 transcript will be available to anybody who wants a
22 copy of it.
23 You can also request a copy of the
24 transcript that was made from this afternoons meeting.
25 So one person at a time Ron will know who

1 is talking at any particular moment.

2 I would ask you to be to the point in

3 questions and try to keep them to questions instead of

4 just making a comment at that time because we really

5 want to provide answers to questions during that first

6 part of the meeting. Then we'll ask you to come up

7 and do your comments.

8 When we get to the comment part of the

9 meeting I have a five to seven minute guideline. You

10 may take less time than that but usually five minutes

11 is enough time to make your major points. And it

12 helps the NRC staff in two ways enough though it's

13 just five minutes.

14 It alerts us to issues that we should

15 start thinking about immediately and talking with you

16 perhaps about after the meeting. And it also tells

17 others in the audience what the advice, concerns,

18 recommendations are.

19 So let me introduce the NRC staff and

20 other who are going to be talking to you tonight. And

21 Rani Franovich is right here. She's going to give you

22 a short welcome and say a few words about license

23 renewals. She's the chief of the environmental review

24 section at the NRC within the license renewal program.

25 And Rani and her staff are the ones that

1 conduct and supervise these environmental reviews that
2 are part of the license renewal evaluation process.
3 She's done several important things at the
4 NRC besides her existing position. She was the
5 coordinator of enforcement on reactor issues.
6 Enforcement for non compliance with NRC regulations by
7 licensees.
8 She's also served as a resident inspector.
9 These are the NRC staff who actually are at the
10 facility every day. They live in a community and
11 they're there to make sure that the NRC regulations
12 are complied with.
13 And Rani is going to introduce the
14 resident from Palisades in a few minutes when she
15 talks.
16 She has a, in terms of educational
17 background she has a Bachelors in Psychology and a
18 Masters in Industrial and Systems Engineering from
19 Virginia Tech.
20 And after Rani does a brief welcome we're
21 then going to go to Mr. Bo Pham who is right here.
22 And Bo, one of Rani's staff, he's the project manager
23 for the preparation of this environmental review on
24 this license application for Palisades.
25 And he's going to go over the license

1 renewal process with you. And Bo has been with the
2 NRC for four years. Rani has been with us for about
3 14 years I think. Bo is with us for four years. He
4 comes to us from the nuclear navy. He was an officer
5 in the nuclear navy on a submarine and his degree is
6 a Bachelors Degree in Mechanical Engineering from the
7 U.S. Navel Academy.
8 After Rani and Bo are done we'll see if
9 there's any questions on the process itself. And then
10 we're going to the part of the meeting tonight and
11 that's the information and conclusions that are in the
12 draft environmental impact statement.
13 And we have Dr. Dave Miller right here.
14 And Dr. Miller is the team leader of a group of expert
15 scientists who evaluated environmental impacts at
16 Palisades from licensee renewal. So he'll be going
17 over that with you.
18 And he's from Argonne National Lab. He's
19 an environmental engineer there. He has a PHD in
20 environmental engineering from Johns Hopkins
21 University. He's also a professional engineer and a
22 certified geologist.
23 And so he'll be telling you that. We'll
24 then go on to you for questions. And then we're going
25 to come to a small but important part of the draft

environmental impact statement and it's something called severe accident mitigation alternatives.

The acronym is SAMA but what it stands for is severe accident mitigation alternatives.

We have Mr. Bob Palla from the NRC staff here. He has been with the NRC for 25 years. He's an expert in something called probabilistic risk assessment and severe accident analysis. And he's going to talk to you about SAMA and Bob has both a Bachelors and a Masters in mechanical engineering from the University of Maryland.

Go onto you for questions again and then Bo is going to close out us on the presentations with where you can submit comments, things like that and then we're going to go out to all of you for comments.

And with that I don't think I skipped anybody did I. Okay, good. We're going to go to Rani.

MS. FRANOVICH: Good evening. I need to make sure everybody can hear me because we had some challenges with the sound quality earlier. Can everybody hear me? Okay, super.

Just wanted to extend my own personal gratitude for your participation in our meeting today. And it is a very important part of our process to

1 solicit comments from the public on our work and make
2 sure that any questions the folks has can be answered
3 by us while we're here or if we don't have the answer
4 with us that we get back to you with our answers when
5 we return to our offices in Rockville, Maryland.
6 So thank you very much for spending your
7 time with us. I know it's your personal time, it's a
8 sacrifice by you all but it's important to us and we
9 appreciate it.
10 I'd like to start off by briefly going
11 over the agenda and the purpose for today's meeting or
12 tonight's meeting. We'll explain the NRC's license
13 renewal process for nuclear power plants with emphasis
14 on the environmental review process.
15 Then we're going to present the
16 preliminary findings of our environmental review which
17 assesses the impacts associated with extending
18 operations at the Palisades nuclear plant for an
19 additional 20 years.
20 Then really the most important part of
21 today's meeting as Chip indicated is for us to receive
22 any comments that you may have on our draft into our
23 impact statement.
24 We also will give you some information
25 about the schedule for the balance of our review and

1 let you know how you can submit comments on our draft
2 environmental impact statement after today's meetings.
3 At the conclusions of the staff's
4 presentation we'll be happy to answer any questions
5 you may have. However, I must ask you to limit your
6 participation to questions only and hold your comments
7 until the appropriate time during tonight's meetings.
8 Once all questions are answered we can
9 begin to receive any comments you have on the draft
10 environmental impact statement.
11 Before I get into a discussion of the
12 license renewal process I'd like to take a minute to
13 talk about the NRC in terms of what we do and what our
14 mission is.
15 The Atomic Energy Act is the legislation
16 that authorizes the NRC to issue operating licenses to
17 nuclear power plants.
18 The Atomic Energy Act provides for a 40
19 license term for power reactors. The 40 year term is
20 based primarily on economic considerations and anti
21 trust factors not on safety limitations of the plant.
22 The Atomic Energy Act also authorizes the
23 NRC to regulate civilian use of nuclear materials in
24 the United States. In exercising that authority the
25 NRC mission is threefold. To ensure adequate

1 protection of public health and safety. To provide
2 for the common defense and security. And to protect
3 the environment.
4 The NRC accomplishes its mission through
5 a combination of regulatory programs and processes
6 such as inspections, issuing enforcement actions,
7 assessing licensee performance and evaluating
8 operating experience from the nuclear power plants
9 across this country and internationally.
10 The regulations that the NRC enforces are
11 contained in Title 10 of the Code of Federal
12 Regulations which we commonly refer to as 10CFR.
13 As I have mentioned the Atomic Energy Act
14 provides for a 40 year license term for power
15 reactors. Our regulations also include provisions for
16 extending plant operation for up to an additional 20
17 years. For Palisades the license will expire in 2011.
18 Palisades is owned by Consumers Energy.
19 A subsidiary of CMS Energy Corporation and licensed to
20 operate by the Nuclear Management Company, LLC.
21 Nuclear Management Company has requested
22 licensee renewal for Palisades. As part of the NRC's
23 review of that license renewal application we have
24 performed an environmental review to look at the
25 impacts of an additional 20 years of operation on the

environment.

We held a meeting here in July of 2005 to seek your input regarding the issues we needed to evaluate. We indicated at that earlier scoping meeting that we would return to South Haven to present the preliminary results of our draft environmental impact statement. That is the purpose of tonight's meeting.

The NRC's license renewal review is similar to the original licensing process in that it involves two parts. An environmental review and a safety review. This slide really gives a big picture overview of the license renewal review process which involves those two parallel paths.

I'm going to briefly describe these two review processes starting with the safety review.

You might ask what does the safety review consider. The license renewal safety review focuses on aging management. The systems, structures and components that are important to safety as determined by the license renewal scoping criteria contained in 10CFR Part 54.

The license renewal safety review does not assess current operational issues such as security, emergency planning and safety performance.

1 The NRC monitors and provides regulatory
2 oversight of these issues on an ongoing basis under
3 the current operating license.
4 Because the NRC is dealing with these
5 current issues on a continual basis we do not
6 reevaluate them in license renewal.
7 As I have mentioned the license renewal
8 safety review focuses on plant aging and the programs
9 the licensee has already implemented or will implement
10 to manage the effects of aging.
11 Let me introduce Juan Ayala the safety
12 project manager. Thank you, Juan. He's in charge of
13 the staff safety review.
14 The safety review involves the NRC staff's
15 evaluation of technical information that is contained
16 in the licensee renewal application. This is referred
17 to as the staff's safety evaluation.
18 The NRC staff also conducts audits as part
19 of its safety evaluation. There's a team of about 30
20 NRC technical reviewers and contractors who are
21 conducting the safety evaluation at this time.
22 The safety review also includes plant
23 inspections. The inspections are conducted by a team
24 of inspectors from both headquarters and NRC Region
25 III office near Chicago. A representative, in fact we

1 have two representatives from Region III here today.
2 The senior resident at Palisades is John Ellegood.
3 John, thank you. And his boss in Region III is
4 Christine Lipa. So thank you guys for joining us
5 tonight.
6 The results of the inspections are
7 documented in separate inspection reports. The staff
8 documents the results of its review in the safety
9 evaluation report. The report is then independently
10 reviewed by the advisory committee on reactor
11 safeguards or the ACRS.
12 The ACRS is a group of nationally
13 recognized technical experts that serve as a
14 consulting body to the Commission. They review each
15 license renewal application and safety evaluation
16 report, form their own conclusions and recommendations
17 on the requested action and report those conclusions
18 and recommendations directly to the Commission.
19 This slide illustrates how these various
20 activities make up the safety review process. I'd
21 like to point out that these hexagons, the yellow
22 hexagons on this slide represent opportunities for
23 public participation in the safety review process.
24 Also the staff will present results of its
25 safety review to the ARCS and that presentation will

1 be open to the public.

2 The second part of the review process

3 involves an environmental review. The environmental

4 review which Bo will discuss in more detail in a few

5 minutes evaluates the impacts of license renewal on a

6 number of areas including ecology, hydrology, cultural

7 resources and socioeconomic issues among others.

8 The environmental review involves scoping

9 activities and the development of a draft supplement

10 to the generic environmental impact statement for

11 license renewal of nuclear plants. Also referred to

12 as the GEIS.

13 The GEIS forms the basis for plant

14 specific environmental reviews. The draft

15 environmental impact statement for Palisades has been

16 published for comment and we're here tonight to

17 briefly discuss the results and to receive your

18 comments.

19 In October of this year we will be issuing

20 the final version of this environmental impact

21 statement which will document how the staff addresses

22 the comments that we receive here today at this

23 meeting or in writing after this meeting.

24 So the final agency decision on whether or

25 not to issue a renewed operating license depends on

1 several inputs. Inspection reports and a confirmatory
2 letter from the Region III administrator, conclusions
3 and recommendations of the ACRS which are documented
4 in a letter to the Commission, the safety evaluation
5 report which documents the results of the staff's
6 safety review and the final environmental impact
7 statement which documents the results of the staff's
8 environmental review.
9 Again the hexagons on this slide indicate
10 opportunities for public participation. The first
11 opportunity was during the scoping period and the
12 meeting we held here back in July of last year. Many
13 of you may have attended that meeting.
14 This meeting on the draft environmental
15 impact statement is another opportunity. No
16 contentions have been admitted to a hearing so that
17 does not apply here. However, appeals are currently
18 before the Commission.
19 That concludes my presentation on the NRC
20 and general overview of the license renewal process.
21 Now I'd like to turn things over to Bo and
22 Bo will discuss the environmental review in more
23 detail.
24 MR. PHAM: Thank you, Rani, and thank you
25 all again for coming out tonight. Can everybody hear

1 me okay.

2 Like Rani and Chip had mentioned I am Bo

3 Pham. I am the environmental, I'm an environmental

4 project manager for the NRC. And my responsibility

5 [is] to coordinate the activities of the NRC with the

6 various environmental experts at the national

7 laboratories to develop our environmental impact

8 statement associated with this license renewal

9 proposed for Palisades Nuclear Plant.

10 The National Environmental Policy Act of

11 1969 requires that federal agencies like the NRC

12 follow a systematic approach in evaluating potential

13 environmental impacts of certain actions like the

14 license renewal of a nuclear power plant.

15 We're required to consider the impacts of

16 the proposed action and also any mitigation for those

17 impacts that we consider to be significant.

18 Alternatives to the proposed action

19 include taking no actions on the applicant's request

20 are also to be considered.

21 The National Environmental Policy Act and

22 our environmental impact statement are disclosure

23 tools. They specifically, they're specifically

24 structured to involve public participation and this

25 meeting here tonight facilitates that process.

1 So we're here to collect the public
2 comments on the draft environmental impact statement
3 and these comments will be included in the final
4 environmental impact statement that's due to be issued
5 in October.
6 To go into a little more detail about our
7 approach I'd like to provide you a bit more
8 information of the background about the development of
9 the license renewal environmental impact statement
10 that we're working on. That we have issued the draft
11 of so far.
12 In the mid 1990's the NRC was faced with
13 the prospect of having to prepared impact statements
14 for the majority of the operating nuclear power plants
15 in the country. In order to do this the NRC had to
16 tackle it in two ways.
17 First we evaluated it the impacts of all
18 the plants across the entire country to determine if
19 there were impacts that were common to all operating
20 plants. So we looked at 92 separate areas and found
21 that for 69 of these issues the impacts were the same
22 for all plants with similar features.
23 The NRC called these category one issues
24 and made the same or generic determination about that
25 impacts in a document that we call The Generic

1 Environmental Impact Stated For License Renewal which
2 Rani previously mentioned also known as the GEIS.
3 These category one issues, to give you an
4 example, include things like the discharge of chlorine
5 or biocides
6 -- into bodies of water, thermal shock and fish
7 entrainment or fish impingement. So those are
8 considered category one issues common to plants with
9 similar features.
10 The Generic Environmental Impact Statement
11 was issued by the NRC in 1969, excuse me, it was 1996
12 and contains the NRC's generic determinations for all
13 its 69 category one issues.
14 The second way the NRC tackled this was
15 to, found it was not able to make generic conclusions
16 about the remaining 23 issues. Site specific
17 supplements were needed for 21 of these issues and
18 there were two, called category two issues and in
19 addition to that there were two issues remaining that
20 we put into the non categorized, category and
21 therefore those two almost needed the specific, a site
22 specific analysis.
23 The NRC also did not rule out the
24 possibility that its generic connclusions may not
25 apply in some of the cases. Therefore a verification

1 is done to determine if new and significant
2 information is found that contradicts the generic
3 conclusion. And if so then the staff would do a site
4 specific analysis on each of those issues.
5 The Palisades supplement containing a
6 summary of all the category one issues, category two
7 and a site specific analysis for category two issues
8 as well as the two non categorized issues is what you
9 have or what we are presenting to you today for
10 comments.
11 This slide shows our decision standard for
12 the environmental review. And the standard comes
13 directly out of the regulations under Part 51.71 of
14 Title 10 of the Code of Federal Regulations which is
15 what the NRC operates under.
16 And I'll give you a second to read it
17 there but simply put we look at the license renewal
18 request to see if it's acceptable from an
19 environmental standpoint.
20 This next slide shows important milestone
21 dates for the environmental review process and the
22 highlights indicate the opportunities for the public
23 involvement in the review process.
24 We receive the Nuclear Management
25 Company's application requesting a license renewal of

1 Palisades in March 22nd of 2005. On June 27th of 2005
2 we issued a federal registered notice of intent to
3 compare the impact statement and conduct scoping.
4 A meeting was held on July 28th here as
5 part of the scoping process and many of you may have
6 attended as well as provided comments to us.
7 The comments that were given at the
8 scoping meeting and in the scope of this review are
9 contained in Appendix A of the draft of environmental
10 impact statement.
11 I also have copies of the scoping summary
12 report which contains your comments and our responses
13 to it in the back of the room if you're interested in
14 getting a copy.
15 The scoping period ended on August 22nd,
16 2005 and the summary, and the scoping summary report
17 was issued on December 14th of 2005 addressing all the
18 comments that we received from all the different
19 sources during the scooping process.
20 Our draft is actually a supplement to the
21 generic environmental impact statement or the GEIS so
22 it's a supplement 27 to the GEIS and that was issued
23 on February 14th, 2006.
24 We're currently accepting public comments
25 on that draft until May 18th of 2006. Today's meeting

is being transcribed as Chip mentioned earlier and the comments provided here carry the same weight as if it was submitted in writing.

Once the comment period closes we will develop the final supplemental environmental impact statement which we expect to publish in October of this year.

Now before I turn over the presentation to Dr. Dave Miller here I guess we can take some of the questions if you have any regarding the review process for the license renewal.

MR. CAMERON: Okay. Thank you, thank you both. Thanks, Rani.

Are there any questions on the review process with the NRC? And please just introduce yourself too.

MS. BARNES: My name is Kathryn Barnes. I have a question. You mentioned biocides. I was wondering what biocides are used at Palisades and for what purpose.

MR. PHAM: I don't have the, I just gave that as an example. I would have to probably get back to you on that on the specific biocides. But that's just an example of, you know, things that are released and the known release into bodies of water if any that

1 we document in the generic environmental impact
2 statement.
3 I do not have, I don't have the specific
4 on that right now.
5 MR. CAMERON: And Kathryn, if we have more
6 information we'll get that to you. John.
7 MR. ELLEGOOD: Just real quick, a lot of
8 licensees use some sort of biocide to limit the growth
9 of clams in service water systems. Palisades is no
10 exception to this in terms of biocides that would be
11 used --
12 MR. CAMERON: Thank you.
13 MS. BARNES: Do you know what it is.
14 MR. CAMERON: Now what --
15 MS. BARNES: I, I was wondering what kind,
16 what kind of chemical components --
17 MR. ELLEGOOD: I'd have to get back to you
18 --
19 MS. BARNES: Hydrocarbons or?
20 MR. ELLEGOOD: We'll get back to you.
21 MR. CAMERON: We'll find out specifically
22 for you. Process, did you have something, you don't,
23 okay.
24 MR. SCHAAF: I don't have the specifics off
25 the top of my head but we, that's one of the things

1 we, we did talk about in the supplement. It, it'll be
2 identified in the supplement to the GEIS and also
3 those are, those releases are permitted by the State
4 of Michigan and, and the permit includes conditions on
5 which materials are, are able to be released. And at
6 what, what concentrations.
7 MR. CAMERON: And if Kathryn wants to see
8 the specifics she can find that in the draft
9 environmental impact statement.
10 MR. SCHAAF: The permit is available in our
11 document management system. The utilities are
12 required to submit a copy of, of their permit when
13 it's renewed. These permits are renewed on a, on a
14 five year basis.
15 So we can identify the accession number in
16 our document management system if you're interested in
17 that information.
18 MR. CAMERON: Okay. Thank you very much.
19 Process questions? Yeah, and.
20 MR. RICHARDS: One of the things, Ken
21 Richards, one of the things I was looking through the
22 manual for was the plant's original decommissioning
23 date. I found decommissioning dates in there but I've
24 always been curious what was the original
25 decommissioning date for the Palisades Plant.

1 When it was first built we were told 20,
2 25 years.
3 MR. CAMERON: Right.
4 MR. RICHARDS; They'd be building another
5 plant after that. They even worked on it, and it's
6 been like 38 years and now they want to go another 20
7 years with this. But I'm wondering what was the
8 original decommission date. And I've been all through
9 this thing --
10 MR. CAMERON: Okay. We're going to try and
11 see if we know that.
12 MR. PHAM: I don't have, I don't know what
13 the intention was for the original decommissioning
14 date. However, as Rani said in her part of the
15 presentation that when the NRC licenses a nuclear
16 power plant the, the life of the license is for 40
17 years --
18 MR. RICHARDS: 40 from that?
19 MR. PHAM: Yes. And that's, that's also
20 based on economic reasons not on plant aging.
21 MR. RICHARDS: Well, what does that --
22 MR. CAMERON: Okay. Can we, we need to get
23 everybody on the transcript. Could we follow up on
24 this.
25 MR. RICHARDS: Well, when did they issue a

1 40 year permit? Because I remember back in the late
2 60s, early 70s they were talking 20, 25 years. Now
3 they're saying 40.
4 MR. CAMERON: And I think the very simple
5 answer is when we, when we gave this license to
6 Palisades originally what was the length of the
7 license time.
8 MR. PHAM: The, 2011 is the --
9 MR. CAMERON: Okay. Carry on.
10 MR. RICHARDS: That's the current --
11 MR. CAMERON: All right.
12 MR. PHAM: We haven't, we have --
13 MR. CAMERON: Let's, let's, do you have
14 anything else then?
15 MS. FRANOVICH: That's, that's the length
16 of the license. Now maybe the utility at time has
17 talked about closing before the license ends. Maybe
18 that's the information he has.
19 MR. CAMERON: Okay.
20 MS. FRANOVICH: And that would be their
21 decision, it would be a business decision.
22 MR. CAMERON: Yes, sir and please introduce
23 yourself.
24 MR. ADAMS: Duane Adams. My question is
25 what was the design during the 60s when, when this was

1 on the planning books. You design a piece of
2 equipment to last a certain period of time.
3 What was that in that original document
4 and is it in this document that you just issued?
5 Because normally the plants are built to last a
6 certain period of time much like cars are.
7 MR. CAMERON: All right.
8 MR. PHAM: I think the answer to that would
9 be that when the plant, the plant was, I don't, I
10 don't think this plant was specifically designed with
11 components lasting a certain period of amount of time.
12 Everything that the NRC does basically is
13 to ensure the health and safety of the public and so
14 we had ongoing safety programs to ensure that the
15 plants are operated safely.
16 And part of that is the equipment managing
17 process in which we look at the safety equipment and
18 make sure they're operating and, and they're going to
19 be sustainable throughout the life of the plant.
20 MR. ADAMS: But there are certain
21 components you cannot look at.
22 MR. CAMERON: Okay, sir, sir. We need to
23 get all comments on the record and maybe Rani can
24 provide a little bit more on that question.
25 MS. FRANOVICH: Yeah, with the, with the

1 license being for 40 years the utility may have
2 purchased certain components that may have a life of
3 40 years or less in which case they replace or
4 refurbish those components to ensure that they perform
5 their intended functions during the extended period of
6 operation.
7 MR. CAMERON: Okay.
8 MR. ADAMS: All the components have --
9 MS. FRANOVICH: No.
10 MR. CAMERON: Sir.
11 MS. FRANOVICH: No.
12 MR. CAMERON: Sir, we need to get you, you
13 know, on the transcript so.
14 MS. FRANOVICH: Those that may have a
15 design life for 40 years or less may be replaced or
16 refurbished to ensure that their intended functions
17 are performed. That's what we inspect.
18 MR. CAMERON: Okay. Thank you. Let's go
19 to one other question here and then go to, to the
20 draft EIS.
21 Yes, sir.
22 MR. ANAN: My name is Robert Anan. I just
23 want to, I, I think what the gentleman is getting at
24 is I'd like to ask the engineer, there was an engineer
25 over here. The major components of that plant I think

1 what the guy was trying to get at is anything that's
2 built like that the critical stages of when it's
3 break, it's break in point and when it ages.
4 And I'd just like to know from the
5 engineer if, if indeed that is, that's correct. Just
6 a yes or no would be fine.
7 MR. CAMERON: And the question is whether
8 the critical point is the break in period and then in,
9 as it gets --
10 MR. ANAN: As it --
11 MR. CAMERON: -- to its end of its useful
12 life --
13 MR. ANAN: Yeah.
14 MR. CAMERON: -- aging.
15 MR. ANAN: Exactly.
16 MR. CAMERON: All right. John.
17 MR. ELLEGOOD: What you're thinking of is
18 with components you typically have a infant mortality
19 and, and
20 a life mortality of the component when it fails.
21 At the power plants they do routine
22 inspection surveillance as preventive maintenance
23 activities on components a lot of predictive
24 maintenance to determine if that particular component
25 is nearing it's end of life and try to replace it for

1 pro actively before it fails.

2 As part of the license renewal process

3 there was an extensive evaluation of the aging

4 management programs to make sure that they were in

5 place and licensing was doing additional inspections

6 above and beyond what they had historically been doing

7 to find out those types of issues.

8 For example a pipe a certain wall

9 thickness eventually is going to erode, make sure they

10 have a process in plan to determine the remaining wall

11 thickness and replace that pipe if necessary.

12 So the answer becomes they had an ongoing

13 program and the license renewal process adds

14 additional inspection activities and aging management

15 activities to replace components before they fail.

16 MR. CAMERON: Thank you very much, John.

17 We're going to go to Dr. Dave Miller to

18 talk about the findings in the draft environmental

19 impact statement now. And then we'll go back to your

20 questions.

21 DR. MILLER: Thank you, Chip. Is the sound

22 level okay back there, great.

23 Good evening. As Chip said I'm from

24 Argonne National Lab. We're in Chicago and the NRC

25 has contracted with us to provide the expertise

1 necessary to evaluate the impacts, the environmental
2 impacts as a result of license renewal at Palisades.
3 My team consists of nine members from
4 Argonne National Lab plus one member from the Lawrence
5 Livermore National Lab in California.
6 As you can see on the screen here the
7 categories of expertise that we provide are
8 atmospheric sciences, socioeconomics, archaeology,
9 terrestrial ecology, aquatic ecology, land use,
10 radiation protection, nuclear safety, hydrology and
11 regulatory compliance.
12 One of the things that's important to note
13 is how we actually quantify impacts. And when we use
14 the terms small, moderate and large they're used in
15 context.
16 For each environmental issue identified an
17 impact level is assigned. And so when we say a small
18 impact it means the effect is not detectable or is too
19 small to destabilize or noticeably alter any important
20 attribute of a resource.
21 For a moderate impact the effect is
22 sufficient to alter noticeably but not destabilize
23 important attributes of that resource.
24 And finally for an impact to be considered
25 large the effect must be clearly noticeable and

1 sufficient to destabilize important attributes of the
2 resource.
3 I'll use a short example to provide a
4 little more clarity on that.
5 It's a, we'll use a hypothetical fishery
6 in Lake Michigan and illustrate how we use these three
7 criteria.
8 A plant may cause the loss of adult and
9 juvenile fish at an intake structure. If the loss of
10 the fish is so small that it can't be detected in
11 relation to the total population in the lake the
12 impact would be considered small.
13 If losses cause the population to decline
14 and then stabilize at some lower level the impact
15 would be considered moderate.
16 If losses at the intake cause the fish
17 population to decline to the point where it can't be
18 stabilized and continually declines then the impact
19 would be large.
20 This slide goes to the kind of information
21 and the sources of information that we gather.
22 When my team evaluates the impacts from
23 continued operations at the Palisades Plants, at the
24 Palisades Plant we considered information from a wide
25 variety of sources.

We considered what the licensee had to say in the environmental report. We considered, we conducted a site audit during which we toured the site. Interviewed plant personnel and reviewed documentation of plant operations.

We also talked to federal, state and local officials as well as local service agencies. And we also consider the comments that come in from the public during the scoping period. These comments are provided in Appendix A of this draft supplemental environmental impact statement along with NRC's responses to those comments.

This collective body of information then is the basis for the analysis and preliminary conclusions in the Palisades supplement.

We'll talk about the structure of the document, the actual environmental impacts and how we look at them in continued operation.

The central analysis and the supplement are presented in Chapters 2, 4, 5 and 8. In Chapter 2 we discuss the plant, its operation and the environment around the plant.

In Chapter 4 we look at the environmental impacts of routine operations during the 20 year license renewal term. And as part of those impacts

1 the team looks at the following issues. They are all
2 but the last one which we address in Chapter 5 the
3 cooling system, transmission lines, radiologic
4 impacts, socioeconomic, groundwater use and quality,
5 threatened or endangered species.
6 And then in Chapter 5 that contains the
7 assessment of accidents.
8 At this point I'd like to make a
9 distinction. Environmental impacts from routine day
10 to day operation of the Palisades Plant for another 20
11 years are considered separately from the impacts that
12 could result from potential accidents during the
13 license renewal term.
14 I will discuss impacts from the routine
15 operations. Mr. Palla will discuss impacts from
16 accidents following my presentation.
17 Then in Chapter 8 we describe the
18 alternatives to the proposed license renewal and their
19 environmental impacts.
20 Each of these issue areas are discussed in
21 the detail in the Palisades supplement and I'm just
22 going to provide the highlights.
23 So for cooling system impacts. If you
24 remember from previous presentation there are category
25 two issues [which] are site specific issues. And

1 there were no site specific cooling system impact
2 issues related to this closed cycle cooling system
3 operation at the Palisades Plant.
4 As part of the preliminary findings there
5 was no new and significant information identified.
6 Now there are a number of category one
7 issues related to the cooling system. These include
8 issues related to discharge of sanitary waste, minor
9 chemical spills, metals and chlorine.
10 As you remember the category one issues
11 are ones where NRC has already determined that the
12 impacts from these are small.
13 My team evaluated all information we had
14 available to us to see if there was any information
15 that was both new and significant for these category
16 one issues. We didn't find any new and significant
17 information and therefore we had thought that the
18 NRC's generic conclusions that the impact of the
19 cooling system is small.
20 Next we'll talk about radiological
21 impacts. Radiological impacts are also a category one
22 issue. And the NRC has made a generic determination
23 that the impact of radiological release during nuclear
24 plant operations during the 20 year license renewal
25 periods are small.

1 But because these releases are a concern
2 I want to discuss them in detail.
3 Nuclear plants are designed to release
4 radiological effluents in the environment. Palisades
5 is no different from any other plant and Palisades
6 does release radiological effluents to the
7 environment. During our site visit we looked at the
8 effluent release and monitoring program and we looked
9 at the documentation associated with that program.
10 We looked at how the gaseous and liquid
11 effluents were treated and released as well as how the
12 solid wastes were treated, packaged and shipped.
13 We also looked at how the applicant
14 determines and demonstrates that they are in
15 compliance with regulations for release of
16 radiological effluents. And we looked at data from
17 onsite and near site locations and we looked to see
18 that the applicant monitors for airborne releases and
19 direct radiation and at other monitoring stations
20 beyond the site boundary including locations where
21 water, milk, fish and food products are sampled.
22 We found that the maximum calculated doses
23 for a member of the public are well within the annual
24 limits. Since releases from the plant are not
25 expected to increase on a year to year basis during

1 the 20 year license renewal term and since we found no
2 new and significant information related to this issue
3 we adopted the generic conclusion that the
4 radiological impact on human health and the
5 environment is small.
6 Another issue is threatened and endangered
7 species. Threatened or endangered species.
8 The U.S. Fish and Wildlife Service has
9 determined that there are four terrestrial species
10 federally listed as threatened or endangered that have
11 the potential to occur at Palisades or along it's
12 transmission lines.
13 These are the Pitcher's Thistle, Karner
14 Blue Butterfly, Mitchell's Satyr Butterfly and the
15 Indiana Bat. The eastern Massasauga Rattlesnake has
16 been identified as a candidate for listing.
17 Our review has indicated that the
18 continued operation of Palisades during the license
19 renewal term would not likely have any adverse affect
20 on these species. The applicant currently has no
21 plans for refurbishment activities that could affect
22 the habitat of these species.
23 The U.S. Fish and Wildlife Service
24 determined there was no need for a biological
25 assessment or further consultation under Section 7 of

1 the Endangered Species Act.

2 Based on this the staff's preliminary

3 determination is that the impact of operation of the

4 Palisades Nuclear Plant during the license renewal

5 period on a threat to endanger species would be small.

6 The last issue I'd like to talk about from

7 Chapter 4 is cumulative impacts. These are impacts

8 that are minor when considered individually but

9 significant when considered with other past, present

10 or reasonably foreseeable future actions regardless of

11 what agency or person undertakes the other actions.

12 The staff considered cumulative impacts

13 resulting from the operation of the cooling water

14 system, operation of transmission lines, releases of

15 radiation and radiological material, sociological

16 impacts, groundwater use and quality impacts, and the

17 threatened and endangered species impacts.

18 These impacts were evaluated to the end of

19 the 20 year license renewal term and I'd like to note

20 that the geographical boundary of the analysis depends

21 upon the resource.

22 For instance the area analyzed for

23 transmission lines is different than the area analyzed

24 for the cooling system.

25 Our preliminary determination is that any

1 cumulative impacts resulting from the operation of
2 Palisades Nuclear Plant during the renewal period
3 would be small.
4 There were other impacts evaluated. The
5 team also looked at all issues for uranium the fuel
6 cycle and solid waste management as well as
7 decommissioning and they are considered category one
8 issues.
9 Because they are category one we looked
10 for new and significant information and no new and
11 significant information was brought forward from any
12 of the sources that we worked with as part of our
13 evaluation process.
14 So as I mentioned we also look at
15 alternatives to what this plant might be able to, what
16 this plant produces.
17 My team evaluated potential environmental
18 impact associated with Palisades not continuing
19 operations and you, so the generation capacity would
20 have to be replaced and that would be with alternative
21 power sources.
22 The team looked at a no action
23 alternative, new generation from coal fired, gas
24 fired, new nuclear, purchased power, alternative
25 technologies such as wind, solar and hydro power and

1 then a combination of alternatives.

2 For each alternative we looked at the same

3 types of issues. For example water use, land use,

4 ecology, socioeconomics. You know, they're the same

5 issues that we looked at for the Palisades Plant

6 during the license renewal term.

7 Palisades has a net summer capacity of 786

8 megawatts. So for the coal fire to natural gas

9 alternatives the staff assumed there would be

10 construction of an approximately 800 megawatt plant.

11 For the new nuclear alternatives we assume

12 the same current capacity as the existing Palisades

13 Plant.

14 For two alternatives solar and wind I'd

15 like to describe the scale of the alternatives that we

16 considered because the scale is important in

17 understanding our conclusions.

18 First for solar. Based on the average

19 solar energy available in Michigan and current

20 conversion efficiencies of photo -- cells and solar

21 thermal cells between 17,543,758 acres would be

22 required to replace the generation from the Palisades

23 Plant replace in kind.

24 For wind power replacement of that base

25 load i.e., 786 megawatts, would require approximately

120,000 acres of land.

Due to the scale of the reasonable alternatives the team's preliminary conclusion is that the environmental effects at least in some impact categories could reach moderate or large significance.

So for our preliminary conclusions for the 69 category one issues in the generic environmental impact statement that related to Palisades we found no information that was both new and significant therefore we have preliminarily adopted a conclusion that the impact of these issues is small.

My team also analyzed the remaining category two issues in this supplement. Now we found the environmental effects resulting from these issues were also small.

During our review my team found no new issues that had not already been identified.

Last we found that the environmental effects of alternative of these in some impact categories could reach the moderate or large significance.

Now I think after a question I'll turn it over to Bob Palla, is that correct?

MR. CAMERON: We're going to get a bunch of questions so if you could just --

1 DR. MILLER: Oh --

2 MR. CAMERON: Maybe we won't get a bunch

3 but we'll get some questions --

4 MR. PHAM: Chip, I just wanted to follow up

5 with Kathy on her question and, and we verified in our

6 document that the State of Michigan does license

7 Palisades to, to use Chlorine, Bromine and Amine as

8 far as their permit for biocides.

9 MR. CAMERON: And if you could when after

10 the meeting why don't you point out where that is to

11 her so she can see the content. But let's go, thank

12 you, Bo.

13 Let's go to see if there is questions on

14 the, the analysis on the presentation you just heard.

15 Any, any questions on, on that. Yes. And just please

16 introduce yourself to us.

17 MS. MORGAN: My name is Jeanise Morgan. I

18 was wondering what does it take to get denied or, you

19 know, the license denied. And has this group ever

20 done that?

21 MR. CAMERON: Okay, good, thanks Denise.

22 MS. MORGAN: Jeanise with a J.

23 MR. CAMERON: Jeanise, I'm sorry. Jeanise,

24 two questions is what does it take for a denial. That

25 means all the different parts of the analysis and what

1 is our history in terms of denial, how do we modify
2 applications that come in.
3 Bo, do you want to start us off on that?
4 MR. PHAM: Yeah, the first part of that
5 question what does it take to deny a request is
6 basically the standard that I had, that I put up
7 before is we look at the environmental impact to see
8 if it's large enough to the point where it would be
9 unreasonable for us to leave -- as an option.
10 Now that sounds like a very subjective
11 measure I realize that but it's, it goes back to for
12 example the hypothetical example that Dave used on the
13 fishery on the lake for example.
14 MS. MORGAN: Can you give me a real example
15 of one that you denied?
16 MR. CAMERON: Let him, let him get there
17 and we'll go to that.
18 MR. PHAM: So that's the answer to the
19 first part --
20 MR. CAMERON: That's why it's, it's not a
21 complete answer in the sense that that's only the one
22 part of the review the environmental part of the
23 review.
24 MS. MORGAN: I understand that but I just
25 want an example have you ever --

1 MR. PHAM: From a, yeah, from an
2 environmental perspective if a resource is impacted to
3 the point where it cannot be sustained is the general
4 answer on that, okay.
5 MS. MORGAN: Is that --
6 MR. PHAM: The second part of, the second
7 part of your question has it ever been denied. No,
8 the NRC has never denied. We have, we have returned
9 applications to applicants because of lacking of
10 information or inadequate formatting of the
11 information that they provided us. I remember, the
12 process isn't a go no go process.
13 The applicant submits their application.
14 We review it for consistency with our standards and if
15 it contains the adequate information that's required
16 per regulation.
17 Now if it doesn't to the point where it's
18 not, it's not quite at the, you know, at the effort
19 where we should be putting the effort into doing the
20 review without adequate information then we will
21 return it to the applicant and have them look at it
22 again or review it for quality of purpose prior to
23 trying to, to trying to submit such a document.
24 MR. CAMERON: And Rani, do you have
25 anything to add to that for Jenise?

1 MS. FRANOVICH: Did that answer your
2 question or are you satisfied with that answer?
3 MS. MORGAN: I was hoping for a good
4 example of one you might have stopped because it just
5 seems to me there would be one that would need to be
6 shut down.
7 MS. FRANOVICH: Okay.
8 MS. MORGAN: And I'm sure you have a lot of
9 years under your belt to say that there would be one
10 that was just so bad it shut down.
11 MS. FRANOVICH: Well, to tell you the truth
12 when applicant comes to the NRC with a license renewal
13 application they have advanced invested a substantial
14 amount of time and money in putting together their
15 application to demonstrate to the NRC that that plant
16 will be safe to operate and will not adversely impact
17 the environment.
18 If an applicant cannot do that then they
19 will probably decide not to apply for license renewal
20 because it's costly endeavor.
21 So if an applicant feels they cannot
22 demonstrate that to the NRC they will not pursue
23 license renewal.
24 MR. CAMERON: Okay. That, I think might
25 give Jeanise an idea of why a lot of the applications

1 end up being granted --

2 MS. FRANOVICH: The applications will be

3 typically accepted by the NRC we have returned

4 applications that we felt were not adequate or

5 sufficient for us to conduct our review.

6 MS. MORGAN: But 100 percent of those have

7 been okayed then? 100 percent?

8 MS. FRANOVICH: Well, when we, when we get

9 the application we review it. We typically will ask

10 a number, a large number of additional questions.

11 When I was project manager for license renewal for

12 Catawba and McGuire we had 273 requests for additional

13 information.

14 So the application comes, the staff looks

15 at it. The staff almost always is not satisfied with

16 that which is in the application. So we engage with

17 the, with the applicant to get more information so

18 we're satisfied that continued operation of the plant

19 will be safe.

20 MS. MORGAN: I guess it's just hard to

21 believe that never one has never been, you know,

22 denied like that.

23 MR. CAMERON: Okay.

24 MS. BARNES: Wasn't there two --

25 MR. CAMERON: We're going to go, Kathryn

1 please just don't just speak out we need to try to get
2 people in turn --
3 MS. BARNES: I think --
4 MR. CAMERON: -- and get them on the
5 record and we're going to go to this gentleman over
6 here. Please introduce yourself, sir.
7 MR. KAUFFMAN: Maynard Kauffman. And I
8 have a question for Dr. Miller and ask if you really
9 want to stand by those figures that you cited on wind
10 energy 125,000 acres for I presume the kind of
11 megawatts the plant currently produces.
12 If you, if you, if you do the calculations
13 here I know there's been machines that put out four
14 megawatts each and there could be, you know, maybe
15 you'd need about 200 of them or so to do that and that
16 would be about 500 acres per machine. And that makes
17 it look as if wind is really impossible but it's not.
18 And I think there's a fallacy in there.
19 MR. CAMERON: Okay. Dave, do you want to
20 address that and we're going to go to, to another
21 questioner.
22 DR. MILLER: Yes. The, the information I
23 provided to you is in the generic environmental impact
24 statement and you'll see that in the references.
25 And I would encourage you to provide us as

1 a part of you comments any additional updated
2 information that you might have on that because that
3 is exactly the kind of thing we would look at.
4 MR. KAUFFMAN: All right, I appreciate
5 that.
6 MR. CAMERON: Thank you, thank you Maynard.
7 Yes, ma'am.
8 MS. ADAMS: My name is Sandra Adams and I'm
9 curious as to where Homeland Security and terrorism
10 falls in this environmental impact. Are you going to
11 discuss that tonight or are you going to discuss that
12 later?
13 MR. PHAM: Security is part of an ongoing
14 review process at the plants. So emergency
15 preparedness and security are part of the everyday
16 items that we look at at the NRC. And there are
17 processes in place that look at the adequacy of the
18 security of the plant. So therefore it's not part of
19 the license renewal process. So we look at more than
20 aging management of equipment. And in our case our
21 team looks at the environmental impacts of it.
22 And so no we will not address that tonight
23 because it's beyond the scope of --
24 MR. CAMERON: And as Bo pointed out and I
25 think Rani did in her presentation it's considered an

1 everyday issue that we need to look at. Yes.

2 MS. ELLIGIN: My name is Mary Ann Elligin.

3 I'm with the Michigan Department of Environmental

4 Quality and to answer, was it Jeneane,

5 MS. MORGAN: Jeanise.

6 MS. ELLIGIN: Jeanise's question we had Big

7 Rock Point out just a couple years ago. They went

8 through this study prior to putting it down to the NRC

9 and submitting it and they decided they could no

10 longer operate under this kind of condition.

11 And so the plants themselves are wise

12 enough not to pay to go through the NRC process and to

13 take themselves off.

14 MS. MORGAN: Yeah, I knew about that.

15 MR. CAMERON: Okay. Thank you, thank you

16 very much. Let's go over here. Yes.

17 MS. TIDWELL: Hi, I'm Carol Tidwell. I

18 just have a question about the Argonne National Lab.

19 Is that related to the government? Is it part of the

20 government --

21 DR. MILLER: Argonne National Laboratory is

22 one of a number of national laboratories. The, the

23 structure is such that the Department of Energy owns

24 our facilities but we are operated under contract to

25 the government by the University of Chicago.

1 Other labs are operated by other
2 consortiums typically universities but sometimes
3 they're corporations of some sort.
4 MS. TIDWELL: So is there, is there a
5 private not connected to the government agency that
6 reviews these plans/
7 MR. PHAM: Yes, actually we are using a
8 contractor Earthtech that is doing the review for one
9 of other plants as well.
10 MR. CAMERON: And you might want to note
11 that whenever, for any contractor that we use to help
12 us with this there is a specific conflict of interest
13 review that has to take place to make sure there's no
14 conflicts between who is doing it and the work they're
15 doing. So is that right, Bo?
16 MR. PHAM: Yes. The answer is yes we are
17 using commercial contractors.
18 MR. CAMERON: Okay. Did you want to add
19 anything, Rani?
20 MS. FRANOVICH: I just wanted to affirm
21 what you said, Chip. We cannot use a contractor that
22 is for example engaged in doing work for the very
23 applicant that has requested license renewal.
24 MR. CAMERON: Okay. Let's to Mr. Hannan
25 and then Kathryn.

1 MR. HANNAN: I, you mentioned the amounts
2 of radiation that are admitted or released annually
3 was small. Does radiation accumulate in the body over
4 time? And has anybody ever tested people who live in
5 Covert medically to see the amounts of radiation that,
6 that are in their bodies?
7 MR. CAMERON: Okay. Two, two good
8 questions. And one of them is the accumulation and
9 the second one is whether there has ever been a health
10 study done --
11 MR. HANNAN: Yes.
12 MR. CAMERON: -- on, on radiation here.
13 MR. PHAM: I'm going to try to answer this
14 man and Rich can help me in the back there.
15 But to answer the question yes radiation
16 does accumulate in the body. The amount of radiation
17 released from the plant is in our definition per the
18 EPA standard. We don't look at specifically at the
19 content but at the dose that's received from the
20 population and that's the standard we're, we're
21 looking at.
22 The second part of your question I believe
23 you were asking is anybody looking, looked at the
24 accumulation, Rich, which could you provide additional
25 information on that.

1 MR. CAMERON: Okay.

2 MR. EMCH: Yes, I'll be happy to. My name
3 is Richard Emch and I'm a health physicist and I work
4 for the U.S. Nuclear Regulatory Commission.

5 To get back to the first question, sir,
6 about, about accumulation in the body. Yes, there is,
7 there is some chance of accumulation in the body. And
8 in fact there are certain radio nuclides that you have
9 in your body all the time no matter how far away from
10 a nuclear power plant you live, okay.

11 In addition to that though I wanted to
12 point out the dose models that are used where we
13 calculate doses and let's say you receive a certain
14 amount of -- or something like that from the plant the
15 dose models that we calculate have what we call a 50
16 year dose commitment.

17 In other words we're saying when we
18 calculate the dose we're saying the dose that you're
19 going to receive from this amount of radioactive
20 material, we're, we're estimating what that dose is
21 going to be over a 50 year period.

22 We're assigning it all in the one year but
23 it's estimated over a 50 year period.

24 The second question I believe was about
25 health effects about monitoring of heath effects.

1 MR. CAMERON: And whether there's ever been
2 a study of health effects in Covert --
3 MR. EMCH: In 1990 the, the Congress
4 commissioned the National Cancer Institute to do an
5 evaluation of, of available data about cancer
6 incidents around nuclear power plants. And then they
7 also looked at control, what we call control counts
8 and Palisades was one of the plants that they looked
9 at.
10 And the conclusion was that they saw no
11 increased incidents, no, no evidence of increased
12 incidents of cancer from living near a nuclear power
13 plant. And that includes Palisades.
14 Beyond that what I would like to point out
15 and I'll give you an example of why that's the case.
16 Earlier Dave said that the doses from,
17 were very small. In reality the doses are less than
18 100th of one milligram per year maximum dose for an
19 individual living or working near a power plant.
20 For usefulness of comparison the
21 standards, the EPA standard is 25 milligram per year
22 from the entire fuel cycle. The, if you go to the
23 dentist and get dental X-rays you're probably looking
24 at 5 to 20 milligram. You take a cross country flight
25 you're probably looking at 2 to 5 milligram. Just by

1 being an inhabitant of planet earth you're getting in
2 the neighborhood of 300 milligram a year from all
3 sources including radon.
4 So you can see that the doses, the
5 difference in doses here we're talking this much
6 versus this much.
7 That's, that kind of thing is not going to
8 show up in health studies. And so as far as I know
9 there's been nothing specific done in Covert.
10 Now we did talk to the state agencies to,
11 to the State of Michigan about this and they indicated
12 that they were aware of no problem. So we did look at
13 that as well.
14 MR. CAMERON: Great, thank you. Kathryn.
15 Let me get you this microphone.
16 MS. BARNES: Yeah, two things. First of
17 all I believe that there was a couple of the reactors
18 in the State of Maine. The Yankee Row and another one
19 that were trying to get re licensed and they were
20 denied a re licensing. And also I have heard, read
21 that the level for nuclear power plant workers is
22 higher as if they're super human. In other words
23 their level for milligrams per year is higher than an
24 average person.
25 And I also read that the, the standards

1 for how much, how many milligrams per year a person
2 can have was increased. And I wonder how that's
3 justifiable. I don't believe there their
4 physiological beings are any different than anybody
5 else's. So two things.
6 MS. FRANOVICH: Actually I counted three.
7 MR. CAMERON: Okay. And the first one in
8 terms of --
9 MS. FRANOVICH: Yankee Row and --
10 MR. CAMERON: -- Yankee --
11 MS. FRANOVICH: Yankee Row was considering
12 license renewal back in the early to mid 90s before we
13 actually even finished our rule and realized that they
14 really could not demonstrate that the plant could be
15 run safely. It didn't generate a large number of
16 megawatts.
17 And so they made a business decision to
18 not go through license renewal. In fact I think they
19 actually shut down and are decommissioning.
20 As far as Maine Yankee goes they did not
21 ever file for license renewal either. They also
22 decided to shut down the plant. It was a business
23 decision. They did not produce a lot of electricity
24 to, either. And so they decided to shut down and they
25 are decommission those, that plant.

1 So no those plants never did come in for
2 renewal. One of them I know did consider it and
3 decided for economic reasons not to.
4 The second question or second comment.
5 MR. CAMERON: Question is the standards for
6 the radiation doses that workers at a plant can get,
7 are --
8 MS. FRANOVICH: It's a different standard
9 --
10 MR. CAMERON: -- higher than the standard
11 for the general public is, is what Kathryn was saying
12 --
13 MS. FRANOVICH: I believe that's the case
14 --
15 MR. CAMERON: -- is that, is that true and
16 why. Do you want Rich to do it or do you want to do
17 it?
18 MS. FRANOVICH: I'm going to let Rich
19 comment on that but I think she also made an assertion
20 that they receive higher levels than the general
21 public.
22 MS. BARNES: No, that the level was
23 increased for the general public --
24 MS. FRANOVICH: The standard was increased.
25 MS. BARNES: Yes.

1 MS. FRANOVICH: Okay, Rich.

2 MR. CAMERON: Okay. We got an answer over

3 here, Kathryn. Richard.

4 MR. EMCH: Okay. I'm a little confused.

5 I'm going to try it and if I don't quite get it you

6 let me know, okay.

7 I am not aware of any increase in

8 radiation standards for either members of the public

9 or for occupational workers ever. I, I don't ever

10 remember seeing that. Occupational workers are

11 limited by Part 20 to five rem, I was talking earlier

12 about millirem. Now I'm takimg rem, five rem per year

13 for an occupational exposure limitation.

14 And as I said before the 10CFR, I'm sorry

15 40CFR190 which is the EPA regulations, we have a set

16 of regulations ourselves but they're, but they're

17 supposed implement the, the EPA regulations.

18 The EPA regulations are, must be less than

19 25 millirem to any member of the public from the

20 entire fuel cycle and that includes Palisades or, you

21 know, if another plant was nearby it would be both

22 plants are included.

23 Did I cover what you were asking? I'm not

24 sure I did but.

25 MR. CAMERON: Why are they higher?

1 MS. BARNES: So there is, there is a
2 different standard, there's a different standard?
3 MR. EMCH: There's a different standard for
4 members of the public and for --
5 MS. BARNES: Right.
6 MR. EMCH: -- occupational, for workers
7 yes.
8 MS. BARNES: Right. They're stand, they
9 can tolerate supposedly more radiation than average
10 people.
11 MR. EMCH: Actually in fact biologically
12 no. They're just very healthy members of the public,
13 okay. And, and in fact a member of the public could
14 get five rem and you would probably see no, no health
15 impact on them either, okay.
16 But the belief is because the worker makes
17 a conscious decision to work at the plant and, and
18 undergo whatever risk there is just like working at,
19 if you're a fireman or a, or a policeman or whatever
20 there's certain risks inherent with your job.
21 But occupational worker like at the plant
22 makes a decision that he's going to incur those risks,
23 okay. The plant does a good job of trying to make
24 sure that he gets a very low dose.
25 When we're talking about members of the

1 public that's a different story. You folks aren't
2 volunteering for anything in terms of radiation
3 exposure so that's why the standard is so much lower
4 for members of the public.
5 MR. CAMERON: Okay. Thank you. And I just
6 want to go the State of Michigan to add anything that
7 she wants to on this. We're going to take a couple
8 more questions and then we're going to go to Bob Palla
9 so we can hear about the severe accident aspect. Go
10 ahead.
11 AUDIENCE: I just want to back Rich up. As
12 a radiation worker I have protective clothing and I
13 also have other protective features that we have
14 available to us. These are not available to the
15 public. So politically we have determined that the
16 public needs a lower dose because you are not aware of
17 what you can do to help your dose. And you're not
18 aware of that you're getting the dose.
19 So the State of Michigan chose an even
20 lower one than the DPH standard and we have our own
21 administrative limits for our public.
22 MR. CAMERON: Okay. Thank you. Thank you
23 very much. Let's go over here and then Ken and then
24 Maureen. Go ahead.
25 MR. ADAMS: Wade Adams. I have a couple of

1 questions actually. One goes to the lady over here.
2 It's my recollection that Big Rock went, went into
3 service about 1959 or 60 about 11 years before
4 Palisades. And it's my recollection that Big Rock has
5 not been running really as a power plant for some
6 number of years here now. And it's got a lot of
7 trouble.
8 So that means that if you go ahead and,
9 and renew this you'll be, this reactor will be far
10 exceeding the line time of the Big Rock Plant in terms
11 of production.
12 My second question is to the health
13 scientist. Is there any level of radiation where you
14 cannot achieve an increase in incidents of cancer.
15 It is my understanding that there is a
16 linear relationship and there is no threshold between
17 the incidents of cancer and your exposure to
18 radiation, the lifetime.
19 MR. CAMERON: All right. I don't know what
20 we can say about the Big Rock comparison to, to this
21 plant. I don't think we'll be able to say anything
22 about that.
23 But, Rich, can you talk about the, the,
24 you know, the linear no dose threshold and maybe you
25 can go up there and do that and then we're going to go

1 to this young lady here and over here and then we'll
2 go back to a presentation.
3 MR. EMCH: It wasn't actually part of what
4 I was supposed to answer but I think you're, you're
5 assumption is correct, sir, if the, if the, if
6 Palisades is granted a renewed license I'm sure they
7 will operate longer than Big Rock Point did.
8 MR. CAMERON: Can --
9 MR. EMCH: I'm sorry, can you not hear me?
10 MR. CAMERON: We want to go to the --
11 MR. EMCH: To what I'm really up here for?
12 MR. CAMERON: Yeah.
13 MR. EMCH: Okay. Fair enough, all right.
14 Yes, sir, you are correct. And in fact the NRC does
15 stand by what's called the linear non threshold
16 theory. You've seen it probably in a number of
17 places. It was mostly recently reconfirmed in
18 something called the BIER 7 report which I earlier
19 today somebody mentioned to us.
20 And basically this theory is that there
21 is, that there is some but there is no actual
22 threshold that this is some amount of risk associated
23 with any amount of exposure. Okay, very
24 simplistically, okay.
25 What I was, and, and the NRC follows that,

1 that theory as do most of the, the low radiation
2 protection community does. And, and that's part of
3 why the, the, those limits that I was talking about
4 for the public are as low as they are.
5 Earlier when I said that there was I think
6 I think I mentioned something about no recorded or no
7 health effects below five rems or something like that
8 I was talking about things that had been reported or
9 things that had been found in the studies.
10 But again back to the very basic
11 philosophy. The NRC's philosophy, the NRC's theory
12 our, our regulations are based on the concept of a
13 linear non threshold theory, yes.
14 MR. CAMERON: Okay. Thank you and there is
15 a discussion of the BIER 7 report in the draft
16 environmental impact statement.
17 Do you have a quick follow up, sir,
18 because we really need to move on.
19 AUDIENCE: Well, I wondered if I, I presume
20 that you couldn't calculate an increase number of
21 cancers that would develop because of the increased
22 exposure to radiation in the locality of this plant.
23 And second the study you cited that was
24 commissioned by the National Cancer Institute was a
25 bonafide epidemiology study that, that really looked

1 for a hot spot.

2 MR. EMCH: What they did was they looked at

3 all of the available data from various counties, the

4 counties where these, where these plants were located,

5 control counties that, that would presumably not have

6 any effects from them and that we can certainly give

7 you that information.

8 It's, it's full of information like, I

9 don't want to get into it because it actually, some of

10 it I have trouble understanding.

11 But I'm a health physicist not an

12 epidemiologist, that's why I have some difficulty with

13 part of it.

14 I'm sorry, what was the, there was another

15 part of it or? Oh, yes, yes.

16 Actually these the, the international

17 committees like the international, I can never

18 remember, it's commission and radiation protection, I

19 believe it is, they have, there's a publication ICRP-

20 60 that does have coefficients that you can, that you

21 multiply these coefficients times a dose.

22 If you say this person got a certain dose

23 you can calculate it times those coefficients.

24 Now if you took, those coefficients are

25 really intended to be used for population dose. But

if you took those coefficients and multiplied them times a number like .01 milligram per year it's, it's not worth doing. It's so small.

MR. CAMERON: Okay. Thank you, Rich. Yes.

MS. OVERHEISER: My name is Liz Overheiser and I have two questions involving the last point on the board there.

That includes, well, yes I guess, all of, and when you consider those solar and wind power would that be like a centralized like field of windmills and --

MR. PHAM: Yeah. The, the model --

MS. OVERHEISER: -- sun panels.

MR. PHAM: Again the modeling assumption, can you hear me okay.

The modeling assumption is that Palisades produces a certain amount of megawatts right now, 780 plus some change.

The, so what we look at as an alternative is a, that we're going to replace that we need something to provide the same capacity.

And so whether the, the wind farm is separated into several different areas or all centralized in one location. The bottom line is you, we have certain, some [thumb]rules that we have for X

amount of, a certain number of, of megawatts per acreage for the wind farm production.

So in the end aggregately you're going to need that much acreage, you know, even if it's in one place or all separated.

MS. OVERHEISER: Well, I'm --

MR. CAMERON: Okay. Do you want to a follow up there, go ahead.

MR. OVERHEISER: I'm worried about like the environmental effects. Is that moderate or large considering that it would be all in one place.

MR. CAMERON: And there's a, there's a good, a good point is that conceivably there would be different environmental effects depending on whether it was centralized or decentralized. Good comment also but Dave can you talk to, to that in terms of how we considered that in the draft? Thank you.

DR. MILLER: It, it does depend on what alternative source you're talking about. Now for instance the gas, coal, they have to be in one place to replace that base load.

The, the combination of alternatives that we look at which would mean drawing from more than one single source to make up that amount would therefore be a smaller incremental part compared to the overall

1 whole.

2 I hope I'm getting to your question.

3 Because, because the impacts then are looked at. So

4 for the one where you'd need a coal plant on an entire

5 site that would look at consuming that entire site.

6 For the kind of individual piecing

7 together of different sources of energy then it's

8 fractioned by the amount they contribute. So that's

9 how the impacts are evaluated. Does that get to what

10 you're after?

11 MR. CAMERON: And maybe, maybe we should

12 also consider that as a comment.

13 DR. MILLER: Yeah, I was about to say --

14 MR. CAMERON: Yeah, okay --

15 DR. MILLER: -- I mean that's something

16 we, we are going to take away with us today. It's a

17 simple answer and current modeling in what we looked

18 at in alternatives. Yes, it's all collectively or is

19 all centralized in one location.

20 MR. CAMERON: Okay. Let me, let me try to,

21 I know we have two people here we haven't heard from,

22 from you. So let me, let's just do some, try to do

23 this quickly so we can get --

24 MS. ANDERSON: Elizabeth Anderson. I would

25 like to ask Rani this question. You know, because --

1 if you really feel that a place should be shut down
2 are you allowed to deny the license renewal or are you
3 only allowed to give recommendations?
4 MS. FRANOVICH: If we feel that a plant
5 needs to be shut down license renewal is not even a
6 consideration. We will issue an order to shut them
7 down when we feel it is necessary.
8 License renewal is should they extend
9 operation from the end of their current term, which is
10 a 40 year terms, for another 20 years.
11 If we have a concern about utilities
12 performance today to the point where we're not
13 comfortable with letting them continue to operate we
14 won't wait for license renewal to take action.
15 MS. ANDERSON: This recommendation --
16 MR. CAMERON: The NRC is not an advisory
17 body. They're a regulatory body and if the
18 regulations are, are violated and the plant needs to
19 be shut down we have the authority to --
20 MS. FRANOVICH: We have the authority to
21 issue an order to shut the plant down. We have a
22 number of other tools in our toolbox to either impose
23 additional requirements if we feel that there are
24 safety issues at the plant and to enforce existing
25 requirements to demand information.

1 I mean we're a regulatory agency. We, we
2 determine whether or not a plant is safe enough to
3 operate. And if we don't think that they're safe
4 enough to operate irrespective of license renewal we
5 will take the actions that --
6 MR. CAMERON: Okay. Thank you for that
7 question too. And Ken and then with Corrine and then
8 Bob are you ready.
9 MR. RICHARD: I have a quick one for the
10 health risk physicist. When you were answering her
11 question you were -- alpha, beta, gamma radiation like
12 it was altogether, it's all the same thing. And now
13 you're talking about normal background; can you
14 explain to me the difference between alpha, beta and
15 gamma radiation
16 MR. CAMERON: We have them, we have them
17 behind you right over here. Okay, Rich, you got a
18 question, right?
19 MR. EMCH: Yes.
20 MR. CAMERON: Okay, good. And Corrine
21 we're going to go to you and then we're going to go
22 back to presentations.
23 MR. EMCH: As you pointed out, sir, there
24 are a number of different kinds of radiation alpha,
25 beta, gamma and neutrons. Actually if you look at

1 some of the documents you'll find that we even
2 attribute a different quality of factor to fission
3 product fragments.
4 MR. CAMERON: Speak up, Richard, if you
5 can.
6 MR. EMCH: Okay. And all, I mean all this
7 is when, when I'm saying a dose I'm usually talking in
8 terms of the whole body or total body dose, okay.
9 But we do also look at organ doses. We
10 look at internal, you know, doses taken through
11 ingestion and through inhalation. And, and when we do
12 that that's when you really start, that's when the
13 ones like the alpha and the, and the beta really start
14 to come into play because they're really not dangerous
15 at all outside of the body but once they get inside
16 the body they can be, yes.
17 And those are included in the dose models,
18 yes, sir.
19 MR. CAMERON: Okay. Corrine.
20 MS. CAREY: Yes. Regarding the screen that
21 is showing up there. Which one of those is
22 insignificant? Small, moderate, large. Because time
23 and again I keep hearing reference to impact is
24 insignificant.
25 MR. CAMERON: Can you just give us, why

1 don't you discuss the individual items and explain
2 those very quickly to Corrine and I think it will be
3 obvious, Dave.
4 MS. CAREY: I wanted a specific answer --
5 MR. CAMERON: Right.
6 MS. CAREY: -- and I wanted to know if
7 significance is a matter of a cumulative situation
8 like radiation is itself and if so at what numerical
9 point does insignificance become significant.
10 MR. CAMERON: Okay. We got a little bit
11 more information on what Corrine's question is with
12 that. Do you think you can --
13 DR. MILLER: I think I can.
14 MR. CAMERON: Okay.
15 DR. MILLER: And Corrine help me --
16 MR. CAMERON: Good.
17 DR. MILLER: -- if I don't get it.
18 MR. CAMERON: Okay.
19 DR. MILLER: We try to be very careful not
20 to call anything insignificant in our evaluations. In
21 fact we try to stick because of the definitions I
22 provided earlier to small, moderate and large.
23 And if I use the term insignificant
24 anywhere I, I should be corrected. But I, I hope that
25 I didn't. I don't think I did.

In terms of quantification there are elements of these that simply aren't quantifiable but we use weight of evidence and multiple lines of evidence to come to the conclusion about whether it's a small, medium or large.

And we use those definitions that I had provided earlier and we would skip back to them if you like. That, that, to look at the impact to the resource that we're concerned about and, and in essence the semi quantitative magnitude of that impact.

MR. CAMERON: Okay. And if, if Corrine needs further information please, please talk to her. Bob Palla. Thank you, thank you both, Dave and thank you Rich and Rani. Bob.

MR. PALLA: Good evening, my name is Bob Palla. I'm with the division of risk assessment at NRC. I'm going to be discussing the environmental impacts of postulated accidents.

These impacts are described in Section 5 of the generic environmental impact statement or the GEIS. The GEIS evaluates two classes of accidents. They're called design basis accidents and severe accidents.

Design basis accidents consist of a broad

1 spectrum of postulated accidents that both the
2 licensee and the NRC staff evaluate to ensure that the
3 plant can respond without undue risk to the public.
4 The ability of the plant to withstand
5 these accidents had to be demonstrated before the
6 plant is granted a license.
7 Since the licensee has to demonstrate
8 acceptable performance for these design basis
9 accidents throughout the life of the plant the
10 commission has determined that the environmental
11 impact of design basis accidents is of small
12 significance.
13 Neither the licensee nor the NRC is aware
14 of any new and significant information on the
15 capability of Palisades Plant to withstand design
16 basis accidents. Therefore the staff concludes that
17 there are no impacts related to design basis accidents
18 beyond those discussed in the GEIS.
19 The second category of accidents evaluated
20 in the GEIS are, are the severe accidents. So these
21 accidents are by definition more severe than design
22 basis because they could involve substantial damage to
23 the reactor core.
24 The commission found in the GEIS that the
25 risk of a severe accident is small for all plants.

1 And by this I mean the probabilistically weighted
2 consequences of the accident.
3 Nevertheless the commission determined
4 that alternatives to mitigate accidents, severe
5 accidents in particular, must be considered for all
6 plants that have not done so. These alternatives are
7 called SAMAs or severe accident mitigation design
8 alternatives.
9 The SAMA evaluation is a site specific
10 assessment and it's a category two issue as described
11 earlier.
12 THE SAMA review for Palisades is
13 summarized in Section 5.2 of the GEIS supplement and
14 is described in more detail in Appendix G of the GEIS
15 supplement.
16 The purpose of performing SAMA evaluation
17 is to ensure that plant changes with the potential for
18 improving severe accident safety performance are both
19 identified and evaluated. The scope of the potential
20 plant improvements that were considered include
21 hardware modifications, procedure changes, training
22 program enhancements, basically a full spectrum of
23 potential changes.
24 The scope includes SAMAs that would
25 prevent core damage as well as SAMAs that improve

1 containment performance given that a core damage event
2 were to occur.
3 SAMA evaluation process is a four step
4 process.
5 The first step is to characterize the
6 overall plant risk and the leading contributors to
7 risk. This typically involves extensive use of the
8 plant specific probabilistic safety assessment study
9 which is also known as the PSA.
10 PSA is a study that identifies different
11 combinations of system failures and human errors that
12 would be required to occur together in order for an
13 event to progress to either core damage or to
14 containment failure.
15 The second step in this process to
16 identify potential improvements that could further
17 reduce risk. The information from the PSA such as the
18 dominant accident sequences is used to help identify
19 plant improvements that would have the greatest impact
20 in reducing risk.
21 Improvements identified in other NRC and
22 industry studies as well as SAMA analyses that have
23 been conducted for other plants are also considered.
24 The third step in the process is to
25 quantify the risk reduction potential and the

1 implementation costs for each improvement. The risk
2 reduction and implementation costs for each SAMA are
3 typically estimated using a bounding approach.
4 Risk reduction is generally overestimated
5 by assuming that the plant improvement is completely
6 effective in eliminating the accident sequences that
7 it's intended to address.
8 Implementation costs on the other hand are
9 generally underestimated by neglecting certain cost
10 factors such as maintenance costs and surveillance
11 costs that are associated with the improvements.
12 The risk reduction and cost estimates are
13 used in the final step to determine whether
14 implementation of any of the improvements can be
15 justified.
16 In determining whether improvement is
17 justified the NRC staff looks at three factors. The
18 first is whether the improvement is cost beneficial.
19 In other words is the estimated benefit greater than
20 the estimated implementation cost of the SAMA.
21 The second factor is whether the
22 improvement provides a significant reduction in risk.
23 For example does it eliminate a sequence or
24 containment failure mode that contributes a large
25 fraction of the plant risk.

1 The third factor is whether the risk
2 reduction is associated with aging effects during the
3 period of extended operation in which case if it was
4 we would consider implementation of the SAMA as part
5 of the license renewal process.
6 The next step summarizes the results of
7 the review. 23 candidate improvements were identified
8 for the Palisades Plant based on review of the plant
9 specific PSA the dominant risk contributors at
10 Palisades as well as SAMA analyses performed for other
11 plants.
12 The licensee reduced the number of
13 candidate SAMAs to eight based on a multi step
14 screening process. Now the factors considered during
15 this screening included whether the SAMA is applicable
16 to Palisades due to design differences and whether the
17 SAMA would involve extensive plant changes that would
18 clearly be in excess of the maximum benefit that's
19 associated with completely eliminating all severe
20 accident risk.
21 The more detailed assessment of each of
22 the, of the risk reduction potential and
23 implementation costs -- breach of the remaining eight
24 SAMAs. This is described in detail in Appendix G of
25 the GEIS supplement.

1 The detailed cost benefit analysis shows
2 that several of the SAMAs are potentially cost
3 beneficial when evaluated individually in accordance
4 with the NRC guidance for performing regulatory
5 analysis.
6 Six of the eight SAMAs that, that
7 remained, that survived this screening process were
8 identified as potentially cost beneficial in the
9 licensee's environmental report.
10 As part of the staff's review four
11 additional potentially cost beneficial SAMAs were
12 identified. Two of these four involved lower cost
13 alternatives to SAMAs that the licensee had eliminated
14 in the initial screening. So there could be some
15 lower cost ways to do two of the potential
16 improvements.
17 So these were identified and two
18 additional ones beyond those were also identified
19 where they came from some SAMA reviews that were done
20 at other plants of, of similar plant design, other --
21 plants that identified two, two other SAMAs that had
22 not been initially looked at in the environmental
23 report but were looked at subsequent during the
24 staff's review in response to the staff's review and
25 were also identified as possible cost beneficial SAMAs

1 at Palisades.

2 So in summary a total of ten SAMAs were

3 identified as potentially cost beneficial.

4 I just want to point out that it's, that

5 some of these ten SAMAs address the same risk, but in

6 a different way.

7 For example once SAMA might involve

8 procedure changes to improve the ability to cope with

9 station blackout accidents. Where as another SAMA

10 might involve hardware changes that also address

11 station blackout.

12 In such instances implementation of one of

13 these SAMAs could reduce the residual risk to a point

14 that the related SAMAs would no longer be cost

15 beneficial.

16 Because of this interrelationship between

17 SAMAs we would not expect that implementation of all

18 ten of these SAMAs would be justified on a cost

19 benefit basis but instead implementation of carefully

20 selected subset of the SAMAs could achieve much of the

21 risk reduction and would be more effective than

22 implementing all of the SAMAs.

23 So the end result is that none of the ten

24 potentially cost beneficial SAMAs are linked to

25 managing the effects of plant aging during the period

1 of extended operation.

2 So in accordance with the regulations they

3 are not required to be implemented as part of license

4 renewal because they're not tied to aging.

5 But notwithstanding this the licensee is

6 committed to further evaluate the ten SAMAs for

7 possible implementation as a current operating license

8 activity.

9 Completion of these evaluations is

10 underway and is being tracked in the licensee's plant

11 change process.

12 So that concludes my presentation and --

13 MR. CAMERON: All right, thank you.

14 MR. PALLA: -- questions.

15 MR. CAMERON: Thank you. Any questions on

16 SAMAs at all? Okay. We have one question, two

17 questions and then we're going to go on to Bo for a

18 wrap up so that we can get to you all for comments.

19 And this is Kathryn.

20 MS. BARNES: Yeah, if you could give me an

21 example of a severe accident that might happen and the

22 SAMA that you would procure for it just as an example

23 such as what would happen during a meltdown with the

24 embrittlement issue.

25 DR. MILLER: Well, I'm, I'm not going to

1 give you an example of an embrittlement issue because
2 it doesn't, it doesn't really tie in very well.
3 But I guess an example that may be a
4 little easier to understand is just that if you, if
5 one looks at the risk profile of the plant, meaning
6 the different types of sequences or scenarios that
7 could lead to core damage one that always seems to get
8 a lot of attention is called the station blackout
9 sequence.
10 Basically you loss, it's a loss of offsite
11 power. The plant is equipped with several diesel
12 generators. In this particular type of an event they
13 would fail. They fail to start or they fail to run
14 but they are not available so the plant is basically
15 sitting there without any power to, to supply the
16 pumps.
17 So the way that this could be covered
18 through SAMAs, and I'm, I'm flipping pages here just
19 to find the ones that are applicable.
20 One of the SAMAs, SAMA 10 it's described
21 in more detail in Chapter 5 and in Chapter, in
22 Appendix G but this SAMA would involve modifying
23 turbine driven auxiliary feed water systems so it can
24 be operated indefinitely without AC DC or pneumatic
25 support.

1 So basically by implementing that SAMA the
2 plant would be able to continue to supply water to the
3 steam generators which would remove heat from the
4 reactor core.
5 This could be sustained for, for several
6 hours and in the meantime in, in PRA space we always
7 look at recovery of offsite power and there's a,
8 there's a curve that describes the probability of
9 recovering as a function in time.
10 But if you can extend the ability of the
11 plant to cope with these station blackout events for,
12 for several hours you increase the change of
13 recovering power. And so then at that point the main
14 line front, front, front line systems would be
15 available and --
16 MS. BARNES: Is that with a --
17 MR. CAMERON: Okay, yeah. Let's, let's go
18 to this gentleman here and then maybe you can get more
19 into those examples with Kathryn after the meeting
20 because it is, it seems very complex. But you did a
21 good job of providing a simplified explanation.
22 AUDIENCE: Have you factored into your
23 considerations the impact of an earthquake. And the
24 reason I ask that is that, well, we don't have
25 earthquakes here really. The largest earthquake in

1 the continental United States occurred in the Midwest
2 in the early 19th century. That could happen again.
3 Have you taken that into consideration --
4 MR. PALLA: Yeah --
5 AUDIENCE: -- in your computations.
6 MR. PALLA: -- within the, I'll explain
7 how we handle that and --
8 AUDIENCE: And that regards to both the
9 reactor and as well as those waste storage containers
10 that are sitting there on the shore of Lake Michigan.
11 MR. PALLA: Okay. So --
12 MR. CAMERON: Okay --
13 MR. MILLER: I'll, well, I'll begin by
14 saying we did not look at the waste containers in
15 this, in the, it's not in the scope of the SAMA
16 analysis.
17 What we looked at is the impact on the
18 plant. We, the way that this [was] done we have a
19 probabilistic safety assessment that looks at
20 internally initiated events. This is what I referred
21 to as the PSA.
22 And then there, in the early to mid 1990s
23 all plants were requested to perform an individual
24 plant examination for external events. And this is
25 done via a generic letter from NRC. It's not, it, it

1 basically required every licensee to look at the, the
2 vulnerabilities of the plants to external events in,
3 including seismic events.
4 So those, the insights from the, that
5 study were brought to bear in the process of looking
6 for potential improvements to the plant. So we, we,
7 we have quantified estimates in core damage frequency
8 for internal events, we have some estimate of
9 approximately how much a seismic event contribute
10 relative to what an internal, internally initiated
11 event would contribute.
12 And as part of this study we did in fact
13 identify one seismic related change and there's a SAMA
14 that involves replacing some under voltage relays with
15 seismic requalified relays that these, these relays
16 were judged to be a, kind of a soft spot so to speak
17 in, in the design.
18 So this was an improvement that was
19 identified specifically for seismic.
20 AUDIENCE: But what was your --
21 MR. CAMERON: Okay. Thank you.
22 AUDIENCE: -- decision on the --
23 MR. CAMERON: Sir. Now let's go to a
24 quick follow up because we really need to move on so
25 that we can hear from all of you. Go ahead.

1 AUDIENCE: I would like a quick question as
2 to what sort of seismic event did you assume in this
3 calculation. In other words on a Richter scale. And
4 second why wouldn't you include the waste or the spent
5 rod storage in this calculation because I don't think
6 we can count on, on Yucca Mountain coming online
7 because as I understand it there have been some
8 conflicting information that's been presented on the
9 Yucca Mountain situation and that might not be
10 approved for many years.
11 MR. CAMERON: And Bob can you try to put
12 this into a little bit of perspective --
13 MR. ELLEGOOD: Let me --
14 MR. CAMERON: -- just because, John, can
15 I just finish, thank you.
16 Just because the spent fuel pool or the
17 dry storage and this may be where you're going, John,
18 isn't considered as a SAMA doesn't mean that the NRC
19 isn't concerned and take account of seismic in terms
20 of that. And, John, go ahead.
21 MR. ELLEGOOD: Let me answer the seismic
22 question for you. The entire plant is designed to
23 survive seismic events. The earthquake for Palisades
24 for safe shutdown or designed basis is a point 2G
25 earthquake. That's not characterized in terms of the

1 Richter scale because the Richter scale is more of a
2 energy release during an earthquake and for seismic
3 analysis it doesn't provide the right type of scale to
4 use for the design activity.
5 In terms of how frequently are you going
6 to get that size of an earthquake here that's going to
7 be about every 15,000 years you would achieve an
8 earthquake of about .2G which is the design basis
9 earthquake.
10 The plant was designed for that as well as
11 the original storage pads were designed for that size
12 of an earthquake.
13 Does that answer your question.
14 AUDIENCE: Well, I guess I don't understand
15 how you can say it's 15,000 years for this part of the
16 Midwest because new information suggests that it's a
17 rebound of the land --
18 MR. CAMERON: Okay, I think we've --
19 MR. ELLEGOOD: It comes from a series of
20 government studies that calculated that particular
21 turn frequency.
22 MR. CAMERON: And we really need to, to
23 move on and if you can provide more information to, to
24 that gentleman offline fine. But, Bob, thank you.
25 MR. PALLA: You don't want me to say --

1 MR. CAMERON: Do you, did you, did you want
2 to add anything more?
3 MR. PALLA: Well, what I, what I would add
4 is that from the risk point of view what we would look
5 at in, in contrast to a specific G value for the
6 design within a seismic risk study you look at the
7 whole range of potential seismic levels. And it's,
8 it's called seismic hazard.
9 Obviously you could postulate extremely
10 high G levels but the probabilities of those things
11 are correspondingly much lower. And in this
12 individual plant examination that I spoke of this
13 seismic analysis that, that I spoke of it relies on,
14 on the seismic hazard curve for the site.
15 And you, you look at the ability of the
16 various components and the structures to be able to
17 withstand that, the, the spectrum of, of the loads.
18 And at some point they don't, they would fail and, and
19 this is all solved in a very complicated matter.
20 But the end result if you, you end up with
21 some components that are generally thought to be the,
22 the lowest prone to fail and they might give you the,
23 via the greatest interest for looking at them in terms
24 of reducing risk.
25 So we did go to the individual plant

1 examination. We used it to help identify seismic
2 related fixes that would have the greatest impact on
3 risk.
4 MR. CAMERON: Great. That, I'm glad you
5 added that seismic hazmat curve that looks at
6 different G factors and probability. All right.
7 MR. PHAM: I'm sure Bob is available
8 afterwards, sir, if you want to address the question
9 some more.
10 MR. CAMERON: Okay. Bo.
11 MR. PHAM: Okay. So Dave and Bob has, have
12 gone through the details of our analysis and right now
13 I'd like to turn us to the conclusion in which we
14 found as David and Bob both mentioned that the impact
15 of license renewal are small in all areas.
16 We also concluded that the alternative
17 actions including the no action alternative may have
18 moderate to large environmental -- impact in some
19 categories.
20 Based on these results our preliminary
21 recommendation is that the adverse environmental
22 impacts of license renewal for Palisades are not so
23 great that it is not unreasonable to preserve the
24 option for license renewal for the energy planning
25 decision makers.

1 This slide is a quick recap of where we
2 are right now. We issued the draft environmental
3 impact statement for Palisades on February 14th, 2006.
4 The comment period for the draft ends on May 18th,
5 2006. There are regulations require a 40, 45 day
6 period from the issuance of the draft until the, until
7 the closing of the comment period but we actually
8 build in a 70, at least a 75 day period there.
9 So we expect to issue the final impact
10 statement around October time frame of this year.
11 And then this slide identifies me as your
12 primary point of contact with the NRC awaiting
13 preparation of the environmental impact statement for
14 Palisades.
15 It also identifies where the documents
16 related to our review may be found in the local area
17 at the South Haven Memorial Library.
18 The documents are also available online at
19 the www.nrc.gov website.
20 And in addition as you came in today you
21 were asked to fill out a registration card. If you
22 included your name or address on that card we will
23 automatically mail a copy of the draft and final
24 environmental impact statements to you.
25 If you did not fill out a card I encourage

1 you to do so as it, it's a good opportunity for us to
2 include you in the part of the public outreach process
3 that we have for the review.
4 And if you need to register please see
5 Christina or Laura out front would be your best.
6 In addition to providing comments at this
7 meeting there are other ways you can submit the
8 comments for our review process. You can provide
9 written comments to the chief of rules and directives
10 branch at the address on the screen. You may also
11 make the comments in person if you happen to be in
12 Rockville but for many of you that's not the case so
13 we provided an email address for Palisadeseis@nrc.gov.
14 All of our comments, your comments will be
15 collected and considered.
16 And this concludes my remarks and
17 presentation.
18 MR. CAMERON: Thank, thank you very much.
19 MR. PHAM: Thank you all again for coming.
20 MR. CAMERON: And thank you, Carl, those,
21 those were very very good questions.
22 We're going to go to the comment part of
23 the meeting so we have an opportunity to hear from you
24 and we're going to go first to Mr. Tom Tanlzos who is
25 the chair of the Van Buren County Board of

1 Commissioners. And after Mr. Tanlzos we'll hear from
2 one of his colleagues Richard Freestone and then Mr.
3 Wayne Radell Covert Township supervisor. And this is
4 Mr. Tanlzos, the chair.
5 MR. TANLZOS: Thank you.
6 MR. CAMERON: Thank you.
7 MR. TANLZOS: I'll use the microphone. My
8 name is Tom Tanlzos, county commissioner. I represent
9 South Haven Township, South Haven City and the
10 northern half of Covert Township which includes the
11 plant.
12 I'm also the chairman of the commissioners
13 for Van Buren County.
14 On March 22nd we did pass in 2005, we
15 passed the unanimous resolution in support of the
16 license renewal of the nuclear power plant and I will
17 submit that as a certified copy to you.
18 One of the things even though you might
19 see it was an economic decision for the County, for
20 the Township and the area, yes, these are all true
21 benefits of having the plant in our area.
22 But if there was any concern that it was
23 harming the environment or the residents of this
24 county or this area we would not have taken such
25 action.

1 So I would like to present this to you and
2 on behalf of the Board of Commissioners that we
3 unanimously support the license renewal application.
4 Thank you.
5 MR. CAMERON: Okay, thank you, Chairman
6 Tanlzos. And we'll attach this to the transcript and
7 also have this as a formal comment on your record too.
8 So, Ron, I'm just going to give this to you right now.
9 How about Mr. Freestone. Is he still
10 here?
11 MR. FREESTON: I don't have anything
12 additional to add to what Mr. Tanlozos said. I'm also
13 a county commissioner and support the renewal license.
14 MR. CAMERON: Okay. Thank you, Mr.
15 Freestone.
16 Mr. Radell. Covert Township supervisor.
17 MR. RADELL: Yes. My name is Wayne Radell
18 and I'm the supervisor for Covert Township. Covert
19 Township has supported Palisades Plant since its
20 inception in 1965. The plant's very location is a
21 direct result of the township's encouragement to
22 construct and operate a nuclear plant in this area.
23 Consumers Energy, it's predecessor,
24 Consumers Power and the plant's current operator
25 Nuclear Management Company have been good stewards of

1 the environment. At no time since the plant's
2 beginning operation in December of 1971 to the present
3 has posed any threat or danger to the residents of
4 Covert or the surrounding area.
5 The Covert Township board has officially
6 gone on record to support Palisades license renewal
7 activities through a resolution of support enacted on
8 March 8th, 2005.
9 As the host township for Palisades nuclear
10 plant Covert Township and seven other taxing entities
11 received over $6 million annually in taxes from the
12 plant. Over the years this tax money for the township
13 has funded paving roads throughout the township,
14 building water mains throughout the township, lighting
15 intersections and increased fire and police protection
16 for our citizens.
17 Covert public schools receives the lion
18 share of that tax money and provides first class
19 school facilities and services.
20 Covert Township is very much in favor of
21 Palisades Nuclear Plant's license renewal. It has
22 been, there has been a partnership between Covert
23 Township and Palisades since the beginning.
24 We look forward to that partnership
25 continuing for another 20 years and longer. Thank

1 you.

2 MR. CAMERON: Okay, thank you, Mr. Radell.

3 Now we're going to hear from Mr. Dale

4 Lewis and then we'll hear from Mr. Maynard Kauffman

5 and then Mr. Wade Adams.

6 Mr. Lewis.

7 MR. LEWIS: I just had an operation on my

8 throat, nose last week so I can't speak very loud so

9 I won't speak very long either.

10 Palisades is a great vehicle for

11 industrial growth and growth in South Haven. At the

12 present time during normal operations Palisades

13 employees 600 people from their operations. And if

14 you can imagine in your town, and I presume that most

15 of you are from outside South Haven since I don't

16 recognize too many of you, if you have something that,

17 a plant that employed 600 people and that were to

18 close down there would be great economic impact on the

19 area.

20 So the nuclear plant right now, Palisades,

21 is in a refueling outage where 900 more people come in

22 to South Haven to work on the outage to repair things,

23 to improve things.

24 You can imagine what that does to the

25 hotels, motels in South Have. It's a great economic

1 boost to South Haven.

2 If you were to close Palisades down and I

3 haven't heard a good reason tonight for doing it, it

4 would make South Haven a ghost town almost because

5 there just wouldn't be the jobs that are there now.

6 And I have, as I say I haven't heard a

7 word that says anything about a good reason to close

8 Palisades down.

9 So and we as a city council, oh by the

10 way, I was mayor of South Haven for four years and

11 while I was mayor we passed a resolution also

12 endorsing the continuation of Palisades. Thank you.

13 MR. CAMERON: Thank you, Mr. Lewis. Thank

14 you, thank you very much.

15 We're going to go to Ryan McCoy at this

16 point because he's here with his family and his young

17 son and maybe they want to go bed. But --

18 MR. McCOY: I didn't mean to interrupt.

19 MR. CAMERON: Go ahead.

20 MR. McCOY: I'll be real brief.

21 MR. CAMERON: Go ahead.

22 MR. McCOY: My name is Ryan McCoy. I'm a

23 citizen of South Haven. I'm not affiliated with

24 anyone. I'm here mainly to be educated about it. I,

25 I'm blessed to live close to the beach and I'm on the

1 beach every day and I see that plant every day and
2 I'm, frankly I'm worried so I want to know what's
3 going on.
4 What I've heard from our former mayor and,
5 and some of the commissioners has all been economic
6 based. It's all about economy and jobs.
7 And this touches me deeply because I'm a
8 recently unemployed worker who was selling topical
9 plants and I lost my job from environmental impact
10 from hurricanes.
11 So I'm unemployed and I still stand
12 opposed to it. I want to know what I'm seeing here
13 more is public relations and not a lot of truth.
14 There was a gentleman asked a really profound question
15 why the dry cast things weren't affiliated or weren't
16 in with the seismic analogy. And to me that seems
17 more important than the deteriorating radioactive, see
18 and I don't even know the terminology, so forgive me.
19 But what I want to see happen is that
20 economy take a backseat to ecology. If this is not
21 ultimately safe for our citizens, if our citizens are
22 breathing radioactive fumes, if there's a potential
23 for a major accident that wipes us all out there's no
24 need for an economy.
25 I'd like to see economy take a backseat to

1 ecology. I'd like better answers on, on the questions
2 that are asked, a lot less lip service.
3 I have a young child I want to see grow up
4 in South Haven. I want him to grow up healthy. It's
5 a beautiful community. We'll find ways to replace the
6 economy.
7 These alternatives that you say have vast
8 potential for economic sustain ability. The waste
9 generated, dry casting it there and not having a home
10 for it worries me. 20 years from now what's that
11 going to be like or where are we going to be with, how
12 much more waste will they produce in those 20 years.
13 And right now from what I've read and
14 again I'm naive so I'm here to be educated but we
15 don't have a home or a place to put this waste that's
16 one of the most toxic substances on the plant from
17 what I understand. It's sitting 150 yards from our
18 precious resource the lake. Why that doesn't trouble
19 more people I don't know.
20 I understand the need for economy and
21 jobs. Let's get that behind us and let's look at the
22 ecology. I think that's most important.
23 You know, I'm happy to remain unemployed
24 for another couple of months if that's what it takes.
25 But I'd like to see some true answers, some truth, a

1 lot less PR, a lot less bureaucracy and let's, you
2 know, let's really talk about what's, what matters
3 here.
4 I could go on and on but thank you for
5 listening and for the opportunity and clearly I'm
6 opposed to the re licensing. I've got a lot more to
7 learn. But I think the economy is no, is no reason,
8 it shouldn't be the top consideration.
9 MR. CAMERON: Okay. Thank you, Mr. McCoy.
10 And I'm going to ask John Ellegood at some point not,
11 not now, John.
12 MR. ELLEGOOD: Whatever you want.
13 MR. CAMERON: But since you're here in the
14 community and since there's lots of questions that I
15 think Mr. McCoy has is the draft, at some point not
16 necessarily tonight but at some point, you guys could
17 hook up and maybe you could, you could talk about some
18 of these issues. That may be, may be helpful to him.
19 And, Mr. McCoy, did your, did your wife
20 want to say anything? I know she's out there but --
21 MR. McCOY: I'm sure she doesn't. She's a
22 little tied up.
23 MR. CAMERON: Yeah.
24 MR. McCOY: Our opinions are very similar.
25 MR. CAMERON: Okay. All right.

1 MR. McCOY: I'll just stand behind what I
2 said.
3 MR. CAMERON: Good. Thank you very much.
4 Let's go to Mr. Kauffman, Michigan Land Trust and then
5 we'll go to Mr. Adams.
6 MR. KAUFFMAN: I appreciate the opportunity
7 to speak. Maynard Kauffman speaking on behalf on
8 Michigan Land Trustees.
9 I live on a farm about ten miles straight
10 east of here. And my comments are about alternatives.
11 And what I want to do first is say I am opposed to the
12 20 year extension of the Palisades operating license.
13 I think it's a needless risk. And I'll try to explain
14 why.
15 My hope is that by the time the current
16 license expires in 2011 that nuclear power should be
17 replaced by wind power and by a lot more conservation
18 and more efficient use of electrical energy. That is
19 possible. I'll come back to that.
20 Also it's cheaper. Currently as according
21 to my latest figures and I've been doing a lot of
22 reading on this, wind energy is sold for four cents a
23 kilowatt power or less sometimes when it's under long
24 term contract to where as I understand the cost of
25 nuclear energy is about three times higher than that.

1 So we the taxpayers, the ratepayers are
2 paying so somebody else can make money. And it's not
3 necessary. Let me explain.
4 Palisades sits on 432 acre site of which
5 80 acres is developed or I presumed used. That leaves
6 200 to 300 acres of land which could be available for
7 wind turbines. If you figure four acres per turbine
8 and they're really large, this would be a four
9 megawatt turbine and they exist, you would need or you
10 would have room for about 50 large wind turbines.
11 They could be erected on the site, more land could be
12 rented for farmers down the line along the
13 transmission line too.
14 But even these 200 megawatts that would be
15 produced here by wind is not negligible. That's one
16 fourth as much roughly as the current nuclear plant
17 provides.
18 Now on page of the GEIS on page 845 I
19 understand that wind power had been considered and
20 rejected for a number of reasons. One of which is
21 that it said could be intermittent and there's sense
22 in which you could say that but I, I have a wind
23 generator next to my house, nearby, and I say that
24 wind power isn't seasonal.
25 Because in this season it hasn't quit

1 running for weeks and weeks. So it's not just
2 intermittent but it might be seasonal. So certain
3 other seasons might require a different mix of energy
4 to keep the customers going.
5 So that's one of the problems I have here.
6 It isn't simply intermittent. It's seasonal.
7 In any case wind power is really growing
8 worldwide. It's growing at the rate of 30 percent per
9 year. Most of this is happening in Europe and in
10 Europe Germany is in the lead with I believe at this
11 point 14,600 megawatts of electricity from wind. They
12 seem to know how to do it.
13 So I suggest to the people at the NRC or
14 to the, to the management company that they should go
15 to Germany and ask and say we don't know how to make
16 wind power work here maybe you could tell us how to do
17 it. You may to say this in German so you might want
18 to say ve con mein dusche dunday so they really
19 understand what you're trying to do, okay.
20 Okay. I'm not here to entertain.
21 I want to suggest that there are three
22 paragraphs on page 8-45 of this GEIS dealing with wind
23 power and together the three paragraphs includes so
24 many distortions, falsehoods or simple stupidity that
25 I think if this is a kind of an indication of what's

1 in this book it's bad news because this is not going
2 to gly.
3 The way this is put down here is to sort
4 of make wind a non starter. And it's not true because
5 as I just said it is growing worldwide and it could
6 here too if people were to take a different kind of
7 attitude.
8 And incidently wind generators and their,
9 their towers can be reused and recycled over and over
10 again so that they have that advantage as well. And
11 they provide the jobs that you're so concerned about
12 in this community.
13 So let me wind this up.
14 There, I already mentioned in my comment
15 earlier that it does not require 500 acres for a
16 single wind generator and if the large ones, you know,
17 the, the way the GEIS puts it you really have a system
18 here where they say you need 500 acres or well
19 actually they say 150,000 acres in order to provide
20 1000 megawatts.
21 I've been on wind farms and many of you
22 have seen them. They're not one per 500 acres. This
23 is either a big mistake by somebody that should have
24 known better or it's a blatant distortion. As I
25 suspect the latter because they don't want to deal

1 with wind power they'd rather deal with nuclear
2 because that's the business that they're in both for
3 the commercial and governmental agency.
4 So I, I worry about this.
5 Finally I have to say that according to
6 the GEIS again Consumers Energy has decided they
7 didn't want to deal with what they call DSM and for
8 you who haven't read the book DSM mean demand supply
9 management. In other words giving advise to the
10 consumer to use less energy to get complex for, you
11 know, all of the things that could save energy.
12 Oodles of it. They chose not to do that. Why?
13 Well, it might be very costly or this or
14 that. Now come on. This would be a way of trying to
15 sort of curtail the need for licensing this plant in
16 a risky way for another 20 years.
17 Any relevance has said that we could do
18 with 50 percent less electricity if we used it
19 intelligently and if we conserved. And I think this
20 certainly true because I see all over the place that
21 people do waste a lot.
22 So my point is that I think the, the put
23 down of wind energy in this book is so blatant that I
24 suspect I have to say I'm afraid I lose, I think that
25 the nuclear regulatory commission loses credibility by

1 people who know something about this.

2 And that's a serious thing because I don't

3 want to live in a society where governmental agencies

4 lose credibility because they're supposed to be

5 responsible. Thank you.

6 MR. CAMERON: Thank you, Mr. Kauffman,

7 serious, serious comments that we have to seriously

8 consider. So thank you for pointing that out,

9 pointing that out to us tonight.

10 And then we're going to go Mr. Adams.

11 MR. ADAMS: Thank you very much. I'm Wade

12 Adams. I'm from Kalamazoo, Michigan. I decided to

13 take the, I decided to come over with my wife and, and

14 waste that energy. I hope it's not a waste. I didn't

15 come here to have it, to be a waste.

16 My concern is a catastrophic event. And

17 as this plant becomes older and older as we already

18 heard the Big Rock plant up in Charlaboy has been

19 closed and it hasn't been generating electricity for

20 some time. And as Mr. Kauffman said generating power

21 by nuclear plants is not the cheapest way to generate

22 energy.

23 Now I came from Kalamazoo because we're

24 right downwind of what could happen if radiation was

25 released from the Palisades Plant. It would

1 devastating to Southern Michigan perhaps Northern
2 Indiana. It could, if you look at the Chernobyl case
3 and I would guess that all those government
4 authorities there in the Ukraine were just 100 percent
5 behind Chernobyl until they had their accident.
6 And of course I also lived through the 3
7 mile island incident when Jimmy Carter was president.
8 So I, I believe that we would be far better to spend
9 our money on safer distributing energy sources like
10 wind power particularly in Michigan.
11 My wife and I just came back from
12 California. Even a state like Wyoming has tremendous
13 numbers of wind generating plants now. Wyoming has
14 tremendous amounts of coal. They have tremendous
15 amounts of oil yet they are going to wind generation.
16 And you look out across this nation the
17 idea that you, you cannot have distributed types of
18 energy production is insane in my view point.
19 So in that respect we do not have to take
20 the chance even though it might be in your estimation
21 small on re licensing this plant. This plant if re
22 licensed could be in operation for 60 years. I do not
23 believe it was engineered to last 60 years and I don't
24 believe you can change all the components in that
25 plant to make it really be safe for 60 years or even

1 50 years.

2 So let's invest in alternative energy

3 sources. I hope and, and as far as jobs I'm a PHD did

4 research in Kalamazoo for 27 years. 2500 of us lost

5 our jobs quite recently when Pfizer decided to close

6 that research facility. We're managing.

7 Certainly South Haven, Covert Township and

8 this county will survive if you happen to have to

9 close this plant in the next five years. Trust me.

10 Finally I'd like to say that I hope when

11 you do your consideration that you listen to what

12 Abraham Lincoln said. We need government of the

13 people, by the people and for the people.

14 And what I am seeing increasingly in this

15 nation is government of the corporation, by the

16 corporation and for the corporation.

17 I hope you will keep the people in mind.

18 Thank you.

19 MR. CAMERON: Thank you, Mr. Adams. We're

20 going to next go to, to Mr. Hannan, Robert Hannan and

21 then to Gary Kartch and Barb Geisler.

22 Mr. Hannan, do you want to come up.

23 MR. HANNAN: Thank you for allowing me to

24 speak.

25 It's just hard for me to imagine that,

1 that we're all here in this room even talking about
2 this. I think the humanity of, of this nuclear thing
3 is, is not good. And if, and everyone in here is a
4 human being and therefore we should all be able to
5 define the meaning of humanity.
6 And to take a risk like this in my mind I,
7 I don't care how safe it is, you know, it's, it's
8 still a risk and you people you're here defending
9 yourselves from a risk, a potential risk.
10 So therefore you're admitting that there
11 could be a meltdown. So I, I just find this whole
12 thing just, us being here talking about this is
13 totally insane. We shouldn't even, man should have
14 never split the atom to begin with. It was a bad
15 thing. It's very bad.
16 And that's all, that's all I have to say.
17 MR. CAMERON: Gary Kartch.
18 MR. KARTCH: Thank you also for letting me
19 speak. I wasn't really planning on saying anything
20 but I am compelled to do so.
21 The statement by the resident, Ryan McCoy,
22 was very eloquent. He said he thinks the economy
23 should take a backseat to ecology. I agree. But the
24 secret that the people, the citizens of this country
25 and state and county do not realize that the economics

1 are indeed an issue.

2 And forgive me for not having the

3 information with me, the facts and figures at the

4 moment, but the information I have been reading

5 indicates that nuclear industry has received more

6 government subsidies during its lifetime than any

7 other industry. It's well over 50 percent of all of

8 the tax incentives, breaks, guaranteed loans,

9 supplementing catastrophic insurance for the industry

10 etcetera.

11 The amount of money that the taxpayers are

12 paying out of their tax, taxes to the industry on top

13 of these high electric rates that they're having to

14 pay monthly rates is absolutely extraordinary. If

15 people knew that and if that was, if that was analyzed

16 down to a level and given to them so they could see it

17 they would be absolutely appalled.

18 And the renewable, the percentage of, of

19 money going to renewal is something like 11 percent of

20 all the money and the nuclear industry gets well, well

21 over 50 percent as I say.

22 Now in the, and the media has, you know,

23 made some, had been reporting a large subsidy and tax

24 incentives to the oil industry and everybody is

25 appalled over that. The nuclear industry has them by

1 a mile.

2 So if this money were diverted to the

3 renewalables and the technology to wind and solar you

4 would and perhaps let's pretend that the, the

5 information in the environmental impact statement is

6 correct for a minute but as submitted by the, in the

7 EIS, that, that wind turbines need X amount of acreage

8 and all this and they can only produce X amount of

9 megawatts etcetera.

10 If you take even a minuet amount of the

11 money that is given to the nuclear industry just as a

12 given and divert that to renewables and, and improve

13 the technology of the renewables this would absolutely

14 not be an issue.

15 And I also concur with Mr. is it Hannan,

16 who said these, how can we even be in this year of,

17 of, of 2006 still being, trying to justify the

18 manufacture of a waste that is absolutely lethal for

19 hundreds and thousands of years. What are we going to

20 do with it.

21 Who, nobody wants it. This is the

22 substance of which we are having international, you

23 know, traumas over right now with North Korea and a

24 few years ago it was, you know, India, Pakistan and

25 every, every nation on earth wants nuclear and we're

giving it to other nations. It's absolutely preposterous.

The process by which we are generating electricity is the same process that was used to make the atomic bomb that was dropped on, on Hiroshima and Nagasaki. So this is a technology of death make no mistake about it.

We are made of better stuff than this. We are intelligent enough to create electricity in a manner that does not produce a waste. And to have the waste off of discussion for the environmental impact statement is absolutely scandalous.

That is my comments. Thank you very much.

MR. CAMERON: Is, is Barb Geisler still here.

MS. GEISLER: Yes.

MR. CAMERON: Oh, hi, Barb.

MS. GEISLER: Hi.

MR. CAMERON: Would you like to join us up here. This is Barb Geisler.

MS. GEISLER: Thank you. I live 10 miles from here on a farm. I'm going to address something a little differently.

In the early 80s I became, can you hear me or do I need to be over here more.

1 MR. CAMERON: Maybe we, maybe we can bend
2 it over a little towards you.
3 MS. GEISLER: Yeah, okay.
4 MR. CAMERON: See this, this.
5 MS. GEISLER: I'm a little shorter than the
6 guys.
7 MR. CAMERON: Okay. Go ahead and see how
8 that works.
9 MS. GEISLER: Dose that work.
10 MR. CAMERON: Is that better. It sounds
11 good.
12 MS. GEISLER: Okay. In the early 80s I, I
13 became concerned about nuclear issues in, in a broad
14 way. And I remember a film from that era which was
15 called The Dark Circle documentary. And it, they
16 interviewed lots of people in the nuclear industry
17 both the weapons industry and the power industry.
18 And what I remember from that is how
19 intertwined they all are. That it, that you can't
20 really separate atoms for peace, atoms for industry
21 from, from the weapons industry. And Gary Kartch
22 said, you know, it's, it's about death. Do we choose
23 death or do we choose life. It really is about that
24 ultimately.
25 And in going to various meetings and

1 conferences through the last 25 years I want to focus
2 on just one thing which is I've heard a lot of whistle
3 blowers speak. And their lives have been ruined.
4 Now some of you may have seen the film
5 about Karen Silkwood and maybe you thought that was
6 over dramatized or not true or whatever. But I sat
7 down with a women in her 70s at at least three of
8 these events who told me what happened to her.
9 She went, and this is I'm, I'm moving to
10 the inside here. She was an innocent young girl. She
11 went to work for the industry and she noticed that
12 some figures weren't quite right. And so she thought
13 she better tell her boss and she did and that was the
14 beginning.
15 Basically she was told you can either do
16 the figures the way we want them or you can leave.
17 And she realized either way she was a marked woman.
18 And yes she did have to go underground. She, the, the
19 act that protected people that came out I believe
20 after Silkwood she, she, she literally had to go
21 underground. This is, this a gramma tell me this.
22 She, she was, she felt, she feels
23 deliberately exposed. She was dying of bone cancer.
24 Now this is just one woman speaking. I
25 don't think she was lying but I can't prove this. But

1 she's only one of several that I've talked to who had
2 their lives ruined in one way or another.
3 Ann Harris at Lockspar, part of TVA,
4 Curtis Overall eight years ordeal, same place.
5 Finally won on appeals. Wrongful termination. I, he
6 was in tears, divorced, everything else. Ann Harris
7 was run off the road.
8 Interestingly enough it was Curtis Overall
9 whose, who pointed out the flaws Lockspar which led to
10 Cook very near us, DC Cook being shut down for three
11 years because they had the same kind of system.
12 And I remember hearing a guy in St. Joe
13 talk about working at Cook and becoming a whistle
14 blower and his life was ruined too. That's very near
15 us. People are threatened. They are called on the
16 phone. They are run off the road.
17 So knowing this I wonder if this isn't
18 just a charade. How many of you within the industry
19 would have the guts if you, if you decided it was,
20 there were things that weren't quite right to say so
21 in public. You'd, you'd pay a heavy price number one.
22 Number two because of all this and because
23 of the nature of this dangerous industry that has to
24 be closed, it has to be secret, it has to be top down,
25 it has to be authoritarian. This isn't a real

1 democratic meeting here. It couldn't possibly be, you
2 see. This is so we think we have some input.
3 And when I look at our country as some
4 others here mentioned tonight and I see it moving more
5 and more toward secrecy and authoritarianism and it's
6 Orwellian, isn't it. We live in a democracy but you
7 know what? If you're a little Quaker lady in Palm
8 Beach our wonderful new spy people are down there, you
9 know, we're all being spied on you know that don't
10 you.
11 They wrote a report that these, and these
12 are passivists, you know, Quakers are passivists, they
13 wrote a report saying that this was a very dangerous
14 group. We went through this in Viet Nam. Quakers are
15 dangerous. They're not the real terrorists are they.
16 So I guess I want to end by saying I don't
17 think you can have nuclear weapons and nuclear power,
18 the Dark Circle and also have democracy. And I think
19 that's what we're up against in this country right now
20 if you want to look at, excuse me, the big picture.
21 So let's look for alternatives. We need
22 a whole new way of living. We can get along with a
23 lot less of this, look at this. Lights on all night.
24 You go to the cities they're, and frankly we're going
25 to, we're running out of oil, we're running out of

natural gas, we're running out of a lot of stuff. We're going to have to think about doing things a different way guys.

And just keeping this little plant open 20 more years and maybe it won't blow maybe it will but it's not looking at what we're going to need in the future. That will be very different so let's, let's think about a new way.

Thank you.

MR. CAMERON: Thank you, Barb. Thank you. Is Michael -- still here and did he, Michael, did you want to, okay.

Let's go to, let's go to Kevin. Kevin, did you want to speak again.

MR. KAMPS: Yeah.

MR. CAMERON: Okay. Let's go to Kevin and then we'll go to Kathryn and Ken and Corrine and Mr. Hart.

Kevin Kamps.

MR. KAMPS: My name is Kevin Kamps. I work for Nuclear Information and Resource Service in Washington, D.C. But I'm from Kalamazoo, Michigan, a board member of
Don't Waste Michigan for the Kalamazoo chapter.

And what I thought I would really focus on

1 because it really caused quite a stir earlier today
2 and I think it deserves as much attention from the
3 public as it can get because the public deserves to
4 know about it was the incident last October involving
5 the cask that was stuck on a crane above the pool at
6 Palisades.
7 And I just wanted to read some passages
8 from NRC documents from Palisades documents that
9 reveal the serious nature of that incident.
10 So I'll start with something I read
11 earlier.
12 The NRC inspectors concluded that working
13 outside the bounds of a work package on a crane with
14 a suspended load that if dropped would damage the
15 spent fuel pool warranted a safety significance
16 determination. Had the load dropped the spent fuel
17 pool could have sustained severe damage.
18 The inspectors concluded working outside
19 the bounds of the approved work package and
20 manipulating the break release represented an increase
21 in the risk of a load drop. This increase in risk is
22 directly associated with the reactor safety
23 cornerstone objective of the spent fuel, spent fuel
24 cooling system as a radiological barrier.
25 And what that last sentence means is if

1 the cask which weighed 107 tons had fallen into the
2 pool it would have cracked the floor of the pool,
3 drained away the water which cools the waste in the
4 pool. And in a matter of time, some hours, the waste
5 would catch on fire and it would be a large scale
6 radiation release perhaps worse than Chernobyl.
7 So what were the potentially catastrophic
8 consequences had the cask dropped. And again this is
9 from an NRC report entitled Technical Study of Spent
10 Fuel Pool Accident Risk published in February of 2001.
11 The analysis exclusively considered drops
12 serve enough to catastrophically damage the spent fuel
13 pool so that pool cooling water inventory would be
14 lost rapidly and it would be impossible to refill the
15 pool using onsite or offsite resources.
16 There is no possibility of mitigating the
17 damage only preventing it in the first place. The
18 staff assumes the catastrophic heavy load drop
19 creating a large cooling water leakage path in the
20 pool would lead directly to a zirconium fire.
21 Zirconium is the metal cladding around the
22 fuel rods. It's, it's a combustible material, highly
23 combustible.
24 The time from a load drop until a fire
25 varies depending on fuel age, burn up and

1 configuration. The dose rates in the pool area before
2 any zirconium fire are tens of thousands of rem per
3 hour making any recovery actions very difficult. Tens
4 of thousands of rems per hour would deliver a lethal
5 dose of radiation to someone close to that in a matter
6 of minutes.
7 And that's what happened to the
8 firefighters at Chernobyl. They received deadly doses
9 of radiation in a very short period of time. They
10 died two weeks later because their red blood cells
11 stopped reproducing.
12 MR. CAMERON: And that, that part is not in
13 the --
14 MR. KAMPS: I'm sorry I'm, I'm trying to
15 translate from --
16 MR. CAMERON: Oh, if you, I think it just
17 needs to be clear if you're purporting to read --
18 MR. KAMPS: Okay.
19 MR. CAMERON: -- from our document and
20 then you're editorializing just tell us when you're
21 editorializing.
22 MR. KAMPS: I sure will, Chip.
23 MR. CAMERON: All right.
24 MR. KAMPS: I'm sorry that I was --
25 MR. CAMERON: I know you didn't, I know you

1 didn't intend it.

2 MR. KAMPS: Right. I did not intend to at

3 all.

4 MR. CAMERON: Thank you, Kevin.

5 MR. KAMPS: I'm reading directly from the

6 NRC again.

7 Based on discussions with NRC staff

8 structural engineers it is assumed that only spent

9 fuel casks are heavy enough to catastrophically damage

10 the pool if dropped.

11 In fact NRC has reported, "the possibility

12 of a zirconium fire leading to a large fission product

13 release cannot be ruled out even many years after

14 final shutdown of a reactor".

15 Palisades is an operating reactor so the

16 waste in the pool is thermally hot, it's radioactively

17 hot. All the more likely to lead to worst case end

18 results.

19 So this is a quote from a study done by

20 Robert Alvarez and others in 2003 and it was about

21 pool fires. This is the quote: "Spent fuel recently

22 discharged from a reactor could heat up relatively

23 rapidly to temperatures at which the zurcolode fuel

24 cladding could catch fire and the fuel's volatile

25 fission products including 30 year half life, cesium

1 137 would be released. The fire could well spread to
2 older spent fuel. The long term land contamination
3 consequences of such an event could be significantly
4 worse than those from Chernobyl".
5 Another quote from that same report, "The
6 damage that can be done by a large release of fission
7 products was demonstrated by the April 1996 Chernobyl
8 accident. More than 100,000 residents from 187
9 settlements were permanently evacuated because of
10 contamination by cesium 137. Strict radiation dose
11 control measures were imposed. The total area of this
12 radiation control zone is huge equal to half the area
13 of the State of New Jersey. During the following
14 decade the population of this area declined by almost
15 half because of migration to areas of lower
16 contamination". From the Alvarez study.
17 And so we found out about this cask
18 incident by a fluke because a number of us attended an
19 unrelated NRC technical meeting where a piece of it
20 was mentioned. But we understood what it could mean
21 and so we followed up.
22 And we did a Freedom of Information Act
23 request which NRC informed us would take two to four
24 weeks to get back to us. Well, it took two months to
25 reach us.

1 And in the meantime we found out all that
2 we could and we found the tables in that earlier
3 report I read from about spent fuel waste fires and
4 the casualty figures downwind were quite remarkable.
5 The NRC's own numbers again 20,000 to 44,000 cancer
6 deaths over time downwind out to a distance of 500
7 miles away from a pool fire. That was at 2001 NCR
8 study.
9 So we finally got the FOIA, this was after
10 the Detroit Free Press exposed the incident in that
11 front page article. We only received a partial FOIA
12 response at this point. And the, the document that I
13 read from earlier was the quarterly inspection report
14 from the NRC. That was the first public document of
15 that incident.
16 But the details that came out in the FOIA
17 were quite interesting. The precursors that led to
18 the incident. Here's, here's a quote from an internal
19 Palisades mia copa done by the inspection crew that
20 inappropriately handled the crane.
21 MR. CAMERON: And, Kevin, could you just
22 sort of, sort of wrap up --
23 MR. KAMPS: Uh-huh.
24 MR. CAMERON: -- on this and, you know,
25 feel free I mean read the quote or whatever but we'll

1 just need to go on to some, some other, other people.
2 MR. KAMPS: Well, I'd like to encourage
3 everybody to go over to that table in the back corner
4 and get their own copy of this thing and read it
5 because it's worth it.
6 So this is, this is the company's workers
7 who made the mistake that could have overridden the
8 emergency brake. That's the whole point. They
9 shouldn't have handled the crane because they didn't
10 understand the crane.
11 We failed to consider the severity of the
12 consequences if our troubleshooting caused the load to
13 slip or fall into the spent fuel pool. This is why we
14 set up an event response organization to, to allow an
15 open forum with full consideration of how these
16 activities will affect the plant and the health and
17 safety of the public.
18 This is the company saying this.
19 The NRC earlier said that the risk of a
20 load drop was increased because of this inappropriate
21 handling.
22 So I'll just, please do pick up a copy.
23 The precursors of the event that led to this thing,
24 the false setting of the emergency brake were due to
25 the fact that Palisades lacks knowledge of the crane.

1 They have to bring in the crane company to help them
2 operate the crane.
3 The crane company representative who came
4 last August to set the emergency brake had to get to
5 vacation. He was in a hurry. So instead of setting
6 the emergency brake correctly with three checks on the
7 emergency brake he did one check. And he set it wrong
8 that time. He thought he set it at 175 foot pounds.
9 He actually set it at 140.
10 So that was one precursor. He had to go
11 home on vacation. And the other one was that
12 Palisades doesn't know how to handle the crane. The
13 people that did know how to handle it have left the
14 company.
15 And one of the amazing admissions by the
16 company is that there may be other aspects of
17 operations where we also lack full knowledge not just
18 this crane.
19 MR. CAMERON: Thank you. Thank you, Kevin.
20 Kevin's report is back there on the table. I would
21 also urge you to read the NRC inspection report so you
22 can see what the NRC said about this particular
23 incident. If you need to find out how to get a copy
24 of that we'll be glad to get you a copy of the
25 inspection report.

1 There was also a dialogue this afternoon
2 on this particular issue. It is in the transcript
3 that will be available from this afternoon's meeting
4 and we're going to go to, to Kathryn Barnes and then
5 Ken Richards, Corrine, Paul Harden.
6 Kathryn Barnes.
7 MS. BARNES: I'm a member of Don't Waste
8 Michigan. I'm one of the people that decide the, one
9 of the intervenors. I live within a 50 mile radius of
10 Palisades. I have a son that attends Western
11 Michigan. He's in electrical engineering. He's
12 almost graduated. He's nearby.
13 I have my other son and their father work
14 in Kalamazoo in carpentry. And my family pretty much
15 all lives in the danger zone and a lot of my friends
16 do.
17 And I'm concerned about Palisades because
18 through the years, you know, growing up here in
19 Michigan the last time I was in Lake Michigan was as
20 a baby, when I was a baby my mother has a photo of me
21 in the water.
22 When I was growing up I went swimming
23 quite a lot in Lake Michigan. I can remember drinking
24 the water, swimming, enjoying it. I can remember how
25 many people were on the beach. It was just glorious.

1 And I can remember drinking the water and
2 it was clean, sometimes it tasted a little fishy but,
3 you know, it wasn't a bad taste, you could drink it.
4 You can't drink it now.
5 Since the, the building of the nuclear
6 reactors the water quality has deteriorated. Last
7 time I went swimming last year my daughter and my
8 granddaughter, I have a little almost three year old
9 granddaughter now, precious.
10 They went swimming and they both got
11 stinging rashes. And I got a rash myself although I
12 was only in the water for a couple of minutes. And we
13 cannot drink the water, it's got a bad, foul taste and
14 I don't know if this is because of the chlorine,
15 bromine and amean released or if it's from other
16 things.
17 One time I sat on the beach and I had the
18 sand in my fingers etcetera and there was a lot of gas
19 coming out of Palisades that day and I was near the
20 plant. I got real sick afterwards.
21 It reminded me of when I was out at the
22 nuclear test site the feelings I had afterwards being
23 very tired and nauseous and just really dead tired.
24 I'm a cancer survivor. I know what it's
25 like to go through that dark cloud. I've seen

1 children from Chernobyl. I've seen their sunken eyes
2 and their handicaps and I feel so sad for what they've
3 gone through, what their parents that carried them
4 went through. That's an end to the, to the lineage of
5 people.
6 Once you have a nuclear disaster you lose
7 your DNA. When you lose your DNA quality you use up
8 the seed for cancer and then you set the seed for
9 death. And there's no getting it back.
10 I live on land where there's pesticide
11 use. I'm been a victim of that which is an
12 essentially a cause of cancer not radiation but
13 radiation does cause cancer too.
14 I've seen frogs with ten arms. I've seen
15 a lot of things from broken DNA. And here what you
16 have is, I know a man who worked at Palisades and he's
17 still in the nuclear industry he's got a real high job
18 in the nuclear industry.
19 And he told me that it's well known quote
20 un quote, is what he said it's well know within the
21 nuclear industry that Palisades is the most likely to
22 blow of all the nuclear power plants in the United
23 States at this time.
24 And I asked him well why is that. I said
25 is it, are they covering something up like they did at

1 DC Cook which for ten years they covered up the fact
2 that they had a non functioning coolant system. Or if
3 they had a meltdown they could not have, they could
4 not have stopped the meltdown.
5 And only by the grace of God we have not
6 had a meltdown yet.
7 Well, they covered that up and as people
8 have mentioned the whistle blower got in trouble for
9 that. And now he said no he says Palisades they don't
10 cover things up he says they just don't report it.
11 And I think this, this incidents of the
12 crane that was just mentioned that's another incident
13 I believe that was not reported to the NRC. And I
14 believe that Palisades asked for an exemption that
15 they don't want to report things any more.
16 I think that the premiss is upside down
17 where they consider the, another 20 years of, of
18 Palisades operating as, environmentally a small issue
19 and they consider alternatives as a great impact. I
20 think it's opposite actually.
21 I think that Palisades was burgeoning
22 nuclear waste which is a problem, unstable geological
23 strata, the singing sands, the shifting sands,
24 freezing and thawing conditions on the casks. Cask
25 number four which is surrounded by other casks has bad

1 welds, could crack.

2 There's a lot of problems there and, and

3 these aren't being addressed. The, at one of the

4 meetings earlier and I've been to all of these

5 meetings now, this is before there was a lot of people

6 here. Thank God there's more people getting involved

7 but maybe this is the last meeting.

8 They were talking about the experimental

9 use of sealants. And that wasn't addressed. There

10 was other things that the NRC themselves wanted to

11 address. And when I came to the meeting

12 supposedly for that, those issues they switched

13 locations and so they kept this, the public in the

14 dark on that one.

15 So where's, and I, I don't know the

16 answers to those questions or if they were ever

17 answered to the NRC's specifications. But I know

18 there's real issues at Palisades.

19 The biggest issue I've heard about and

20 this is not disputed, this is fact. Is that it is

21 embrittled. In a layman's terms I'll try to explain

22 to you what embrittlement is.

23 When a nuclear reactor has, of the, the

24 design at Palisades is, had so many reactions through

25 the years it gets like little finger holes in it, lots

1 of little holes from all this stress and these
2 reactions. Cooling, heating, cooling heating and the
3 near misses they've had.
4 And after you get this, these holes in
5 the, in the design structure it becomes embrittled
6 which means that if there was a stuck value, broken
7 coolant pipes, lots of things could happen to cause a
8 meltdown, okay, and then it starts heating up. And
9 they cool, they had to cool it real fast. So they
10 flood it with water. If the plant is embrittled as
11 Palisades is it's like taking a really hot glass
12 coffee pot and immersing it in cold water. Bang.
13 That's what accurate embrittlement is and
14 that's what I've hear would, would be the most
15 probable thing that would happen to cause a meltdown.
16 Well, what does a meltdown mean here.
17 Okay, well, if you live in Covert, you know, you don't
18 have a chance to say goodby to anyone.
19 If you live anywhere close to Palisades
20 you, you'll, you'll, you're gone. If you live
21 downwind which could be in any direction but usually
22 the wind comes from the Great Lakes. It comes from,
23 from the west going east.
24 MR. CAMERON: Kathryn, could you just try
25 --

1 MS. BARNES: I will try and wrap up, yes,
2 I will to wrap up.
3 What it means that there is a huge area of
4 contamination. It could go into Canada. It could
5 affect all of us in Michigan and Canadians. And as in
6 the case of Chernobyl that year Meyer -- had the most
7 insane bizarre food. I am sure in Michigan because of
8 all our precipitation we had fallout.
9 I had turnips, they got this big with a
10 little narrow and then they bulged out again and they
11 were rotten inside. I had cabbage that was huge and
12 rotten inside. That's not normal. It's never
13 happened since.
14 But I, I think that it can affect
15 everybody in the world.
16 I would like to see with your rules, a
17 rule be made if, if this nuclear power plant is
18 relicensed that everybody that is in on the decision
19 to relicense it be obligated with their families to
20 live within five miles of Palisades until the plant is
21 shut down.
22 MR. CAMERON: Okay. Kathryn, thank you.
23 MS. BARNES: That might make a difference.
24 MR. CAMERON: Thank you. Ken Richards.
25 Then we're going to Corrine and to Mr. Paul Harden.

1 Ken Richards.

2 KEN RICHARDS; Good evening. I'm Ken

3 Richards Palisades Conversion Group. I'm going to try

4 to get this down a bit but --

5 MR. CAMERON: We will have to keep you to

6 five at this point.

7 KEN RICHARDS: Yeah. Recently I got the

8 generic impact statement license renewal and I've been

9 reading through both the manual and its cover letters.

10 I see despite potential radioactive hazards the NRC

11 insists that environmental impact of the Palisades

12 Nuclear Power Plant, all the radioactive materials

13 about its reservation, such as the casks is always

14 regarded as small throughout the report.

15 But when I turn to alternative energy

16 sources which should be pursued at Palisades plant

17 site they're impacts are often referred to as large

18 which all considering they would be taken into account

19 the enormity of nuclear power the plant puts on the

20 grid for alternatives to equal out in their current

21 forms at the site.

22 A rather particular assumption bracketing

23 both the plant and the NRC's position as well yet

24 ignoring the simple fact that of all the resources

25 used to continue operation of this plant or renewables

1 and other forms of electrical generation throughout
2 the state it would turn the argument on its head.
3 But my real concern here is the fact that
4 the GEIS report does not take into consideration of
5 dry cask storage. Other highly radioactive
6 contaminated things such as the former steam
7 generators on the site.
8 Many would argue that Palisades
9 reservation is already a defactile high level nuclear
10 waste dump which to their, Palisades Conversion Group
11 and my way of viewing the issue a large impact on this
12 fragile lakeshore enviroment.
13 More to the point potential in fact should
14 things not go as designed or planned or promised which
15 over the last 38 years time and time again have been
16 broken. With an additional 20 years worth of above
17 ground dry storage cask along with other contaminated
18 equipment which is sure to be replaced should this
19 plant be pushed so far past its original design
20 capacity which it already has by years now.
21 Counter to the GEIS' insistence that no
22 changes to the plant need take place in the additional
23 20 years. Isn't the reactor head soon to be replace
24 in July perhaps.
25 I talked with the vice president and he said

1 2000 and something.

2 The pressure reactor vessel long in

3 question operating in a patchwork method since

4 embrittlement was discovered more than ten years ago.

5 How long before this is replaced.

6 Annealiated as once promised in court or

7 a neutron thermal shield installed. And yes, the dry

8 cask storage casks piling up on site.

9 I'm sure we'll all hear about Yucca

10 Mountain or the -- Indian reservation taking all of

11 this off our hands for the umpteenth time in the last

12 20 years.

13 Now there are over 20 to 30, somebody told

14 me 29 here but I keep getting different answers, dry

15 cask storage onsite. Will anyone here give us an

16 exact number. Somebody did give me 29.

17 This is a community concern for we will

18 have to live with and care take all of this waste for

19 generations to come. In '93 we were told these

20 experimental cut waste storage casks would be gone in

21 1998 time and time again by Mark Savage the plant's

22 spokesperson.

23 Now we're told by the NRC there license to

24 store fuel assemblies for 20 years. It'll last for

25 150 years and above ground storage is our nation's

1 nuclear future since the Feds haven't found a hole
2 deep or dry enough to put all this radioactive waste
3 and materials in.
4 After nearly 50 years of looking, instructing,
5 spending and charging us ratepayers for a place to
6 take all of it off our lakeshore nothing but this.
7 Another promise broken, more public trust going by the
8 wayside.
9 On April 4th the Squaw Valley Reservation
10 will be approved for above ground storage but with
11 Yucca Mountain's inability to take this slated cask
12 off the Goshite's hands, there will not be move in
13 either nuclear waste storage site for all the waste
14 piling up at Palisades now much less that all the
15 additional waste produced during the 20 year
16 relicensing period. All for a little electricity now.
17 Decades perhaps centuries of radioactive waste for the
18 local citizenry to look at.
19 Yet the operators still insist this is a
20 cheap form of power generation.
21 Another concern is the plant's original
22 seven mile cooling loop rumored to be back in use
23 again. It's affect of Lake Michigan's eco system. Is
24 it or is it not back in use.
25 MS. ELLEGOOD: There's no seven mile

1 cooling loop.

2 MR. RICHARD: Okay.

3 MR. RICHARD: I, I agree --

4 MR. CAMERON: -- I would have to ask you

5 to, to wrap for us now.

6 MR. RICHARD: I know Mr. Bradley a welder

7 who built it back in the 60s, oh yeah.

8 MR. CAMERON: Okay, Ken, so if you could

9 just make your main point for us.

10 MR. RICHARD: Yeah, wrap it up. Questions

11 about --

12 AUDIENCE: It's the last chance people

13 have, let him speak.

14 MR. RICHARD: -- the Palisades -- crane

15 break down on October 11th. 55 hour shutdown with a

16 110 casks containing spent fuel assemblies partially

17 suspended broke in the air fell partly submerged over

18 the fuel pool.

19 The fuel pool went well beyond its

20 original design capacity with fuel assemblies going

21 back to the 70s. I gather from the Tribune article

22 all the brakes froze because plant personnel did not

23 set the emergency brake properly just before leaving

24 for his vacation.

25 How big a rem stream would this situation

1 be giving off. How many rems the article certainly
2 didn't say. Did the whole fuel pool area must have
3 had, must have had to been decontaminated. How much
4 did it receive.
5 All that spent fuel at risk should that
6 cask have dropped down onto decades where for spent
7 fuel assemblies it would have caused a fire making for
8 an accident much worse than Chernobyl.
9 The article also pointed out this incident
10 was considered of low significance by the NRC within
11 its quarterly report. Quite a change from the NRC in
12 the early 90s when dry storage cask storage was
13 initiated at Palisades hearing the operators 30
14 violations for everything from cracked pipes to
15 mishandled drop fuel assembly rods into its reactor
16 vessel. Did they ever find the two pounds of missing
17 fuel.
18 To Palisades Conversation Group this
19 incident further demonstrates the aged long time
20 ineffectiveness of both the equipment and the
21 personnel at the Palisades Plant right along with the
22 current NRC not handing out violations for such --
23 This must have been some long term
24 radiation being released for over two days within the
25 flow through area. Were procedures fumbled, could not

1 get their crane to budge for days because one brake
2 froze and all the brakes shut down for 55 hours. What
3 were the plant personnel doing scratching their heads.
4 A further explanation of partly suspended
5 a 110 pound metal inner cask leaves me with cause for
6 concern as it did others, was not made clear in the
7 article.
8 Just insistent that everything was okay.
9 Just what is the shielding of a bare metal cask --
10 MR. CAMERON: Ken, I'm going to have to ask
11 you --
12 MR. RICHARD: -- that neutron thermal
13 shielding --
14 MR. CAMERON: -- to wrap up --
15 MR. RICHARD: -- that they're -- in the
16 cask at the time.
17 MR. CAMERON: Ken --
18 AUDIENCE: Let him talk.
19 AUDIENCE: This needs to be answered in
20 public record. This is the last chance he has.
21 MR. CAMERON: He can submit his whole thing
22 to us.
23 AUDIENCE: We want to --
24 AUDIENCE: We want --
25 MR. CAMERON: Could you just please wrap up

1 and then we're going to go to Corrine, okay.
2 MR. RICHARD: We're wrapped up.
3 MR. CAMERON: All right. Thank you.
4 Corrine.
5 MR. RICHARDS: Thank you.
6 MS. CAREY: Will the volunteers for the
7 Raging Grannies please come forward if you're
8 available. You've seen this guy before. He was --
9 MR. CAMERON: We have, we have.
10 MS. CAREY: Yes. He's built as --
11 MR. CAMERON: -- come up here again.
12 MS. CAREY: -- a recycle but I added a
13 couple touches here.
14 MR. CAMERON: All right.
15 MS. CAREY: All right. Okay. I do
16 encourage you to, yes, yes, all of you who would like
17 to come, any honorary grannies are more than welcome.
18 The, yes, I urge you to get the materials
19 that are on these tables on the side. People look at
20 these over here including some rare books. And do get
21 this one which is the radioactive releases from
22 nuclear power plants in the Great Lakes Basin
23 including a picture down here of the Palisades Plant
24 and it's, it's, yeah, it's discharge holes and a map
25 etcetera of the Great Lakes area.

1 And your very own picture of the current
2 situation at the cask or the one that we heard about
3 on March 18th. It happened in October. It made the
4 federal reserve or the federal report to, yeah,
5 register, in January.
6 So yes we, we all question that.
7 All right. So we are going to skip the
8 one that says about -- this, the great region grannies
9 are all over the country but they originated out in
10 the Washington State area. There is another one the
11 earth is going to throw up over, all over us. We'll
12 skip that one.
13 Give me a home where the rivers don't
14 foam. But this one is, happens to be about the land
15 of the beaver. Oh, I forget to use this. Now this is
16 an example of how inadequate this kind of protection
17 would be in a nuclear event, totally inadequate just
18 like the fallout shelters of years back.
19 So land of the beaver. Here in the land
20 of the beaver (singing) they say we are nuclear free.
21 We want to be happy believers but ask ourselves how
22 can it be.
23 There are nuclear ships in our harbors and
24 the tridents are out in the straights. We have tested
25 the crews, terriorized caribou's, do we look like the

1 51st state.

2 They told us that we'd never do it. That

3 no nuc mess would ever be found. But it's starting to

4 look like we blew it and the bad stuff is spinning

5 around.

6 There are nuclear ships in our harbors and

7 the tridents are out in the straights. We have tested

8 the crews, terriorized caribou's maybe we'll be the

9 dirtiest state.

10 When business and George Bush are talking

11 they put on their friendship display, big smiles,

12 friendship display.

13 We wish they would do something shocking

14 and have Georgie -- every state. We'll take nuclear

15 ships from our harbors. We'll take tridents away from

16 the straights. We'll not test the crews, terriorized

17 caribou's and we won't be the dirtiest state. No, we

18 won't be the dirtiest state neah, neah, neah.

19 We won't be the dirtiest state, neah,

20 neah, neah. And that includes Michigan so.

21 MR. CAMERON: All right. Okay, thank you

22 and Chester.

23 Mr. Paul Harden, site vice president at

24 Palisades.

25 MR. HARDEN: My name is Paul Harden. I'm

1 the site vice president of Palisades Plant. And I'll
2 focus my comments on the purpose of the meeting and
3 that's the draft supplemental environmental impact
4 statement.
5 And I'd like to start off by commending
6 the Nuclear Regulatory Commission on the scope and
7 depth of that report. It's very comprehensive and
8 Nuclear Management Company agrees with the conclusions
9 although we may have some comments that are minor that
10 we'll submit as well by the date none of which will
11 affect the conclusions of the report.
12 I'd like to spend a few minutes addressing
13 the environmental impact of operating, continuing to
14 operate the Palisades Nuclear Plant.
15 But before I do that I'd like to recognize
16 not all of us are ever going to agree whether nuclear
17 power plants should exist. Not all of us are ever
18 going to agree the public policy that this country has
19 taken on how to deal with spent nuclear fuel. That's
20 okay. That doesn't bother me.
21 The fact that we have diverse people,
22 diverse views and we have the freedom to speak our
23 opinions is part of what makes this country great.
24 What I would like to do is share a few
25 facts.

1 AUDIENCE: -- opinions and knowing --

2 MR. CAMERON: Excuse me.

3 MR. HARDEN: Some of the facts --

4 MR. CAMERON: Could we have the courtesy

5 to just listen to the speaker. Thank you.

6 MR. HARDEN: Some of the facts are the

7 environmental responsibility is built into the design

8 of nuclear power plants. There are multiple

9 redundancies so that no single failures of whether

10 it's human failure or equipment failures can cause

11 incidents that would be adverse to the environment.

12 There's environmental responsibility built

13 into the way the plants are operated, the way they're

14 managed and the regulatory oversight. The nuclear

15 industry is one of the more heavily regulated and

16 industries that has additional oversight that there

17 are out there. And the inspectors do a very good job

18 of challenging everything we do.

19 Another fact is that in addition to

20 continuously monitoring radiation levels on the site

21 and monitoring all the release pathways from the site

22 we go beyond that to verify that we're not having an

23 adverse effect to the environment or the people that

24 surround the plant.

25 We regularly sample soil. We sample fish.

1 We sample fruits. We sample cows milks to verify that
2 there are no low or trace levels of radioactive
3 material that could have come from the plant. And we
4 do that on a regular basis.
5 Another fact is that the employees that
6 work at the Palisades Nuclear Plant over 600 employees
7 they're also residents of the local areas. They raise
8 their children here too and they have a deep respect
9 and desire to keep the environment safe as well.
10 They're just as concerned about their children as
11 everyone else.
12 Given that Consumers Energy and Nuclear
13 Management Company are confident that we can operate
14 Palisades Nuclear Plant and extend the license renewal
15 period safely and with no adverse impact to the
16 environment.
17 That is why we are spending hundreds of
18 millions of dollar each year as we proceed forward
19 through the license renewal process upgrading the
20 plant, changing the equipment.
21 I heard some of the concerns in here with
22 aging of equipment. In a nuclear power plant we are
23 required to have what we call aging management
24 programs.
25 We do regularly change out components.

1 Components that aren't changed out get inspected or
2 tested to verify that they are in good condition to
3 continue to operate. And if they start to degrade or
4 the testing shows that there is degradation we change
5 out those components to keep them going.
6 I'm not up here to change the mind of
7 anyone who is against nuclear power. But I do want to
8 get those facts out.
9 We agree that, with the conclusions of the
10 draft report that there are no significant or adverse
11 impacts of operating the Palisades Nuclear Plant in
12 the continued license renewal period.
13 And if anyone would like to be educated on
14 the facts or learn more about the plant I would be
15 happy to discuss that with you. If you don't trust
16 talking to someone who works for the plant I'd
17 encourage you to talk to the Nuclear Regulatory
18 Commission because nuclear power can be a safe and
19 viable entity.
20 Everything we do in life has risks. It's
21 a matter of agreement whether those risks are worth
22 endeavoring whether it's a chemical plant, a coal
23 plant or a nuclear plant.
24 But for the purpose of this meeting the
25 draft environmental impact statement we agree with its

1 conclusions and we look forward to operating the plant
2 in a continued operating period.
3 MR. CAMERON: Okay, thank you, thank you
4 very much.
5 AUDIENCE: Can I ask a question please.
6 MR. CAMERON: And you can talk to Paul
7 after the meeting.
8 AUDIENCE: All right.
9 MR. CAMERON: If you want to get a copy I
10 believe the NRC inspection report on crane incident or
11 ask about it please talk to John Ellegood our resident
12 or Victoria Midland, one of our communications staff
13 from, from the region.
14 I would just thank all of you for
15 following the ground rules and the NRC staff will be
16 here to talk to you informally with you and I'm going
17 to ask Rani Franovich who has disappeared to, to close
18 the meeting out. And we'll, we'll get to you after
19 the meeting.
20 MS. FRANOVICH: Thank you, Chip. I just
21 wanted to again thank you all for coming to our
22 meeting, providing your comments, asking questions.
23 It's, it's one of my favorite parts of this job is
24 really going out to the communities and talking with
25 people.

1 So thanks again for your input. It's
2 important to our process and we will consider your
3 comments in the development of our final environmental
4 impact statement.
5 I wanted to mention that each of you
6 should have received an NRC public meeting feedback
7 form when you registered for the meeting outside.
8 If you have any suggestions about how we
9 could conduct our meetings better, how we could
10 provide information to you better we would love to
11 hear your suggestions.
12 Please feel free to fill out the feedback
13 form. It's already postage prepaid. You can fold it
14 up and send it to us in the mail or you can just hand
15 it to us as you leave this evening.
16 I wanted also to just remind folks that
17 tonight was not the last opportunity to submit your
18 comments to the NRC. We will be taking comments until
19 May 18th. Bo Pham is the point of contact for those
20 comments. There's an email address you can send them
21 to in written form.
22 And with that again thank you all for
23 being with us tonight and we appreciate your time.
24 (Whereupon the meeting concluded at 10:15
25 p.m.)