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Title: Nextera Energy Point Beach, LLC

Docket Number: 50-266-SLR and 50-301-SLR

ASLBP Number: 21-971-02-SLR-01

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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ATOMIC SAFETY AND LICENSING BOARD PANEL

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HEARING

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In the Matter of: : Docket Nos.
NEXTERA ENERGY POINT : 50-266-SLR
BEACH, LLC : 50-301-SLR
(Point Beach Nuclear : ASLBP No.
Plant, Units 1 and 2) : 21-971-02-SLR-01

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Tuesday, June 22, 2021

Video Teleconference

BEFORE:

WILLIAM J. FROEHLICH, Chair

DR. GARY S. ARNOLD, Administrative Judge

NICHOLAS G. TRIKOUROS, Administrative Judge

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

10:00 a.m.

CHAIR FROEHLICH: Good morning all. Thank you, Mr. Curry, and all of you for joining so promptly so we can begin on time. And the court reporter, I just want to confirm is with us this morning?

COURT REPORTER: I am here.

CHAIR FROEHLICH: Okay, thank you so much, Mr. Mollen.

Good morning, all. It's 10:00 a.m. eastern time. And this is Judge Froehlich from my home in Fairfax, Virginia. With me on the line are Judges Arnold and Trikouros from their respective homes in Maryland and New Jersey.

Also on the line is our law clerk, who you worked with this morning, Mr. Ian Curry, along with Ms. Twana Ellis, Mr. Andrew Welkie, providing technical support for this web conference call.

This case is captioned in the matter of NextEra Energy Point Beach, LLC, Point Beach Nuclear Plant Units 1 and 2, and assigned docket numbers 50-266-SLR and 50-301-SLR, ASLBP Number 21-971-02-SLR-01.

The Point Beach Nuclear Plants 1 and 2 were first licensed for operation in 1970 and 1973, respectfully. And were granted renewed operating

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1 licenses in 2005. The current renewed licenses expire
2 October 5th, 2030.

3 NextEra has filed an application for a
4 subsequent license renewal of the Point Beach Plant by
5 letter dated November 16th, 2020. NextEra seeks to
6 extend the operating license of Unit 1 until October
7 5th of 2030 and for Unit 2 until March 8th, 2033.

8 This morning the Board will hear oral
9 argument on the petition for leave to intervene and
10 the request for a hearing, filed by Physicians for
11 Social Responsibility Wisconsin, which was filed on
12 March 23rd, 2021.

13 Public notice of this oral argument was
14 issued on May 26th, 2021 and provision has been made
15 for a Cisco WebEx web conference for the parties to
16 present their oral argument and a telephonic bridge
17 line with listen only access for interested members of
18 the public.

19 The petition and hearing request assert
20 that a hearing should be granted on four proposed
21 contentions. With proposed Contentions 1 and 3
22 raising challenges to the environmental report and
23 proposed Contentions 2 and 4 raising challenges to the
24 subsequent license renewal application, specifically
25 its aging management plan and certain Part 54 safety

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1 concerns.

2 As we proceed through this argument, if
3 the parties would identify themselves before speaking,
4 that's for the benefit of the people on the bridge
5 line, also remember to mute themselves when they're
6 not speaking. This will make things easier on our
7 court reporter, on members of the public on the bridge
8 line. And we'll all have a better record of this
9 proceeding.

10 This oral argument will be transcribed.
11 And the transcript will be promptly placed on the NRC
12 electronic hearing docket, where it may be accessed by
13 the public.

14 The Commission's regulations at 10 CFR
15 2.309(f)(1), Subsections I through VI, set forth the
16 requirements for admissible contention. The parties
17 are requested to focus their arguments on whether the
18 Petitioner has met the standards for admissible
19 contention.

20 The Board has reviewed the pleadings filed
21 by the parties, including the declarations. And has
22 reviewed the case law and regulations cited by the
23 parties in their pleadings.

24 Participants will have 20 minutes each to
25 present their oral argument to the Board. Counsel for

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1 Physicians for Social Responsibility Wisconsin will
2 speak first, followed by counsel for NextEra Point
3 Beach and then counsel for the NRC Staff.

4 As stated in the May 26th notice of this
5 oral argument, participants may reserve a portion of
6 their time for rebuttal.

7 The participant should be prepared to
8 respond to the Board's questions on any aspect of the
9 petition to intervene and request for hearing. As
10 well as the April 26th motion to amend proposed
11 Contention Number 2.

12 At this time, I'd like to take the
13 appearances of the attorneys who will be presenting
14 arguments for the Board today. Who appears for the
15 Petitioner, Physicians for Social Responsibility
16 Wisconsin?

17 MR. CURRY: Mr. Froehlich, it appears Mr.
18 Lodge has lost his connection, so we will try to get
19 him reconnected in the meantime.

20 CHAIR FROEHLICH: Okay. What we'll do
21 then is we'll wait for him to reconnect. And I'll
22 just give him a minute so that he'll be aware of who
23 is speaking for the other parties.

24 MR. CURRY: Mr. Lodge, if you can hear me,
25 can you please start your video and test your audio?

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1 Mr. Lodge, I just emailed you the call in
2 information. You may want to try to call in, not use
3 video, if your connection is not working. Mr. Lodge,
4 if you can just call in.

5 MR. LODGE: Yes. Can you hear me?

6 MR. CURRY: Yes, we can hear you.

7 MR. LODGE: Good. I have been trying like
8 crazy to get back in. I keep getting screen freezing,
9 so. I have been trying to get back in. Even this is
10 breaking up.

11 I can only hear you in bits and pieces.
12 I think I'm going to end the process and stay on the
13 phone line and try to reenter later, if that's all
14 right.

15 CHAIR FROEHLICH: All right. Mr. Lodge,
16 do you have a phone connection to the oral argument
17 now and if you'd like to enter your appearance, we'll
18 go through, take the appearances of the parties and
19 then rule the, you'll be set to give your argument
20 either by phone or video if you can get yourself
21 reconnected on the video line. Would that be all
22 right?

23 MR. LODGE: Yes.

24 CHAIR FROEHLICH: Okay. And so --

25 MR. LODGE: Please standby. I'm trying to

1 juggle between the Webex and the phone. I'm trying to
2 go with the phone. All right, can you hear me now?

3 CHAIR FROEHLICH: Yes, we can hear you.

4 MR. LODGE: All right, good. My
5 apologies. I love technology.

6 So I'm entering an appearance on behalf of
7 the Physicians for Social Responsibility Wisconsin.
8 The problem is I'm getting an echo. Please standby.

9 CHAIR FROEHLICH: Mr. Lodge, I can see
10 you, your video. Your frozen, and you have to unmute
11 your mic.

12 MR. LODGE: Well, accept the problem is
13 I'm participating by phone. All right.

14 MR. CURRY: Mr. Lodge, if I may, you
15 should use one or the other, so I recommend using your
16 phone. And in that case, you should exit from the
17 Webex application completely, that way there is no
18 echo and the phone is clear. So you'll be able to
19 hear everybody but probably not see them.

20 MR. LODGE: Hello?

21 CHAIR FROEHLICH: I heard a hello.

22 (Laughter.)

23 MR. LODGE: This is Terry Lodge.

24 CHAIR FROEHLICH: Okay, Mr. Lodge, when
25 you're ready please give the appearances for

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1 Physicians for Social Responsibility Wisconsin.

2 MR. LODGE: Thank you. I am Terry Lodge,
3 I am an attorney licensed in Ohio and I am Counsel for
4 the Physicians for Social Responsibility Wisconsin,
5 which is headquartered in Madison, Wisconsin.

6 CHAIR FROEHLICH: Okay. Who appears then
7 for the Licensee, NextEra Point Beach?

8 MR. LEWIS: Yes, Judge Froehlich. This is
9 David Lewis from the law firm, Pillsbury Winthrop Shaw
10 Pittman.

11 Also on the teleconference is my
12 colleague, Ms. Anne Leidich, and Mr. Steven Hamrick,
13 who is a NextEra Counsel. And we represent NextEra.

14 CHAIR FROEHLICH: Thank you very much.
15 And who appears for the NRC Staff?

16 MS. YOUNG: Good morning, Chairman
17 Froehlich, my name is Mitzy Young and I'm with the
18 NRC's Office of the General Counsel.

19 With me today are my co-counsels, who will
20 also be presenting arguments related to the petition.
21 We structured our presentation dividing up Contention
22 1, 3, 2 and 4.

23 My co-Counsel, Travis Jones, will provide
24 argument on Contention 2, while I'll provide argument
25 on Contention 1. And my co-Counsel, Jeremy Wachutka,

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1 will provide argument and address Board questions on
2 the safety contentions, Contentions 2 and 4. And also
3 Petitioner's motion to amend Contention 2.

4 CHAIR FROEHLICH: Thank you, Ms. Young.
5 Are there any questions of Counsel for the Board
6 before we begin? Okay.

7 Does Judge Arnold or Judge Trikouros like
8 to say anything before we hear from Counsel?

9 JUDGE TRIKOUROS: No, thank you.

10 CHAIR FROEHLICH: Okay.

11 JUDGE ARNOLD: Nothing.

12 CHAIR FROEHLICH: Okay. Mr. Lodge, if you
13 are connected, ready, please begin. You have 20
14 minutes. And you are welcome to reserve a part of
15 that time, should you so desire.

16 MR. LODGE: Thank you. And I would like
17 to reserve five minutes.

18 CHAIR FROEHLICH: Okay.

19 MR. LODGE: May it please the Licensing
20 Board and opposing Counsel, there are four contentions
21 pending before the Licensing Board today, which we
22 believe should be admitted.

23 Before I get into the substance of those
24 contentions, I simply want to state for record that it
25 appears that the matter of standing of Physicians for

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1 Social Responsibility, which is a nonprofit
2 organization with a Wisconsin chapter in Madison,
3 Wisconsin, it appears that there is no genuine issue
4 as to whether or not, as a putative intervener, that
5 PSR has standing. Therefore I'm not going to argue or
6 take up the Board's time with that matter.

7 The issues I will take, as numbered, the
8 first issue that we have raised is that Point Beach
9 has continued operation without a serious effort as
10 cooling mitigation in the form of towers, or at least
11 an analysis of the same within the NEPA document, is
12 a violation of the National Environmental Policy Act
13 and that it is effectively a violation of NEPA, and as
14 such, must be litigated before the Licensing Board.

15 The violation is that the possibility of
16 cooling towers in some type of closed cycle array,
17 must be considered in the subsequent re-licensing case
18 because NEPA, the NEPA regs, as implemented by the
19 Nuclear Regulatory Commission, require discretion of
20 reasonable alternatives to reduce or avoid adverse
21 environmental effects. That's 10 CFR Section 51.45,
22 Subsection C.

23 We believe that 50 years of operation with
24 essentially unmitigated carnage being wreaked upon
25 aquatic, as well as some mammalian and avian life in

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1 and around the Great Lake Michigan, has to be
2 examined, investigated, analyzed and disclosed within
3 the NEPA document because, first of all, you are
4 talking about cooling tower technology, which is very
5 well established.

6 The benefits of which are certainly
7 significant in this particular case. And the
8 technology is quite known. And the damage, of course,
9 is also quite well established.

10 Studies show that the installation of
11 cooling towers, which admittedly have their own
12 problems in terms of introducing high levels of water
13 vapor into the local environment, but nonetheless,
14 that cooling towers reduce the uptake of water from
15 the adjacent water body. They also significantly
16 reduce the thermal heat up effect once cooling water
17 is drained back into the adjacent water body.

18 The problem that we find with the
19 environmental report, as written, is that the NextEra
20 utility trivializes or accepts as routine, the 50
21 years of carnage. There are literally millions of
22 fish larvae and ichthyoplankton and of course live
23 fish, and even a few migratory birds that have turned
24 up and been impinged and entrained as water is sucked
25 out of Lake Michigan for purposes of cooling.

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1 There is enormous local, if you will,
2 within a few miles in Lake Michigan, there is
3 considerable local kill that occurs. It is, so long
4 as the system is allowed to operate as it does, it is
5 inevitable with the uptake of approximately a billion
6 gallons a day, for purposes of cooling the two units
7 at Point Beach.

8 The utility attempts to treat this
9 routine, this 50 year length routine, as something
10 that can be essentially ignored, that the status quo
11 can be maintained. But the problem is, is that even
12 in its discussion of replacement power options, the
13 utility effectively acknowledges that any replacement
14 technology, such as advance light water reactors or
15 small modular reactors as an array or a gas turbine
16 plant plus solar, all of those are discussed in
17 conjunction with having closed cycle cooling, cooling
18 towers.

19 It's not sufficient to argue that there
20 are no planned power uprates during the period,
21 roughly 2030 to 2053. First of all, there's no
22 guarantees that there will not be some type of
23 technologically enriched fuel and that there might
24 even been power uprates that occur during that period.
25 But also, it is not a situation where the status quo

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1 can be accepted and unacknowledged in the
2 environmental document.

3 The analysis provided by NextEra takes in
4 effects to the entire lake without any adequate
5 serious discussion of local effects. The data is very
6 inadequate and is very spotty over the 50 year period.

7 The most recent data are a few studies in
8 this century. But four or five years ago, I believe
9 there is a 2017 analysis of only a partial year.
10 There is an earlier, earlier in the 21st century
11 analysis, I believe Circa 2004 or '05 that, again,
12 only covered a few months.

13 The data on the wildlife kills that is
14 provided by NextEra, I'm sorry. The data that they
15 are technically relying on is ancient. Dating back to
16 the 1970s with, I think, some updates toward the end
17 of the 20th century.

18 As I indicted, cooling technology, cooling
19 tower technology, must be considered. It is an
20 established given, legitimate, mainstream retrofit
21 possibility.

22 And what the utility is postulating in the
23 environmental report is either shutdown the plant
24 completely or operate, as is, without a retrofit to
25 cut down by perhaps as much as 90 or 95 percent the

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1 water usage and the massive kill that is going on.

2 It's not adequate for NextEra to say that
3 it cannot do anything about it and that this is all in
4 the hands of the state environmental regulators of the
5 State of Wisconsin.

6 And the environmental law under NEPA has
7 well established that even alternatives that are not
8 within the direct control of the applicant must be
9 investigated, analyzed and disclosed within the NEPA
10 documents. We believe that the alternative of
11 continued operation of Point Beach Units 1 and 2, with
12 cooling tower mitigation, must be counted and analyzed
13 within its discussion of alternatives.

14 Turning to Contention 2. PSR contends
15 that 10 CFR Part 50, Appendix A is violated because
16 reactor, the reactor coolant pressure boundary hasn't
17 been tested so as to ensure that there is an extremely
18 low probability of abnormal leakage rapidly
19 propagating failure and gross rupture of the reactor
20 vessel.

21 Point Beach Unit 2 has been identified
22 repeatedly as perhaps the worse embrittled reactor
23 vessel operating in the United States. Other
24 reactors, the other members of the group of five worst
25 embrittled reactors will all either be closed by 2024,

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1 they're either closed now or will be by 2024.

2 And Point Beach Unit 2 is expecting and
3 anticipating operation through 2053. The problem is,
4 is that the Point Beach units were designed and built
5 with a 40 year operational license in mind, and we are
6 now in, of course, the 60 year extension. And the
7 proposal is for an extension out to 80 years.

8 There are coupons, there are metal samples
9 that have been, that were designed and left
10 calculatedly in the reactor vessels at Point Beach and
11 were to be periodically removed, metallurgically
12 analyzed. And measurements of a scientific nature
13 were to be maintained on the deterioration of the
14 reactor vessels.

15 There has not been, in this century, the
16 analysis of any coupons from either unit. We believe
17 that there may be one remaining sample left inside
18 each unit. We also understand that there may be one
19 or two samples from each unit that are in the spent
20 fuel storage pool dating to the 1990s, which were
21 never analyzed and which are effectively useless now
22 as anything but providing historical data of the
23 metallurgical soundness of the reactor vessels.

24 There has been, at the same time, in the
25 past ten to 20 years, almost zero metallurgical

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1 testing of a state of embrittled reactor vessels at
2 Diablo Canyon, Indian Point and Palisades.

3 So the problem is, is that Point Beach,
4 both units, but effectively, especially Unit 2, is
5 proposing to be operate well into a period where the
6 only protection has been projections made by the
7 utility industry, or at least software developed by
8 the utility industry, as to the metallurgical
9 integrity of the reactor vessels.

10 This is problematic, and I'm getting into
11 the motion to amend Contention 2 that was raised by
12 PSR. This is problematic because in recent months the
13 Electric Power Research Institute, which developed
14 software for both light water reactors and boiling
15 water reactors, for the projections of metallurgical
16 integrity in embrittled reactors, has admitted that
17 for a period of approximately five years, dating back
18 to 2016, that they have learned and discovered that
19 their boiling water reactor calculational software has
20 defects that seriously, and that call into question,
21 the reliability of the reactors, pardon me, of the
22 calculation.

23 So without scientific data, approximately
24 20 boiling water reactors are affected by this rather
25 stunning disclosure. The document that we proffered

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1 from the EPRI into the record, along with the
2 amendment motion, is largely, conceals a lot of
3 proprietary information. But even from what is
4 publicly available, there is a matter of great
5 concern.

6 Yes, it is true that Point Beach Units 1
7 and 2 are not PWRs, but it certainly seems to me that
8 if the NRC is going to delegate the responsibility of
9 reliable calculation and projected software to the
10 industry, that this interesting and troubling
11 disclosure, regarding BWRs, should prompt very serious
12 discussions and formal inquiry into the adequacy of
13 the software that is used to project the integrity of
14 the reactor vessels at Point Beach.

15 We believe that we have articulated a
16 seriously problem, have cited to a regulation which
17 requires the showing of reasonable assurance and that
18 there is no reasonable assurance as the application
19 currently is written.

20 The third contention, our third
21 contention, and I realizing that I'm using up our
22 time, is that the reasonable alternative of baseload
23 photovoltaic solar power must be considered as a
24 utility scale operational replacement of the power
25 that is expected to be provided during the license

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1 extension period by the Point Beach units.

2 NextEra of any utility conglomerate should
3 understand what the potential, right now today, is a
4 photovoltaic and yet is denying it. They closed their
5 boiling water reactor at Duane Arnold recently and are
6 replacing it with a massive expanded solar array.
7 There are solar photovoltaic, solar already developed
8 on a couple of hundred acres at Point Beach.

9 NextEra owns the largest battery storage
10 project on the planet in Manatee County, Florida.
11 They understand how photovoltaic solar works quite
12 well.

13 Solar follows the time of day demand curve
14 far better, in fact, than large base load nuclear
15 power plants, which cannot be greatly reduced in terms
16 of power, at least anything commensurate with what
17 happens at night.

18 The calculations that were provided by
19 Alvin Compaan, a physics PhD emeritus professor who is
20 a long time solar advocate, and in fact is a, in his
21 scientific capacity, is evaluating a day-by-day the
22 solar potential for his own residents in Northwest
23 Ohio. Dr. Compaan calculated that there is
24 approximately 66 grams of carbon dioxide equivalent
25 required for nuclear power plants per kilowatt hour

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1 versus 16 to 40 grams of co2 for photovoltaic.

2 Our economist, Dr. Cooper, has noted in
3 detail in his report, that there is sufficiently time,
4 and this is of course a requirement, we have to be
5 able to show, as the interveners, that the technology
6 (audio interference) --

7 CHAIR FROEHLICH: Are you with us, Mr.
8 Lodge? I haven't -- the audio cutout on my end.

9 MR. CURRY: Judge Froehlich, the call
10 dropped. I guess we'll have to give him a moment to
11 dial back in.

12 CHAIR FROEHLICH: Okay, thank you.

13 MR. LODGE: Can you hear me?

14 CHAIR FROEHLICH: Yes, Mr. Lodge. Your
15 audio cutout as you were talking about the number of
16 grams, whatever, of --

17 MR. LODGE: Oh my.

18 CHAIR FROEHLICH: I also would like to
19 alert you that you are approaching the end of your 15
20 minutes of argument, if you intend to reserve five for
21 rebuttal.

22 MR. LODGE: Yes. Thank you. I'm going to
23 take about two more minutes.

24 Our expert, Dr. Cooper, economics expert,
25 demonstrated in his report that there is more than

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1 adequate time for the continued maturation of
2 photovoltaic solar as a major player in the generation
3 of electricity, both in the Midwest and in Wisconsin,
4 as well as across the country.

5 That he points out in some detail that
6 electric consumption is no longer directly related to
7 economic growth and prosperity, that technological
8 advances in the management of electrical energy
9 generation and distribution are gaining very rapidly.
10 And suggests that the continued existence of baseload
11 units, such as Point Beach, actually messes up the
12 transition to what we commonly refer to as a smart
13 grid, as a very integrity energy management system.

14 I'd like to also just point out in
15 closing, I made a typographical error, which got
16 reproduced throughout our initial petition, referring
17 to baseboard myopia. The phrase that Dr. Cooper used
18 baseload myopia. And apparently everywhere nearly, in
19 the petition where baseload was mentioned, was somehow
20 replaced by baseboard as I was doing edits.

21 But there is a fixation that is manifest
22 in the Point Beach application that centralized large
23 baseload power units are somehow the most satisfactory
24 and effective way of addressing the electric power
25 needs in their jurisdiction, that is very false. And

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1 it is, in fact, Point Beach is an obstacle to the
2 future.

3 We believe that these matters must be
4 addressed in the environmental document, and as
5 appropriate in the final safety evaluation report.
6 Thank you.

7 JUDGE TRIKOUROS: Will, we can't hear you.
8 At least I can't.

9 CHAIR FROEHLICH: Thank you, Mr. Lodge.
10 We'll hear now from Mr. Lewis from NextEra.

11 MR. LEWIS: Thank you. This is Mr. Lewis.
12 I'm going to present the argument on Contentions 1 and
13 4, but we'll do it in order. And my colleague, Ms.
14 Leidich, will present the Contentions 2 and 3. And we
15 intend to preserve five minutes for rebuttal.

16 So I'll start with Contention 1.
17 Contention 1 is inadmissible for two basic reasons.
18 First, it impermissibly challenges the NRC's rule at
19 51.53(c)(3)(ii)(B), which does not require any
20 assessment of entrainment, impingement or heat shock
21 if the applicant provides current determinations under
22 Sections 316(a) and 316(b) of the Clean Water Act.

23 Mr. Lodge argued that NEPA requires an
24 assessment of these impacts, even if they were
25 recommended by another agency. But this provision in

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1 the NRC rules implements Section 511 of the Clean
2 Water Act, which as the Commission explained in its
3 Vermont Yankee decision, CLI-7-16, precludes the NRC
4 from second guessing the concludes and that NPDES
5 permit, and indeed is specifically intended to provide
6 the Agency with the authority to do so.

7 So Section 511 changes the normal NEPA law
8 and creates an exception. And the Point Beach
9 environmental part here provides the 316(a) 316(b)
10 determinations as a consequence and nothing further is
11 required.

12 Mr. Lodge also argued that there was a
13 paucity of monitoring data supporting the
14 determinations. First of all, there was monitoring in
15 1975 and 1976, in 2005 and 2006 and in 2017.

16 And his characterization is the data, as
17 the data being insufficient is nothing more than
18 (audio interference) characterization. There is
19 absolutely not support for, in an expert opinion or
20 any other authoritative source that the data is
21 inadequate. But be that as it may, that is a matter
22 for the Wisconsin permitting agency to decide, not the
23 NRC.

24 Petitioner also tries to side step the
25 limitation in Section 51.53(c)(3)(ii)(B) by arguing

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1 this is in the reply now, that the timing of the
2 subsequent license is unique because Point Beach's
3 NPDES permit is about to expire. That permit,
4 however, will remain in effect under the timely
5 renewal doctrine and therefore it continues to
6 represent the current permit until a new one is
7 issued.

8 Further, the status of the Point Beach
9 NPDES permit doesn't distinguish the case, this case,
10 from the Commission's decision in Vermont Yankee.
11 Again, that's CLI-7-16.

12 In the Vermont Yankee case, the NPDES
13 permit there, which the Commission found satisfied
14 51.53(c)(3)(ii)(B) had expired but it remained in
15 effect under the time to renew doctrine. And the
16 Commission there described the permit as the currently
17 effective permit.

18 So, as a result, the NPDES permit will
19 expire and the permitting agency may make new
20 determinations, has no effect on the availability of
21 the determinations in the currently effective permit.
22 Indeed, because all NPDES permits are issued for five
23 year terms, as the Commission observed in the Vermont
24 Yankee case.

25 They are always subject to review and

1 change by the permitting agency. And if that were
2 sufficient to open up such permits to review in NRC
3 proceedings and limitation in Section 511 of the Clean
4 Water Act and in 51.53(c)(3)(ii)(B) will be rendered
5 meaningless.

6 The second basic reason why Contention 1
7 is inadmissible is because it lacks any basis
8 demonstrating a general material dispute. The
9 Petitioner merely quotes monitoring data from the
10 application without any showing that the number of
11 fish and shellfish entrained, impinged or effected by
12 thermal discharges represents a significant
13 environmental impact, one warranting spending hundreds
14 of millions of dollars to redesign an retrofit the
15 plant with cooling towers.

16 Petitioner provides no expert support
17 showing that there is a significant environmental
18 impact warranting further mitigation. Now, they refer
19 to Mr. Gunderson's declaration but he has no current
20 expertise in aquatic biology or ecology or the
21 assessment of aquatic impacts.

22 And his characterization of that as a
23 super predatory is simply a conclusory rhetoric. It
24 doesn't establish, in the slightest, that the impacts
25 are significant.

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1 Now referring to the large number of eggs
2 that are entrained, doesn't mean those impacts are
3 significant. If you look, for example, on the fish
4 and wildlife service website about alewife, there is
5 a little profile about the alewife. And there a
6 single female spawns between 60,000 to 350,000 eggs.

7 So if you're talking about entraining a
8 million eggs, you're actually only talking about the
9 eggs that are produced by a handful of alewife. There
10 needs to be something more than characterizations,
11 this carnage or a super predator, there needs to be
12 some real expert opinion or some real authoritative
13 source that characterizes these impacts as significant
14 in order to have an adequate predicate for
15 consideration of cooling towers.

16 So in sum, it's Petitioner's obligation to
17 make a sufficient threshold showing that its proposed
18 alternative is warranted by significant environmental
19 impact, that it's reasonable, economically viable.
20 Petitioner does not do so.

21 I'll now turn this over to Ms. Leidich.

22 MS. LEIDICH: Thank you, Dave. I'm going
23 to address Contention 2 and then I'll address
24 Contention 3.

25 Petitioner's Contention 2, which alleges

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1 that Point Beach is violating GDC 14, because the
2 reactor pressure vessels have not been adequately
3 tested, is clearly inadmissible. First, Contention 2
4 largely ignores the facility at issue in this
5 proceeding, Point Beach.

6 Instead, the majority of the contention
7 complains vaguely about the overall NRC approach to
8 neutron embrittlement with Point Beach only serving as
9 one example of that approach.

10 Indeed, today, the Petitioner has
11 reiterated that by complaining about the NRC generally
12 delegating authority to the utilities. This licensing
13 proceeding is not the right venue for such a generic
14 challenge to the Staff or NRC regulations.

15 Second, to the limited extent that
16 Contention 2 does say anything about Point Beach, as
17 it clear from the title of the contention itself that
18 Point Beach is violating GDC 14, it is challenging the
19 current licensing bases of the facility and not
20 subsequent license renewal. Thus the contention is
21 outside the scope of this license renewal proceeding.

22 Contention 2 also fails to address or
23 raise a genuine dispute with the relevant information
24 that is in the application. In fact, original
25 Contention 2, while it addressed Point Beach's

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1 purported lack of surveillance capsules, completely
2 ignored that a supplemental surveillance capsule,
3 Capsule A, is in the reactor and will be withdrawn
4 after receiving between one to two times the peak
5 reactor vessel neutron fluence of interest at the end
6 of the subsequent period of operation.

7 Again today in their oral argument
8 Petitioner has ignored that capsule. Even though it
9 seems directly relevant to their contention.

10 Finally, Contention 2 is vague and
11 unsupported. Mr. Gunderson makes speculative claims
12 as to error prone analytical calculations without any
13 explanation as to what calculations are error prone or
14 what supports that allegation.

15 Such conclusory assertions and speculation
16 make for nothing more than the sort of ill-defined and
17 poorly supported contentions that the Commission's
18 rules of practice are intended to avoid. Petitioner
19 and Mr. Gunderson do not identify or address, let
20 alone identify any deficiency in any of the time
21 limiting aging analyses, of embrittlement in the
22 application.

23 Petitioner's amended Contention 2 does
24 nothing to remedy these various flaws in the original
25 contention. Petitioner's attempt to belatedly address

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1 the capsule in the reactor is both untimely and
2 inaccurate. And the remainder of Petitioner's amended
3 contention is simply irrelevant to the initial
4 contention.

5 Petitioner's provide no explanation why
6 the supplemental capsule in Unit 2, containing
7 materials representative of both units, cannot be
8 considered for Unit 1 as well. And indeed any such
9 claim is an impermissible challenge to the pressurized
10 thermal shock rule.

11 And the new EPRI letter referenced in
12 Petitioner's amended contention regards calculations
13 for BWR, stainless steel, reactor internals at a high
14 fluence. Which has no relevance to Petitioner's
15 contention about a PWR carbon steel reactor vessel
16 with a lower fluence.

17 In sum, Contention 2 fails to meet many of
18 the requirements for contention admissibility under 10
19 CFR 2.309(f)(1). It lacks specificity, it is outside
20 the scope of the proceeding, and is an impermissible
21 attack on the current licensing basis, and NRC
22 decision making. In addition, it fails to raise a
23 genuine dispute with material in the application that
24 is directly on point.

25 Petitioner's Contention 3, alleging that

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1 the ER failed to adequately evaluate solar power as a
2 discrete alternative is also inadmissible. The ER
3 rejected solar power as a discrete alternative, in
4 large part, because of the land requirements for solar
5 power.

6 And Petitioner, in Contention 3, agrees
7 with the application that there significant land
8 requirements. By its own calculation, Petitioner
9 admits that 65.7 square miles of land, or 42,000
10 acres, would be required for a discrete solar
11 replacement.

12 Petitioner's expert, Dr. Compaan,
13 acknowledges that this land requirement seems
14 prohibitive. But Petitioner in the space of two
15 paragraphs summarily asserts that NextEra could find
16 the land. Either by using a significant number of the
17 commercial or residential rooftops throughout the
18 entire state or through the use of land set aside for
19 conservation purposes in the Conservation Reserve
20 Program.

21 That is not enough to establish an
22 alternative that can, as a practical matter, produced
23 baseload power, either now or in time, to constitute
24 a reasonable alternative to re-licensing as required
25 in the Commission's Davis-Besse precedent. Nor does

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1 it establish an alternative that the Applicant can
2 actually implement.

3 Instead, Petitioner only sets forth the
4 kind of hypothetical or speculative alternative that
5 has been rejected by the Commission in the past.
6 Neither Petitioner nor Compaan has shown that
7 sufficient rooftop space is actually or reasonably
8 available for solar development.

9 Indeed, the SLOPE tool relied upon by
10 Compaan has a high degree of uncertainty, as it states
11 on the website. And provides an upper bound of
12 feasible development potential for planning purposes,
13 which does not consider economic or market
14 feasibility.

15 Even applying that tool, utilization of 87
16 percent of all residential rooftops in Wisconsin, or
17 the rooftops of 47,000 commercial buildings, would be
18 needed to replace Point Beach's generation.

19 Petitioner and Compaan never explain how
20 it is practical or commercially feasible to obtain
21 such rooftop space to replace Point Beach's
22 generation. They fail to address how it could be
23 practical for NextEra to negotiate and turn to
24 contracts billed and operate solar power on a
25 significant number of rooftops throughout the entire

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1 state in time to replace Point Beach.

2 Nor has Petitioner shown that this is even
3 plausible for a merchant generator with no transition
4 or distribution system of its own, no link to the
5 ultimate consumer and no power of eminent domain.

6 As to Petitioner's suggestion that NextEra
7 should use land on the conservation reserve program,
8 Petitioner has not demonstrated that such use of
9 conservation land is legal, let alone practical,
10 commercial viable or environmentally preferable.

11 Obviously it does not nothing to reduce
12 the 65 square miles of land that would be required to
13 replace Point Beach. Instead, it merely proposes
14 using environmental sensitive land for that purpose.

15 Finally, Petitioner's argument that
16 nuclear power is too expensive is a clear challenge to
17 the NRC's rule requiring no need for power or cost
18 benefit analysis with the license renewal
19 applications. Thus Contention 2 also fails to meet
20 the contention admissibility requirements.

21 Dave, do you want to address Petition 4?

22 MR. LEWIS: Yes. This is Dave Lewis.
23 I'll be very brief regarding Contention 4.

24 That contention is inadmissible because it
25 challenges the design of the plant and its current

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1 licensing basis by claiming that a shield should be
2 installed to protect against turbine missiles. The
3 design of the plant and the adequacy of the CLB, the
4 Current Licensing Basis, are beyond the scope of this
5 proceeding.

6 Contention 4 is also inadmissible because
7 Petitioner's make no attempt to relate this contention
8 to any portion of the application. And indeed they
9 cannot because turbine missiles and shafts that might
10 generate missiles are active components that are not
11 subject to aging management review, or any other
12 review, in this proceeding. Thank you.

13 CHAIR FROEHLICH: Thank you, Mr. Lewis.
14 And I'd like to hear now from Commission Staff.

15 MS. YOUNG: Thank you, Chairman, public
16 and Members of the Board. My name is Mitzy Young, I'm
17 addressing Contention 1 first.

18 And again, my co-Counsel Travis Jones will
19 address Contention 3, and Jeremy Wachutka will address
20 Contentions 2 and 4. And the motion to amend
21 Contention 2.

22 So Contention 1, as you've already heard,
23 challenges the adequacy of the Applicant's
24 environmental report alleging it does not comply with
25 NRC regulations in 10 CFR Section 51.45(c) and

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1 51.53(c)(3)(iii), because it doesn't consider the
2 reasonable mitigation alternative or replacing the
3 plant once the cooling system with a close cycle
4 cooling tower system.

5 Petitioner claims this alternative will
6 reduce adverse environmental impacts associated with
7 impingement and entrainment of aquatic organisms and
8 thermal impacts on aquatic organisms.

9 Petitioner also claims that there would be
10 reduction in occasional mortality from impingement and
11 that the ER insufficiently analyzes limited data on
12 thermal discharges, and wrongly concludes that
13 mitigation is not needed during the term because the
14 Applicant does not plan any changes which would
15 increase thermal impacts.

16 As the Petitioner is aware, the Applicant
17 concluded that the impacts would be small. And under
18 NRC definition of the category meaning, they're so
19 minor that they will not destabilize nor noticeably
20 alter important attributes.

21 If the Applicant is correct, it would not
22 be reasonable to consider further reductions based on
23 the mission guidance that the proportionality of an
24 impact is considered in determining whether it should
25 be included in a discussion in the environmental

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1 report. Or environmental impact statement.

2 But the Petitioner does not provide
3 sufficient legal bases, or factual bases, to
4 demonstrate a genuine dispute with the Applicant.
5 Neither NEPA nor the NRC regulations require the
6 operation of cooling towers to be considered as
7 mitigation.

8 NEPA is tempered by a rule of reason.
9 That rule of reason applies to both alternatives and
10 consideration of impacts, and it does not dictated a
11 particular action or result.

12 NRC regulations do not specify or require
13 a specific alternative to be considered. But under 10
14 CFR 51.45(b)(3)(ii)(B), an applicant may relay on
15 state water quality determinations, whether a
16 discharge permit or a thermal fluence variance, in
17 lieu of accepting thermal impingement and entrainment
18 impacts on aquatic organisms.

19 To the extent that Petitioner's considered
20 challenged the ability of the Applicant to rely on
21 this regulation and the state water quality
22 determination, Petitioner fails to provide directing
23 the petition and showing required by 10 CFR 2.335 to
24 report a petition for waiver exception to NRC
25 regulations. And has made no showing of special

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1 circumstance.

2 With respect to reasonable alternatives,
3 the case law and Commission law has indicated that
4 reasonable alternatives to those that are practical
5 from a technical or economic standpoint, and the
6 alternative is not speculative.

7 Petitioner points to circumstances in
8 other proceedings. For example, Turkey Point, Oyster
9 Creek and Indian Point. But those proceedings
10 involved concerns by the state permitting agency about
11 water quality, and requirements for the performance of
12 their power reactor that are not cited here.

13 Therefore in those proceedings it was
14 reasonable that the alternative of an operation of
15 closed cycle cooling system be considered.

16 Generally speaking, NRC considers
17 alternative in terms of operation that involves
18 replacing power for the facility to an alternative,
19 merely that considers the impacts of closed cooling
20 cycle systems would not be reasonable here.

21 The Clean Water Act determination by the
22 state are in the Wisconsin permit, which the Applicant
23 appended to its environmental report. That permit,
24 which required this month, but it's in timely renew,
25 and under the statute understanding, had

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1 determinations which includes determination of the
2 interim best technology available or peddling cooling
3 water system.

4 That interim determination happened
5 because the EPA had not finalized its regulations and
6 the state would be reconsidering that. To the extent
7 that the Petitioner is concerned about impacts on
8 fish, on thermal effluence, excuse me, on impacts due
9 to thermal effluence on aquatic species in Lake
10 Michigan, Petitioner raises concerns with the
11 Wisconsin State permitting agency. And there is a
12 vehicle for them to do so.

13 With respect to bird impingement,
14 petitioner does not seriously challenge information in
15 the environmental report that addresses the
16 modifications that were made consistent with state
17 permitting to reduce the impingement of migratory
18 birds, which included lowering the intact structure of
19 additions over ten feet, the intact crib below the
20 surface, and or address the acoustic deterrent system,
21 which used to deter from alewife from swimming near
22 the intact structure.

23 Basically, the Petitioner complaint,
24 again, is that the adequacy of decisions made by
25 Wisconsin state permitting agency and not with the

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1 Applicant.

2 With respect to accumulative impacts, the
3 Petitioner generally alleges that they're not
4 considered. However, the Applicant did include
5 discussion regarding consideration of past, present
6 and reasonable foreseeable actions and concluded in
7 part because there of the continued monitoring and no
8 specific refurbishments being identified in this
9 application, whether to continue to comply with those
10 standards.

11 The reasonableness of relying on the state
12 permitting agency is, in NRC regulations, in two
13 places. First regulation that I mentioned,
14 51.25(c)(3)(ii)(B) and also in 51.71(d), to a
15 footnote, which indicates that the NRC accepts those
16 determinations and will consider the impacts
17 associated with those determinations.

18 But petitioner, here, although they have
19 generalized complaints about impingement, entrainment
20 and the impacts of thermal discharges on aquatic
21 organisms, they don't raise a genuine dispute
22 regarding the various mitigation measures that are
23 already in effect under the Wisconsin State permit,
24 which they have no, made no showing that the Applicant
25 is not abiding with.

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1 And in essence, they would seek to have
2 the NRC second guess, through its consideration of an
3 ultimate technology for cooling, determinations made
4 by the State of Wisconsin, or otherwise outpace
5 determination that the state permitting agency would
6 make regarding the best technical alternative for
7 mitigation of adverse impacts.

8 And the Commission, again, this would be
9 improper under Vermont Yankee and other cases where
10 the Commission identifies that we are to defer to
11 those determinations. And so, as noted, and the Board
12 should be aware, that as noted in the information
13 digest, stated 2020 through 2021, NUREG-1315, Volume
14 2, the NRC has renewed over 90 power reactor licenses.

15 We've issued at least four subsequent
16 license renewals to date. And less than a handful of
17 those were ever considered the mitigation measure that
18 Petitioner proposes here.

19 Petitioner does not, again, it's not
20 reasonable, the alternative they've proposed because
21 they do not show that there are state permitting or
22 water quality concerns here. And don't otherwise
23 generally dispute the adequacy of the environment
24 report in their petition.

25 And to the extent that they challenge the

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1 Applicant's reliance on permits, which include
2 mitigation measures, they have not met NRC
3 requirements for raising that challenge in this
4 proceeding.

5 I will now turn over the discussion to
6 Travis Jones, who will discuss Contention 3.

7 MR. JONES: Good morning, Your Honors.
8 This is Travis Jones on behalf of the NRC Staff.
9 Contention 3 states that the Environmental Report
10 failed to adequately evaluate the full potential of
11 renewable energy sources, such as solar photovoltaics
12 to offset the loss of energy production from Point
13 Beach and to make the requested license renewal action
14 from 2030 to 2053 unnecessary.

15 This contention though failed to satisfy
16 the contention admissibility requirements in 10 CFR
17 2.309. Specifically, it failed to satisfy
18 2.309(f)(1)(iii), which is a portion of the extension
19 that is outside the scope of this proceeding, and it
20 failed to satisfy 2.309(f)(1)(vi) because the
21 contention does not present a genuine dispute with the
22 applicant on a material issue of law or fact.

23 To that point, NEPA requires the
24 consideration of reasonable alternatives, not often
25 feasible ones. The Commission has determined that for

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1 Petitioner to challenge the reasonable alternatives in
2 a license renewal proceeding the Petitioner needs to
3 provide sufficient facts or expert opinions to show
4 that its proposed alternatives are commercially viable
5 on a utility scale and that it can be operational
6 prior to the expiration of the current licenses.

7 Here, Petitioner failed to show that a
8 genuine dispute exists because Petitioner failed to
9 present this required information. Also, as noted in
10 the ER, NextEra determined that the solar and storage
11 option was not reasonable because of the significant
12 impact that would result from the acreage required.

13 In Dr. Compaan's declaration he
14 essentially agrees with NextEra and states that the
15 array would indeed require 65 square miles. The
16 Petitioner does not see this as prohibitive though and
17 attempts to raise a genuine dispute by pointing out
18 that the acreage needed for solar panels exists on
19 rooftops and conserved farmlands.

20 Then the Petitioner frames this
21 information as raising a dispute with the ER without
22 providing any information on whether it would be
23 practical or feasible from a technical or economic
24 standpoint.

25 In the ER though NextEra does not claim

1 that sufficient land doesn't exist in Wisconsin.
2 NextEra instead explains that the associated impacts
3 to wildlife, vegetation, land use, aesthetics, et
4 cetera, render this option unreasonable.

5 Petitioner never mentions let alone raises
6 a dispute with any of the impacts mentioned in the ER.
7 While it is true the Petitioner does not need to fully
8 litigate this contention at this stage, 10 CFR
9 2.309(f)(1)(vi) makes it perfectly clear that
10 Petitioner must show the dispute is genuine.

11 By failing to present any information
12 regarding the technical and economic realities of how
13 NextEra would acquire the aforementioned rooftops or
14 farmlands and by failing to address any of the
15 material reasons listed for NextEra's determination,
16 Petitioner fails to present these facts or expert
17 opinions that would should a genuine dispute with the
18 ER, or that would show commercial viability of its
19 proposed alternatives. Therefore, the Petitioner
20 failed to meet its burden under 2.309(f)(1)(vi).

21 Finally, to the extent the Petitioner is
22 challenging the need for power with its statements,
23 such as the requested license renewal action from 2030
24 to 2053 is unnecessary or its statement that there is
25 no justification for the continued operation of Point

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1 Beach, this contention is clearly outside the scope of
2 this proceeding and the license renewal guidance
3 specifically states that the NRC will not make a
4 decision regarding the need for power at the license
5 renewal stage.

6 Moreover, during the rulemaking process
7 the Commission stated that the regulatory authority
8 over licensee economics, including the need for power,
9 falls within the jurisdiction of the States and the
10 NRC has no role in the energy planning decisions of
11 State regulators.

12 Accordingly, the NRC has stated that it
13 will neither perform analysis of the need for power
14 nor draw conclusions about the need for generating
15 capacity during a license renewal review.

16 Here, to the extent that the Petitioner is
17 challenging the need for power with this contention,
18 it is clearly outside the scope of this proceeding
19 under 10 CFR 2.309(f)(1)(iii).

20 Thank you and I will now pass it on to my
21 colleague, Jeremy Wachutka, to discuss Conditions 2
22 and 4, Contentions 2 and 4, sorry.

23 CHAIR FROEHLICH: Thank you.

24 MR. WACHUTKA: May it please the Board.

25 My name is Jeremy Wachutka and I will be providing the

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1 NRC Staff's position that proposed Contentions 2 and
2 4 are not admissible.

3 In proposed Contention 2 the essence of
4 the Petitioner's argument appears to be a concern for
5 reactor pressure vessel neutron embrittlement at Point
6 Beach.

7 This is a phenomenon by which neutron
8 irradiation due to reactor operation reduces the
9 fracture toughness of reactor pressure vessels making
10 them more susceptible to brittle failure.

11 The NRC's regulations at 10 CFR 50.61 and
12 10 CFR Part 50, Appendices G and H, address this issue
13 through requirements to obtain fracture toughness data
14 from capsules either at a facility or at other
15 facilities and to use these data to ensure adequate
16 margins of safety.

17 Additionally, the NRC's guidance in NUREG
18 2191 and NUREG 2192 provides specific time limited
19 aging analyses, or TLAA, and specific aging management
20 plans, or AMP, as one acceptable way to satisfy these
21 regulations during the subsequent license renewal
22 period.

23 In turn, NextEra's subsequent license
24 renewal application, which is the subject of this
25 proceeding, provides NextEra's argument for how in

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1 light of these regulations and guidance Point Beach
2 would continue to operate safely during the subsequent
3 license renewal period.

4 For example, NextEra's application states
5 that the reactor pressure vessel neutron embrittlement
6 is addressed by a Reactor Vessel Neutron Embrittlement
7 PLAA, a neutron coolant monitoring AMP, and a reactor
8 material vessel material surveillance AMP.

9 This PLAA and these AMPs in NextEra's
10 application are based on the corresponding PLAA and
11 AMPs in the NRC guidance documents and they provide
12 NextEra's proposed practices to ensure safety despite
13 neutron embrittlement during the subsequent license
14 renewal period. They include the withdraw and testing
15 of the surveillance capsule and the consideration of
16 data from capsules irradiated at other facilities.

17 Given this regulatory framework and of the
18 NRC's contention admissibility requirements, in order
19 for proposed Contention 2's concern regarding neutron
20 embrittlement to be admissible the Petitioner was
21 required to point to these portions of NextEra's
22 application, explain why they don't satisfy the NRC's
23 regulations or are otherwise unsafe, and provide
24 support for this argument.

25 The Petitioner though did not do these

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1 things. First, the Petitioner did not refer to the
2 specific portions of NextEra's application that it
3 disputes as is required by 10 CFR 2.309(f)(1)(vi).

4 Proposed Contention 2 contains only one
5 ambiguous reference to "the aging management plan" and
6 its basis contains only one citation to NextEra's
7 application in support of the Petitioner's statement
8 that NextEra is storing two capsules in the Point
9 Beach spent fuel pool.

10 Only in its reply brief did the Petitioner
11 for the first time acknowledge the application's
12 discussion of withdrawing and testing the capsule.
13 This, though, did not cure the insufficiency of the
14 Petitioner's hearing request because, first of all, it
15 was pled too late, and, secondly, a side simply
16 asserting that NextEra's capsule withdraw and testing
17 plan is "of grave concern to Petitioner," the
18 Petitioner did not dispute the basis for NextEra's
19 plan.

20 Second, the support that the Petitioner
21 provided for its arguments is not relevant to
22 NextEra's application as is required by 10 CFR
23 2.309(f)(1)(v).

24 For example, the Petitioner pointed to an
25 EPRI letter regarding errors in calculations related

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1 to evaluating existing flaws in boiling water reactor
2 internals.

3 From this the Petitioner concluded that
4 the testing of capsules at Point Beach "may indeed
5 identify that embrittlement calculations made at Point
6 Beach are not conservative."

7 The Petitioner, though, did not point to
8 any specific embrittlement calculations in the Point
9 Beach Application and explained how the EPRI letter
10 demonstrates that both calculations are somehow
11 deficient. In fact, the calculations identified in
12 the EPRI letter do not appear anywhere in NextEra's
13 application.

14 Finally, without any discussion of the
15 NRC's requirements or the application's attempts to
16 satisfy those requirements, the Petitioner repeatedly
17 asserted its belief that NextEra should be required to
18 perform a "complete physical analysis of the coupons
19 from its reactors and the five other reactors that are
20 its embrittled cohorts."

21 This is both, one, an argument that
22 NextEra should have taken a different approach than
23 the approach actually taken in its application, and,
24 two, it is an implicit challenge to the NRC's
25 regulations which do not require such a requirement.

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1 Therefore, this argument is not within the
2 scope to this proceeding as is required by 10 CFR
3 2.309(f)(1)(iii). Because of these failures to
4 satisfy the NRC's contention admissibility
5 requirements proposed Contention 2 should not be
6 admitted.

7 In the proposed Contention 4 the
8 Petitioner argues that the physical alignment of Point
9 Beach's buildings creates an elevated risk for damage
10 from a turbine generator missile.

11 The NRC's regulations at 10 CFR 54.4,
12 however, limit the scope of license renewal
13 proceedings to certain plant systems, structures, and
14 components, or SSCs.

15 NextEra's application does not consider
16 Point Beach's building alignment or its turbine
17 generators to be SSCs and the Petitioner does not
18 demonstrate that they are.

19 Moreover, under 10 CFR 54.21 SSCs within
20 the scope of license renewal must also be subject to
21 either an aging management review or a time limited
22 aging analysis, but the Petitioner does not explain
23 how Point Beach's building alignment or its turbine
24 generators could fit within these specific license
25 renewal categories.

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1 In essence, instead of demonstrating that
2 its concern is limited specifically to license renewal
3 issues, as is required, the Petitioner's concern
4 appears to have to deal more broadly with the current
5 operation of Point Beach and as such would be more
6 appropriately challenged through a 10 CFR 2.206
7 request for agency action.

8 For this reason proposed Contention 4 is
9 not within the scope of this proceeding as is required
10 by 10 CFR 2.309(f)(1)(iii).

11 In conclusion, because none of
12 Petitioner's proposed contentions satisfy all of the
13 contention admissibility requirements, the
14 Petitioner's hearing request should be denied. Thank
15 you.

16 CHAIR FROEHLICH: Thank you. Thank you.
17 There has been a reservation of time for rebuttal by
18 both the licensee and the Petitioner. What I would
19 propose is that we take about a 5-minute break and
20 then I'd like to hear, again, from Mr. Lodge five
21 minutes of rebuttal and, again, five minutes from the
22 licensee and then the parties can expect questions
23 from the Board.

24 So we will just take a 5-minute break. We
25 will be back on the record at that time, and by my

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1 watch that will be 11:17. Thank you.

2 (Whereupon, the above-entitled matter went
3 off the record at 11:12 a.m. and resumed at 11:18
4 a.m.)

5 CHAIR FROEHLICH: Okay. If the parties
6 are back online let's resume with the rebuttal portion
7 of oral argument. Mr. Lodge, you have reserved five
8 minutes of your time and you can start now.

9 MR. LODGE: Thank you.

10 CHAIR FROEHLICH: Unmute.

11 MR. LODGE: Can you hear me now?

12 CHAIR FROEHLICH: Yes.

13 MR. LODGE: Wonderful. Hopefully things
14 -- Thank you, Your Honor. I would like to first
15 address the coolant tower matter. Respectively, it is
16 not a shield for the applicant to be able to say that
17 it is out of our hands, that technically we have a 316
18 permit process going on with the state agency.

19 In effect, when NEPA and the Atomic Energy
20 Act collide NEPA must prevail. I believe there is
21 case law to that effect, possibly even cited, and I
22 certainly would be happy to provide it to the
23 Licensing Board.

24 In 2017 according to Supplement 1 of the
25 Environmental Report NextEra reported that the

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1 foregoing fishery yield because of Point Beach
2 estimated at 7,406 kilograms that essentially 41
3 percent of the fish kill was rainbow, 41.7 was rainbow
4 smelt, followed by burbot, 26.4 percent alewives, and
5 11.1 in round gobies.

6 This is not -- And while I recognize that
7 there are, this is, that doesn't, that isn't an
8 effective rationale that they should die anyway, they
9 are invasives. The problem is is that there is
10 habitat and wildlife carnage as an ongoing phenomenon.

11 I would also point out that in 2011 the
12 Chicago Tribune reported that approximately 4.5, an
13 equivalent of, that the fish kills were amounting to
14 10,675 pounds per year, which was 4.5 percent the
15 annual commercial fish catch by weight.

16 This is very significant wildlife loss to
17 the lake and just because fish reproduce serially in
18 order to survive as a species is somehow not a
19 justification for not mitigating the permit.

20 As to Contention Number 2 -- Oh, and
21 incidentally back to the cooling chart, Category 2
22 acknowledges that impacts on wildlife may be small,
23 medium, or large, depending on local circumstances, so
24 the Licensing Board does not have to accept NextEra's
25 characterization.

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1 However, with regard to Contention 2, the
2 vessel metallurgy between boiling water reactors and
3 pressurized water reactors is not relevant. We are --
4 Interveners are discussing the metallurgical aging and
5 internal (audio interference) vessels. The internals
6 as between PWRs and BWRs are rather similar, but,
7 again, this is just simply a major, major warning.

8 As to Contention 3, and this is happening
9 with all three of the contentions we are arguing about
10 substantive today, the Staff or the Applicant are
11 attempting to make of this a substitute trial.

12 They are actually arguing the sufficiency
13 and adequacy of our prima facie demonstrations of
14 evidence in many respects and as two of the three
15 members of this Licensing Board ruled in Davis-Besse's
16 renewal, License Extension 2011, all that is required
17 is to demonstrate some sort of factual basis and issue
18 a fact with some sort of contraversion, if you will,
19 with the application, and that is certainly what we
20 have done as to the photovoltaic solar contention.

21 It is interesting to note that the
22 Licensing Board in 2011 in the Davis-Besse case
23 believed that the state of the art of bend and
24 photovoltaic and conversation in some unspecified
25 combination at that time, a decade, fully a decade

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1 ago, was possibly equivalent or competitive as a
2 substitute for centralized baseload power from Davis-
3 Besse.

4 Unfortunately, the Full Commission
5 overturned the Licensing Board's ruling. I say
6 "unfortunately" partly because, in effect, the
7 Commission made a determination on the merits that in
8 2011 the serious commercially viable alternatives were
9 not viable enough to be considered as a serious
10 competition to baseload power from the nuclear power
11 plant involved.

12 Things are far, far different, far more
13 evolved. Wyatt Energy is planning on introducing far
14 more power than the capacity of Point Beach in the
15 next couple of years in the Wisconsin region.

16 There are other competitors. NextEra
17 itself, of course, as I indicated in the State next
18 door, in Iowa at the Duane Arnold site, is making a
19 dramatic expansion.

20 Everyone in this case understands that
21 photovoltaic solar is going to forever profit in price
22 while the costs of nuclear are not going to go that
23 direction at all and is quite likely going the other
24 direction.

25 The reason that Point Beach exists today

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1 is because of a locked in purchase power agreement for
2 the next decade. I realize the Board doesn't take
3 into account whether or not economic feasibility is
4 really viable, but I would simply point out that the
5 artificial nature of the economics is all keeping
6 Point Beach in the game.

7 I believe that I used up my time, probably
8 more than. Thank you very much.

9 CHAIR FROEHLICH: Thank you, Mr. Lodge.
10 And now for the licensee, please.

11 MR. LEWIS: Yes. This is David Lewis.
12 Mr. Lodge suggested that we are not looking at aquatic
13 impacts because they are out of our hands. That's not
14 quite correct.

15 The Environmental Report looks at and
16 references the 316(a) and 316(b) determinations. The
17 reason that a further assessment including an
18 assessment of mitigation measures is not required is
19 because Section 511 and the implementing regulations
20 in the NRC rules requires the NRC, in essence, to take
21 those state determinations as dispositive and rely
22 upon them.

23 For example, the 316(a) determination,
24 which is in our application and is attached to the
25 fact sheet that accompanies the NPDES permit, states

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1 that the impacts on the fish community in the
2 immediate area of the localized ecology of the site,
3 that the thermal plume will cause minimal impacts to
4 the fish and invertebrate communities, or the
5 representative important species list, and that the
6 discharge is protective of a balance in indigenous
7 community of shellfish, fish, and wildlife in and on
8 Lake Michigan and no temperature limit is needed.

9 So these are some of the determinations
10 that the State has made. We have provided them and
11 it's not just NextEra saying, well, this is out of our
12 hands. It is saying that there are dispositive
13 determinations, which under Section 511 of the Clean
14 Water Act the NRC is required to accept and use.

15 With respect to Mr. Lodge's reference to
16 the Chicago Tribune, our answer already showed why
17 that newspaper article simply misrepresents the data
18 that is in ADAMS.

19 The calculation of 4.5 percent on
20 commercial fishery is just wrong and we have pointed
21 to the actual study on ADAMS that showed what the
22 value is and it's, if you look at the impact on the
23 commercial fishery using the documents that the
24 Chicago Tribune was unfortunately unable to
25 understand, the impact was 0.001 percent, which is

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1 such a far cry from 4.5 percent.

2 But, you know, the issue here is that it's
3 Petitioner's burden to demonstrate with sufficient
4 support a genuine material dispute and if a newspaper
5 article, again, by a reporter who, you know, who knows
6 what his qualifications are, is sufficient then just
7 about any contention can come in because you find
8 articles where a reporter says, you know, nuclear
9 power is unsafe.

10 Does that mean all safety issues are, you
11 know, are written in stone? Obviously not. So there
12 needs to be some expert opinion or some authoritative
13 source.

14 Clearly, the reference to the newspaper
15 article didn't meet that standard, but beyond that,
16 you know, when an intervener, sorry, a petitioner, you
17 know, references information the Board is allowed to
18 look to see what that information actually says and
19 whereas here the data on which that article is based
20 is actually in ADAMS, accessible to the Board.

21 The Board should look at it and say, you
22 know, holy cow, that's not even remotely correct.
23 Anne, do you have anything you want to add under the
24 contentions?

25 MS. LEIDICH: Sure. I will be brief, but

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1 I am going to briefly address some matters in
2 Contention 2 and Contention 3.

3 Petitioner has, again, reiterated the
4 possibility of internals being part of Contention 2.
5 Contention 2 itself states that the reactor coolant
6 pressure boundary has not been tested.

7 Reactor internals are not the reactor
8 coolant pressure boundary and this appears to be a
9 late attempt to modify Contention 2 solely so that the
10 EPRI letter might have some relevance to it. However,
11 Contention 2 itself is about the reactor coolant
12 pressure vessel boundary.

13 In terms of Contention 3, the decision
14 that Petitioners have discussed in detail at this
15 point, is not governing on the Board.

16 The Commission decision from 2012 in the
17 Davis-Besse proceeding is governing on the Board and
18 it states that as a practical matter an alternative
19 must be able to produce baseload power either now or
20 in time to constitute a reasonable alternative to re-
21 licensing and it rejects hypothetical or speculative
22 alternatives.

23 Finally, Petitioners have raised a solar
24 power facility that is going to replace Duane Arnold.
25 I believe that is being raised for the first time here

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1 at oral argument, which is beyond untimely.

2 However, that facility is significantly
3 smaller than the Point Beach units and it's going to
4 be, it's not going to be a baseload facility. Thank
5 you.

6 CHAIR FROEHLICH: Okay. Thank you. What
7 I would like to do at this point is to ask a few
8 questions of the parties and I thought it would be
9 best if we did it contention by contention, if that's
10 all right with Judges Arnold and Trikouros, that way
11 we will have the answers hopefully in one spot in our
12 transcript and I think that will help us with our
13 decision.

14 That said, I would like to start, if I
15 could, with Contention 1 and actually start with Mr.
16 Lodge and what the argument seems to revolve around is
17 to what extent should the Board ultimately rely on the
18 fact that there is an existing Clean Water Act from a
19 Section 316(b) determination currently in effect.

20 Mr. Lodge, isn't this Board bound to
21 accept the findings of the Wisconsin DNR and,
22 likewise, the fact that there is an existing permit
23 that has been filed and is part of this record, why
24 should we be going any further than that
25 determination?

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1 Mr. Lodge, are you with us?

2 MR. LODGE: Can you hear me?

3 CHAIR FROEHLICH: Mr. Lodge, perhaps if
4 you turned off your video you might be able to capture
5 enough bandwidth to be heard. At the moment I can't
6 hear anything.

7 (Pause.)

8 CHAIR FROEHLICH: Mr. Lodge?

9 MR. LODGE: Yes. I am --

10 (Simultaneous speaking.)

11 MR. LODGE: I am trying to get out of the
12 Webex because I had a screen freeze again.

13 CHAIR FROEHLICH: Thank you.

14 MR. LODGE: So you can hear me?

15 CHAIR FROEHLICH: I can hear you, yes.

16 MR. LODGE: Okay. Thank you.

17 CHAIR FROEHLICH: Please proceed.

18 MR. LODGE: I did hear your entire
19 question, Judge Froehlich. I am -- Hang on one
20 second. I am still trying to exit the Webex so I'll
21 stop the echo I am receiving.

22 (Pause.)

23 MR. LODGE: Can you hear me?

24 CHAIR FROEHLICH: Yes. Please proceed.

25 MR. LODGE: All right. Thank you very

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1 much. I appreciate your indulgence. Number one, NEPA
2 requires the disclosure of the option and, number two,
3 merely because there is an application or, pardon me,
4 I guess a pending request to extend the NPDES permit,
5 WPDES as its known in Wisconsin, doesn't mean that
6 there need not be discussion under NEPA.

7 I realize what the regulation says. We
8 believe that the purpose, among the purposes of the
9 National Environmental Policy Act, is the disclosure
10 to the public, which is supposed to provide
11 reassurance, that governmental authorities are
12 actively seeking transparency as well as providing a
13 full picture of the proposed project, which, of
14 course, in this case is a 20-year license extension
15 that would come atop 60 years of wildlife destruction.

16 And NEPA, as I say, and I believe the case
17 law strongly shows, that when NEPA and the Atomic
18 Energy Act collide that effectively NEPA wins, NEPA
19 governs.

20 CHAIR FROEHLICH: Mr. Lodge, didn't the
21 Wisconsin DNR determine that the negative impacts to
22 the fish community would be minimal? I thought I read
23 something to that effect at Page 24 of your petition.

24 MR. LODGE: Yes. That is their
25 conclusion, but, again, that is a -- I don't believe

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1 that it is of a res judicata type of finding. It has
2 not occurred as a result of an adjudication. It's an
3 administrative determination being made by the
4 regulatory body in Wisconsin.

5 CHAIR FROEHLICH: Okay. And what do you
6 say then to the Staff's answer where they say that
7 licensing boards are required to defer to the state
8 agency that issued a 316(a) permit. The Commission's
9 decision in Vermont Yankee is the case that they have
10 cited to the Board.

11 MR. LODGE: While I understand that the
12 existing permit continues in effect until there is a
13 further determination by the Wisconsin agency, I would
14 point out that the decision as to whether or not the
15 WPDES permit right now would be extended even through
16 part of the remaining decade of the 60-year license
17 extension has yet to be made.

18 And we have to go on data and
19 circumstances now and the wildlife destruction and
20 habitat destruction continues the pace. I simply
21 don't believe that the Licensing Board is barred from
22 requiring analysis and discussion of this very
23 significant core problem within the NEPA document.

24 CHAIR FROEHLICH: Thank you. Thank you.
25 Let me ask of the Commission Staff, 10 CFR Section

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1 51.71(d) says that the Agency should consider
2 compliance with state and federal standards in its
3 analysis.

4 Is this a consideration that the Agency
5 must apply to the federal and state standards? Is
6 that the same as being bound by those standards, the
7 standards, you know, set or determined by state
8 agencies, for example?

9 MS. YOUNG: Well, with respect to Clean
10 Water Act issues, it is the state agency that has the
11 authority to make those determinations, and what the
12 NRC does based on its regulations is considers the
13 impact of those determinations.

14 CHAIR FROEHLICH: Okay.

15 MS. YOUNG: It doesn't prevent the NRC
16 from considering impacts, but we rely on, you know, as
17 required, that applicants submit information that
18 indicates the status of their compliance with respect
19 to various federal and state permits.

20 And in this case, the best technology
21 alternative determination has already been made by the
22 Wisconsin state permitting agency, and that decision,
23 as we find ourselves at this juncture in the review,
24 is in effect and continues in effect until it is
25 changed by any later action of the state of Wisconsin.

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1 So, when Mr. Lodge argues that you have to
2 take the circumstances based on what they are now, in
3 this specific instance, the circumstances are now that
4 they have the valid permit that the applicant may rely
5 on and the NRC may rely on in determining impacts of
6 this action.

7 CHAIR FROEHLICH: While I have you, Ms.
8 Young, the staff states at page 20 of its answer and
9 makes reference to the Oyster Creek case and the
10 Indian Point cases where the NRC permitted an analysis
11 of cooling towers in a license renewal proceeding. Is
12 that solely because that issue was raised by the state
13 agency?

14 MS. YOUNG: Yes, that's my understanding
15 based on discussions with the staff.

16 CHAIR FROEHLICH: Can that same issue or
17 concern be raised by an individual and it be accepted
18 for hearing?

19 MS. YOUNG: Well, the determination of
20 whether something is acceptable for hearing is yours,
21 Judge Froehlich, and the members of the board, but a
22 petitioner is obviously free to raise any concern that
23 they adequately support.

24 Staff's position in this proceeding is
25 that that concern has not been adequately supporting

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1 by a showing of circumstances where the alternative
2 consideration is reasonable based on either concerns
3 about water quality impacts or state permitting
4 concerns, state permitting agency concerns.

5 CHAIR FROEHLICH: Okay, also in your
6 answer, I noticed in footnote 91 the staff made
7 reference to the Turkey Point case where a contention
8 was admitted claiming that the ER omitted
9 consideration of mechanical draft cooling alternative.
10 Are you familiar with the facts in that case? Was
11 that draft cooling alternative raised by a state
12 agency?

13 MS. YOUNG: I believe there were concerns
14 raised by the state agency with respect to the
15 applicant's compliance with local environmental
16 requirements and permitting requirements.

17 So, there was a foundation there where
18 there were state-initiated issues with respect to the
19 cooling canal system and impacts on ground water, and
20 such that the concern was broader than just being
21 raised by a petitioner, and the staff anticipated
22 considering that in its environmental documents to
23 address the concerns of the state permitting agency.

24 CHAIR FROEHLICH: Okay, thank you, Ms.
25 Young. Judges Trikouros or Arnold, do you have any

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1 questions for any of the parties on contention one?

2 JUDGE ARNOLD: This is Judge Arnold. I do
3 have questions. Let's see, for petitioners, this is
4 not the first license renewal. It's the second
5 license renewal. I'd like to know has anything
6 occurred between the first renewal and this renewal
7 that calls for this evaluation of the impacts of the
8 cooling system now, but didn't call for it at the
9 first license renewal? Has something happened?

10 MR. LODGE: Yes, there has been a power
11 uprating that I believe occurred sometime after the
12 2011 article, but before the 2017 statistics I cited
13 a little while ago, yes, considerably different
14 circumstance.

15 JUDGE ARNOLD: Okay, let me continue on
16 that then and ask NextEra, although the petitioners
17 mentioned the thermal uprates, they were a little bit
18 light on details. Now, can you tell me for each
19 thermal uprate, has there been an evaluation of the
20 effects of increased heat rejection on the
21 environment?

22 MR. LEWIS: Yes, this is Mr. Lewis. There
23 was a report submitted to the Wisconsin permitting
24 agency to evaluate the increased heat, and in fact,
25 the 316a determination that's in the current

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1 environmental report reflects the state's evaluation
2 of that increased thermal impact.

3 That information was also provided to the
4 NRC staff during its review of the uprate and
5 supported its environmental assessment.

6 JUDGE ARNOLD: Thank you. Okay, I'd like
7 to go back to the petitioner. Does the petition
8 provide any new information on the effects of cooling
9 that was not considered by the Wisconsin Department of
10 Natural Resources or by NextEra that demonstrate that
11 the environmental impacts of once-through cooling are
12 greater than small?

13 I'm asking in your petition and documents,
14 you did have some environmental information about
15 entrainment. Is any of that information new or is
16 that just quoted from the NextEra application?

17 MR. LODGE: It's quoted from the NextEra
18 application or supporting documents, yes.

19 JUDGE ARNOLD: Okay, thank you very much.
20 Okay, also for petitioners, on page 24 to 25 of your
21 petition, you note that, quote, NextEra's analysis
22 inappropriately assumes the aquatic community to
23 include all of Lake Michigan, whereas a proper
24 analysis should focus on specific localized site
25 conditions, unquote.

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1 Now, NextEra answers that they did look at
2 localized site conditions. My question is have you
3 provided any evidence of localized fish populations in
4 existence that are either particularly vulnerable or
5 are disproportionately affected by Point Beach, and
6 that have not been addressed by NextEra?

7 MR. LODGE: I don't know what you mean by
8 addressed by NextEra, Your Honor, but I, we -- the
9 data that we have provided is effectively taken from
10 application documents.

11 I might point out that climate change has
12 not been referenced, nor discussed, nor analyzed in
13 any way respecting the thermal pollution and cooling
14 tower need that we are petitioning about.

15 JUDGE ARNOLD: Okay, let me just go to
16 NextEra on this. Your answer on that was that you
17 looked at localized site conditions. Do you know of
18 any fish populations that were excluded from that that
19 could be affected by the cooling system?

20 MR. LEWIS: This is Mr. Lewis. Just to
21 clarify, I think our response refers to the NPDES
22 permitting agency's examination of the thermal impacts
23 and it specifically looked whether there were
24 localized impacts.

25 But, no, the answer is the conclusion is

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1 that the impacts on the fish communities are minimal
2 and there is nothing that prevents a balanced and
3 healthy indigenous population of fish.

4 So, the answer is I'm not aware of any
5 indication that there is some significant localized
6 impact that hasn't been addressed.

7 JUDGE ARNOLD: Okay, thank you very much.
8 Okay, question for petitioners, on page 25 of your
9 petition, you refer to the, quote, changed regulatory
10 view of the need to impose closed-cycle cooling to
11 stop power plant carnage.

12 Now, the two relevant regulatory bodies
13 here are the NRC and the Wisconsin Department of
14 Natural Resources. Can you point to any policy
15 document or regulation of either of these two
16 organizations that recognized this new regulatory
17 view?

18 MR. LODGE: No, Your Honor. The reference
19 there was -- I think we earlier or at some point in
20 our petition discussed how retrofitting cooling towers
21 has basically happened since the passage of the Clean
22 Water Act and the half century since that, roughly
23 half century since that happened, that the changed
24 regulatory view was manifest at Palisades which opened
25 with simply a once-through type of system and

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1 retrofitted cooling tower technology shortly into its
2 operating life.

3 So, there is a changed regulatory view,
4 and actually in some ways you could argue that the NRC
5 itself has acknowledged the circumstances of once-
6 through cooling technology as being very, very
7 destructive.

8 JUDGE ARNOLD: Okay, but neither of the
9 relevant regulatory bodies has come out officially in
10 favor of this new regulatory view as far as I can see.

11 MR. LODGE: If that's a question, we're
12 working on it, Your Honor.

13 JUDGE ARNOLD: Okay, let me ask the NRC
14 staff, if a new permit does come out that makes a
15 different determination on the impacts of once-through
16 cooling, will that new determination be passed onto
17 the NRC?

18 MS. YOUNG: If I understand you correctly,
19 Judge Arnold, you're asking whether the staff has good
20 information as to the results of Wisconsin's
21 permitting review?

22 JUDGE ARNOLD: Yes.

23 MS. YOUNG: Well, under NRC regulations,
24 we would expect the applicant to submit that
25 information to the NRC staff and then we would have

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1 that for our consideration.

2 JUDGE ARNOLD: Okay, so they would have to
3 update their application to include any change in
4 their NPDES permit?

5 MS. YOUNG: That's my understanding.
6 That's correct.

7 JUDGE ARNOLD: Okay, let me ask
8 petitioners, do you have any reason to believe that
9 the next NPDES permit will have a different
10 determination on the effects of once-through cooling?

11 MR. LODGE: That's, of course, a
12 determination that the state agency's going to have to
13 make. I believe that there is some protest or
14 opposition to simply issuing the permit for the status
15 quo from citizens in Wisconsin.

16 Your Honor, I would like to point out,
17 just to supplement my response to your earlier
18 question, that before NEPA once-through systems such
19 as Point Beach's were readily approved, after NEPA and
20 not just the Clean Water Act, the NRC began to require
21 cooling towers as a routine additional feature in
22 licensing of nuclear power plants.

23 So, yes, there is regulatory acceptance on
24 the NRC's part. The regulatory acceptance as to
25 ordering retrofits is certainly not present in any

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1 strong fashion, but the NRC is well acquainted with
2 the need and the rationale for doing this.

3 And just to point out, if the expectation
4 when Point Beach was licensed in the late '60s, early
5 '70s was this is only going to operate for 40 years,
6 so I guess we can kill a lot of wildlife, but it's 40
7 years, but the expectation has changed and now it's
8 twice 40 years that we're looking at and I think that
9 that alone should require within NEPA a very serious
10 inquiry into what we're doing, what the plant will be
11 achieving by way of destructive effects that could be
12 mitigated.

13 JUDGE ARNOLD: Okay, thank you. That's
14 the end of my questions unless, Mr. Lewis, would you
15 like to say anything on that issue?

16 MR. LEWIS: Well, first of all, I'm not
17 aware of NRC after NEPA ever requiring cooling towers.
18 That would be clearly in violation of Section 511
19 which states an agency cannot impose any effluent
20 limitation or other requirement under the Clean Water
21 Act when the NPDES permitting agency has acted.

22 And clearly, for example, the Seabrook
23 proceeding, which a lot of this case law relates to,
24 ended up with, you know, a once-through cooling system
25 relying on the state determination, so I don't know

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1 any basis for Mr. Lodge's statement.

2 Just with respect to Judge Froehlich's
3 question about Turkey Point, as the licensee of Turkey
4 Point, Turkey Point doesn't have 316(a) and 316(b)
5 determinations. It's actually separated from U.S.
6 waters by a sound, I think it's called Card Sound, and
7 therefore it doesn't have the protection of the NRC
8 rule or 511. It's unique and its cooling canal system
9 are unique.

10 CHAIR FROEHLICH: Thank you, Mr. Lewis.
11 I appreciate that clarification. While I have you, I
12 just wanted to follow up on a question that Judge
13 Arnold asked, and that is if there is a change in the
14 water permits issued by the Wisconsin DNR, there is an
15 obligation, I guess, either for the applicant or the
16 state agency to forward that to the NRC and for them
17 to take that into consideration in the preparation of
18 the EIS?

19 MR. LEWIS: I think there's a requirement
20 somewhere that we provide NPDES permits to the NRC,
21 and I think they're routinely provided, but to answer
22 when the license renewal proceeding is, I think we
23 have to inform the NRC staff of material developments
24 and if there was an NRC proceeding and the board and
25 the parties, and I can't imagine NextEra not telling

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1 the NRC staff if, in fact, there was a requirement
2 that was imposed to install cooling towers.

3 That would actually make it like Oyster
4 Creek and Indian Point. I mean, in those cases, it
5 wasn't just that the state was an opponent. It was
6 the state made a determination in those cases that
7 cooling towers would be required to support an
8 extended period of operation.

9 And I believe in Oyster Creek, for
10 example, they were not going to provide the coastal
11 zone management certification which would have
12 precluded the NRC was going forward.

13 So, it was more than just the state was an
14 opponent. The state had actually made affirmative
15 determinations that cooling towers would be required,
16 which, of course, at that junction, the NRC then had
17 to accept the state's determination.

18 CHAIR FROEHLICH: Okay, thank you. Judge
19 Trikouros, do you have any questions for any of the
20 parties in contention one?

21 JUDGE TRIKOUROS: I do. The statement was
22 made by the petitioner that the analysis that was
23 performed in the ER was incomplete and insufficient to
24 support the determination to not go with closed
25 cooling or to not evaluate closed cooling.

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1 There were three reasons provided and one
2 of those was the localized effects that we have
3 already discussed. One of the other ones was the
4 question of considering thermal discharge in isolation
5 and not considering it has a cumulative impact with
6 respect to, I assume we're talking entrainment and
7 impingement effects.

8 I'd just like to ask the petitioner to
9 please explain what that means in terms of the
10 insufficiency in the ER?

11 MR. LODGE: As I understand your question,
12 Your Honor, first of all, we're talking about now 50
13 years of operations and the destruction of habitats
14 and effectively spawning beds closed by thermal
15 pollution as well as the evisceration of some of the
16 fish populations.

17 Climate change is another factor which we
18 believe is a cumulative impact that is not reflected
19 in the discussion about thermal discharge and
20 impingement entrainment, and certainly climate change
21 has some meaningful implications for changes in the
22 water temperature during the 20-year extension period
23 ending in the 2050s.

24 JUDGE TRIKOUROS: But my question was more
25 specific to the insufficiency of the ER analysis that

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1 you mentioned. You're saying that thermal discharge
2 should have been considered cumulatively with the
3 other analyses, and it's clear that there have been --
4 consideration has been given in the ER to all of
5 those.

6 So, for example, I think Section 461 and
7 Section 462, they consider both thermal and also
8 impingement entrainment, so I don't understand why you
9 were saying that there has to be some cumulative
10 aspect to this that's missing. I don't understand
11 what you were saying there.

12 MR. LODGE: Judge Trikouros, could you
13 refer me to a specific page in our intervention
14 petition that you're talking about?

15 JUDGE TRIKOUROS: Yeah, 24 to 25 --

16 MR. LODGE: Okay.

17 JUDGE TRIKOUROS: -- in your petition.

18 MR. LODGE: Thank you. Please just give
19 me one moment here to analyze it.

20 (Pause.)

21 MR. LODGE: Well, once again, Your Honor,
22 I'd simply point out that even the state of
23 Wisconsin's analysis does not appear to encompass any
24 kind of analysis of climate change effects, which
25 resulted in its minimal impact finding.

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1 JUDGE TRIKOUROS: Okay, well, maybe we
2 should just go on. That discussion I just referred
3 you to broke down your question of insufficiency into
4 three parts. One of them I just said was localized
5 effects. The other was what I just mentioned, is
6 considering thermal in isolation. The third was the
7 use of what you refer to as ancient data.

8 And my question to you is why would data,
9 let's say of thermal discharges from other facilities
10 similar in energy release to Point Beach in Lake
11 Michigan, why would that not be relevant and why would
12 you consider that a lacking if you were to use data
13 from other facilities on Lake Michigan?

14 MR. LODGE: We're not saying that it is
15 irrelevant, but it is certainly not -- data from other
16 plants which may be located dozens, even hundreds of
17 miles away may have some pertinence, but it certainly
18 doesn't substitute for up to date local inventorying
19 of fish populations.

20 And I would point out, I mean, even
21 NextEra acknowledges in its pleadings that the
22 composition of the makeup of the fish populations that
23 were being entrained and impinged have changed
24 dramatically from the mid-70s to their most recent
25 surveys.

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1 So, we're talking about certainly almost
2 a self-evident change in nearly half a century, and
3 that's why we believe that the data is dated or it is
4 only parts of years. I think I saw a study of about
5 120 days at one point and perhaps in the last 15 to 20
6 years. I think the 2017 survey was about seven or
7 seven and a half months.

8 JUDGE TRIKOUROS: All right, does the
9 staff have anything to add regarding that question of
10 using other data, even data as old as 1975?

11 MS. YOUNG: Judge Trikouros, I don't
12 believe the petitioner has raised a genuine dispute
13 regarding the adequacy of the data.

14 The operating history of the plant, which
15 they lament that it's been operating for 50 years or
16 a comparable period, is relevant. The past history is
17 relevant and data considered over a long period could
18 identify trends, excuse me, in terms of the
19 information presented.

20 So, the staff doesn't have a concern with
21 respect to that, but the petitioner does have the
22 burden to, you know, demonstrate that the information
23 in the ER is inadequate, and I believe today we're
24 hearing maybe perhaps for the first time, concerns
25 about climate change.

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1 I think if you look at the environmental
2 report, you will see that the cumulative impacts
3 analysis which you appear to be familiar with does
4 consider climate change also.

5 JUDGE TRIKOUROS: Yes, I think the issue
6 of climate change has not come up until now. That was
7 not raised in any of the documentation that I saw
8 anyway or from the petitioner. Does NextEra have
9 anything to say about the use of other data,
10 historical or otherwise?

11 MR. LEWIS: Again, all the data is used,
12 so not just 1975, and again, there was data obtained
13 on entrainment and impingement in 1975, 1976, further
14 data obtained in 2005, 2006, and further data obtained
15 in 2017. So, any suggestion that we're just or the
16 state is just relying on 1975 just is unsupported.

17 Again, the assertion that the data somehow
18 is insufficient needs to be supported by some
19 technical support to demonstrate a genuine material
20 dispute. There is none here. It's simply counsel's
21 characterization. There's no expert opinion or other
22 document that suggests the data is inadequate.

23 And further, that determination about the
24 sufficiency of the data really is a matter for the
25 state to make, and if the state has made 316(a) and

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1 316(b) determinations based on that data, it would be
2 wrong for the NRC to say, you know, we're not going to
3 credit those determinations because we have a
4 different view.

5 I'm pretty sure in one of the cases, and
6 maybe it was the Seabrook, the staff had actually
7 proposed requiring further monitoring after the state
8 had made, I think it was for Seabrook, the finding on
9 the intake structure, and the Commission reversed it,
10 the staff saying no, that's in fact seeking to impose
11 a further requirement, you know, that the state didn't
12 require and is precluded by Section 511.

13 I can't give you the citation, but that's
14 my recollection of the holding by the Commission in
15 probably the last Seabrook case on 511.

16 I do want to also echo what Ms. Young said
17 about climate change not having been raised. It
18 wasn't raised in the context of contention one in any
19 of the pleadings.

20 It's too late to do so, but there's also
21 no factual support or technical support to indicate
22 that climate change is going to have a significant
23 impact on Lake Michigan in a manner that's going to
24 impact fish.

25 You know, that's a technical matter by

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1 itself, and in some cases, climate change causes more
2 precipitation, and in some cases causes less. The
3 temperature may increase in one place and decrease in
4 another, and simply, you know, waving the climate
5 change flag doesn't demonstrate a genuine material
6 dispute.

7 Ms. Young was also correct that climate
8 change is addressed in our ER. For the reference,
9 it's at page 4-55 in the context of aquatic impacts.

10 JUDGE TRIKOUROS: All right, I think we've
11 said enough about it. Let me move onto one more quick
12 question. The staff in their answer at page 21, I
13 believe, and I'm going to read this, it says NRC
14 regulations implementing NEPA instruct the license
15 renewal applicant as well as the staff to consider
16 environmental impacts of alternatives to the proposed
17 action and alternatives available for reducing or
18 avoiding adverse environmental effects.

19 And it goes on to say NRC regulations
20 applicable to subsequent license renewal, however, do
21 not specify the alternative actions or mitigation
22 measures that must be considered, so I don't quite
23 understand that.

24 Are you saying that there's a difference
25 between license renewal requirements and subsequent

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1 license renewal requirements in terms of mitigation,
2 in terms of alternatives?

3 I read it directly, so it does
4 specifically say regulations applicable to subsequent
5 license renewal, however do not specify, so that was
6 confusing to me.

7 MS. YOUNG: Yes, Judge Trikouros. The
8 however there was only to emphasize that the
9 regulations do not specify consideration of a specific
10 alternative, so neither the general regulations or
11 instructions for an applicant specify that a specific
12 alternative be considered, nor the license renewal
13 application.

14 JUDGE TRIKOUROS: All right, so I was
15 getting more out of that than you meant?

16 MS. YOUNG: Yes, perhaps it could have
17 been worded better to convey the staff's position, but
18 that was our attempt to just generally record that
19 there's no specific recommendation as to what
20 alternative was considered. It's going to be to at
21 least on the standard of NEPA.

22 JUDGE TRIKOUROS: Okay, that's the extent
23 of my questions on contention one.

24 CHAIR FROEHLICH: Yeah, petitioner, is the
25 heart of contention two that Point Beach is not in

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1 compliance with General Design Criteria 14, not at the
2 present time and not for the period of extended
3 operation, Mr. Lodge?

4 MR. LODGE: Yes, it is. It's our
5 contention that since we must deal with the
6 circumstances of the present and make projections as
7 to the next 20 years, I think the answer to your
8 question is yes.

9 CHAIR FROEHLICH: Okay, but doesn't the
10 Point Beach application contain, you know, multiple
11 material surveillance programs? I think just by my
12 rough count, there were five specific programs in the
13 application to address things like the reactor coolant
14 boundary pressure issues and other such things going
15 forward?

16 MR. LODGE: Yes, there's surveillance
17 arrangements in place, but not on reactor pressure
18 vessel embrittlement, and that's a huge problem
19 because there's such a policy going back more now than
20 20 years as to the status of Unit 2 in particular,
21 which incidentally is metallurgically somewhat
22 different from the reactor vessel and the internals of
23 Unit 1.

24 CHAIR FROEHLICH: Don't these, I guess,
25 surveillance programs that are referenced in the

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1 subsequent license renewal application at 4.2.1
2 through 4.2.5, don't those surveillance programs
3 address the embrittlement issue that you raise in
4 contention two?

5 MR. LODGE: Well, Your Honor, first of
6 all, I just want to point out something that our
7 expert, Arnie Gundersen, noted in his initial opinion
8 letter, which is that the problem with embrittlement
9 and thermal shock problems is that the utility
10 response -- the plant operators have to respond
11 perfectly in a vanishingly short time period.

12 The utility does not understand any more
13 than we do the embrittlement status. It's optimistic
14 and hypothetical and computer modeled. It hasn't --
15 the data has not been subjected to physical data
16 checks for, again, more than two decades.

17 I mean, it's fine that there's
18 surveillance, but when we're talking about going into
19 the uncharted future of 80 years of operation and
20 this, as I pointed out, all of the other seriously
21 embrittled reactors will be gone by 2024.

22 They will be shut down assuming no
23 disaster between now and 2024, but this one wants to
24 go another 29 years, pardon me, yeah, that's right, 29
25 years.

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1 CHAIR FROEHLICH: You know, the petition
2 alleges that, quote, there are a number of error-prone
3 analytical calculations that we're relied upon. What
4 specific calculations are you referring to there and,
5 you know, why are they error-prone?

6 MR. LODGE: Well, they're error-prone
7 because of the fact that they are computer models and
8 simulations, and they're as good as the underlying
9 assumptions, and the underlying assumptions in 20
10 years have not included any known physical data, so
11 you're building projection upon hypothetical
12 projection and the assumptions are optimistic.

13 And again, I would point out it is
14 troubling. The EPRI disclosures are very troubling
15 for that very reason, that we don't know how over
16 optimistic the pressurized water reactor EPRI software
17 might be.

18 CHAIR FROEHLICH: How do we get, Mr.
19 Lodge, past the argument that's been raised in
20 response to contention two, that this is merely, you
21 know, an attack on the current licensing basis of the
22 plant?

23 MR. LODGE: We have to go with -- the
24 problem is that the current licensing basis is
25 difficult, is troublesome. We're talking about flying

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1 blind right now and talking about building assumptions
2 that it's okay to continue to fly blind for 20 extra
3 years, for in effect 30 years.

4 CHAIR FROEHLICH: Maybe Ms. Leidich can
5 help me on this. Can you explain how the Capsule A
6 material affects the, you know, surveillance programs
7 going forward and the types of analysis that can be
8 made or, you know, or that Capsule A would be used for
9 in the period of extended operation?

10 MS. LEIDICH: Yes, Your Honor. I'm
11 getting a bit of an echo there. Hopefully that stops.

12 I'd just like to first address that this
13 is not actually a computer model. We're using the
14 calculation that's set forth in Reg Guide 1.99,
15 Revision 2, and that's in the rule, specifically in 10
16 CFR 50.61 which has the embrittlement curves that we
17 use.

18 The additional data from the surveillance
19 capsule is used to check what the rule states is the
20 calculation and what's in the reg guide.

21 CHAIR FROEHLICH: Okay, and is there an
22 analysis of pressurized thermal shock in the
23 application? Is that addressed?

24 MS. LEIDICH: Yes, pressurized thermal
25 shock is addressed in the application and we are

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1 screened out under 10 CFR 50.61.

2 CHAIR FROEHLICH: Okay, and would that be
3 the Section 4.2-6 where I'd see that analysis?

4 MS. LEIDICH: It is in a variety of areas,
5 but I believe that is the section. I'm just going to
6 the same spot that you were on.

7 CHAIR FROEHLICH: Okay, thank you.

8 MS. LEIDICH: Yes, that is correct.

9 CHAIR FROEHLICH: Okay, okay, while we're
10 on this, maybe you can tell me, the application of
11 that EPRI report, which is an analysis of
12 embrittlement in BWRs, how, if at all, are the
13 findings of that report applicable to the type of
14 reactor at Point Beach, a pressurized water reactor?

15 MS. LEIDICH: We would say that they're
16 not applicable to contention two. Contention two is
17 specifically about the reactor vessel itself, and the
18 reactor vessel is subject to lower fluids than the
19 reactor internals are subject to.

20 The EPRI document references a potential
21 issue with BWR calculations at a higher fluence value
22 than what the reactor vessel itself is actually
23 subjected to.

24 Additionally, it applies to stainless
25 steel, not carbon steel, which the reactor vessel is

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1 made of carbon steel. It's a computer code. The
2 reactor vessel calculations are based on a reg guide.

3 And in terms of reactor vessel internals,
4 those were not part of petitioner's initial
5 contention. I would say it's untimely to the extent
6 that they're attempting to add them at this late date,
7 especially in terms of the vessel, the bolts that were
8 the issue, has been around for decades, but I really
9 don't see any relevance of the EPRI report to
10 contention two as it exists.

11 CHAIR FROEHLICH: Okay, Mr. Lodge, I'd
12 just like to know if you have any response to Ms.
13 Leidich's answers to my questions before I turn it
14 over to Judges Arnold and Trikouros?

15 MR. LODGE: I believe in our motion to
16 amend that we did address reactor internals. I'm
17 trying to find that right now. If you would proceed,
18 Your Honor, with the other parties, that would be fine
19 if I could come back to that.

20 CHAIR FROEHLICH: Okay, Judge Arnold, do
21 you have any questions of any of the parties on
22 contention two?

23 JUDGE ARNOLD: Yes, I have. Let me start
24 asking this of NextEra. On page seven of petitioner's
25 reply, petitioners state, quote, Point Beach has

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1 admitted that it has inadequate physical samples in
2 the form of metal capsules/coupons to enable
3 metallurgical testing through 80 years of operation,
4 unquote. Do you agree that Point Beach has made this
5 statement?

6 MS. LEIDICH: We do not agree that Point
7 Beach has made that admission. I am not at all sure
8 what petitioners are referring to when they make that
9 statement. In fact, in our answer, we noted that
10 there is a supplemental surveillance capsule with
11 additional material in the reactor that will be tested
12 at the end of life fluence.

13 JUDGE ARNOLD: Okay, thank you. Let me go
14 to petitioners now. Regarding this statement on page
15 seven, you neglected in your reply to cite where
16 NextEra made this admission. Could you tell me where
17 or what is the source of this information?

18 MR. LODGE: The source of the information
19 is that the plant was supposed to operate for 40
20 years. Capsules were installed with that in mind. A
21 couple of samples are sitting in the spent fuel pool
22 that are now well over 20 years in age and are only of
23 historical interest at all.

24 And the one possible remaining sample as
25 to each unit that is left is not planned to be

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1 analyzed for several years to come. I'm thinking I
2 believe I saw 2024 or after, which is certainly not of
3 any relevance to the licensing board making a decision
4 on this contention right now. This is why a hearing
5 is needed.

6 And also just for the record, I have
7 identified in our motion to amend contention two on
8 page five, there is -- we certainly did reference
9 degraded conditions of a reactor's internals subject
10 to high neutron fluence levels. There may be other
11 references, but we did raise the topic in the
12 pleadings.

13 JUDGE ARNOLD: Okay, let me just continue
14 on with the subject I had. So, you're saying that
15 Point Beach has not made the admission it has
16 inadequate physical samples. Rather, it's your
17 interpretation of the current status of samples that
18 they don't have adequate samples, is that correct?

19 MR. LODGE: Yes, our view is that the fact
20 of no scientific data going back so many years speaks
21 for itself and that it is an implicit admission.
22 Inaction in this circumstance, which is rather urgent,
23 is certainly, it's a valid inference that they are
24 admitting that they aren't working from data. They're
25 working from projections.

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1 JUDGE ARNOLD: Okay, let me ask NextEra.
2 Earlier, I heard that you have an aging management
3 program and time-limited aging analysis that addressed
4 vessel embrittlement, and that those TLAAAs and aging
5 management plan program agree with guidance documents.
6 When you say guidance documents, are you specifically
7 referring to the GALL report?

8 MS. LEIDICH: I believe we're referring to
9 Reg Guide 1.99.

10 JUDGE ARNOLD: Okay, also on page 30 of
11 your answer to the petition, you discuss withdrawal of
12 supplement A surveillance capsule. Now, what I got
13 out of that was that your aging management plan
14 removes the supplement A surveillance capsule and
15 tests the end of life fluence, and it does so before
16 the start of the second period of extended operation,
17 is that correct?

18 MS. LEIDICH: Your Honor, I just wanted to
19 note that we're getting feedback that the main phone
20 line had dropped for the public.

21 That said, the supplemental surveillance
22 capsule is currently expected to be tested in
23 approximately 2035 once it reaches the end of life
24 fluence for the subsequent period of operation.

25 JUDGE ARNOLD: Will that be in the current

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1 period of extended operation or the next period?

2 MS. LEIDICH: It will be shortly into the
3 next period of operation.

4 JUDGE ARNOLD: Shortly into, okay. To a
5 large extent, isn't this what petitioners are asking
6 for you to do?

7 MS. LEIDICH: Your Honor, the rule allows
8 us to -- the rule, 10 CFR 50, Appendix H, relies on
9 the capsule testing criteria of ASTM E 185. ASTM E
10 185 only requires that the first four capsules of the
11 reactor be tested, and that a fifth capsule exists in
12 the unit for subsequent testing once it reaches end of
13 life fluence.

14 We're in compliance with the rule right
15 now. To the extent that the petitioners want
16 something different from that, it's a challenge to the
17 NRC rule.

18 JUDGE ARNOLD: Okay, are coupons from
19 other reactor vessels sufficiently representative of
20 the Point Beach vessel steel that their examination
21 would provide useful information?

22 MS. LEIDICH: Tests from other reactors do
23 provide some useful information in terms of Linde 80
24 weld information. However, the surveillance capsule
25 that's currently in Unit 2 actually has the most

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1 limiting material in terms of radiation embrittlement
2 for both units.

3 JUDGE ARNOLD: Okay, that's the end of my
4 questions. Judge Trikouros?

5 CHAIR FROEHLICH: Unmute yourself, Judge
6 Trikouros.

7 JUDGE TRIKOUROS: Yes, I apologize. My
8 router dropped me twice in the last ten or 12 minutes,
9 so I might have or certainly did miss something, but,
10 yes, I do have some questions regarding contention
11 two.

12 I believe while I was gone, you discussed
13 the use of the surveillance capsules, correct,
14 specifically that capsule that's labeled A, is that
15 correct?

16 MS. LEIDICH: That's correct.

17 JUDGE TRIKOUROS: Well, let me just ask --
18 that's correct. This radiation surveillance program
19 that's mentioned in the, I believe it's mentioned in
20 the filings and also in the application, could someone
21 -- let me ask the staff specifically.

22 Could you please say something about that
23 and how it's applicable to the accuracy of the Point
24 Beach embrittlement calculations?

25 MR. WACHUTKA: Your Honor, the staff's

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1 understanding of the application, and the applicant
2 may be able to speak better to that however, is that
3 as I discussed previously, right, this brings in the
4 NRC's regulations as the first level which discuss
5 neutron embrittlement and how it should be covered at
6 all times.

7 Then the guidance documents discuss one
8 way to deal safely with the neutron embrittlement
9 during the subsequent licensing period, and these
10 guidance documents like GALL, as was previously
11 mentioned, and NUREG 21.92 as well, they discuss, you
12 know, different ways that could satisfy the pertinent
13 regulations during the subsequent licensing period,
14 and these discuss things such as withdrawing the
15 capsule and such as considering information from other
16 facilities' capsules.

17 So, really what this goes back to is that
18 this is the basis for everything, and under the
19 contention admissibility requirements, which are
20 strict by design, the burden is on the petitioner to
21 challenge all of this, and the petitioner doesn't
22 challenge any of this.

23 The petitioner doesn't discuss
24 supplemental capsule A until its reply. The
25 petitioner doesn't discuss, you know, how the

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1 applicant is consistent with the guidance documents
2 specific to regulations.

3 So, the NRC staff, the main thing is our
4 understanding is that the information is there. The
5 applicant can speak more to the information, but our
6 understanding is also that the petitioner doesn't
7 point to that information, they just receive that
8 information.

9 JUDGE TRIKOUROS: All right, so the -- I
10 understand. My understanding, and please correct me
11 if this is not right, is that the applicant or NextEra
12 uses what I assume is a Westinghouse computer code
13 called RAPTOR-M3G, which is a neutronic transport
14 model similar to, I guess, for, you know, (audio
15 interference) models, also a cross-section called
16 BUGLE-96, which I assume also was a Westinghouse code.
17 I'm not sure, but I assume that.

18 And they used that to determine the
19 fluence calculations for a bunch of components,
20 including, well, for a bunch of components on the
21 vessel wall and around the vessel wall as well.
22 That's a rather detailed model from what I could see.

23 And that fluence is then used in Reg Guide
24 1.99 and 10 CFR 50.61 to come up with the actual
25 numbers, the temperature numbers, whether or not the

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1 screening criteria were met. Does that sound about
2 right? I'll ask the applicant, or NextEra, I'm sorry.

3 MS. LEIDICH: Yes, that is my
4 understanding of how it works.

5 JUDGE TRIKOUROS: All right, so the
6 connection to the EPRI problem is that stainless steel
7 material testing that they did independently showed
8 that when they applied the calculations to that data,
9 that it was not conservative, and when I say the
10 calculations, what I mean is the, you know, the 50.61
11 part of it is --

12 They have their own 50.61 type analytical
13 procedure apparently in the BWRVIP program which uses
14 then the material property, the material effects of
15 embrittlement and the fluence to make, to basically do
16 the same calculation, but they're doing it on
17 different components than the vessel wall.

18 So, from that point of view, could there
19 be applicability in the sense that the computer codes
20 that are used by NextEra should be validated? Now,
21 I'm assuming since all computer codes of this
22 importance are validated, that they have their own
23 separate verification and validation program. Can you
24 address that in any way?

25 MS. LEIDICH: Sure, so 10 CFR 50.61 only

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1 applies to pressure reactor vessel material. It's not
2 used for stainless steel reactor internals. The
3 stainless steel reactor internal calculation is done
4 by a computer code as the EPRI and letter indicates.

5 The reactor vessel calculation is
6 performed in accordance with an NRC reg guide, Reg
7 Guide 1.99, Rev. 2. It's not a computer code
8 calculation. It's done in terms of the reg guide, and
9 we use the embrittlement curve that's in the rule 10
10 CFR 50.61, so it's a different sort of analysis
11 frankly. They're not really on par with one another.

12 JUDGE TRIKOUROS: Right, and I guess the
13 BWRVIP computer code that's in question is analogous
14 to the 50.61 evaluations for the PWR PTS issue.

15 I mean, I'm just trying to relate the EPRI
16 letter to Point Beach. The fluence calculations are
17 fluence calculations. Wherever you do them in the
18 world, they are fluence calculations, and I don't
19 that's in question.

20 So, the only issue then is the
21 verification and validation of the calculations in
22 50.61. I mean, this is a regulation that's providing
23 equations, and those equations are not up for question
24 --

25 MS. LEIDICH: Yes.

1 JUDGE TRIKOUROS: -- is that correct?

2 MS. LEIDICH: Yeah, so what I was going to
3 say is that 10 CFR 50.61 is not an issue in this
4 proceeding because it's a rule.

5 In terms of the embrittlement trend curves
6 that are in the rule, it's based on all of the
7 surveillance capsule data and test reactor data that
8 they have, but the petitioners would have to seek a
9 waiver to challenge that rule in this proceeding and
10 it's not really fit for challenge here.

11 JUDGE TRIKOUROS: Right, so, and the part
12 of the EPRI BWRVIP program that appears to be in
13 question in that letter is the part that does
14 calculations that are similar. I don't mean exactly
15 the same clearly, but similar to the 50.61 and Reg
16 Guide 1.99 portion of this.

17 It's clear to me that no one is
18 questioning the fluence calculations, so therefore,
19 challenging -- the only thing you could challenge at
20 this point seems to be 50.61 and Reg Guide 1.99, and
21 so what you're saying is you would need a waiver at
22 this point to challenge that?

23 MS. LEIDICH: I think that's a fair
24 characterization of the EPRI report and how it might
25 apply in this situation is that it would be a

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1 challenge to the rule.

2 MR. LEWIS: Judge Trikouros, could I add
3 something? My understanding of the non-conservatism
4 that's identified in the EPRI letter is it relates to
5 the critical stress intensity factor for stainless
6 steel above a certain fluence level, and that, you
7 know, it's the point at which it fractures.

8 The determination was that that critical
9 stress intensity factor was non-conservative at a high
10 level. We're not using that stress intensity factor
11 in any evaluation of any flaw, so it really does have
12 no applicability to Point Beach.

13 JUDGE TRIKOUROS: Right, so agreed. The
14 calculation is totally different (audio interference)
15 but the question would -- I think that the amended
16 contention two is asking is without sufficient
17 verification, there might be an error that only
18 verification and validation would catch.

19 In the case of the EPRI program, they
20 commissioned separate testing in what appears to be a
21 program to validate their calculation, and they found
22 that the calculations were not correct, but in our
23 case, those calculations are a rule, a federal, you
24 know, regulation.

25 MR. LEWIS: Well, and beyond that, there's

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1 the supplemental capsule that gets taken out, you
2 know, very shortly into the period of extended
3 operation and actually tested to validate, and under
4 the PTS rule, you've got to use whichever is more
5 limiting.

6 JUDGE TRIKOUROS: Right, so the use of
7 surveillance capsules provides validation, and the
8 petitioner seems to be questioning that those capsules
9 were not available for the (audio interference) years
10 of operation of the plant, and the reply came back or
11 the response came back that, in fact, there is a
12 capsule that has equivalent full power years of
13 fluence that's equivalent to the end of the extended
14 life period, is that correct?

15 MR. LEWIS: Yes.

16 JUDGE TRIKOUROS: All right, thank you.
17 Now, for the petitioner, I have a question regarding
18 the statement that I believe was made by Mr.
19 Gundersen. It's on page 36 of the petition.

20 It says the NRC's approach to increasing
21 neutron embrittlement has been to develop new operator
22 administrative controls, and then it goes on to say
23 that the operator has to implement those controls
24 perfectly or the reactor vessel will experience
25 cracking.

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1 I don't understand what these new operator
2 administrative controls are. Can someone from the --
3 Mr. Lodge, can you help me with that?

4 MR. LODGE: Well, Your Honor, I will
5 answer as best I can. I want to point out we're
6 trying the contention here. We're actually haggling
7 over evidence or haggling over the lack of evidence
8 where we believe we've certainly articulated
9 sufficient facts and law to warrant the contention
10 being admitted for trial, at which point we could
11 provide expert explanation and articulation on that
12 point.

13 My answer is that reactor operators are
14 taught, among other things, I'm sure, to try to spot
15 and anticipate operational problems and to react when
16 they see a certain combination of temperature, and
17 pressure, and other readings or indicators.

18 And so this evolves with the increasingly
19 suspected or verified embrittlement problems, the
20 pressurized thermal shock. I hope and suspect that
21 there is operator retraining of some sort, operator
22 preparation of some sort.

23 So, I would submit that our expert's
24 opinion that the operators have to respond perfectly
25 is valid because of the inevitable aging metallurgical

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1 embrittlement that is occurring that no one can
2 genuinely dispute.

3 So, you end up having to rely with analog
4 systems and human responsiveness. You have to hope
5 that that is enough.

6 JUDGE TRIKOUROS: All right, let me just
7 elaborate on this a little bit. It says in the
8 petition that these administrative controls require
9 the reactor operators to raise the reactor's
10 temperature before increasing the pressure, and that's
11 true.

12 That's true of a boiling water reactor.
13 That's true of a pressurized water reactor. In the
14 startup procedures, you have to do that, and the
15 operator does it.

16 I don't understand what's new about that.
17 They've been doing that since a long time. Since as
18 long as there have been reactors, they've been doing
19 that.

20 In addition, there are pressure
21 temperature limits on the pressurized water reactor
22 side that have to be adhered to, and when
23 embrittlement gets worse, those pressure temperature
24 limits change, as does the startup procedure nil
25 ductility temperature.

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1 So, but the operator has and always will,
2 until we operate nuclear reactors with computers that
3 is, have the responsibility to follow those
4 requirements.

5 So, I don't see anything new and I'm just
6 trying to understand if I'm missing something here,
7 that the NRC implements something new administratively
8 to overcome a technical problem, and I don't see it
9 and I wanted to get some clarification on that.
10 That's all.

11 MR. LODGE: Well, Your Honor, this is
12 Terry Lodge. The nil ductility is getting more
13 confining as the reactor ages. What's new here is
14 that embrittlement and pressurized thermal shock risks
15 are becoming more and more heightened, and such that
16 errors, human errors are less forgiving.

17 It's not just a matter of the startup
18 procedures. You need to be able to follow up in the
19 event of an accident or an anticipatory set of data
20 that present themselves and suggest an accident may be
21 nearing.

22 JUDGE TRIKOUROS: All right, thank you
23 very much. I think that would be sufficient for me.
24 I have no more questions on contention two.

25 JUDGE ARNOLD: Judge Froehlich, you're

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1 muted.

2 CHAIR FROEHLICH: I was just going to ask
3 you, Judge Arnold, if you had any follow-up questions
4 or if we can move on to Contention 3.

5 JUDGE ARNOLD: I'm ready to move on.

6 CHAIR FROEHLICH: Okay. Okay, then.

7 So, Mr. Lodge, is there a statutory or a
8 regulatory requirement that the full potential for
9 renewable energy sources be evaluated in an ER?

10 MR. LODGE: No. However, there are --
11 there are regulatory requirements about an honest and
12 hard look at alternatives be manifested in the ER and
13 ultimately the NEPA document from which it might be
14 derived.

15 CHAIR FROEHLICH: And is there any
16 specific number of alternatives that must be evaluated
17 in an ER?

18 MR. LODGE: No. The -- I would say that
19 the guardrail there is reasonableness, and we believe,
20 as -- as Your Honor ruled in 2011, that serious
21 consideration of the commercial viability of
22 photovoltaic solar and, of course, other alternatives
23 is here. And it's been here for quite a while and is
24 -- photovoltaic solar, as we amply demonstrated in our
25 petition, is making serious inroads between now and

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1 2030, now and 2033, the expiration dates of the -- the
2 current license extension for Point Beach.

3 So we believe that it's utterly reasonable
4 for a serious commercial technology that has -- has
5 really tough implications for aging dinosaur baseload
6 plants -- that there is -- there's certainly something
7 that has to be dealt with in the NEPA document.

8 CHAIR FROEHLICH: With that in mind, can
9 you reconcile, I guess, that approach with what the
10 Commission said in the Davis -- what the Commission
11 said in the Davis-Besse license renewal proceeding?

12 MR. LODGE: Yes.

13 CHAIR FROEHLICH: Okay.

14 MR. LODGE: First of all, it's ten years
15 later. And, as I indicated, the -- the very
16 unfortunate aspect of the Commission's ruling was that
17 they actually conducted something tantamount to a
18 trial on the merit. They made a determination that in
19 -- at this point in time, the -- the commercial
20 viability of -- of the alternatives as a substitute
21 for baseload central-fired power is not shown.

22 We believe -- and would have believed at
23 the time, I -- I recall -- that there absolutely
24 should be a hearing for scientific and other
25 associated technical information to come before the --

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1 the Licensing Board.

2 CHAIR FROEHLICH: The Commission in -- in
3 Davis-Besse was looking towards the commercial
4 viability and, I guess, the existence of alternative
5 use for baseload power. And now, as -- as you state,
6 we're -- we're a few years down the road. What is the
7 status, I guess, of a solar proposal such as you
8 suggest in Contention 3? Does -- does -- does that
9 exist anywhere in -- in the world for baseload power?

10 MR. LODGE: I -- if you're talking about
11 is there a direct -- is there an aggregation of solar
12 photovoltaic cells in the immediate vicinity of a
13 power plant that are deemed to be a substitute for
14 baseload? I can't cite something really specific like
15 that.

16 But I can tell you that the -- that the
17 evolution that is happening to regional and national
18 grids, especially in the United States, is becoming a
19 way of supplanting local or regional baseload plants.
20 The -- the idea is adaptability and resilience, that
21 when there is a -- a relatively fast-emerging demand
22 in a particular region, it is far easier and less
23 dangerous to increase the amount of the dispersion of
24 photovoltaic or wind or even conservation measures.

25 And -- and the adaptability, particularly

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1 of photovoltaic, is remarkable and happening. I -- I
2 -- I listened to the rebuttals about all of the
3 impossibility of land use and finding enough space and
4 all that for solar photovoltaic, and yet we're not
5 analyzing it and talking about it meaningfully in
6 terms of installing renewables close to the source
7 where the power is used, talking about converting
8 parking lots into solar-collecting asphalt, or roofs
9 or brownfields in cities. But the -- the -- or using
10 rights of way where there are existing power lines
11 which consume hundreds of acres.

12 So I guess what I'm saying is -- is that,
13 no, I can't point to a specific region that had been
14 identified as a photovoltaic substitute for a power
15 plant. But I think that the larger picture suggests
16 that it's happening, and it's happening very rapidly,
17 Duane Arnold being a really good example. There's --
18 there's more capacity planned photovoltaically than
19 Duane Arnold provided.

20 CHAIR FROEHLICH: Okay. Let me ask --
21 sort of follow up with your answer to -- to the
22 Licensee. Why was a proposal like the one suggested
23 by the Petitioner here not considered in -- in -- in
24 the ER?

25 MS. LEIDICH: I think in terms of the

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1 proposal that Petitioners have set forth, on its face,
2 as a practical matter, it's simply difficult to find
3 the land for it. Right now, Petitioner is espousing
4 the possibility of putting it in rights of way, in
5 parking lots, but that's a possibility; it's a
6 hypothetical scenario. That doesn't mean that it's a
7 practical alternative that can be implemented in time
8 to replace these units at the scale necessary for
9 baseline production.

10 CHAIR FROEHLICH: So your bottom line is
11 that the proposal is not a reasonable alternative.
12 It's not a viable alternative. Is -- is that correct?

13 MS. LEIDICH: I think -- yes, and I think
14 as a practical matter that it could not be implemented
15 in time to replace these units as a reasonable
16 alternative to relicensing.

17 CHAIR FROEHLICH: While we're talking
18 about alternatives, then, the ER considers an
19 alternative which, if I understand it, is stringing
20 together 21 SMRs to replace the output of -- of the
21 Point Beach facility. Is that -- is that correct?

22 MS. LEIDICH: I'd have to go back and
23 look. I don't know. I didn't specifically look at
24 that alternative.

25 CHAIR FROEHLICH: Well, I mean, this --

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1 this -- this alternative, I mean, if I -- if I did
2 read it correctly, involved stringing together 21 SMRs
3 to -- and this was one that was -- was considered in
4 the ER.

5 Mr. Lewis, is that -- is that correct? Is
6 that the alternative that was analyzed?

7 MR. LEWIS: I -- I can't remember. It's
8 more than one module. I don't know if it's 21. It's
9 one plant, though. It's not 65 square miles of land,
10 which was the basis for eliminating the photovoltaic,
11 plus storage contention. That -- that scenario was
12 looked at, and it was just -- the land use was
13 prohibited. I don't think you have that same issue
14 with the SMR.

15 But I -- but I -- I don't recall off the
16 top of my head what the land acreage was, and I do
17 think it was one -- one plant and not 61 plants or
18 however many you said.

19 CHAIR FROEHLICH: I see. And this -- this
20 alternative that -- in the ER involving SMRs, does --
21 does such a -- an alternative currently exist? I
22 mean, is -- is this commercially viable? At what
23 stage of development is this alternative?

24 MS. LEIDICH: I think that, you know, the
25 Applicant can look at alternatives that it chooses to

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1 look at to some extent. What we're here to -- to
2 discuss is the alternative that was set forth by
3 Petitioners and whether they have done enough to
4 establish the alternatives that they want discussed as
5 a practical matter, and B, a reasonable alternative to
6 relicensing.

7 MR. LEWIS: I -- I'm just thinking on the
8 SMR. I believe NuScale's SMR has the design
9 certification or is going into the rulemaking for a
10 design certification. So it's fairly advanced, and
11 there have been ESPs that have looked at small modular
12 reactors.

13 If you eliminated that alternative from
14 consideration, that wouldn't affect, you know, the
15 determination of whether Point Beach's renewal is
16 within the range of reasonable alternatives. So you
17 could, but it's an alternative that people are looking
18 at.

19 Again, on the photovoltaic alternative,
20 photovoltaic power coupled with battery storage, you
21 know, the issue there was not, you know, can you use
22 photovoltaics? I mean, clearly you can. The issue
23 was, you know, is the land use in order to try and
24 replace the sort of capacity for -- for the -- like
25 Point Beach, reasonable -- and again, it was, by

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1 Petitioner's own expert's admission, some 65 square
2 miles. I think it's 44,000 acres.

3 And when you start looking at -- that's
4 the predicate for Petitioner's contention. That is
5 the land use that they say is reasonable. And they
6 say, well, don't worry about the land use because you
7 can just put it on rooftops or put it on the sensitive
8 farmland.

9 So the issue there defaults to, you know,
10 is it really reasonable to assume that, you know, this
11 is a -- a -- an alternative that's feasible because
12 you could, you know, just put it on 87 percent of the
13 households in the state or on, you know, umpty-
14 thousand commercial buildings? And we have the
15 numbers in our answer.

16 That's why this contention is -- is not
17 reasonable. And, you know, that predicate's not
18 established by the Petitioner.

19 CHAIR FROEHLICH: Thank you, Mr. Lewis.
20 I was only concerned to address the issues that the
21 Commission raised in the Davis-Besse case.

22 (Simultaneous speaking.)

23 CHAIR FROEHLICH: I say I was only asking
24 and trying to follow up on alternatives that are
25 considered in light of what the Commission said in the

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1 Davis-Besse case where we are to look at the --
2 whether these alternatives exist anywhere in the
3 world, whether they're capable of providing, you know,
4 baseload power, or are they merely theoretical models?
5 And I was -- I was, I guess, concerned and wondering
6 if the alternative that was considered in the ER is
7 more than a theoretical model.

8 MR. LEWIS: I think the standard that the
9 Commission set forth -- and it may not have been in --
10 in Davis-Besse. It may have been in the Seabrook case
11 I'm more familiar with, but it's alternatives that,
12 you know, exist now or will in the near future and
13 obviously involves, you know, some judgment.

14 CHAIR FROEHLICH: Okay. Okay.

15 Judge Arnold or Judge Trikouros, do you
16 have questions on Contention 3?

17 JUDGE ARNOLD: Yes, I have.

18 MR. LODGE: Judge Froehlich -- Judge
19 Froehlich -- pardon me. This is Terry Lodge. I -- I
20 can briefly reply to the things that were just said.

21 CHAIR FROEHLICH: Absolutely. Please.

22 Judge Arnold, just hold for one moment.

23 Go ahead, Mr. Lodge.

24 MR. LODGE: First of all, I want to point
25 out that Dr. Mark Cooper, our economics expert who is

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1 a longtime analyst of the invasion of renewables into
2 the commercial utility market, has stated
3 unequivocally in his expert opinion and unrebutted
4 that, absolutely, there is more than ample time
5 between now and 2030 and 2033, i.e. the end of the 60-
6 year operating period for Point Beach, to see
7 photovoltaic take over the role of central --
8 centralized baseload kinds of power.

9 Also, what -- what is so ironic here is
10 that in Manatee County, Florida, NextEra is doing what
11 we're talking about. They have the largest battery
12 backup storage system, apparently, so far commercially
13 on the planet. They are developing a direct baseload-
14 type competition to what we're talking about with
15 conventional, aging, dangerous nuclear power plants.

16 And I -- I keep thinking of all the
17 rooftops downwind of Point Beach if the reactor
18 operators don't get it right, if there's a -- a
19 pressurized thermal shock event.

20 Thank you.

21 CHAIR FROEHLICH: Thank you.

22 Judge Arnold, please proceed.

23 JUDGE ARNOLD: Well, I -- I want to thank
24 you for that excellent lead-in for my first question.
25 This is for Petitioners.

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1 On page 50 of your Petitioner -- petition,
2 you cite your expert, Dr. Cooper, as saying, quote,
3 lead time necessary to ensure the operation of the
4 21st century system is more than adequate between now
5 and 2030 for Point Beach Unit 1 and 2033 for Point
6 Beach Unit 2.

7 And you cite this from page 5 of Dr.
8 Cooper's declaration. I wanted to learn about that,
9 so I went to page 5 of Dr. Cooper's declaration, and
10 I found that what it says at that point is, quote, in
11 Section 4, I conclude that lead time necessary to
12 ensure the operation of a 21st century system is more
13 than adequate between now and 2030 for Point Beach
14 Unit 1 and 2033 for Point Beach Unit 2.

15 That being what you cited was a summary of
16 what he says is included in Section 4 of his -- of his
17 declaration. I went to Section 4 of that declaration,
18 and I found absolutely no mention of lead time or
19 nothing that would support his conclusion that there
20 is adequate lead time.

21 So, evidently, if that information exists,
22 it's somewhere else in -- in what has been provided.
23 Do you know where Dr. Cooper actually provides support
24 for his statement that there is adequate lead time?

25 MR. LODGE: Your Honor, I would request

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1 having a few minutes to reconcile that and respond to
2 you.

3 JUDGE ARNOLD: Well, could we take maybe
4 a short break?

5 MR. LODGE: That would be fine.

6 CHAIR FROEHLICH: Sure. This would be a
7 good time to take -- take a short break to let Mr.
8 Lodge peruse through the pleadings and declarations.
9 Would ten minutes sound about right to all? Ten-
10 minute break --

11 (Simultaneous speaking.)

12 CHAIR FROEHLICH: Okay. Why don't -- why
13 don't we come back at 1:15? And we'll pick up
14 questioning on Contention 3. Okay. We'll be back at
15 1:15.

16 (Whereupon, the above-entitled matter went
17 off the record at 1:03 p.m. and resumed at 1:16 p.m.)

18 CHAIR FROEHLICH: Okay. Mr. Lodge, if
19 you're ready and if all parties and Judges Arnold and
20 Trikouros are ready, let us resume. I think there was
21 a question pending from Judge Arnold.

22 And, Mr. Lodge, you were -- you were going
23 to try to come up with an answer for him.

24 MR. LODGE: Yes, and thank you for -- for
25 indulging my request for time.

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1 In reviewing Dr. Cooper's report and
2 Section 4 of it, I agree that he does not repeat that
3 conclusion. However, I would point to page 20 of his
4 report. First of all, Dr. Cooper made the observation
5 that Point Beach is afflicted with baseload myopia,
6 and he talks about that concept considerably, and he
7 -- and fleshes it out.

8 And at page 20, the concluding paragraph
9 of his observation is that I include these lengthy
10 exhibits, and those exhibits are 1 through -- well, 2
11 through 11, that talk about the enormous growth that
12 has -- historical growth projections and cost
13 differential and the increasing cheapness of
14 photovoltaic and photovoltaic as a source.

15 But anyway, he says, I include these
16 lengthy exhibits not only to show how much thinking
17 has gone into deployment of the new system but to
18 underscore a simple fact: the Point Beach Licensee
19 refused to consider these remarkable developments
20 because of its baseload myopia, which is unacceptable.

21 If it wants to challenge the ability of
22 the alternative system to meet need on a reliable
23 basis, it can do so, although experience shows it will
24 fail. It simply cannot ignore these developments, nor
25 should the regulators at federal and state levels.

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1 That conclusion is backed up both
2 scientifically and practically by Dr. Compaan's report
3 and by Mr. Gundersen's report that, effectively, solar
4 photovoltaic is here, expanding very rapidly, and is
5 here to stay, and in fact here to predominate.

6 And -- and -- and we're talking -- may it
7 please the Board, we're talking in 2021, not 2011
8 anymore. There can be no serious doubt that
9 photovoltaic is replacing baseload plants. They are
10 closing. Point Beach will collapse as an economic
11 enterprise when the purchase power agreement goes
12 away. There won't be a lot of discussion by NextEra
13 about, oh my God, what will we do without the power?

14 It will simply disappear. Things are --
15 the utility system is living in a -- in a -- some sort
16 of pretend world where economics don't matter. But
17 they certainly matter to their investors, and they
18 certainly matter to the public that in the case of
19 Wisconsin is being overcharged in the next decade by
20 at least \$5 billion, according to our unrebutted
21 expert opinion.

22 Thank you.

23 JUDGE ARNOLD: Okay. Thank you.

24 My next question is for NextEra. On page
25 36 of your answer, you cite to the ER as saying,

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1 quote, solar with energy storage was not considered
2 further as a discrete alternative due to the acreage
3 requirements.

4 Now, that seems to be a somewhat
5 conclusionary statement just going from this amount of
6 acres to saying that's not reasonable. Does NextEra
7 have sufficient expertise in solar power to make that
8 conclusion authoritatively?

9 MS. LEIDICH: I would say that out of all
10 of the utilities that are out there, NextEra perhaps
11 has the most expertise to make that conclusion, as has
12 been referenced by the Petitioners here. You know,
13 they have multiple solar facilities, and they have
14 significantly large solar facilities, some of the
15 largest in the United States.

16 I'm just going to note briefly also that
17 the ER references three reasons that solar is
18 rejected. The reason that we speak to acreage here is
19 because the analysis by Compaan attempts to address
20 the first two reasons but sort of only summarily
21 dismisses the third reason. So we focused on the
22 third reason for our response to the contention, but
23 there are three actual reasons that are -- it was
24 rejected.

25 JUDGE ARNOLD: Okay. Let's see. Chapter

1 -- oops. Somebody's echoing. Okay. Maybe it's gone.

2 Chapter 6 of the Environmental Report is
3 titled Summary of License Renewal Impacts. And I
4 looked through that, and I came to -- I -- I didn't
5 find any impact that was greater than small. So would
6 it be correct to overall summarize the environmental
7 impacts of continued operation of Point Beach as being
8 no greater than small?

9 MS. LEIDICH: I think that would be a fair
10 assertion. I haven't looked back at the table, the
11 summary table that's included in the report itself.

12 JUDGE ARNOLD: Well, I can tell you
13 there's nothing larger than small in there. So it
14 seems to me reasonable that --

15 MS. LEIDICH: Yes.

16 JUDGE ARNOLD: -- it's small. And on page
17 78 of the Environment Report, the land-use impacts of
18 a solar facility are characterized as moderate to
19 large. Is that correct?

20 MS. LEIDICH: Yes, That is correct.

21 JUDGE ARNOLD: Okay. So even if solar
22 with an energy storage was considered to be a
23 reasonable alternative, have you not already done
24 sufficient evaluation of the solar alternative to say
25 it is not preferable to -- environmentally preferable

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1 to continued operation of Point Beach?

2 MS. LEIDICH: Can you repeat the question?

3 I think I misheard you.

4 JUDGE ARNOLD: Okay. You've said that
5 solar impact on land use is moderate to large, whereas
6 continued operation of Point Beach is small. Isn't
7 that enough to conclude that the environmental impacts
8 of solar are greater than the environmental impacts of
9 continued operation of Point Beach?

10 MS. LEIDICH: Yes, that's correct. I did
11 actually mishear you the first time, so I'm glad you
12 repeated the question. But yes. I think we would
13 state that the environmental impacts of solar have a
14 potential to be quite significant, given the amount of
15 land that would be required to be used, and that
16 that's greater than the license renewal of Point
17 Beach.

18 JUDGE ARNOLD: Okay. Now, let's see. One
19 last question for Petitioners.

20 I've looked through the contention, and
21 I've looked to see whether you assert that the
22 environmental impacts of license renewal would be
23 greater than small. And I haven't found any such
24 assertion, and I haven't found any assertion that the
25 land-use impacts of solar would be less than moderate.

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1 So I don't see that you've actually challenged
2 anywhere the -- the comparison of the environmental
3 impacts of Point Beach versus solar.

4 Do you make any such explicit challenge
5 within your contention, and did I just miss it?

6 MR. LODGE: Yes, Your Honor. We did make
7 a very explicit contention in our reply memorandum,
8 and I'm trying to give you the exact page numbers.
9 Our reply in support of Contention 3 begins at page 13
10 and runs through 21 or 22.

11 In that, we talk -- first of all -- first
12 of all, I want to point out, once again, you're
13 calling upon us to litigate this contention here and
14 now, put all of our evidentiary cards on the table,
15 and assume the veracity of unnamed experts cited in a
16 vague way by NextEra, and you make a decision as to
17 admissibility based on whether we could win the trial.
18 And that I have to object to, Your Honor, as being an
19 inappropriate test of the petition.

20 But I'd like to point out that the -- the
21 -- NextEra exaggerates their -- the claimed problems
22 with industrial photovoltaic in favor of their small
23 findings. The -- the -- the fact that there may be a
24 moderate to large environmental impact is a judgment
25 determination when you don't have to realistically

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1 delve into the possibilities of adapting lots of
2 unused land, lots of unused structures, rooftops and
3 whatnot, to photovoltaic when you don't have to
4 actually develop evidence that supports your blanket
5 conclusion that thousands of acres and impossible --
6 impossible problems will keep this from being
7 practical when, in fact -- when, in fact, NextEra
8 itself is proving the -- the coming era is here.

9 So the fact that, for instance, they call
10 the radiological effects of storing waste on-site
11 during the extended period a small impact is, yes,
12 technically accurate. But during the 20-year
13 extension period, they will be generating more high-
14 level radioactive waste, spent nuclear fuel, and low-
15 level radioactive waste, all of which are problems,
16 and all of which the NRC concedes post-closure are
17 large problems.

18 So they're exaggerating their advantages
19 and exaggerating the disadvantages of consideration of
20 photovoltaic. You're asking us to prove that today.
21 I ask that the Licensing Board please review and
22 consider the arguments we make about small on pages 13
23 to 21 or 22 of our reply.

24 JUDGE ARNOLD: Okay. First off, I haven't
25 asked you to prove anything. I'm asking you to point

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1 out where in your contention you make the challenge,
2 and apparently you didn't. You didn't -- you instead
3 refer to your reply, in which you can't make new
4 challenges or provide new information.

5 So I'm going to take it that your petition
6 does not challenge the small environmental impact of
7 Point Beach and does not challenge the medium to large
8 impact of solar, unless you can point me to something
9 in the petition that states otherwise.

10 MR. LODGE: With respect -- with respect,
11 Your Honor, there was no motion to strike any aspect
12 of our reply memorandum. That's because we were
13 fairly responding to points that were made in the
14 answers. And so I believe the -- the Licensing Board
15 is obliged to consider our reply arguments as simply
16 legitimate expansion -- amplification, I believe is
17 the term -- of points that we had made in our initial
18 petition.

19 So -- and yes, I would also point out that
20 we do have some problems, which I -- again, I may have
21 to take a few minutes, but I believe that we did
22 address the -- the small references in our initial
23 decision. But in any event, I believe that they're
24 legalistically and adequately responded to in the
25 reply.

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1 JUDGE ARNOLD: Thank you. I have no more
2 questions.

3 CHAIR FROEHLICH: Judge Trikouros, do you
4 have any questions for -- for any of the parties on
5 Contention 3?

6 JUDGE TRIKOUROS: Yes. I have a few.
7 First of all, this word, baseload, gets used a lot.
8 It's (audio interference) in order to be viable. So
9 how would -- how would baseload be defined? And this
10 if for -- for any and all of you.

11 (Simultaneous speaking.)

12 JUDGE TRIKOUROS: Let me -- let me ask --
13 let me ask NextEra -- let me ask NextEra first.

14 MS. LEIDICH: Baseload is defined, in my
15 interpretation of it, as power that's available at all
16 times. It's not cyclical. Let's put it that way.
17 Traditional power -- solar power, obviously, is
18 available during the day. It's not available at
19 night.

20 Baseload power would be power that is
21 available throughout the day without a cyclical dip in
22 terms of the time of day that you're dealing with. At
23 least in terms of solar power, I think that's an
24 accurate characterization of how we're using baseload.

25 JUDGE TRIKOUROS: All right. Well, let me

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1 come back to that. Let me -- is there someone else
2 who wants to define that for me?

3 (Pause.)

4 JUDGE TRIKOUROS: Hearing none --

5 MR. LEWIS: This is Mr. Lewis.

6 (Simultaneous speaking.)

7 MR. LEWIS: Not only is it cyclical, but
8 it's also a large block of highly reliable power
9 that's not only not intermittent, you know, but is
10 available, you know, over long periods of time. So,
11 you know, nuclear plants operate over 18- or 24-month
12 refueling cycles, and they operate at a highly -- a
13 very high capacity factor, you know, often over 90
14 percent.

15 And it's that large block of continuing
16 operating, highly reliable power. That's not precise,
17 but that's the concept.

18 JUDGE TRIKOUROS: Would a solar PV
19 facility -- the baseload, in replacing the power of
20 Point Beach, would it have to provide a capacity
21 factor of 90 percent, something equivalent to Point
22 Beach? And I ask that question --

23 (Simultaneous speaking.)

24 MR. LEWIS: -- a high capacity factor.
25 Therefore, it would have to be coupled with a storage

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1 mechanism that in turn is able to provide, you know,
2 with the -- with the solar -- with the charging from
3 solar power, continuous power. And I guess I should
4 add that the facility that is -- is being built by
5 Florida in Florida has batteries that are really only
6 for, like, peaking power. That facility is not being
7 built as -- as baseload energy storage.

8 JUDGE TRIKOUROS: Yeah. That -- that, in
9 fact, is my problem. The -- I hear terminology that
10 seems conflicting to me. For example, solar can only
11 provide baseload power if it's coupled with energy
12 storage. And then I look at any data that's available
13 in this -- in this case with respect to the battery
14 backup, and I -- and I don't see numbers that make any
15 sense at all with respect to baseload.

16 For example, Dr. Compaan -- paragraph 18
17 of his declaration, he refers to a 250-megawatt solar
18 field that would have a surge capacity of 300 megawatt
19 hours, which means that it only has enough batteries
20 to run for one hour.

21 MR. LEWIS: That's correct.

22 JUDGE TRIKOUROS: I don't see how that
23 takes you from baseload to non-baseload or -- or from
24 non-baseload to baseload. It -- it -- one hour of the
25 battery doesn't seem to make any sense at all in that

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1 regard. And that seems to be what I see wherever I
2 look.

3 Does anyone wish to comment on -- on that,
4 that the -- that the assumption of battery backup to
5 solar makes it baseload?

6 MR. LODGE: Yes, the Petitioners would
7 like to respond, Your Honor.

8 JUDGE TRIKOUROS: All right. Please.

9 (Simultaneous speaking.)

10 MR. LODGE: -- number 1, you may recall
11 from the 2011 Davis-Besse hearings one of the
12 components of our alternatives exposition was the use
13 of compressed air storage. Specifically, FirstEnergy
14 owned a large cavern complex near Akron, Ohio. And
15 the -- the idea that they had conjectured was that in
16 times of overnight power production, they would
17 essentially compress air and then release it to turn
18 turbines during peaking times of day.

19 You could certainly use the excess power
20 generated by photovoltaic, which, as Dr. Cooper
21 pointed out, usually coincides pretty closely with
22 peak power needs during daylight hours, as a battery
23 storage type thing. There are other battery storage
24 types of mechanisms, such as pumped hydro in Michigan
25 that's used by Consumers Energy.

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1 But -- but, moreover, one of the things
2 Dr. Cooper pointed out, and -- and it was exculpated
3 somewhat by Dr. Compaan's report, is that we're
4 talking about scalable, readily resilient kinds of
5 systems where if you need incrementally more power,
6 you install more photovoltaic collectors and -- and/or
7 wind or whatever.

8 But the point is that renewables don't
9 require a ten-year licensing and construction period,
10 et cetera, et cetera, all of the things that I'm sure
11 the Panel already knows. So the point is -- is that
12 if you wanted to be more than a peaking battery
13 backup, NextEra, undoubtedly they will expand into
14 baseload power.

15 NextEra is actually showing the Licensing
16 Board what is -- what is possible while at the same
17 time claiming it's impossible in Wisconsin, and that's
18 because it's impossible because of NextEra's
19 investment. This is their cash cow.

20 JUDGE TRIKOUROS: The -- I think the
21 concern is more with respect to overnight hours and --
22 and also cloudy days, and the -- there's -- I -- I
23 couldn't find any invitation in the -- in the
24 pleadings for the declarations regarding how much
25 battery backup we're talking about in -- in order to

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1 achieve a given baseload number.

2 So, you know, for example, if I remember
3 correctly from Davis-Besse, the interconnected wind
4 farms were capable of producing 47 percent baseload
5 capacity, which meant for 47 percent of the time, they
6 provided continuous power.

7 That does not seem to be the case with
8 solar in the sense that its capacity factor without
9 backup is 30 percent and therefore would require
10 significant backup to -- to get up to numbers like 50
11 percent. And the cost of that is not addressed at
12 all.

13 So I'm -- I'm just -- I'm just curious how
14 the solar -- I mean it is a requirement of these solar
15 plants that they provide baseload power. And I -- I'm
16 confused by what that means exactly. All right.

17 MR. JONES: Your Honor, Travis Jones.
18 Before we -- we move on, I just wanted to point out I
19 think your original question was whether there was any
20 sort of guidance documents that reference the -- the
21 baseload power. And in the GEIS Section 2.3 on page
22 2-18, that does speak to baseload power.

23 They're -- the -- given a specific
24 definition, but they speak to it in decent detail if
25 you wanted a reference.

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1 (Simultaneous speaking.)

2 JUDGE TRIKOUROS: What -- what document
3 are you referring to? I'm sorry. I missed what you
4 said.

5 MR. JONES: The -- the GEIS, the final
6 report.

7 JUDGE TRIKOUROS: Oh, in the GEIS. Okay.

8 MR. JONES: New Reg 14 -- New Reg
9 14-37, Volume 1, Revision 1.

10 JUDGE TRIKOUROS: Okay.

11 MR. JONES: And it's on page 2-18.

12 JUDGE TRIKOUROS: All right. I'll
13 certainly look at that. Thank you.

14 When -- when the calculation of the
15 acreage was made, it was originally 6,780 acres based
16 on a metric that was provided of a -- a -- what was it
17 -- 5.2 acres per megawatt, I think. Anyway, the --
18 Dr. Compaan looked at that with respect to the -- the
19 actual capacity factor of solar, and he concluded that
20 you would need 42,000 acres.

21 Now, can anyone address for -- well, I
22 guess I'll ask the Petitioner to address for me, that
23 42,000 acres, did that include acreage for the
24 batteries as well? Or was that just the -- just the
25 solar without battery backup?

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1 MR. LODGE: I don't think the -- first of
2 all, Your Honor, once again I just want to point out
3 these are the kinds of questions our experts, not
4 having to talk through me, a poly sci major, would be
5 able to adequately and effectively answer.

6 But my hunch is that the battery backup,
7 if we're talking about physical manufactured battery
8 equipment, is not going to be a very large piece of
9 the footprint. Yes, we agree and admit that there's
10 a large amount of acreage necessary for the
11 photovoltaic collection. But -- but, Your Honor, that
12 -- photovoltaic is -- is here. Photovoltaic is able
13 to beat on a pricing as well as adequacy of power
14 basis, most hours of the day -- if we are quibbling
15 over storage mechanisms, that is an issue of fact that
16 can be tried, and you can listen to competing experts.

17 What I'm -- what seems to be going on here
18 is that representations by the utility are accepted
19 for their inherent worthiness and -- and truthfulness,
20 whereas we're being called upon to prove and, again,
21 try the issues that our experts have already -- the --
22 the markers that they have laid down in the reports.

23 JUDGE TRIKOUROS: All right. Well, the --
24 given the -- given the growth of solar power, I'm not
25 in any way disputing what you say, obviously. I'm --

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1 I'm simply trying to address the requirements for
2 alternatives -- for an alternative for Point Beach.
3 And one of the requirements is that it be baseload
4 power. And that seems -- that seems to be confusing,
5 since we have no -- and I certainly will look at the
6 GEIS and see what it says regarding that. But there's
7 nothing in the pleadings that I've seen that helps me
8 with that.

9 Let me ask another question for the -- I
10 guess for the Petitioner, in this case. How would the
11 -- how would batteries integrate with rooftop solar?

12 MR. LODGE: I'm not an engineer, sir. I
13 rather suspect -- I rather suspect that the technology
14 exists and is well established for such an
15 integration. We're talking about dispersed forms of
16 energy collection, of course, and we're talking -- but
17 those are technical details, and they're technological
18 features that I think would be explicated at a trial
19 on the merits.

20 You're -- again, you're asking -- you're
21 asking me for responses that will go into some sort of
22 weighing as to whether or not the contention is worthy
23 of a hearing. And -- and I believe that -- with
24 respect, that that goes too far afield into -- you
25 know, again, we're talking matters of proof here. And

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1 we're actually talking about weighing things on the
2 scale. And once you're -- once you're in that field,
3 then let's get -- let's put our people under oath, and
4 let's let our experts answer you directly.

5 JUDGE TRIKOUROS: All right. I -- I'm --
6 I'm not going to ask -- I'll try not to ask any more
7 -- any more questions that are that level of
8 technical.

9 If one were to -- to utilize farmland for
10 -- 42,000 acres of farmland for a solar facility,
11 would -- would there have to be a distribution system
12 built? And if so, why wasn't that evaluated as an
13 environmental impact at all?

14 MR. LODGE: Well, very little has been
15 evaluated as an environmental impact so far as the
16 needs of the system. But I would point out that if
17 Point Beach were closed, it has already created a main
18 stem transmission corridor, which could certainly be
19 adapted to -- to draw in power generated on farmland,
20 brownfields, even within the transmission corridor
21 itself.

22 And, you know, these are -- these are
23 effectively details that can be worked out. They're
24 not technological hurdles that haven't been addressed
25 or contemplated. But there certainly is some grid

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1 that is salvageable and reusable around all closed and
2 closing power plants.

3 JUDGE TRIKOUROS: All right. Are you
4 aware of what the lifetime of a solar PV panel is,
5 sir?

6 MR. LODGE: Pardon -- the life cycle of
7 the collectors?

8 JUDGE TRIKOUROS: The life -- the -- yes,
9 before they have to be replaced.

10 MR. LODGE: I think the period of their
11 durability is expanding, but that -- depending of
12 course on manufacturer and all of that, it's really
13 something on the order of 20 years or more.

14 JUDGE TRIKOUROS: All right --

15 MR. LODGE: But, again, there are -- and
16 I also note, Your Honor, that I have read accounts
17 that there are recycling firms developing that are
18 going to be able, apparently, to convert and reuse the
19 film and other components of the collectors
20 themselves.

21 JUDGE TRIKOUROS: But they're not
22 operating right -- right this moment, are they?

23 MR. LODGE: I believe -- I believe that
24 there are some start-ups, yes. The -- the thing is
25 that there is a -- a large segment of the economy is

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1 growing. This is a -- is a burgeoning industry,
2 certainly compared to nuclear.

3 JUDGE TRIKOUROS: Well, what I'm trying to
4 determine, and as Judge Arnold had indicated earlier,
5 is that the environmental effects of the solar PV --
6 certain solar PV facilities have -- haven't been
7 available in the pleadings. For example, the disposal
8 of -- of all of the -- of 87 percent of the
9 households' rooftops solar PV in 20 years.

10 The distribution system has to be built.
11 None of those environmental effects seem to be
12 included in the comparison, and we're trying to make
13 a determination of environmental comparisons between
14 the renewal of the plant and -- and -- and other --
15 other options that are -- well, I'll say we are not --
16 we are not making that determination. I -- I correct
17 myself. But we are evaluating the pleadings regarding
18 that.

19 The -- and so there are a number of
20 questions that -- that come up, and I -- I think I'm
21 just not going to answer any more of these -- oh, one
22 more, though. When you do say capacity in the
23 pleadings, you're referring to capacity factor?

24 MR. LODGE: Is there a specific example
25 you're looking at?

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1 JUDGE TRIKOUROS: Well, it's throughout
2 the -- it's mentioned many, many times. Let me ask
3 the applicant -- let me ask the expert, I should say.

4 When -- when -- would you take the word
5 generation -- the words generation capacity to mean
6 capacity factor?

7 MS. LEIDICH: I think we would take it to
8 mean -- sorry, David. I think we would take it to
9 mean both the rated power supply of the unit that
10 you're intending to replace as well as the ability to
11 be baseload power, which would be capacity factor.

12 JUDGE TRIKOUROS: All right. All right.
13 I think I'm going to stop there.

14 CHAIR FROEHLICH: Okay. Thank you, Judge
15 Trikouros.

16 Let's move promptly to Contention 4, which
17 is the contention that raises a -- a -- a concern
18 about the elevated risk of a turbine missile accident
19 due to, I guess, the alignment of the buildings and --
20 and structures.

21 Mr. Lodge, by this contention, are -- are
22 you attempting to raise the existing design of that
23 turbine or the turbine and its -- the building around
24 it as an issue in this proceeding?

25 MR. LODGE: Yes, and it's -- the problem

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1 is it's a -- it's another metallurgical type of
2 question that will certainly not improve with age,
3 which is why we believe it will continue -- turbine
4 missile problems might continue -- well, will continue
5 to be of some concern throughout the 20-year
6 extension.

7 CHAIR FROEHLICH: But, Mr. Lodge, aren't
8 turbine shields and turbine blades and these sort of
9 components -- aren't they classified as active
10 components?

11 MR. LODGE: Yes.

12 CHAIR FROEHLICH: And aren't active
13 components outside the scope of a subsequent license
14 renewal?

15 MR. LODGE: Well, I -- I think the problem
16 is -- is that they are active components, and they
17 will be active components during the extension period,
18 and -- and that they -- that the mitigation that we
19 propose is something that must be considered within
20 the framework of this proceeding.

21 CHAIR FROEHLICH: I guess my problem is I
22 don't see how that's -- even -- even worded as -- as
23 you just stated it, is different than -- than an
24 attack on the current licensing basis of the plant and
25 of those components. If you can, please explain how

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1 we can -- you know, how -- how -- how we can look at
2 that in the context of a subsequent license renewal.

3 MR. LODGE: Well, the missile shielding
4 itself is a passive component. And -- and that is --
5 that's -- that's the focus of our contention.

6 CHAIR FROEHLICH: And is the shielding
7 suffering from some degradation or something because
8 of its age?

9 MR. LODGE: Well, the problem is -- is
10 we're venturing into an extended period that was not
11 contemplated during the design and construction of the
12 power plant. And -- and I would also like to point
13 out that Mr. Gundersen actually holds a patent on
14 missile shielding. And -- and the idea at the time
15 that he worked on and developed that -- that
16 patentable design was in contemplation of a 40-year
17 operating license.

18 CHAIR FROEHLICH: All right. Those --
19 those were my fundamental concerns with Contention 4.
20 I don't have any further questions on this contention
21 for any of the parties.

22 Judge Arnold or Judge Trikouros, do you
23 have anything on Contention 4?

24 JUDGE ARNOLD: I have no questions.

25 JUDGE TRIKOUROS: I -- I have one general

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1 question. I think you just -- I think Mr. Lodge just
2 answered it, but I'll -- I'll mention it.

3 In your petition -- in your reply, at page
4 22, you make a statement that irrespective of what the
5 NRC staff or NextEra consider the processes to be, the
6 turbine shafts in Units 1 and 2 are aging and will
7 continue to do so for a score more years in a
8 subsequent license renewal period.

9 What you -- what you mean by that is that
10 it's a safety issue that should be considered even if
11 it's outside of the requirements of -- of license
12 renewal? Is that what you mean by that, Mr. Lodge?

13 MR. LODGE: Well, the -- the turbine is
14 not safety related in and of itself. And so it's not
15 covered under the active failure types of regulatory
16 concerns. The -- the -- let me just step back a
17 little bit and point out that what happened was that
18 the Nuclear Regulatory Commission changed its rules so
19 that newer reactors -- the layout of newer reactors
20 was altered from tangential to radial turbine halls.

21 The -- the failure of this non-safety-
22 related component, the turbine, however, will endanger
23 in an old plant like Point Beach, which was built
24 before the alteration of the layout -- failure will
25 endanger and very possibly, if not likely, hit safety-

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1 related components.

2 JUDGE ARNOLD: This is Judge Arnold. Now
3 I do have a question.

4 Where in the regulations does it discuss
5 turbine building orientation? Do you know?

6 MR. LODGE: I think it's probably
7 discussed in the construction regs. And it may not be
8 set up so as to explain that to avoid a turbine
9 missile problem, build it this way. It may simply be
10 a regulation that says that the layout shall be on --
11 you know, on some type of axial radius or location.

12 JUDGE ARNOLD: I have no questions.

13 CHAIR FROEHLICH: All right. I think
14 we've come to the conclusion of today's oral argument
15 on the admissibility of the four proposed contentions
16 from the Wisconsin -- Physicians for Social
17 Responsibility Wisconsin.

18 I want to thank the parties for their
19 written pleadings thus far in the case and say that
20 today's oral argument has been helpful to me and, to
21 speak for the Board, has been helpful to the Board in
22 helping us make a determination on the admissibility
23 of -- of the four proposed contentions.

24 We will -- we will meet immediately after
25 -- after this session, and you can expect our decision

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1 to be issued within 45 days of today as contemplated
2 by 10 CFR 2.309(j).

3 If I could ask the parties and court
4 reporter to stay on the line after -- after I adjourn
5 today's hearing to clean up the record if there need
6 be any corrections made or acronyms explained or
7 anything that, because of connectivity issues, maybe
8 isn't clear on our transcript. If you'll stay on and
9 answer any questions that our court reporter might
10 have, it'd be appreciated.

11 Other than that, I really have nothing
12 further. Again, I thank the parties and the -- the
13 support people, our law clerk, Andy Welkie, the
14 technical support, for making this happen in the age
15 of COVID. And thank you all for your participation
16 today.

17 Okay. We'll stand adjourned.

18 (Whereupon, the above-entitled matter went
19 off the record at 1:58 p.m.)
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