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NUCLEAR REGULATORY COMMISSION

Title: First Energy Nuclear Operating Company
Davis Besse Nuclear Power Station, Unit 1

Docket Number: 50-346-LR

ASLBP Number: 11-907-01-LR-BD01

Location: Rockville, Maryland

Date: Wednesday, November 12, 2014

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1 UNITED STATES OF AMERICA

2 U.S. NUCLEAR REGULATORY COMMISSION

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4 BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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6 _____

7 In the Matter of: : Docket No.

8 FIRSTENERGY NUCLEAR : 50-346-LR

9 OPERATING CO. : ASLBP No.

10 (Davis-Besse Nuclear : 11-907-01-LR-BD01

11 Power Station, Unit 1):

12 _____:

13 Wednesday,

14 November 12, 2014

15 Rockville, Maryland

16

17

18 BEFORE:

19 WILLIAM J. FROEHLICH, Chairman

20 NICHOLAS G. TRIKOUROS, Administrative Judge

21 DR. WILLIAM E. KASTENBERG, Administrative

22 Judge

23

24

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

2 9:01 a.m.

3 JUDGE FROEHLICH: Thank you. Please be
4 seated. Okay. Good morning, all. It's November
5 12th, 9:00 a.m., and we're in the Nuclear Regulatory
6 Commission headquarters building in Rockville,
7 Maryland.

8 We're on the second floor, ACRS Conference
9 Room. ACRS stands for the Advisory Committee on
10 Reactor Safeguards, and we thank the ACRS for allowing
11 us to use their hearing room, while the ASLBP hearing
12 room is under renovation.

13 The docket number for this proceeding is
14 50-346-LR, which is the docket in which FirstEnergy
15 Operating Company has filed to renew its facility
16 operating license for the Davis-Besse Power Station
17 Unit 1, for an additional 20 years from its current
18 expiration date of April 22nd, 2017.

19 In accordance with the Board's public
20 notice and order issued October 27th, this oral
21 argument concerns a proposed Contention 7 filed by
22 Beyond Nuclear, the Citizens Environmental Alliance of
23 Southern Ontario, Don't Waste Michigan and the Green
24 Party of Ohio. These are -- collectively we'll refer
25 to as the Intervenors.

1 Proposed Contention 7 is found in
2 Intervenor's Motion for Admission of Contention 7 on
3 worsening shield building cracking and inadequate
4 Aging Management Programs in the shield building
5 monitoring program, which was filed on September 2nd,
6 2014 as supplemented on September 8th, 2014.
7 Intervenors' proposed Contention 7
8 challenges the adequacy of FENOC's shield building
9 monitoring Aging Management Program, as revised by the
10 license application amendment 51. That's FENOC's July
11 3rd, 2014 RAI response.
12 My name is William Froehlich, and I'm
13 chairman of this Atomic Safety and Licensing Board,
14 established for this proceeding. To my right is Judge
15 Nicholas Trikouros. Judge Trikouros has been a full-
16 time member of the panel since 2006.
17 He holds a B.S. from Fordham, a Masters
18 from NYU, an advanced engineering degree from the
19 Polytechnic Institute affiliated with NYU, and has
20 over 30 years' experience in the nuclear industry,
21 including serving as an adjunct professor at Rutgers
22 University, where he taught at the graduate level.
23 To my left is Judge William Kastenberg.
24 Judge Kastenberg holds a Bachelors of Science and a
25 Masters of Science in Engineering from UCLA, and has

1 a Ph.D. in Nuclear Engineering from the University of
2 California at Berkeley. For over 40 years, Dr.
3 Kastenberg was a professor in the University of
4 California system.
5 He retired as the Daniel M. Tellep
6 Distinguished Professor of Engineering. He's
7 published numerous journal articles on nuclear safety
8 and risk analysis.
9 As I mentioned earlier, my name is William
10 Froehlich. I'm a lawyer by training and have had
11 about 35 years of federal administrative and
12 regulatory law experience. Because I'm a lawyer, I'm
13 one of the three judges here, I'll serve as chairman
14 of this Board for procedural issues.
15 I'd also like to introduce a few other
16 people from the Atomic Safety and Licensing Board
17 Panel. Our law clerk, who you've probably dealt with
18 by emails is Mr. Sachin Desai. We also have an
19 administrative and logistical support member with us,
20 Karen Valloch, and in the back of the room is Andrew
21 Welkie, who will help manage the audiovisual equipment
22 for this hearing.
23 I'd also like to acknowledge the people
24 from the ACRS, including Alesha Bellinger, Kendra
25 Freeland and Theron Brown. I believe Mr. Brown is in

1 the back room with Mr. Welkie, helping him support the
2 audiovisuals for today's argument.
3 Our court reporter is Daniel Michon.
4 They'll be an electronic transcript made of this oral
5 argument, and copies of that transcript will be made
6 available to the public. They'll also be posted on
7 the NRC website in about a week.
8 At this point, I'd like the parties to
9 introduce themselves. I'd like the lead
10 representative to introduce yourself, state the name
11 of your client, any counsel who might be participating
12 with you in the oral argument, and I believe we'll
13 start with the Intervenors, go to the licensee and
14 then to the NRC staff.
15 MR. LODGE: Very good. Thank you, Judge.
16 My name is Terry Lodge. I am an attorney and counsel
17 of record for Beyond Nuclear, the Citizens
18 Environmental Alliance of Southwestern Ontario, Don't
19 Waste Michigan and the Green Party of Ohio, who are
20 the intervenors in this matter.
21 Seated to my left is Kevin Kamps of Beyond
22 Nuclear, who is going to be a co-presenter along with
23 me. Seated to my right is Michael Keegan of Don't
24 Waste Michigan, who is also assisting today.
25 JUDGE FROEHLICH: Thank you, Mr. Lodge.

1 For the licensee.

2 MR. MATTHEWS: Good morning members of the

3 Board. I'm Tim Matthews of Morgan, Lewis and Bockius,

4 on behalf of the Applicant, FirstEnergy Nuclear

5 Operating Company, FENOC. With me at the counsel

6 table this morning is my partner, Stephen Burdick, who

7 will address the Board's questions related to the

8 proposed safety contention, and David Jenkins, senior

9 corporate counsel at FirstEnergy.

10 Also present with us today are my partner,

11 Kathryn Sutton and several FENOC personnel, including

12 representatives from the Davis Besse Engineering

13 Organization and the License Renewal Project should we

14 need their assistance.

15 JUDGE FROEHLICH: Thank you, Mr. Matthews.

16 And for the staff.

17 MR. HARRIS: Good morning, Your Honor.

18 This is Brian Harris representing the staff. With me

19 today to my left is Cathy Kanatas, who will also be

20 representing the staff today.

21 JUDGE FROEHLICH: Thank you. For any

22 proposed contention to be heard in an evidentiary

23 hearing, an intervenor must timely file that

24 contention. Whether it is timely or not depends on

25 whether it meets the standards in 10 C.F.R. 2.309, the

1 old 2.309(f)(2) or the current 2.309(c)(1) test.
2 It has to be based on new information not
3 previously available. It has to materially affect
4 either a safety or environmental issue, and the
5 contention has to be put forward in a timely manner
6 which, according to our prior orders, we define as
7 being put forward within 60 days after the information
8 was available to the public.
9 The crux is whether the Petitioner has
10 shown good cause. If timely, it must also meet the
11 six elements of 10 C.F.R. 2.309(f)(1). A request for
12 hearing, a petition for leave to intervene or a motion
13 to admit a new contention are set forth with
14 particularity the contention sought to be raised.
15 In each contention, the request for
16 petition must provide a specific statement of the
17 issue of law or fact to be raised or controverted, a
18 brief explanation of the basis for the contention,
19 demonstrate that the issue raised in the contention is
20 within the scope of the proceeding, demonstrate that
21 the issue raised in the contention is material to the
22 findings the NRC must make to support the action
23 that's involved, and provide a concise statement of
24 alleged facts or expert opinions which support the
25 petitioner's position on the issue, and on which the

1 petitioner intends to rely at hearing, together with
2 references to the specific sources and documents on
3 which the petitioner intends to rely to support the
4 petition on the issue.
5 And finally, it must provide sufficient
6 information to show that a genuine dispute exists with
7 the licensee on a material issue of law or fact. This
8 information must include references to specific
9 portions of the application that the petitioner
10 disputes, and the supporting reasons for each dispute.
11 On September 2nd, 2014, Intervenors
12 brought a new contention regarding cracking in the
13 shield building that covers the Davis-Besse Unit 1
14 nuclear reactor.
15 Intervenors' new contention alleges that
16 there is new information, primarily in the form of
17 disclosures by FENOC on July 3rd and July 8th, 2014,
18 that indicate the cracking in the Davis-Besse shield
19 building is propagating, and that this is a new
20 concern.
21 Intervenors claim as a result of the
22 plant's aging management -- as a result, the plant's
23 Aging Management Program needs to be revised, to
24 account for this crack propagation, more than has
25 already been done.

1 Intervenors also ask that this alleged new
2 issue be addressed in the Environmental Impact
3 Statement, within the Discussion of Alternatives
4 section and the section dealing with Mitigation
5 Alternatives for severe accidents. The licensee and
6 the NRC staff both oppose the admission of this
7 contention, arguing that no litigable issue exists
8 with FENOC's Aging Management Program or the
9 Environmental Impact Statement.
10 FENOC and the NRC staff also raise
11 timeliness concerns, arguing that Contention 7 was not
12 brought quickly enough after the information was
13 available to the public, and thus this contention is
14 precluded by NRC regulations. Intervenors, of course,
15 do not agree.
16 If any issue -- if any of the parties take
17 issue with how I have just framed this contention,
18 please address that as part of your oral argument or
19 opening statements. So today we'll be talking and
20 probing the intervenors about Contention 7, trying to
21 figure out whether they meet the timeliness and
22 admissibility criteria of 2.309 of the regulations.
23 If they meet the regulatory requirements,
24 we will rule that the contention is admissible, and if
25 they don't, we're obliged to rule that the contention

1 is not admissible. After we hear oral argument today,
2 we'll review the pleadings and the transcript of this
3 argument, and issue a written decision, and we intend
4 to get that decision out within the next 45 days or
5 so.
6 As I mentioned earlier, members of the
7 public are free to observe the proceedings today, as
8 in all of NRC's proceedings. But it is only counsel
9 for the parties or their representatives that will be
10 allowed to speak at this oral argument.
11 At this point, if anyone still has their
12 cell phone on, please check, turn it off or turn it to
13 vibrate. If you have any conversations and need to
14 discuss with others, please take them out in the hall
15 during our proceedings.
16 At this point, I'd ask my two colleagues
17 if anything -- if they'd like to add anything before
18 we begin. Judge Trikouros.
19 JUDGE TRIKOUROS: No.
20 JUDGE KASTENBERG: Nothing at this point,
21 thank you.
22 JUDGE FROEHLICH: Okay, all right. As
23 stated in the Board's notice and order scheduling this
24 argument, today's argument will begin with an opening
25 statement of no more than ten minutes in length from

1 each party. The Intervenors will go first, followed
2 by the licensee and then the NRC staff.
3 Each one will get ten minutes to give an
4 uninterrupted opening statement to us. We'll then
5 turn to reviewing the questions of timeliness and the
6 admissibility of the contention that's been filed.
7 After we've asked all of our questions and heard
8 arguments from the parties, each party will get five
9 minutes for closing statements.
10 At this point, I believe we're ready to
11 begin with an opening statement from the Intervenors.
12 MR. LODGE: Thank you. Members of the
13 Panel and parties and representatives, we are in our
14 37th month since the discovery in October 2011 of
15 laminar cracking problems that were visible during a
16 maintenance outage at the Davis-Besse nuclear power
17 station, and specifically around and near an opening
18 that was blasted through the wall for purposes of
19 replacing a reactor head.
20 The cracking controversy has evolved
21 tremendously in 37 months. We are now looking at what
22 appears to be the latest, I guess I would call it Root
23 Cause 3.0, the 2014 explanation for the cracking
24 phenomena. But it's interesting and useful to review
25 historically what the circumstances were.

1 In February 2012, FirstEnergy Operating
2 Company released their initial root cause analysis for
3 the laminar cracking, essentially concluding that the
4 blizzard of 1978 did it, that it essentially caused
5 unusual vulnerability to the outer concrete layers of
6 the shield building at the Davis-Besse reactor, and
7 that moisture over the decades infiltrated the
8 concrete and began to cause, from the freeze-thaw
9 cycle of northwestern Ohio winters, cracking to
10 develop.
11 The consensus of FirstEnergy's consultants
12 at the time was the problem is limited, the problem is
13 solvable, that a good coat of certified coating on the
14 building, which had been omitted or neglected to be
15 added during the construction process in the 1970's,
16 would do it, and now we know that it didn't do it.
17 In July of 2014, FirstEnergy's
18 consultants, in the latest in what we call Root Cause
19 3.0, the apparent cause evaluation, full apparent
20 cause evaluation, indicate that there is now
21 microcracking, an additional type of structural
22 failure in addition to laminar or layered cracking,
23 and that there are going to be possibly continuing
24 difficulties.
25 The company's response in 2012 was to

1 propose a monitoring setup, wherein 20 core bores
2 would be developed at various locations near
3 identified cracks in the building, and that from time
4 to time on a scheduled, but infrequent we believe
5 basis, that there would be tests of the cores.
6 The response after the latest revelation
7 of microcracking and essentially a consensus that this
8 is an aging problem of increasing, potentially
9 increasing seriousness, is to -- is for the utility to
10 have promised that it will initiate three additional
11 core bore drillings at sites on the shield building,
12 which it will identify as being close to visible
13 cracking.
14 We have roughly calculated that the
15 interior and exterior surface area of the shield
16 building is somewhere in the neighborhood of 180
17 square feet. The core bores are, pardon me, 280. The
18 core borings themselves are a few inches across. They
19 penetrate perhaps a foot or less into the structure.
20 So what is proposed by way of a monitoring
21 setup, of a building that was left open and uncovered,
22 unroofed if you will in the early 1970's, and that has
23 some controversy surrounding any protective barriers
24 in its foundation, which would protect the foundation
25 from infiltration and moisture.

1 What we have is a circumstance where
2 roughly a cubic foot of core borings are dispersed on
3 some unknown basis throughout the shield building
4 structure, and are supposed to past muster
5 regulatorily, as an adequate means of monitoring the
6 shield building.
7 This is a passive structure, but a very
8 obviously critical structure. The shield building is
9 approximately 30 inches thick. It is rebar-reinforced
10 concrete. It is supposed to be there to protect the
11 reactor from exterior threats, including tornadoes,
12 including damage from certain types of aircraft
13 accidents.
14 But it also contains a filter containment
15 type of system. So it provides a certain degree of
16 protection of the outer environment from mishaps that
17 might befall the reactor itself. A very critical
18 structure. It is degraded and deteriorated. There is
19 serious issue as to the extent of that.
20 The Intervenors contend that there is far
21 too much ignorance as to the actual status of the
22 structure, that any attempts to simply call a wait and
23 see monitoring effort, especially at this low level,
24 is very insufficient to provide the requisite,
25 adequate assurance that the shield building is going

1 to perform its original design functions at any
2 adequate level throughout the expected 20 year or
3 anticipated 20 year license extension period.
4 The utility company and the staff have
5 tried in particular to argue that this is simply a
6 current licensing concern. The problem with that
7 argument is that it -- I would suspect that the first
8 day of the 20 year extension period they'll say it's
9 a current licensing concern. It's a day-to-day
10 problem.
11 Well, perhaps three years ago or two and
12 a half years ago, that might have had -- carried some
13 credence. But 37 months into this, with now multiple
14 root cause reports being issued and issued on a slow
15 motion basis I might add, the latest coming rather
16 close to the end of the adjudicatory phase of this
17 license extension, we believe that there are serious
18 questions of whether there are adequate assurances
19 that mere monitoring is going to suffice.
20 The expert opinions that we are relying on
21 are those of NRC staff and FirstEnergy's consultants.
22 We think that more than -- what was called sheer
23 speculation on the Intervenors' part in our multiple
24 filings of 2012, and we've all been together before on
25 those filings, that it was mere speculation and indeed

1 we were castigated at some length for having, without
2 an expert, intentions to parlay FOIA and other
3 information into a contention.
4 But history is proving that mere
5 speculation of 2012 is hard fact and harsh reality for
6 the utility company to deal with in 2014. In sum,
7 this is a matter which must be scrutinized through the
8 adjudicatory process, must be scrutinized by way of
9 relief in the form of much beefier analysis and
10 discussion in the FSAR and the NEPA document, the
11 final Environmental Impact Statement, both in the
12 Consideration of Alternative section, because we
13 believe that the shield building is that big of a
14 problem, that it raises -- its condition raises grave
15 questions as to the continuing feasibility of using it
16 to protect the reactor, and also in the SAMA analysis.
17 The SAMA analysis presumes a pristine
18 structure. This is a uniquely non-pristine structure,
19 unique and admitted as such by FirstEnergy's own
20 consultant in its 2014 report. That's all we have at
21 this point. Thank you.
22 JUDGE FROEHLICH: Thank you, Mr. Lodge.
23 Mr. Matthews.
24 MR. MATTHEWS: Thank you, Judge Froehlich.
25 Good morning again. FENOC appreciates this

1 opportunity to address the Board. The parties appear
2 before you today on a now-familiar issue. FENOC
3 identified and reported its shield building laminar
4 cracks in 2011.
5 FENOC then promptly studied the laminar
6 crack phenomenon, identified its root cause,
7 demonstrate the capability of the shield building to
8 perform its intended functions, developed corrective
9 actions including application of external coating,
10 developed a condition monitoring program to assess the
11 possibility of crack propagation, and updated the
12 shield building design and licensing basis documents.
13 FENOC also prepared an Aging Management
14 Program or AMP for the shield building, to monitor
15 possible changes in the laminar cracks during the
16 period of extended operation, and supplemented its
17 license renewal application appropriately.
18 In 2013, FENOC discovered indication of
19 changes in the existing laminar cracks. This
20 demonstrated that FENOC's monitoring program worked.
21 Using a more indepth inspection tool, FENOC found the
22 preexisting laminar cracks, fine cracks that had not
23 been identified earlier.
24 They also found new cracks in core bores
25 that previously had not shown cracks. Extensive core

1 bore inspections followed by impulse response testing
2 indicated that the cracked area had expanded. In
3 other words, FENOC identified limited propagation of
4 some of the laminar cracks.
5 As it had previously in 2011 and '12,
6 FENOC identified the condition and promptly reported
7 it, studied it and confirmed the shield building's
8 ability to perform its intended functions. FENOC
9 updated the design and licensing basis documents,
10 identified the root cause of the propagation, and
11 modified its condition monitoring program during the
12 current license term. And again, FENOC revised its
13 Aging Management Program.
14 FENOC concluded that the cause of the
15 laminar crack propagation was ice wedging. Moisture
16 inside the existing laminar cracks froze during severe
17 cold. The coating contributed to the cracks by
18 retaining moisture.
19 FENOC's evaluation found that the laminar
20 crack propagation was very small in relation to the
21 450, approximately 450 foot circumference of the
22 shield building, and over 17 foot reach of each flute
23 shoulder. Volumetric expansion of freezing water from
24 its liquid state to its solid state opened the crack
25 tips a small amount, roughly 0.4 to 0.7 inches on

1 average.

2 Although the existing program elements of

3 the shield building AMP were demonstrated to be

4 effective to monitor the propagation, FENOC further

5 enhanced its existing AMP by adding three more core

6 bores to be checked during each inspection, on top of

7 the existing 20.

8 FENOC specified that the additional core

9 bore locations would be selected the known edge to

10 identify crack propagation. It also extended the

11 period during which inspections would be performed

12 annually, regardless of whether further propagation

13 was identified.

14 FENOC has been open in its identification

15 of the cracks, thorough in its evaluation of the

16 causes, rigorous in monitoring of the condition and

17 appropriate in its enhancements of the Aging

18 Management Program.

19 Obviously, Intervenor disagreed, but we're

20 left to suggest why. Intervenors don't provide any

21 reasons for their disagreement. They suggest instead

22 yet again that this Board should undertake a broad-

23 ranging investigation.

24 Intervenors continue to demonstrate a

25 misunderstanding of the role of the Atomic Safety and

1 Licensing Board in the NRC's licensing and license
2 renewal process. As a result, they fail again to
3 state an admissible contention.
4 Intervenors appear to argue that FENOC's
5 discovery of crack propagation somehow vindicates the
6 admissibility of previously rejected contentions. But
7 then, as now, it is the sufficiency of their proposed
8 contention that is at issue, not the crack
9 propagation. The only question before the Board today
10 is this: have the Intervenors timely proposed a
11 contention that satisfied the Commission's contention
12 admissibility requirements?
13 Once again for multiple reasons, they have
14 not. The Commission did not establish this
15 adjudicatory process to stop or hop over licensing
16 process. Rather, the Commission established the
17 adjudicatory process so that members of the public
18 with sufficient knowledge or information to inform the
19 agency's decision-making might have a forum to present
20 that information and to test it.
21 In this way, they enhance the agency's
22 safety mission. Toward that end, the Commission has
23 promulgated very specific contention pleading
24 requirements in its regulation, to clarify and make
25 more efficient this adjudicatory process.

1 First, the Commission made clear that
2 issues presented must be within the scope of the
3 licensing action then under consideration, here
4 license renewal. Second, the NRC regulations require
5 that proposed contentions may not consist solely of
6 vague generalities, but must be specific and clearly
7 stated. They also must be supported by some
8 identified basis statement and grounded in expert
9 opinion or appropriate authority.
10 So too the Commission has defined
11 reasonable timeliness requirements in which to bring
12 proposed contentions. None of this new to the Board
13 or to these intervenors. Both the Board and the
14 Commission have instructed these same intervenor
15 repeatedly on exactly these requirements. Intervenors
16 simply choose to ignore them again.
17 Despite repeated reminders about the
18 limited scope of the NRC's license renewal decision,
19 Intervenors attempt to challenge NRC's information
20 disclosure practices, FENOC's quality assurance
21 program and safety culture, Davis-Besse's current
22 licensing basis, all baseless allegations and all
23 outside the scope of this license renewal proceeding.
24 Despite previous rejections of earlier
25 proposed contentions rooted only in speculation,

1 Intervenors again furnish nothing more. They advance
2 a wide array of hypothetical concerns, and invite the
3 Board to investigate them.
4 Specifically, Intervenors do not identify
5 any purported deficiency in FENOC's shield building
6 monitoring AMP, that would justify the changes they
7 suggest. They cite no inadequacy in FENOC inspection
8 methods, not in the number of core bores monitored or
9 their locations, and not in the frequency with which
10 core bores are monitored.
11 Rather, Intervenors call for more, more
12 testing methods, more core bores, more locations and
13 want the one-year inspection frequency extended
14 indefinitely, regardless of what the inspection
15 results or guidance from the American Concrete
16 Institute Code might suggest.
17 It's fine for Intervenors to want all of
18 these things. But here, before the Commission's
19 ASLBP, merely wanting them is not sufficient.
20 Intervenors bear the burden of stating why FENOC's AMP
21 is not adequate for its purpose, demonstrating a basis
22 for that position and identifying their technical
23 authorities. They've done none of these things.
24 Intervenors also fail to connect their
25 complaints to any new information. To the extent the

1 concerns relate to the ability of the shield building
2 AMP to monitor crack propagation, the proposed
3 contention is untimely as well as unsupported. The
4 AMP has always been about monitoring for changes.
5 The only new information is this: One,
6 the cracks propagated in some areas, and two, the
7 monitoring program worked to identify that change. A
8 fundamental purpose of the AMP, from its introduction,
9 has been to identify any changes in the laminar
10 cracking, including propagation.
11 Intervenors have challenged the AMP before
12 many times and failed each time. FENOC's recent
13 enhancements to the AMP do not render the entire AMP
14 now subject to reattack. The Commission stated the
15 same logical conclusion in its *Oyster Creek* decision.
16 Also similar to their earlier failed
17 attempts, Intervenors include vague references to a
18 proposed environmental contention related to severe
19 accident mitigation alternative analysis. Here too,
20 they fail for all the same reasons they failed before,
21 because they chose again to ignore the Commission's
22 contention admissibility standards.
23 Intervenors are not unrepresented or
24 inexperienced citizen petitioners. Intervenors are
25 seasoned advocates and active participants in the

1 NRC's adjudicatory process. They're aided by multiple
2 experts and very capable experienced counsel.
3 Accordingly, when a burden its theirs to
4 shoulder, as it is here, they must shoulder that
5 burden. We respectfully submit that they have not.
6 FENOC's personnel have worked openly, candidly and
7 thoroughly to address this issue. They have retained
8 independent experts, commissioned testing at multiple
9 respected universities to confirm the conservatism in
10 their analyses.
11 They've responded to multiple rounds of
12 questions from the NRC staff, and diligently enhanced
13 the shield building monitoring AMP. We appreciate
14 this opportunity to respond to your questions, and
15 look forward to today's discussion. Thank you.
16 JUDGE FROEHLICH: Thank you, Mr. Matthews.
17 And for the NRC staff.
18 MS. KANATAS: Good morning, Your Honors.
19 My name is Cathy Kanatas and this Brian Harris. We
20 represent the staff. As Judge Froehlich indicated,
21 this oral argument is about the admissibility of
22 Intervenors' Contention 7. The question is whether
23 Intervenors have met their burden in showing that
24 their contention salsifies the Commission's contention
25 admissibility requirements.

1 The answer to that question is no. Before
2 I summarize why Contention 7 is inadmissible, I would
3 like to make a few points to address Intervenors'
4 assertions, and to put Contention 7 in context.
5 First, the staff recognizes that the
6 shield building a structure subject to aging
7 management review under 54.21, and that the staff must
8 make a finding that FENOC can adequately manage the
9 effects of aging on the shield building before issuing
10 a renewed license.
11 This is why the staff took the position
12 that Intervenors' Contention 5, which was submitted in
13 January 2012, after the laminar cracking in the shield
14 building was identified, raised an admissible safety
15 contention of omission. At that time, the application
16 did not discuss how any AMP would account for the
17 aging effects of the laminar cracking.
18 However, since April 2012, FENOC's
19 application has provided for a plant-specific AMP to
20 manage the aging effects of the laminar cracks, which
21 are hairline cracks typically less than .01 inches in
22 width. Specifically, the shield building monitoring
23 AMP, which supplements the structures monitoring AMP,
24 provides for the detection of aging effects prior to
25 the loss of shield building intended functions.

1 Second, it is important to note that
2 Contention 7 is not the first time Intervenors have
3 raised challenges to this shield building monitoring
4 AMP. Intervenors' Contentions 5 and 6 made claims
5 related to this AMP. However, those contentions did
6 not point to specific ways in which the AMP was wrong
7 or inadequate, or how it should be improved.
8 Therefore, the Board found that those
9 claims did not raise a genuine material dispute with
10 the application. Finally, the staff recognizes that
11 FENOC has modified the shield building monitoring AMP
12 in response to operating experience and staff
13 questions.
14 As you know, and we heard again today, the
15 monitoring done under the shield building monitoring
16 AMP led to the discovery of new cracks in August and
17 September 2013. Broken rebar was also discovered in
18 February 2014. In response, the staff issued an RAI
19 on April 15th, 2014, asking how the shield building
20 monitoring AMP would address these issues or how it
21 would be modified.
22 FENOC's July 3rd response to this RAI
23 provided modifications to the shield building
24 monitoring AMP. On July 8th, FENOC notified the Board
25 that it had submitted a full apparent cause

1 evaluation, discussing the root cause of the new
2 cracks. These two submittals are the basis for
3 Intervenors' Contention 7.
4 As Judge Froehlich summarized, to be
5 admitted as a contention, Intervenors must meet two
6 sets of requirements. First, they must show that
7 Contention 7 is based on new and materially different
8 information than previously available and timely
9 filed.
10 Second, Intervenors must show that
11 Contention 7 satisfies the contention admissibility
12 requirements. Intervenors have not made either
13 showing. Therefore, Contention 7 should not be
14 admitted into this proceeding.
15 First, Intervenors have not shown that
16 Contention 7 is based on new and materially different
17 information. Intervenors claim that FENOC's July 3rd
18 submittal is new and materially different information,
19 because it modified the shield building monitoring
20 AMP.
21 Intervenors also claim that the full
22 apparent cause evaluation contains new and materially
23 different information, because it concludes that the
24 cracking propagation is aging-related, which
25 Intervenors claim is a change in FENOC's position from

1 earlier root cause reports.

2 But Intervenors have not shown that this

3 information is new and materially different. Since

4 April 2012, the shield building monitoring AMP

5 accounted for the possibility of an aging-related

6 mechanism, used core bores and visual inspections to

7 monitor, and indicated that inspection frequency and

8 core bore sample size and locations would be

9 reevaluated if changes or any new cracks were

10 identified.

11 These are exactly the types of changes

12 that FENOC did in response to the recent operating

13 experience. They increased the core bores from 20 to

14 23, and increased the inspection frequency to annual

15 inspection to manage the cracks, including the

16 cracking propagation.

17 The full apparent cause evaluation does

18 not change the position taken in the previous root

19 cause reports. The previous root cause reports, which

20 FENOC submitted in February and May 2012, concerned

21 the initial laminar cracking, which was determined to

22 be caused by a combination of three things: The

23 blizzard of 1978, the design of the flute shoulders

24 and the lack of a moisture sealant.

25 The full apparent cause evaluation states

1 that the findings of the previous root cause reports
2 with respect to the initial laminar cracking are still
3 valid. It then discusses the root cause of the
4 cracking propagation, which was determined to be
5 caused by ice wedging.
6 That requires the combination of three
7 things: pre-existing laminar cracks, water
8 accumulation and freezing temperatures within the
9 cracks. These findings about ice wedging are not
10 materially different information, because the shield
11 building monitoring AMP always contemplated
12 identifying aging effects.
13 Intervenors also incorporate their
14 Contention 5 filings and reference their Contention 6
15 filings in support of Contention 7. But these filings
16 are not new and materially different information.
17 These filings were based on the February
18 and May 2012 root cause reports, FENOC's April 2012
19 shield building monitoring AMP, and documents
20 Intervenors received through FOIA related to the
21 current operation of the plant. All of this
22 information has been considered by this Board and is
23 not new or materially different.
24 Second, Contention 7 is inadmissible
25 because it does not meet the Commission's contention

admissibility standards. While the staff recognizes that the shield building monitoring AMP is in the scope of license renewal, Intervenors have not raised a genuine material dispute with the AMP.

Instead, Intervenors only point to the enhancements in the AMP, and assert that it's inadequate. These type of unsupported claims that do not specify what is wrong or inadequate with the AMP do not raise a genuine material dispute.

The rest of Intervenors' safety claims are out of scope arguments about safety culture, current operation, the adequacy of the staff's review, and the current licensing basis of the plant. These arguments were rejected when they were raised in Contentions 5 and 6, and they should be rejected again.

The license renewal safety review focuses on managing the detrimental effects of aging on certain structures, systems and components. The license renewal safety review explicitly excludes current operating issues.

Contention 7 also fails to raise an admissible environmental claim. Contention 7 repeats the claim made in both Contentions 5 and 6, that FENOC's SAMA analysis is deficient, because it does not account for the cracks.

1 While it is true that FENOC had to submit
2 a SAMA as part of the license renewal environmental
3 report, Intervenors offer no support for why the SAMA
4 that FENOC submitted, which concerns beyond design
5 basis accidents and assumes containment failure or
6 bypass, would need to account for the cracks, or how
7 the SAMA is deficient.
8 Likewise, Intervenors do not offer any
9 support for their claim that the discussion of SAMAs
10 in the staff's DSEIS is inadequate. Contention 7 also
11 claims that the alternatives analysis in the DSEIS is
12 deficient, because it does not account for the
13 cracking.
14 Intervenors' argument is premised on the
15 idea that the shield building cannot perform its
16 intended functions, and should be replaced or
17 repaired. This argument is unsupported, and does not
18 raise a license renewal environmental issue. The
19 staff's environmental license review focuses on the
20 potential impacts of 20 years of additional operation.
21 If the shield building cracks prevented
22 the shield building from performing its design basis
23 safety functions, then the plant would have to shut
24 down now until those functions are restored. Any
25 environmental impacts resulting from that are not

1 unique to license renewal.

2 For these reasons, Intervenors have not

3 met their burden of proof, and Contention 7 should not

4 be admitted into this proceeding. Simply pointing to

5 the staff's RAIs or FENOC's responses to those RAIs is

6 not sufficient to trigger an adjudicatory hearing.

7 Thank you, Your Honors.

8 JUDGE FROEHLICH: Thank you, Ms. Kanatas.

9 Let us begin, and I'll begin with you, Mr. Lodge. Let

10 me ask first, the licensee and the staff are not

11 contending that this contention is untimely because it

12 wasn't filed within 60 days of the license renewal

13 application amendment or the FACE report.

14 The argument, I understand from the staff

15 and from the licensee, is that these -- this

16 contention relates to issues that happened well before

17 this report, and therefore it's untimely, more than 60

18 days. Is that correct? Is my understanding correct?

19 MR. BURDICK: Yes, Your Honor.

20 JUDGE FROEHLICH: Also the licensee?

21 MR. BURDICK: Your Honor, this is Stephen

22 Burdick on behalf of the Applicant. I think that is

23 correct. But just to clarify, we make two timeliness

24 arguments. One is under the *Oyster Creek* principle

25 that Mr. Matthews discussed, that there hasn't been

1 any material change to the AMP and to the extent there
2 were changes, they were enhancements.
3 But we did make the separate argument that
4 they do identify certain topics that are greater than
5 60 days from before they filed their Contention 7, and
6 so untimely purely for that reason as well. But they
7 were more on the fringes. They weren't their primary
8 arguments.
9 JUDGE FROEHLICH: Okay. So that brings us
10 then to the question of whether the items that are in
11 the FACE report or in the license amendment, are
12 materially different from things that were in the
13 record of this case before that; is that correct?
14 MR. BURDICK: That's correct.
15 JUDGE FROEHLICH: Okay. So Mr. Lodge,
16 then to you. What is materially different in the
17 license renewal application or the FACE report, that
18 would trigger a new contention?
19 MR. LODGE: A new type of cracking,
20 microcracking, is finally conceded. Intervenors were
21 accused of merely speculating that there were other
22 cracks besides laminar. That's been now confirmed by
23 the July 8th, 2014 disclosure made by FENOC to the
24 Board.
25 I might point out that among the things

1 that we learned at that point in July were that since
2 February of 2012, that FirstEnergy knew that there was
3 a considerable amount of water being identified in the
4 core drillings that they were taking. Then again in
5 2013, there was some note taken of that, but the
6 significance of it was not summarized, brought
7 together into an identifiable explanation of causation
8 until this July 2014 disclosure.
9 So there also was identified in the July
10 2014 disclosure the propagation, the spreading of
11 laminar as well as other cracks. FirstEnergy had
12 decided to use electron microscopic analysis and that
13 is how they began to identify the very fine, sometimes
14 invisible to the naked eye, cracking.
15 So FirstEnergy's knowledge of the problems
16 has been growing, and the public somewhat behind
17 because of the slow pace of disclosures, is learning
18 and filing in the timely fashion, as timely a fashion
19 as can be expected.
20 JUDGE FROEHLICH: If the purpose of an
21 Aging Management Program is to detect changes in
22 matters that will need attention, why does it matter
23 what the cause of the cracking is? If the Aging
24 Management Program's goal is to be alert or be on the
25 watch for changes in cracks.

1 What does it matter what causes or what
2 changes it? Why is that new and significantly
3 different, if again we're talking about the purpose
4 and goal of an Aging Management Program?
5 MR. LODGE: Well since in the last two
6 years, FirstEnergy itself has caused some of the
7 cracking propagation that's present, I would think
8 that that has a few implications for prospective
9 management of the cracking problem.
10 There is now saturation of the outer ten
11 inches of concrete that is apparently conceded not to
12 have existed at the 90 to 100 percent moisture content
13 level prior to the application of the coating to the
14 shield building.
15 The causation has changed. We have
16 multiple causations now being identified. Things
17 started out in 2012 in the initial root cause analysis
18 as some sort of discrete, controlled identification of
19 the cracking problem. Things are being handled.
20 We're going to seal the building. It didn't work.
21 That is a major material disclosure in 2014. I don't
22 know if that fully answers your question, sir.
23 JUDGE FROEHLICH: For the licensee, the
24 discovery of the new cracks or propagation of existing
25 cracks triggered the change or caused the change in

1 the Aging Management Program. Was it this crack
2 propagation or additional cracking that triggered the
3 changes that were made to the aging management
4 program?
5 MR. BURDICK: Your Honor, when FENOC
6 identified the additional or the laminar crack
7 propagation in 2013, they undertook an extensive
8 evaluation, and the result of that included what's
9 found in the apparent cause evaluation, and then that
10 was done not necessarily for this license renewal
11 proceeding.
12 But then as they evaluated it and
13 responded to questions from the NRC staff, they
14 identified some changes, some enhancements that we
15 wanted to make to the shield building monitoring
16 program. So ultimately, there is some connection
17 there.
18 But I think this, as I've listened to the
19 Intervenors' response to this question, I think
20 they're answering the wrong question. The Board asked
21 what is materially different here, and the Intervenors
22 chose the content of Contention 7, the subject matter
23 for Contention 7.
24 As it's worded, and they reproduce it in
25 their original Contention 7 or the amended Contention

1 7, it's focused on the shield building AMP, and they
2 identified some challenges to things like the number
3 of inspections, the scope of the inspection and the
4 frequency of the inspections.
5 So they selected that, and here's what we
6 have to look at whether something's materially
7 different, and here it is not. If we go back to when
8 FENOC first submitted the shield building monitoring
9 program to the NRC in April of 2012, it was a
10 monitoring program to look at the laminar cracking, to
11 monitor the core bores in the building with a certain
12 frequency in certain locations, and to see if there
13 was any change in the nature of the cracking, whether
14 it's a lighter crack or a crack in an area that it
15 hadn't been before.
16 The shield building has changed a little
17 bit over time, but only to enhance it. It has not
18 changed. That is still the functioning, is to monitor
19 for any changes in the laminar cracking. So that's
20 where there hasn't been a material difference. This
21 is where we point to, in our brief, to the *Oyster*
22 *Creek* case in CLI-09-7, where we believe it's a very
23 similar circumstance.
24 There, the Applicant had an Aging
25 Management Program, and they enhanced it by adding

1 additional inspections, and there both the Licensing
2 Board and the Commission concluded that enhancing a
3 program in that manner did not give a right to file a
4 new contention.
5 You know, the Commission explained there
6 in that case, CLI-09-7, that there just would be no
7 end to these NRC licensing proceedings if we could
8 just add a new contention for convenience during the
9 course of the proceeding based on information that
10 could have formed the basis for a timely contention at
11 the outset of the proceeding.
12 So here, if the Intervenors had a problem
13 with the way we were monitoring for propagation, which
14 hasn't changed, then they should have filed a
15 contention back in April of 2012.
16 MR. LODGE: If I may respond to that, sir.
17 JUDGE FROEHLICH: Yes.
18 MR. LODGE: What if the 2013 cracking
19 propagation had not been identified, because it had --
20 because the frequency was out to two or four years?
21 I think you're seeing very substantial timing changes,
22 sampling timing changes within the AMP, but more than
23 that.
24 The larger picture is is that I think that
25 there's an implicit concession here by the utility and

1 staff, but especially the utility, that they're
2 increasing open to increasingly sophisticated
3 scientific explanations of cracking. The cracks are
4 bigger. The cracks are in new locations.
5 The cracks are propagating in new
6 directions, and there is not just layered or laminar
7 cracking; there's cracking that appears to be
8 penetrating into the outer layer of concrete. There's
9 very significant problems.
10 FirstEnergy's most central difficulty is
11 that they don't know where this will stop or what will
12 stop it. They're monitoring and they're gathering
13 some data. They have not done a comprehensive
14 analysis of the overall structure. They are hoping
15 that it will be sufficient for regulatory muster, for
16 there to be some spot checks, if you will.
17 I repeat: There's massive area that we
18 have cited, the 280,000 square feet, and 23 samples
19 and a cubic foot essentially worth of analysis
20 scattered across the building, but only identified
21 with known cracking.
22 JUDGE TRIKOUROS: One of the themes that
23 I read from the Petitioners' documents is that their
24 concerned that the full extent of the shield building
25 is not being adequately looked at. The focus seems to

be more on, you know, what has occurred in the past, and how it will propagate.

So I wanted to explore that a little bit. Also, I want to make sure we're all on the same page with the design basis of this thing. As I understand this, this is sort of a secondary containment structure, that annular region between the containment and the shield building wall, that filters any radiation release from the containment by tech spec leakage.

It provides biological shielding clearly to anybody outside the shield building, from any neutrons that may come through from the reactor. Also, if there's any tornado or hurricane generated missiles, this shield building is there to protect the containment, right, not the reactor as you indicated earlier. But it's really to protect the containment.

MR. LODGE: Ultimately the reactor we believe, but yes.

JUDGE TRIKOUROS: Right. For nuclear engineers, containment and reactor are significantly different.

MR. LODGE: Sure.

JUDGE TRIKOUROS: Okay, and as we said, it's a very large surface area building. When you

1 look at the FACE report, it had mentioned that there
2 were three things that caused the original cracking.
3 One was the -- it was a combination of
4 rebar spacing, high moisture content in the concrete,
5 and subfreezing conditions, which in that -- at that
6 point were brought on by this 1978 blizzard.
7 But those three things are still there,
8 right? We still have the same rebar spacing,
9 etcetera. So it would be difficult for me to believe
10 that cracking couldn't occur pretty much anywhere in
11 this building, laminar cracking. Is that a bad
12 assumption? Is that a bad belief?
13 MR. BURDICK: Your Honor, thank you. So
14 I think it's important to look at that there are two
15 separate causes here.
16 In 2011, when FENOC was performing the
17 hydroblasting through the shield building wall to
18 replace the reactor vessel head, they first identified
19 the laminar cracking, and they did extensive
20 evaluation, and you discuss some of the causes that
21 were identified for the cracking there.
22 One of the causes there, one of the
23 additional causes was a lack, and I believe it was
24 actually the root cause in the root cause evaluation,
25 was a lack of an exterior coating to minimize the

1 amount of water that ingressed into the building.
2 And so FENOC, as one of its corrective
3 actions, applied that coating. So that's kind of the
4 first event. The second event then showed up in
5 August and September of 2013, when FENOC was
6 performing its inspections of the core bores, and in
7 monitoring for any crack expansion or propagation,
8 they identified some propagation scenarios and I'm
9 happy to talk more about that as well.
10 But after that evaluation, they determined
11 it was an ice wedging phenomenon. So I just want to
12 be clear that there is kind of two events. One was
13 the initial laminar cracking, and then the second one
14 is the laminar crack propagation.
15 JUDGE TRIKOUROS: So can you say there's
16 absolutely laminar cracking any place else in this
17 building right now?
18 MR. MATTHEWS: Can I supplement that? The
19 rebar spacing that you mentioned in the PII study
20 related to Contention 5, rebar spacing was significant
21 because it contributed to a stress pattern within the
22 concrete structure. The PII report found that the
23 concrete -- the initial laminar crack progressed to
24 its full length at the time of the 1978 freeze.
25 What's significant is they didn't find,

1 when they looked in 2000 -- the early era, 2011-12,
2 they didn't find evidence of step fracture. When they
3 looked again more recently, after discovering crack
4 propagation, they found evidence of step fracture, but
5 only after the application of the coating.
6 So the hypothetical that you started this
7 discussion with, Judge Trikouros, was that the cracks
8 could be progressing. That's not what FENOC's
9 analysis found. They found an initial step, and then
10 since 2012, evidence of step fracture since. So --
11 JUDGE TRIKOUROS: But that's with respect
12 to that region, where the laminar cracking has been
13 identified to have occurred?
14 MR. BURDICK: And Your Honor, just to
15 clarify on that as well. When FENOC was performing
16 its cause evaluation other inspections back in the
17 2011-2012 time frame, it did look at the entire shield
18 building, to characterize where the laminar cracking
19 was, and it used impulse response technology. I think
20 it took 60,000 plus impulse response readings to cover
21 all the accessible areas of the shield building, to
22 identify where the laminar cracking is.
23 Then based on that, and based on what the
24 cause was, they put together the shield building
25 monitoring program, which uses the core bores to watch

1 for any propagation, in addition to the other core
2 bores that were used throughout the evaluation. So
3 FENOC did identify where the cracking was on the
4 shield building, but only as part of its management
5 program that looks at the core bores.
6 JUDGE TRIKOUROS: Okay. So you've
7 answered my question, I think, that you did look at
8 the entire shield building using impulse response
9 testing methods, and determined that there was no
10 laminar cracking to be -- that was identified in other
11 portions of the building?
12 MR. BURDICK: So the laminar cracking is
13 in different places of the building. We believe
14 through those activities with the impulse response, as
15 supplemented by other core bores, we were able to
16 characterize where it is. So it is in different parts
17 of the shield building.
18 JUDGE TRIKOUROS: All right. So as of
19 let's say -- what's that document, RCA 1, the first
20 root cause, you've had it characterized. There was no
21 laminar cracking anywhere other than what you
22 identified, and you put in place an AMP, which
23 included 20 core bores to examine those over the aging
24 program. Okay.
25 But the conditions for which the laminar

1 cracking occurred in the first place are still present
2 over this entire building; is that a correct
3 statement?
4 MR. MATTHEWS: To the extent the rebar
5 spacing that you're -- that we discussed initially,
6 the rebar spacing concern --
7 JUDGE TRIKOUROS: That was one of three
8 criteria.
9 MR. MATTHEWS: Yes. But it's the tight
10 rebar spacing, not rebar spacing generally. That
11 tight rebar spacing has already cracked. It's not
12 subject to recrack.
13 JUDGE TRIKOUROS: In that region. The
14 rebar, I mean the rebar is throughout the building.
15 So it's at that spacing, right?
16 MR. MATTHEWS: The rebar at that spacing
17 is limited to particular areas, the flute shoulders
18 around the main steam line penetrations. The rebar
19 spacing throughout the shield building is at a broader
20 interval. It's not the tight rebar spacing --
21 JUDGE TRIKOUROS: All right. So you're
22 saying that the rebar spacing in other parts of the
23 building is not the same as the rebar spacing where
24 the cracking occurred, and are you further saying that
25 the rebar spacing in the rest of the building would

1 not be conducive to laminar cracking? Is that
2 something you can say or not?
3 MR. BURDICK: I think, you know, just to
4 clarify. There is different rebar spacing around the
5 steam line penetrations and along the top 20 feet of
6 the shield building, and if I recall correctly, the
7 rebar spacing is about six inches between the pieces
8 of rebar.
9 So the root cause evaluation looked at
10 that, and looking at the blizzard of '78 with the
11 sharp drop in temperature, the penetrating moisture
12 with the wind-driven rain and the stresses caused by
13 that event, were enough to cause the stresses, the
14 smaller allowable stress with a six inch rebar to
15 cause the laminar cracking.
16 It did not cause it as extensively in
17 other areas of the shield building. There is some
18 laminar cracking -- or beyond those areas, there is
19 some laminar cracking in the shoulders on the shield
20 building, which is also due to that design feature
21 with the shoulders that are sticking out from the
22 shield building.
23 So those are the areas where the original
24 laminar cracking was limited to, and also where we've
25 seen the, you know, sort of propagation.

1 JUDGE TRIKOUROS: So it was around the
2 flutes?
3 MR. BURDICK: That's right, that's right.
4 But the mechanism is different from back then to the
5 issues raised by the Intervenors in this contention,
6 with the propagation identified in 2013.
7 JUDGE TRIKOUROS: Did the moisture that
8 occurred because of the original laminar cracking, did
9 that moisture penetrate the building as a result of
10 the blizzard, or was that moisture that was always
11 there, but the combination of rebar and cold combined
12 to cause the laminar cracking?
13 MR. BURDICK: My sense a combination of
14 both. But the shield building was designed. There
15 was no coding specification, which would have been one
16 of the -- I think the root cause from that 2011-2012
17 evaluation. So because it didn't have a coating,
18 there was some amount of moisture in the building,
19 just because there was nothing to prevent it from
20 coming in.
21 But I believe that blizzard, then, was
22 able to drive in more moisture at that time, combined
23 with the other factors that Your Honor has mentioned.
24 JUDGE TRIKOUROS: So it's a combination,
25 okay. Can we talk -- I just wanted to get sort of a

1 baseline understanding of things as we ask questions,
2 and of course I wanted to elaborate a little bit on
3 the -- what I think the Petitioners were saying.
4 This moisture that's in this concrete is
5 throughout the entire concrete structure right now;
6 correct? Or well let me ask it that way. I could be
7 more specific.
8 MR. BURDICK: My understanding, there's
9 moisture in the concrete. I believe it's certainly a
10 higher amount of moisture towards the exterior of the
11 shield building. But we believe it is migrating
12 through the building or dissipating through the shield
13 building.
14 JUDGE TRIKOUROS: Okay. So the mechanism
15 by which the root cause reports, or at least one of
16 them said it would dissipate, is -- they refer to
17 absorption and dispersement mechanisms. Could you
18 perhaps -- they never explained that. So you have any
19 explanation for that?
20 In other words, this moisture is
21 disappearing. At least that's what they're saying.
22 MR. BURDICK: I'll try my best, and then
23 someone can correct me and elaborate.
24 JUDGE TRIKOUROS: I understand none of us
25 here are structural engineers, as far as I know.

1 MR. BURDICK: So when -- it was October
2 2012. FENOC sealed the shield building with the
3 coating, applied that coating. There was moisture in
4 the building, because it was -- because there was no
5 coating there before. So once they've sealed that,
6 the shield building, it's preventing additional
7 moisture from coming in. Also, it's preventing
8 moisture from coming out.
9 So there's a finite amount of moisture in
10 there, and through the testing, it's primarily on that
11 outer region of the shield building. But our
12 expectation is that it will dissipate, which I think
13 means migrate through the building. So it's not
14 focused in the area of alignment of cracking, such
15 that that moisture can support the ice wedging,
16 because the ice wedging requires three things.
17 It requires the laminar crack or requires
18 an existing crack which is caused by laminar cracking;
19 requires a freeze event; and then it requires a
20 moisture -- the moisture has to be, I guess, a
21 significant enough concentration to have water at the
22 tip of that laminar crack, such that when you have a
23 freeze event, the water expands and causes the stress.
24 So the belief is that because there's a
25 finite amount of moisture and it will dissipate, that

1 it will dissipate to some point where there's not
2 enough water or moisture at that crack tip to cause
3 ice wedging.
4 JUDGE TRIKOUROS: Now when you say
5 dissipate, do you mean that it will migrate towards
6 the annular region between the containment and the
7 shield building on the inside surface of the shield
8 building? I mean that's the only place this water
9 could go, where it can eventually get out of the
10 shield building wall; correct?
11 MR. BURDICK: Your Honor, let me just
12 confer if I can.
13 (Pause.)
14 MR. BURDICK: Thank you, Your Honor, for
15 allowing me to confer. So the answer is yes, that
16 when we discuss the dissipation of the moisture, it is
17 towards the inner region of the shield building,
18 towards the annulus. That's both because of the, I
19 guess the concentration of moisture and there being a
20 relative humidity gradient as well that will cause
21 that moisture.
22 JUDGE TRIKOUROS: So most of the moisture,
23 then, is on the -- is within let's say ten inches of
24 the exterior surface of the shield building? You're
25 saying that's going to disperse towards the inside

1 surface and eventually dissipate that way?

2 MR. BURDICK: That's correct.

3 JUDGE TRIKOUROS: Okay. One other point.

4 In terms of freezing, I mean this is concrete. It's

5 a thermal insulator effectively. The inside surface

6 of this thing is seeing probably something like

7 reactor building temperatures, I would assume. You

8 know, my memory of PWRs I worked with, it's maybe 120-

9 130 degrees in that reactor building, which would get

10 right through that containment and into that annular

11 region.

12 I would imagine the annular region is well

13 over 100 degrees normally. So some big fraction of

14 that shield building is fairly warm. But it wouldn't

15 propagate all the way through where you have a cold

16 outside. So you would have some 2D distribution. I'm

17 just making the -- I'm just trying to make myself

18 understand the heat transfer situation here.

19 So the freezing could only occur on the

20 outside, you know, within let's say, pick a number,

21 ten inches of the outside surface. Is that a fair

22 assumption? Do Intervenors have an issue with that?

23 MR. LODGE: Ten percent is outside

24 surface.

25 JUDGE TRIKOUROS: Freezing can only occur

1 on the outside, from the outside surface in of some
2 amount of distance, because the other side of this
3 building is very hot, and would propagate in some
4 amount of distance. I know if you deal with 2D
5 distribution, it wouldn't be above freezing except at
6 some region on the outer surface.
7 MR. LODGE: Yeah, correct. We're not
8 prepared to stipulate to adjudicatory facts, but yes.
9 JUDGE TRIKOUROS: Okay. I just want to
10 understand. All right. Do you have any indication of
11 how long it will take for this moisture to leave that
12 building?
13 MR. BURDICK: Your Honor, what the
14 apparent cause evaluation concludes is that it's
15 leaving the building. But as far as the exact time
16 frame, you know, we have not determined that. I think
17 what's -- another thing that's important here, based
18 on this discussion, is the laminar cracking that we've
19 seen is always in the same layer of rebar in the
20 shield building.
21 So it's always -- it's just in the one
22 outer rebar layer. So when we're talking about the
23 laminar cracking from 2011 and also any propagation,
24 it's always in that layer.
25 So I think, you know, this freezing

1 question is also important is that some of -- because
2 of the design of the structure with the shoulders,
3 some of the locations of the laminar cracking are such
4 that they're -- that they are much deeper than other
5 locations, because of the slant of the shoulder.
6 So we did see that, and that's discussed
7 in the apparent cause evaluation. Some locations may
8 only see one freeze event in a winter, and others may
9 see more. So as it dissipates inward, you know,
10 that's when the risk of this laminar crack propagation
11 decreases.
12 JUDGE TRIKOUROS: But does the AMP make
13 the assumption that new laminar cracking will not
14 occur anywhere else in this building?
15 MR. BURDICK: Yes.
16 JUDGE TRIKOUROS: That's the concern of
17 the Petitioners.
18 MR. BURDICK: Yes. There's no basis to
19 assume that additional laminar cracking will occur.
20 Now I'm distinguishing that from any laminar crack
21 propagation. I think that's -- that's -- that's an
22 unknown, because it depends on many different
23 variables, including these ones that we've discussed.
24 That's one of the key reasons why this
25 shield building monitoring program is a monitoring

1 program, is to monitor this. You know, we understand
2 the nature of the laminar crack propagation, the ice
3 wedging phenomenon. We understand what happened in
4 the winters behind us. So putting these together,
5 we've developed a monitoring program, and that's why
6 we believe it's appropriate.
7 JUDGE TRIKOUROS: Well for example, does
8 the AMP require impulse response testing of the whole
9 building at some frequency?
10 MR. BURDICK: It does not require it,
11 although there are statements in there that we can
12 supplement the core bore inspections with additional
13 methods, if appropriate. That's why when we monitor
14 the core bores, I'm sure we'll talk more about their
15 locations and we'll certainly explain that.
16 But the AMP requires the monitoring of
17 these core bores, and then it's watching for whether
18 there's -- for the uncracked areas, whether there's
19 new laminar cracking, and if there's core bores in
20 cracked areas, whether there's a change in the nature
21 of that cracking.
22 If anything is identified, then that will
23 be further investigated under the monitoring program,
24 to determine if any additional options are needed.
25 JUDGE TRIKOUROS: But the focus is what is

1 the regions that are cracked now. That's the focus.
2 The focus is not to identify any new cracking. I mean
3 the Intervenors point out that, you know, it's X years
4 before this laminar cracking was found. It's not an
5 invalid point. There's a lot more building.
6 MR. BURDICK: Well, it's -- to this
7 question, it's a combination. You know, certainly all
8 these factors factored into our decision as to the
9 number of core bores and their locations. Some of
10 this is discussed on the docket in the November 2012
11 RAI, where we explain the location of the 20 core
12 bores.
13 But what we determined, based on our
14 investigation and impulse response testing, was the
15 laminar cracking was more focused on the southern
16 exposure of the building, and also, as Mr. Matthews
17 explained, on the top 20 feet of the building around
18 the main steam line penetration.
19 So we've selected the 20 core bores before
20 this latest revision, to ensure that we covered many
21 of those areas where the laminar cracking was most
22 prevalent. But also some other regions, including the
23 flutes and other regions, just to ensure -- to look
24 for any other areas.
25 But the purpose of identifying the

1 locations is to perform a representative sample of the
2 shield building to inspect. I would also point out
3 that although the shield building monitoring program
4 has not been put into place, a very similar program
5 has been in place under our maintenance rule, under
6 the Part 50 license, that there's very similar
7 inspections.
8 And in fact it worked in a sense that it
9 identified the laminar crack propagation, and I think
10 is another indication of the reasonableness of using
11 a monitoring program.
12 MR. MATTHEWS: I think also, if I may,
13 Judge Trikouros, to your point, with the discovery of
14 the initial cracking, FENOC went out and did survey
15 the whole building exactly as you're discussing, with
16 numerous core bores and complete circumferential
17 impulse response testing, and developed its
18 understanding of where the cracking --
19 JUDGE TRIKOUROS: Is that the 80 core
20 bores that they referred to in the RCA 1?
21 MR. MATTHEWS: 80 or 82.
22 MR. BURDICK: So the impulse response --
23 yeah, there's not a core bore, of course. I think
24 that was 60,000 plus locations. I think there's more
25 than 80 core bores or there had been throughout the

1 investigation. But right now, I think there are 80
2 core bores that are in the building.
3 MR. MATTHEWS: But to your point, the AMP,
4 as originally proposed, was to assess -- we originally
5 looked at where cracking might be, to discover the
6 extent of the problem and develop the cause. From
7 that, the AMP then looked at where cracking was, to
8 see whether it was changing. There was no reason to
9 go back and look at the other places that were
10 uncracked.
11 When crack propagation was discovered,
12 FENOC modified the AMP in the areas of propagation.
13 There was no reason, and there's been none asserted,
14 why FENOC should go back and reevaluate the entire
15 building now or elsewhere.
16 Now FENOC did do more extensive core bore
17 testing in response to this discovery of propagation,
18 and did some impulse limited, more limited than the
19 entire building impulse response testing. But there's
20 been no indication and certainly no reason advanced
21 why an entire diagnostic of the entire building is
22 called for, either now or at any frequency going
23 forward under a monitoring program.
24 JUDGE TRIKOUROS: So basically, FENOC has
25 the ability at any time to go and look at all of these

1 core bores and make a very thorough investigation of
2 this building. They don't want to be committed to
3 that in the AMP; is that the way I read this? The AMP
4 is basically 23. They run from 20 to 23.
5 MR. BURDICK: I would explain it this way,
6 that we don't think it's necessary, that the core bore
7 monitoring or the shield building monitoring program
8 uses core bores for a representative sample. So we
9 believe that the 20 that we discussed, plus the
10 additional three are appropriate, and satisfy all the
11 requirements for a license renewal.
12 But you're correct. You know, as we did
13 in 2013, there are others we can look at if we need
14 to, if there's, for example, an indication. But we're
15 not committing to that. We don't think we need to.
16 Judge Trikouros, if I may too, we've been
17 discussing a lot of the technical aspects of these
18 issues, and the shield building AMP. I just want to
19 emphasize, that I think we've gotten into way more
20 detail than have been provided in Contention 7 itself.
21 I note that this Board has made the point
22 to these Intervenors in I believe both the Contention
23 5 and Contention 6 orders, is they have to provide the
24 support for the contention themselves in their
25 pleading. The Board -- and so that's our argument.

1 We can't supplement their arguments for them and
2 develop, you know, some support.
3 So I just want to make that point and make
4 it clear on the record. You know, we're going to be
5 on what was in the record.
6 JUDGE TRIKOUROS: But I wanted to make
7 sure that I understood the lay of the land, so to
8 speak, because you know, we're not going to reach a
9 decent decision if we have an unclear understanding of
10 what it is that we're evaluating here.
11 MR. HARRIS: Your Honor, for the staff, if
12 I may add one thing, because I think it's also very
13 easy to get confused with the terminology here when
14 we're talking about cracking and the laminar cracks
15 and then the cracking propagation, that we're really
16 talking about two different things.
17 It's been a long time since we discussed
18 the laminar cracks in a lot of detail. One of the
19 things that they found was with the laminar cracks is
20 that it actually split through the aggregate in the
21 concrete. So it was not, you know, what you would see
22 with your ice wedging, when it seems to go around the
23 laminar cracking.
24 So people sometimes, when you talk about
25 the cracks, is that we're really talking about two

1 different mechanisms at the point, and that you can
2 see the difference in the force. I'm sure we can go
3 into detail, but I think it's important that we sort
4 of distinguish between the laminar cracking and the
5 propagation that we're seeing now, so that we don't
6 get confused on the record as to what -- which one
7 we're talking about.
8 JUDGE FROEHLICH: Maybe this would be a
9 good point for me to follow up with you or with the
10 licensee. The purpose of the Aging Management Program
11 is to discover cracks, as I understand it, and in the
12 course of its operation, certain laminar cracks were
13 found.
14 It's kind of addressed this -- the Aging
15 Management Program as it exists, discovered or
16 confirmed propagation of the laminar cracking.
17 Correct me when I make a mistake here.
18 And also, we have come across a phenomena
19 of ice wedging, which leads to microcracking. Can you
20 please explain to me the propagation portion of the
21 laminar cracks, and how microcracking fits in either
22 to the propagation or to the original laminar cracking
23 that the AMPs are detecting?
24 MR. BURDICK: Certainly. Thank you, Your
25 Honor. Just to be fair, the purpose of the shield

1 building monitoring program is focused on just the
2 laminar cracking, to look for changes in the nature of
3 that cracking and some other issues such as the
4 coating.
5 But as far as cracking, it's focused on
6 the laminar cracking and just to be clear here, the
7 program itself, it talks about laminar cracking and
8 says we will monitor for cracking, changing material
9 properties, lost material concrete. So but here it's
10 focused on laminar cracking.
11 The laminar cracking is really just
12 referring to the cracks along this outer rebar layer.
13 So in 2011, that was -- what was found is this laminar
14 cracking along the outer rebar layer. When we're
15 talking about cracked propagation, all we're talking
16 about is that same laminar cracking just expanding.
17 So it's continuing to expand. But it's
18 still a laminar crack, but the 23 identification was
19 when we talk about --, it's just propagation that
20 laminar cracking. Microcracking is a whole separate
21 type of cracking. So it's not directly tied to the
22 cause of the ice wedging or vice-versa.
23 Microcracking is discussed in the apparent
24 cause evaluation, was identified in some of the
25 investigations where we withdrew a core from the

1 shield drilling and analyzed it. I think one thing
2 that needs to be clear is when we talk about
3 microcracking, it's really to support the conclusion
4 that there was ice wedging, because the microcracking
5 is an indication that there's moisture in the building
6 at that area.
7 Because what microcracking is is the
8 concrete, totally separate from this laminar cracking,
9 has very small pores in it. So when those pores have
10 moisture in it and you have a freeze event, then that
11 moisture in those pores will expand as it freezes, and
12 the microcracks are minuscule cracks coming from those
13 pores.
14 So when we talk about microcracking in the
15 apparent cause evaluation, it's just to show that
16 there was water transport to where the laminar
17 cracking is, to provide that moisture that's needed as
18 one of the three prongs for ice wedging.
19 JUDGE FROEHLICH: Microcracks are part of
20 the laminar cracks?
21 MR. BURDICK: No.
22 JUDGE FROEHLICH: Okay. You want to try
23 again?
24 MR. BURDICK: I understand. It's
25 confusing here. To have ice wedging, there has to be

1 moisture at that laminar crack. So before we talk
2 about microcracking, you just have to have moisture at
3 that laminar crack. If you have water at that cracked
4 tip, it freezes. That will cause some expansion of
5 that water at the crack tip, causing some stress, and
6 that can propagate the laminar crack, and so that is
7 the ice wedging mechanism.
8 Microcracking is completely separate. It
9 was something that was identified during our
10 evaluation, and was an indication that there was water
11 in the shield building, that would have reached the
12 laminar cracking.
13 So it's a separate mechanism. It was just
14 an indication that there's water in the shield
15 building, and it was one of the things we looked at in
16 our failure methods analysis and the cause evaluation,
17 that supported our conclusion that there was ice
18 wedging. There's two separate things.
19 MR. MATTHEWS: It's not a separate failure
20 mode of the concrete.
21 JUDGE FROEHLICH: Okay.
22 MR. MATTHEWS: At least as identified at
23 Davis-Besse, that has not been a concern.
24 JUDGE FROEHLICH: And is your allegation
25 different than that? It's not a separate mode or it

1 is a separate mode.

2 MR. LODGE: It is a separate mode.

3 JUDGE FROEHLICH: You're suggesting it is?

4 MR. LODGE: Yes. Microcracking can

5 proceed radially, as opposed to laminar, which is more

6 on the order of layered -- more tied, I would say,

7 probably to the presence of the rebar.

8 There are a number of responses we have.

9 I first think that it is somewhat interesting that

10 even though the staff and the FirstEnergy have argued

11 vigorously that best not incorporate by reference our

12 2012 filings, we're talking about facts from the 2012

13 filings that were raised.

14 Thus proving that history is highly

15 relevant to trying to figure out and get a grasp of

16 what the future looks like in the shield building.

17 There are many sources of moisture infiltration into

18 the shield building, which date back to the 70's and

19 to the construction of the building and the fact that

20 it was left open for approximately three years, and

21 that even in 1976, there were cracks that were

22 identified on the roof of the shield building.

23 Davis-Besse has, of course, had a history

24 of boric acid leakage within the shield building, and

25 water vapor and water leakage. So there are some

1 sources also from the sand bucket region.

2 We established from FOIA and other

3 internal FOIA documents from the NRC that the concrete

4 was sub-par and that particularly the concrete that it

5 is in contact with or near the ground level of the

6 shield building may be developing its own problems.

7 There are barrier degradation difficulties, that

8 there's lot of water source problems here.

9 The discussion of the impulse testing is

10 problematic because from what we discerned, that

11 occurred before they applied the coating. So it would

12 seem to us that those test results may be completely

13 out the window and useless at this point, that there

14 has been damage identified and now admitted by FENOC

15 since that time, and apparently attributable to the

16 fact of sealing the building, very very decades

17 belatedly.

18 The microcracking is far different. As

19 Mr. Harris pointed out, the laminar cracks may have

20 actually sheared through aggregate. The microcracks

21 may be working their way around the more solid or more

22 integral portions of the concrete.

23 But the problem with the microcracking is

24 that it is very capable of penetrating radially,

25 inward from outside inward on the shield building.

1 Just one moment, please. I have notes. FirstEnergy
2 has a policy that 1/16th inch surface cracks aren't
3 even required to be repaired, meaning that there's a
4 conscious determination to allow pathways for moisture
5 to remain open as pathways.
6 It is somewhat remarkable to note that the
7 decision that's taken place just in the last half hour
8 or so actually suggests very strongly that there
9 should be an adjudication. So that instead of
10 listening to unsworn representations of counsel after
11 they've talked with their respective experts and
12 engineers, and you know, that they're simply saying
13 things that they're told, we can hear from those
14 experts and engineers, and ask our own questions of
15 them.
16 I think that this is a very complicated
17 issue, that once again 23, you know, an additional
18 three bore holes is not a significantly useful
19 informational device. But it does constitute an
20 admission that there are some big changes that have
21 now been discovered, and now are admitted.
22 JUDGE TRIKOUROS: With respect to the
23 dissipation, the dissipation mechanism is not
24 discussed in -- I just want to make sure -- is not
25 discussed in the reports. We were just -- we were

1 sort of thinking out loud, if you will, where water
2 might be able to go.
3 I mean it's rational, but it's not in the
4 report. So I want to put that on the record.
5 MR. BURDICK: The reports talk about
6 water, potential water sources, and then that those
7 potential water sources are no longer available,
8 because of the sealing of both the shield building
9 walls and the shield building dome.
10 So I think with respect to dissipation, it
11 does discuss that there's a finite amount of water,
12 and there is some discussion about the humidity in the
13 internal. So I think there is some support, even if
14 it's not discussed in excruciating detail.
15 JUDGE TRIKOUROS: Okay. Umm, I guess I
16 was going to ask the question later, but maybe I
17 should bring it in now.
18 (Off mic comments.)
19 JUDGE KASTENBERG: I appreciate your
20 comment before about it's so easy to slip into
21 technical discussions, because they're interesting.
22 But I just wanted to clear one thing up on the
23 timeliness issue that Judge Froehlich started at the
24 very beginning.
25 I just want to get a sense of something,

1 because clearly Petitioners claim that the contention
2 is timely, and NRC staff made an opening statement and
3 an argument that it's not timely. And as I read the
4 licensee's submittal or pleading, you are kind of in
5 the middle, I guess.
6 It says here "Parts of Contention 7 are
7 untimely," which leads me to believe that there are
8 parts that are timely. So maybe we could kind of
9 complete the discussion about timeliness before we get
10 into the discussion of the technical questions and
11 other issues regarding -- procedural issues. But
12 maybe we can complete the discussion on timeliness.
13 So where do we stand? We have it's not
14 timely, we have it's timely and we have it's partially
15 timely. Some parts are timely and some are not. So
16 perhaps a statement from each party on this, and maybe
17 we can go on to other things.
18 MS. KANATAS: I'm happy to make a
19 statement. Again, the standard in both 2.309(f)(1)
20 and yes, it applies here, is that it's new and
21 materially different. So while something might be new
22 in terms of 60 days from the time filed, it also to be
23 timely has to be materially different.
24 I think that is the crux of staff's
25 position, that none of the information cited to in

1 Intervenors' Motion to Admit and Amend is materially
2 different, and that it does not support the
3 contention, and also that there were indications
4 previously in the 2012 AMP that these type of
5 modifications would be made, as well as the Contention
6 5 and 6 filings, which have already been considered by
7 the Board.
8 So that really -- it's the "and materially
9 different" portion, I think, that we primarily focus
10 on.
11 JUDGE KASTENBERG: So your argument is
12 based on the idea that it has to be both, timely and
13 material?
14 MS. KANATAS: Yes, yes.
15 JUDGE KASTENBERG: Not just timely or
16 material?
17 MS. KANATAS: Yes, correct, correct.
18 JUDGE KASTENBERG: Got it.
19 MS. KANATAS: And it must support the
20 proposed contention, and in our mind, none of the
21 information supports admissibility of the contention.
22 MR. HARRIS: And just to add some facts to
23 that, looking at some of the AMPs, and as they've been
24 modified over the years, things like ice wedging and
25 these kind of freeze-thaw cycles and crack propagation

1 were contemplated in FENOC's response as early as
2 April 5th, 2012, that you know, there could be freeze-
3 thaw cycles that could affect these.
4 So these are all things that they would
5 look at, and now that they've found it, they've made
6 it more explicit in their AMP, you know, to look at
7 these things, now that you're seeing the propagation
8 that they contemplated in the AMP originally.
9 MR. BURDICK: Thank you. Let me try to
10 clarify our position here. I think the reference to
11 different parts of Contention 7 are untimely was
12 because we have multiple arguments for why different
13 information is untimely.
14 So as discussed in our answer on pages 54
15 through 56, we identify certain topics discussed
16 throughout the Contention 7, the original and the
17 amendment, where they refer to documents or
18 information that were available more than 60 days
19 prior to the submission of Contention 7.
20 So there are some arguments that fall into
21 that category, things like discussing an Inspector
22 General report from 2002. So things that were just
23 simply old information, things like the 2012 and 2011
24 emails on the design and licensing basis that just
25 don't satisfy it for that 60-day reason.

1 But certainly they filed their contention
2 within 60 days a couple of documents. So, you know,
3 we can't say that there aren't some new facts in
4 there. But what we do say, I think consistent with
5 the staff, that there isn't any material new
6 information in those documents.
7 For that part of our argument, I'd point
8 the Board to pages 52 through 54. So I think
9 collectively, the contention is untimely. The
10 confusion was we were making multiple arguments, not
11 just the one. Just to reemphasize, I think our
12 primary argument that we start with on timeliness
13 issues is this one that I mentioned earlier about the
14 *Oyster Creek*.
15 This contention is really challenging the
16 revisions to the shield building AMP that were made on
17 July 3rd, 2014, and as the staff just explained now
18 and we explain in our briefs as well, the Commission
19 and the *Oyster Creek* Licensing Board concluded that
20 adding additional inspections or other types of
21 enhancements to an Aging Management Program does not
22 provide a new opportunity.
23 So that's the focus of our argument. I
24 think that's the key point with respect to timeliness.
25 JUDGE FROEHLICH: Okay. You have the last

1 word on this.

2 MR. LODGE: Thank you. As I understand,

3 the staff's point is gee whiz, FirstEnergy promised,

4 when they formulated their AMP, that they would stay

5 open to new information and maybe develop some new

6 data, and perhaps change their approach if there were

7 reasons to change their approach.

8 That's fine. That's a pledge. That is

9 not an act. What has happened in the interceding time

10 is that there is new evidence, there are new facts,

11 there is new scientifically verifiable, objective

12 information, and that information points in a new root

13 cause direction.

14 It points in the direction of an

15 inescapable conclusion that the cracking phenomenon is

16 ongoing, is not over, and is not solved, is not

17 perhaps conceptually completely understood yet.

18 So yeah. We were partly within the 60-day

19 limit because we're pointing out is these earlier

20 promises to stay open to changing the AMP, and there,

21 yes, concededly have been some minor changes to the

22 AMP in terms of changing the schedule of doing

23 analysis work.

24 But what the bigger problem is is that

25 there is totally insufficient knowledge, based on the

1 changing conditions, based on the changing conditions
2 caused in large part by the coating of the shield
3 building. So the problem here is we're quite timely.
4 The Intervenors raised this -- we made the 60-day
5 limit, but we made the evidentiary limit.
6 The public has not known of the
7 considerable moisture infiltration problem. Nobody
8 knows what the dissipation rate is going to be, how
9 long it will take, what the winters are going to be
10 like and how much further damage will occur before
11 there is, I guess for want of a better word,
12 equilibrium again achieved to the 65 percent humidity
13 level or whatever you want to call it.
14 But the problem is is that we're 37 months
15 into this, and we're still having these new revelatory
16 discussions and discoveries, new propagation, new
17 cracking and new methodologies for that cracking to
18 occur. So I think it's quite untimely.
19 JUDGE FROEHLICH: Mr. Lodge, I think
20 you've outlined a number of the new elements. Could
21 you address, I guess, the staff's perspective, that
22 there's nothing materially different in these new
23 elements, because I believe that was their point. Not
24 that there are new, issued new facts that are coming
25 to light.

1 But the second part of that, I guess,
2 according to what the staff had said, is that they
3 have to be materially different from what was
4 previously in the record.
5 MR. LODGE: Well the previous
6 understanding was that there was a finite -- that we
7 have identified the laminar cracking, we've identified
8 the source, and we're going to slap a coat of paint on
9 it, for want of a better word, high quality coating
10 material, and we're going to change the penetration
11 ability, of the resistance, if you will, of the shield
12 building.
13 Well, that's all been done and as part of
14 a -- what's turning out in retrospect to look like an
15 experiment, there are new implications for it. That's
16 different. Please remember also, Your Honor, we're
17 talking about when did the public -- when was the
18 public finally let in on this information, and that
19 did not occur until July.
20 It may be two years old or two and a half
21 years old, but it is -- it cannot be something which
22 becomes the fault of the Intervenors for simply not
23 knowing it. It is materially different because we
24 have a new cause articulated by FirstEnergy's
25 consultants, not by the public.

1 We have propagation spreading identified.
2 So the new, materially new information is is that this
3 is ongoing. It ain't fixed. It is not stopped. It
4 has not been curbed, and I repeat. It may also not be
5 fully understood. There are welcome and increasingly
6 sophisticated scientific analyses that are starting to
7 appear in PII's writing.
8 But the thing is is that yes, there's
9 considerable material difference between what we know
10 as of July of this year, versus what we knew even in
11 the spring of this year.
12 JUDGE FROEHLICH: But Mr. Lodge, I mean
13 let me just tell you what we have to deal with in our
14 decision. If the previous AMPs had, you know, Content
15 A in them and this July AMP has Content A plus B in
16 it, the fact that there's a B in it doesn't mean that
17 you have the legal right to go back and question the
18 A part, which was available two or three times earlier
19 in years.
20 Now that's what we're being told, is that
21 that is not admissible. You never submitted a
22 contention that criticized A before, even though it
23 was available.
24 MR. LODGE: June 4th, 2012 we did, Your
25 Honor, and we -- understand our contention is is that

1 they don't know enough to be making the judgment calls
2 they're making. This is -- particularly the earlier
3 calls apparently were grossly erroneous, and I am
4 operating from 20-20 hindsight here.
5 But we did critique the AMP before. It
6 was terribly insufficient; it wasn't really fully
7 investigatory. The response at the time, and I'm
8 willing to accept the Board's decision at the time.
9 But the response at the time was "Hey, man. We've
10 done all these impulse tests; we have been all over
11 this building."
12 But there's been a lot of change since
13 that time, much of it initiated by the utility itself,
14 and now a certain number of chickens are coming home
15 to roost, and it is creating new problems. They
16 actually could also be because of the more
17 scientifically capable investigatory method of
18 electronic microscopy. They may actually simply be
19 identifying things that could have been identified had
20 that technique been used in 2011-2012.
21 But there's also propagation on top of
22 that. There is new cracking besides. So I simply
23 repeat. We're talking about a wait-and-see monitoring
24 effort that is revealing new information, and the
25 utility's saying "hey, the plan works. We're finding

1 this stuff, and in fact we're going to now go to an
2 annual basis for a while."
3 But they do not have a knowledge base of
4 the status of the entire building, and they're looking
5 at new changes. It is not enough to say that we're
6 going to keep looking at this for the remaining two
7 and a half or three years of license activity under
8 the 40-year license, and then we'll just continue
9 keeping an eye on things.
10 There's no plan for mitigation. There is
11 some discussion of how the building is out of
12 compliance with this licensing basis. I don't see how
13 that gets -- how that passes muster and justifies a
14 20-year extension at this point.
15 JUDGE FROEHLICH: We're going to talk more
16 about these others as this day progresses.
17 JUDGE KASTENBERG: Thank you. I just
18 wanted to follow up on something that Mr. Harris said
19 before about the ice wedging, that there was some
20 indication that there might be ice wedging in a pre-
21 2014 report. Could you point us to where we could
22 find that?
23 MR. HARRIS: It is in a letter response,
24 the July 3 modifications. No, that's not the right
25 one.

1 MS. KANATAS: Uh-uh.

2 MR. HARRIS: There is -- FENOC had
3 provided a number of responses to RAIs related to the
4 Aging Management Program. There is an April 5, 2012
5 response, and that ML number is ML 12097A520, and in
6 the enclosure to it, it discusses cracking of concrete
7 from freezing water that has permeated the concrete.

8 It's monitoring the surface condition, the
9 bore holes, the core bore samples and changing crack
10 conditions and by visual inspection. So this is one
11 of the things, one of the things that they were
12 monitoring from the initial AMP, you know.

13 As we continue to go through this, this
14 same sort of language appeared in other responses and
15 November 2012, 20-2012. That ML number is ML
16 12331A125. It had very similar language in an
17 enclosure. That can be found in Enclosure A, page 8
18 of 12. These are letters that FENOC sent in in
19 response to RAIs.

20 Then when you get to the final one, and of
21 course some of that becomes more explicit in terms of
22 not just being in these enclosures; they're talking
23 about now that we have this crack propagation, we're
24 going to be trending it, you know. Whereas before
25 with those responses, there was not any indication of

1 propagation.

2 So you know, it was one of those things

3 you don't need to explicitly say, I should trend the

4 crack when I don't expect to find any crack.

5 JUDGE KASTENBERG: Right.

6 BH So it's just -- it's one of those

7 that's almost implicit in what they were monitoring,

8 that as soon as you find it, you need to trend it.

9 MS. KANATAS: And if I may, Your Honor,

10 getting at the timeliness issues in response to some

11 of what Intervenors just said, to the extent that

12 they're talking about this new cracking being

13 materially different, it was the subject of their

14 Contention 6.

15 So it was August and September 2013, and

16 the subject of Contention 6. So to the extent that

17 they're talking about the full apparent cause

18 evaluations ice wedging, as Mr. Harris just said,

19 multiple submittals from 2012 and through these years

20 have indicated that ice wedging aging effects may be

21 identified, including ice wedging, and that ice

22 wedging could affect rebar and coating effectiveness.

23 To the extent that this is an issue about

24 compliance with the current licensing basis, that's

25 clearly outside the scope. Therefore does not support

1 admissibility and gets at that materiality prong of
2 timeliness. Thank you.
3 MR. BURDICK: Judge Froehlich.
4 JUDGE FROEHLICH: Yes?
5 MR. BURDICK: Can I make one more point on
6 the timeliness before we move off this topic? You
7 know, I've heard from their Petitioners in their
8 explanation a few times today. They talk about how we
9 didn't think there would be propagation.
10 There is some discussion about it in our
11 root cause evaluation, that we didn't expect
12 propagation from I think it's thermal fatigue. But
13 regardless of that, we put in -- in 2012, we
14 deliberately put in the shield building monitoring
15 program to monitor exactly for propagation, to look
16 for these types of incidences, events.
17 So it functioned, and that's really our
18 timeliness argument here, is we had a program in
19 place. Part of the discussion of the Commission in
20 the *Oyster Creek* decision that I referenced earlier
21 was they referred to some of the Licensing Board's
22 discussion of, you know, why you shouldn't be allowed
23 to keep doing this, that if the Petitioners have a
24 problem with this enhanced program that has additional
25 inspections, you know, a shorter or a larger

1 frequency, then they should have had a problem with
2 the earlier monitoring program and should have
3 challenged it then. So that's really our argument
4 here.
5 JUDGE FROEHLICH: Did the earlier program,
6 the AMP deal or address the microcracking?
7 MR. BURDICK: The shield building
8 monitoring program has never been designed to address
9 microcracking itself. Instead, there's a separate
10 AMP, the structures monitoring AMP, that addresses
11 other types of cracking within concrete structures,
12 including microcracking.
13 JUDGE FROEHLICH: Yeah. I think certainly
14 the answer, looking at the FACE report, quotes
15 something. It says "Performance International
16 concluded in RCA 1 that the general determination, it
17 was not likely to propagate." That was the original
18 conclusion.
19 "Note that in RCA 1, ice wedging was not
20 considered because it had not been known to be
21 involved in concrete crack initiation." So basically
22 they didn't know. Now they know.
23 MR. BURDICK: And Your Honor on that
24 point, we're not disputing that. We acknowledge that
25 in that document. But our point is notwithstanding

1 that conclusion, we still put in a shield building
2 monitoring program to monitor for propagation, and it
3 functioned. It identified the propagation.
4 So that's from a timeliness perspective is
5 our argument there, consistent with the *Oyster Creek*
6 case.
7 MR. HARRIS: And Your Honor, just to
8 address the microcracking a little bit, microcracking
9 is somewhat inherent on all concrete structures, you
10 know, because there is water present in them. So any
11 structure that's getting a freeze-thaw cycle, that was
12 true when we started this proceeding a long time ago,
13 that you know, microcracking is an inherent part of
14 any large concrete structure.
15 MS. KANATAS: In the FACE, the Full
16 Apparent Cause Evaluation discusses this on page 63 of
17 98. The presence of moisture is inherent in any
18 concrete structure, and as in the case of the shield
19 building, it was not believed to pose any challenges
20 to the coating effort.
21 JUDGE FROEHLICH: Okay. Well, what I'd
22 like to do is take about a ten minute break at this
23 point, and collect our notes, and I'm going to get
24 into the contention itself and move away from some of
25 the timeliness and groundbreaking -- the

1 groundbreaking or the initial portions of this.
2 So let us stand in recess for just ten
3 minutes. We'll resume against 11:00 a.m. Thank you.
4 JUDGE TRIKOUROS: I just have a couple of
5 preliminaries I hadn't finished before and I want to
6 -- this deals with which parts of the shield building
7 were originally coated. There seems to be some
8 confusion and I wanted to make sure I understood that.
9 As I can determine from looking at RCA1, the portion
10 below grade of the shield building was waterproofed
11 back in the '70s and also the dome of the shield
12 building back in '76, I believe. Is that correct?
13 MR. BURDICK: Let me check on the dome,
14 Your Honor.
15 (Pause)
16 MR. BURDICK: Thank you, Your Honor. For
17 below grade there is a waterproof membrane that's
18 around the shield building walls that are below grade.
19 The dome, there was some evidence of some coating
20 applied prior to 1976, however, the dome and the
21 above-grade walls were all re-coated in -- or coating
22 was applied in October of 2012 as a corrective action
23 from RCA1.
24 JUDGE TRIKOUROS: So the dome was also
25 coated at that point? Nothing was done below grade

1 though, right?

2 MR. BURDICK: Just there was a waterproof

3 membrane, but not the same type of coating about, yes.

4 JUDGE TRIKOUROS: I just wanted to read

5 from the root cause report. It says, "The shielded

6 building dome lacks susceptibility to the causal

7 factors for concrete cracking found in the

8 architectural flute shoulders involving waterproof

9 coating on the exterior surface." It says, "The

10 discontinuities, stress concentration factor and the

11 intermediate radial reinforcing steel and high-density

12 reinforcing steel. Therefore, only the remainder of

13 the accessible above-grade exterior wall of the shield

14 building should be examined similar to those." Is

15 that where we are and this is correct?

16 MR. BURDICK: That's correct from the --

17 the conclusions in that RCA1 document was it was the

18 shield building walls and portions of those that are

19 susceptible to the laminar cracking that was

20 identified at that time. And then no laminar cracking

21 was identified except for in those areas of the shield

22 building wall above grade.

23 JUDGE TRIKOUROS: Does the AMP exclude

24 these areas, specifically the dome and the below-grade

25 or do you know if they've ignored and just --

1 MR. BURDICK: Because there was no laminar
2 cracking identified in the dome and their conclusion
3 was it's not susceptible. It's excluded from the
4 extent that the Shield Building Monitoring Program is
5 monitoring for additional crack propagation. That
6 same Shield Building Monitoring Program also covers
7 the coatings. And so the coating applied to the
8 shield building dome in October 2012 is covered by
9 that AMP.
10 JUDGE TRIKOUROS: Okay. Thank you.
11 JUDGE KASTENBERG: So I wanted to get now
12 more to the technical aspects of the contention as
13 proffered by petitioners. And first is the question
14 of the containment, the concrete structure itself.
15 And in your answer you summarize the function of the
16 structure. You said, "As stated in the LRA the shield
17 building is a concrete structure surrounding the
18 containment vessel. It is designed to provide
19 biological shielding during normal operation and from
20 hypothetical accident conditions."
21 So I'm curious about the hypothetical
22 accident conditions. And can you say whether that
23 includes both design-basis accidents of a hypothetical
24 nature and/or what used to be called Class 9 or
25 beyond-design-basis, which I think now are called

1 severe accidents? So can you clarify what you
2 actually mean by "hypothetical accident conditions?"
3 MR. BURDICK: Certainly. The shield
4 building, given that it is a two-and-a-half foot thick
5 wall with concrete with rebar in it, provides some
6 amount of biological shielding no matter what just
7 because of its nature. Any radiation would be
8 directed out the wall. Some of that would be
9 mitigated by the wall. And so I think this discussion
10 here is certainly during regular operating conditions,
11 but also would provide some protection.
12 Let me check though, if you'd like, Judge
13 Kastenberg, whether there are specific accidents that
14 are accounted for. I don't know that level of detail.
15 MR. HARRIS: Your Honor, I might be able
16 to add something to that while he's checking. At
17 least in terms of the technical requirements for the
18 reactor is we're dealing with what are traditionally
19 called design-basis accidents in terms of their
20 intended functions, so these severe accidents, what
21 used to be called Class 9 accidents or beyond-design-
22 basis accidents. So where this tends to get
23 overlapped is when we start looking at severe accident
24 mitigation analysis. Its intended function would be
25 for the design-basis accidents required as part of the

1 regulations which do include some beyond-design-basis
2 accidents: station blackout, ATWIZ, those kind of
3 things.
4 But in general I think for what you're
5 referring to the severe accidents that are account for
6 in the SAMA don't actually take any credit for the
7 concrete shield building.
8 JUDGE KASTENBERG: That's where I was
9 going with this line of questioning. Thank you.
10 MR. MATTHEWS: I'd add one caveat there,
11 Judge Kastenberg. And that is correct, with the vast
12 majority of the SAMA the analysis assumes that there
13 is no shield building in the release path. There are
14 some SAMA for interfacing system loss of coolant
15 accidents where you have penetrations through. And so
16 in small-break LOCA analysis there are some that
17 consider the flow path there, the flow path up through
18 the shield building vent, a very small considerate in
19 the SAMA analysis. But that is the existence of a
20 vent path, not the exterior laminar coating.
21 JUDGE KASTENBERG: Yes. So, reflecting
22 back on your SAMA analysis, I guess the way I would
23 phrase the question is do you take credit for the fact
24 that the shield building is there or is not there? In
25 other words, did it enter at all into any of your

1 consequence calculations in your SAMA?

2 MR. MATTHEWS: And I'm not clear whether

3 it's the consequence -- the maps or the max piece of

4 it. I'm not a SAMA expert.

5 JUDGE KASTENBERG: I get that.

6 MR. MATTHEWS: But for a small subset of

7 the small-break LOCA accidents, the interfacing system

8 there is credit for the pathway between the

9 containment and the shield building. So it's a

10 qualified yes. There is some consideration of it.

11 It's interesting, but as a contention of

12 omission there's no suggestion why cracking on the

13 exterior surface of the shield building is in any way

14 relevant to the analysis. There's no discussion of

15 what's wrong with it. There's not even a reference to

16 the analysis itself, whether it's the identification

17 of AMPs, the screening of AMPs, the assessment of

18 AMPs, the cost benefit evaluation of the AMPs.

19 There's no reference to any of that. Just SAMA as if

20 it were some incantation that trumps the contention

21 admissibility rules.

22 To the extent it's a contention of

23 omission it would have to identify and explain the

24 legal requirement and the technical requirement why

25 somehow this changes the outcome of the SAMA analysis

1 in some material way. There's nothing there. It just
2 says SAMA should be considered and they invite the
3 Board to conduct some investigation. So on the
4 threshold matter is the contention sufficient?
5 There's nothing there to assess. The discussion we
6 are having or started to have is more on the merits of
7 it, and cracking would have no effect on the SAMA
8 analysis.
9 JUDGE KASTENBERG: Thank you. Well,
10 perhaps we should ask Mr. Lodge to --
11 MR. LODGE: Thank you. The incantation is
12 that a couple of NRC engineers projected in 2011 that
13 there was a possibility in the event of a minor
14 earthquake or a heat event within the containment of
15 the reactor that there could be a serious, if not
16 massive, collapse of a lot of the shield building
17 material down to a thickness of perhaps three or four
18 inches in the inner rebar layer. That has not been
19 discussed. There certainly are some questions about
20 the loss of the filtering action that is performed by
21 the building. It's not simply mumbling SAMA as though
22 it were something sacred and indecipherable, although
23 it is both of those things, too.
24 JUDGE KASTENBERG: Can you tell me is
25 there any indication in your pleadings as to what you

1 think the effect of the cracks would be or the
2 collapse would be on the SAMA analysis itself, how it
3 might actually change the result? Is there anything
4 in what you've submitted to us?
5 MR. LODGE: Well, you mean besides the
6 obvious fact that perhaps 90 percent of the concrete
7 function to protect from outside missiles and that
8 sort of thing would be gone? I mean, I think that
9 there's a certain obvious problem that would occur.
10 There's also the opportunity of, as we
11 said I think at page 14 of our reply on October 10th
12 -- we cite an NRC engineer who talks about if there
13 were loss of concrete FACE material, that there could
14 be a collapse of the rebar. And if you're talking
15 about a collapse of the rebar in the direction of the
16 containment, the containment is an inch or an inch-
17 and-a-half thick steel shell with its own corrosion
18 problems, incidently, and I haven't heard or seen
19 anything that suggests that it would be strong enough
20 to hold up a significant hundreds-or-thousands-of-
21 tons-kind of collapse of shield building material onto
22 it.
23 JUDGE KASTENBERG: But how would you
24 envision, given that scenario, that the reactor itself
25 would still be operating at that point?

1 MR. LODGE: How would I envision it would
2 still be operating?
3 JUDGE KASTENBERG: Yes, I think we heard
4 staff say this morning that in extended operation of
5 the plant that if for some reason the concrete vessel
6 reached the point where it's no longer function-able,
7 the reactor would have to be shut down. And in a
8 shutdown state how would you envision a severe
9 accident taking place?
10 MR. LODGE: I think a severe accident took
11 place at one of the reactors at Fukushima that shut
12 down, too. I think shutdown reactors certainly can
13 pose some problems if there is a massive failure such
14 as we're talking about. And this is not to dodge it,
15 but under NEPA the responsibility of the public, of
16 the intervenor, is to raise the unconsidered
17 potential, not to necessarily explain every nuance of
18 what might happen as a result of the scenario. I
19 think that there would be some serious problems
20 occasioned by destroying a reactor that's in a
21 shutdown state, or damaging it.
22 (Off microphone comments)
23 MR. LODGE: That's true, too. My friend
24 points out that an earthquake could potentially cause
25 a very rapid, if not sudden, collapse of a perhaps

1 operating nuclear reactor.

2 JUDGE KASTENBERG: And do you have any

3 data to indicate that earthquakes are an important

4 external event for Davis-Besse?

5 MR. LODGE: In 2012 -- it's in the record

6 some place, but in one of our filings we identified a

7 document as V1, which actually does talk about that.

8 MR. MATTHEWS: Judge Kastenberg, if I

9 might respond? The intervenors point to some staff

10 emails, internal discussions in the deliberative

11 process that they've referred to in the previous

12 iteration of the contention that have no connection to

13 propagation. So we're untimely in the first instance.

14 But coming again to those points, they're

15 internal discussions that are in conflict with the

16 staff's ultimate conclusion. The staff, to its

17 credit, was looking very hard at FENOC's analysis.

18 FENOC's analysis concluded that the shield building

19 was capable of performing its intended functions. The

20 structural integrity, even discounting a conservative

21 discount for the rebar, was still able to perform its

22 intended function. It was able to withstand the

23 seismic qualifications, the seismic requirements.

24 The staff came to that same conclusion.

25 And the staff as recently as May of this year

1 reiterated that same conclusion at looking at the
2 analysis. The laminar cracking phenomenon has not
3 impacted the shield building in the way the
4 intervenors suggest. And all they ride on is an
5 internal staff deliberation. Even it were timely,
6 there's no basis for it.
7 And to your point do they identify
8 anything wrong with the SAMA analysis or suggest how
9 it would change, I think the omission in the answer
10 answers it.
11 MS. KANATAS: And I would add to what was
12 just said. In support of Contention 5, when these
13 claims about internal emails that the staff was having
14 in relation to the restart of the reactor, there were
15 mis-characterizations that were just repeated. And I
16 would just point to the affidavit of Abdul Sheikh that
17 was submitted as part of the Contention 5 filings,
18 which we discussed two years ago at oral argument when
19 these claims were raised before. And again, they do
20 have to do with the ability of the plant to restart.
21 And as Mr. Matthews just indicated, the
22 shield building is classified and designed as a
23 seismic class 1 structure, which means that it is
24 designed to remain capable of performing its functions
25 even during and following a design-basis or safe

1 shutdown earthquake event. And as Judge Kastenberg
2 alluded to, if the shield building was determined not
3 to be operable, it would have to shut down. And when
4 a plant is shut down, the gaseous effluents and direct
5 radiation levels within the plant are significantly
6 reduced. Thank you.
7 MR. LODGE: Judge Kastenberg, just to
8 answer your question, in what I'm guessing to be
9 approximately 1983 the ACRS raised some serious
10 questions in a document called, "Licensing Basis
11 Seismic Ground Motion Concern." We identified it in
12 connection with one of our 2012 filings as Exhibit
13 B/1. I'd be happy to provide it if you want to make
14 a copy.
15 JUDGE TRIKOUROS: I guess since we got
16 into design-basis analyses, we might pursue that a
17 little bit.
18 Okay. First of all, in the May 12th, 2014
19 inspection report it indicates that FENOC had
20 completed two calculations presumably to reestablish
21 the design-basis of the shield building. And I guess
22 the inspectors looked at those calculations. Do you
23 know what the status of the NRC review of those
24 calculations is?
25 MR. HARRIS: I believe there is one

1 unresolved item. I don't believe it's the actual
2 calculations, but one of the methods that they used.
3 I can't really comment too much further on that
4 because it's still being under consideration within
5 the staff in terms of that, what they submitted.
6 JUDGE TRIKOUROS: Okay. Well, as I
7 understand it, again, just from the material in the
8 record, there's a method of spherical shells that
9 apparently is what the USAR calls for for the design-
10 basis calculation for the shield building. I believe
11 these calculations were done using ANSYS, a modern,
12 more computer-oriented calculation. And from what I
13 can see, it's a URI. What is that?
14 MR. HARRIS: Unresolved item.
15 JUDGE TRIKOUROS: Unresolved issue, or
16 item, right. So what does that mean?
17 MR. HARRIS: Let me try to sort of start
18 a little bit earlier. There are two things: When a
19 plant finds a condition of a component that is
20 different than it was built to is it -- it can be in
21 a degraded condition. And so one of the first things
22 plants do is to do an operability determination to
23 determine whether or not the plant as it currently
24 exists can meet its intended functions.
25 And for doing an operability determination

1 you can use a different method of analysis to show
2 that it would still be able to meet all of its
3 intended functions as opposed to the analysis of
4 record. Then when they've gone back to go to
5 reestablish the design-basis, you have to look at sort
6 of the analysis of record and in terms of how that all
7 fits together.
8 One of the unresolved items, as you
9 mentioned, is what was originally done back before we
10 had modern computers to do a lot of this analysis was
11 really sort of a spherical hoop analysis looking at a
12 section instead of a more finite element analysis that
13 you can now do with these. And so that's the
14 unresolved item of how that should be used in terms of
15 reestablishing the design-basis.
16 JUDGE TRIKOUROS: Well, then let's assume
17 that -- I mean, certainly ANSYS -- somebody would
18 argue ANSYS is a better method than the old method,
19 but would that require a license amendment? And I
20 guess my is is do you know if there going to be a
21 license amendment request issued?
22 MR. HARRIS: I do not know if there will
23 be a license amendment request issued. I'm not sure
24 that that's contemplated at that time. That's part of
25 what the staff is currently looking at right.

1 JUDGE TRIKOUROS: Do you have any insight
2 into that?
3 MR. BURDICK: No, I agree with what I've
4 heard. But just to provide a little more background
5 on this, this May 2014 inspection report relates to
6 the efforts that came out of a corrective action from
7 RCA1. And so at that time back in 2011-2012 FENOC, in
8 talking to the staff, determined that the plant was
9 operable but non-conforming, and then had the
10 corrective action then, then developed this design
11 evaluation that Your Honor has raised. And so, FENOC
12 went through the process of significant testing and
13 developing this evaluation.
14 And then FENOC; the way the process works,
15 looked at its existing licensing basis and design-
16 basis and updated its design-basis documents to
17 incorporate this new design evaluation that relies on
18 these test results and everything. And so it did
19 that, and through its processes determined a license
20 amendment was not needed. But then now is discussing
21 with the NRC. So I think that's where we're at is
22 there's still ongoing inspection and discussions as to
23 what happens.
24 But I think what's key to point out here
25 is this question though is part of the current

1 licensing basis and outside the scope of this
2 proceeding. I know the intervenors raised questions
3 about FENOC's compliance with the current licensing
4 basis and design-basis in a number of different places
5 and we've argued; I think it's in our answer at pages
6 40 to 44, or 42 to 46, that that's outside the scope.
7 And I think that's true of this question as well.
8 Regardless of whether a license amendment is
9 ultimately determined we need it, that's going to be
10 separate and apart from this license renewal
11 proceeding.
12 JUDGE TRIKOUROS: But as of this moment
13 the design-basis of the shield building has not been
14 reestablished?
15 MR. BURDICK: From FENOC's perspective it
16 has been reestablished. So all these activities after
17 the root cause evaluation of 2012 led to FENOC
18 updating its updated safety analysis report of USAR.
19 So that now includes discussion of laminar cracking
20 including this design evaluation. So from FENOC's
21 perspective it has updated its licensing basis.
22 And additionally, in 2013 after
23 identification of laminar crack propagation, FENOC did
24 a similar exercise, looked at its design-basis
25 evaluation to first ensure that the additional

1 propagation identified fell within that design
2 evaluation, but then again updated the USAR to provide
3 some additional discussion of the laminar crack
4 propagation event.
5 So again, I think the key point is from
6 FENOC's perspective it has updated the design-basis
7 and licensing basis to address laminar cracking and
8 laminar crack propagation. And it's under the Part 50
9 inspection process.
10 JUDGE TRIKOUROS: Well, in terms of
11 contention admissibility the AMP would have to make
12 some conclusions regarding design-basis acceptability
13 if more cracks were found in the course of the AMP,
14 implementing the AMP. In the period of extended
15 operation now I'm talking about. Are those
16 investigations considered current licensing basis even
17 within the extended licensing period associated with
18 the AMP?
19 MR. BURDICK: Let me explain it this way:
20 So the definition of current licensing basis is in 10
21 CFR 54.3, and that includes regulations, commitments,
22 but also the updated safety analysis report. So from
23 our perspective this design evaluation is within the
24 updated safety analysis report and so it is part of
25 the current licensing basis.

1 The Aging Management Program then is
2 separate from that in the sense that the standard for
3 license renewal in 10 CFR 54.29 assumes that that
4 current licensing basis goes into the period of
5 extended operation, but then changes are made as part
6 of the license renewal process to ensure that any
7 aging effects during that period of extended operation
8 are managed in a way to ensure the intended function.
9 So we've proffered, we've put forward this
10 Shield Building Monitoring Program as part of the
11 license renewal. If something were identified as part
12 of that monitoring, certainly we would not be
13 prohibited from looking at our current licensing basis
14 to look to see if there's something that's at issue
15 there, but that alone does not pull the design
16 evaluation into the license renewal. It's still part
17 of the current licensing basis.
18 JUDGE TRIKOUROS: So if something is
19 discovered, additional cracks are discovered as part
20 of the AMP implementation in the period of extended
21 operation, I'm assuming then they're referred to the
22 plant's Corrective Action Program? There's nothing in
23 the MAP that says here's what we're going to do other
24 -- and I don't even think it says Corrective Action
25 Program. But in any event, from my experience, it

1 would have to go to the plant's Corrective Action
2 Program.
3 MR. BURDICK: That's correct.
4 JUDGE TRIKOUROS: Which would then apply
5 the licensing basis methodology for evaluation?
6 MR. BURDICK: That's correct and --
7 JUDGE TRIKOUROS: Whatever is agreed to in
8 all of this would become then the current licensing
9 basis, right?
10 MR. HARRIS: I think that's generally
11 right. You're sort of looking at acceptance criteria
12 for what you find. Those cracks, are they large
13 enough to no longer meet the acceptance criteria for
14 the design? And then you would have to figure out how
15 to either show that the building was still operable,
16 basically similar to what was already done now, or
17 what kind of repairs you might have to make in light
18 of what you discovered at that point. But that's true
19 of every Aging Management Program.
20 JUDGE TRIKOUROS: So there's nothing
21 different in the period of extended operation then
22 today?
23 MR. HARRIS: In terms of the acceptance
24 criteria? That's correct.
25 JUDGE TRIKOUROS: Right, and except for

1 the requirement to do the AMP investigations, which
2 really today there's a requirement to evaluate that
3 building as well. I just want to make sure I
4 understand the --
5 MR. BURDICK: And, Judge Trikouros, just
6 two points: One is if the renewal license issues as
7 requested, then the AMP does become part of the
8 current licensing basis, or the licensing basis at
9 that time. And so they're working together. And so
10 my comments earlier were to distinguish what's part of
11 this proceeding, as part of the license renewal
12 review. But when you're actually in the period of
13 extended operation, that's all your licensing basis,
14 and so they're certainly working a function.
15 And I'd just point out in our July 3rd
16 revision to the AMP -- and actually this has been in
17 there the whole time, but it does specifically mention
18 that if the acceptance criteria are not met, then the
19 indications or conditions will be evaluated under the
20 FENOC Corrective Action Program. And so that is the
21 process.
22 JUDGE TRIKOUROS: So that's good.
23 MR. BURDICK: Yes.
24 JUDGE TRIKOUROS: And that Corrective
25 Action Program would implement the current licensing

1 basis analytical methods for doing that analysis?
2 MR. BURDICK: So if something were
3 identified as part of the Shield Building Monitoring
4 Program, and there are certain criteria -- and all of
5 this has been in here, but it talks about a
6 discernable change. So if we were to identify a
7 widening of a crack or additional propagation in the
8 laminar direction crack; so some change, then we would
9 put that into our Corrective Action Program. And that
10 would drive us to look at the design evaluation, of
11 course, just to make sure that it's still appropriate.
12 JUDGE TRIKOUROS: Okay.
13 MR. HARRIS: And, Judge Trikouros, just to
14 indicate how long that's been in there, it was
15 actually -- originally that same language about the
16 Corrective Action Program was in their April 5th, 2012
17 response under the acceptance criteria. It's on pages
18 13 and 14 of, 15 and it's the enclosure that's
19 attached to that response. I mentioned the ML number
20 before, which is ML 12097A520. But it says basically
21 if the acceptance criteria is met, then the
22 indications or conditions will be evaluated under
23 FENOC's Corrective Action Program.
24 JUDGE TRIKOUROS: All right. Okay. So I
25 think I understand how that works.

1 I just wanted to ask, Mr. Lodge, do you
2 have any problems with what we just discussed?
3 MR. LODGE: We do. I'm going to defer to
4 Mr. Kamps to respond.
5 MR. KAMPS: Just big picture, we're over
6 three years into this cracking phenomenon, going back
7 to October of 2011. And we were promised, for
8 example, at the town hall meeting in Oak Harbor, Ohio
9 at the high school that current licensing basis would
10 be restored. I believe it was by December of 2012 at
11 that point. We've cited in our recent filings that
12 there is an interplay that was admitted to between
13 current licensing basis and license renewal
14 application. There's a lot of overlap. It's
15 incredible that we're this far into this discussion,
16 three-plus years, and we're still talking about it.
17 And I would refer you back to what we've
18 cited by reference, our 2012 filings, which would be
19 the July and perhaps also the August, those three
20 filings, where based on the FOIA return, which is
21 right here, it was very apparent from October-November
22 2011 that the staff, whose emails we have cited
23 repeatedly for all these years, were very concerned
24 about the loss of current licensing basis at Davis-
25 Besse.

1 And what was really incredible to us was
2 the morning of the confirmatory action letter that
3 allowed the rushed restart, December 3rd of 2011,
4 there were still questions being asked by NRC staff.
5 And they were abruptly stopped. The call was issued
6 and the plant has been operating ever since with
7 problem after problem piling up that we've cited. And
8 this seems to be the way things have gone these past
9 several years. This is going to continue on into the
10 license extension.
11 And that is our objection. It's very
12 loose. The definitions are very loose. The
13 commitments are very loose. I heard FirstEnergy's
14 attorney say that impulse response testing could be
15 deployed, if need be, but there's no commitment to do
16 that. It's a very amorphous moving target that we're
17 dealing with. And that's why I emphasize those
18 initial responses to the severe cracking, which we now
19 have established FENOC has admitted is worsening
20 significantly, which was denied previously. So I
21 refer back to those initial responses by NRC staff
22 that this is a serious problem. And it has been
23 pushed off. The can has been kicked down the road
24 repeatedly for years now.
25 JUDGE KASTENBERG: Yes, just a follow-on

1 to that. I appreciate your concern, but if I read
2 your contention literally, that's not what your
3 contention is about. At least the way I read it, the
4 crux of your contention is that the AMP itself is
5 inadequate. And you cite scope or location, you cite
6 frequency, you cite number of bore holes and so on.
7 That's the heart of your contention. And I appreciate
8 your concern of this other matter, but I don't see
9 that in the way you've stated this contention.
10 MR. KAMPS: We've certainly --
11 JUDGE KASTENBERG: Am I misinterpreting
12 what you've written here?
13 MR. KAMPS: I think so. We've certainly
14 raised the interplay between current licensing basis
15 and the license renewal application. I thought I just
16 heard FirstEnergy's attorney admit that there is that
17 interplay, that these commitments in the AMP are a
18 part of the current licensing basis. Once April 23rd,
19 2017 arrives, what is currently a future commitment
20 during the license extension under the Aging
21 Management Program will then become a part of the
22 current licensing basis.
23 So these splitting of hairs that are going
24 to allow this license to be renewed is what concerns
25 us, that there's no firm commitment, that those

1 impulse response tests that seem to be a part of the
2 possibility that haven't been done since cracking
3 propagation was admitted to, or perhaps even occurred,
4 will ever happen. We don't know the status of the
5 shield building in the current moment and we're not
6 sure that we ever will under these loose commitments,
7 which are no commitments at all.
8 JUDGE KASTENBERG: Do you have a response
9 for that?
10 MR. BURDICK: Well, so first of all, the
11 description of -- I guess my description of the
12 current licensing basis and license renewal simply
13 describing how it works in the license renewal
14 regulations at 10 CFR Part 54, Section 54.29 discusses
15 the current licensing basis in the standard for
16 license renewal. And then Section 54.30 specifically
17 addresses that the staff's review should not cover the
18 current licensing basis. If something comes up
19 related to the current licensing basis, then I direct
20 it to their NRR folks that address the current
21 operating.
22 So I was not making any revelation here.
23 Simply describing the regulations. And just point out
24 here, too, in this proceeding under 10 CFR 2.335 the
25 intervenors are not permitted to challenge the

1 regulations, if that's what they're trying to do here.
2 This is simply describing how the process works.
3 MR. KAMPS: I found the citation I was
4 referring to. It's page 12 of our October 10th, 2014
5 filing. It's footnote No. 5 where we point to NRC
6 regulations that show that current licensing basis and
7 license renewal application overlap, have interplay,
8 have an interchange. And that's our concern.
9 JUDGE TRIKOUROS: All right. Well, let me
10 ask the NRC, or the staff, the current obligation of
11 Davis-Besse with respect to -- first of all, let me --
12 I prefer to use the term "design-basis of the shield
13 building," but the current licensing basis is a
14 broader a thing and certainly would include the AMP in
15 the extended period of operation. I don't think
16 that's anything new.
17 But in any event, would the license
18 renewal for this plant be issued if the design-basis
19 of the shield building were not adequately
20 established, I guess is my question.
21 MR. HARRIS: That's a big question because
22 in terms of what do you really mean by "adequately
23 established?" If the shield building could perform
24 its intended functions, then -- and met its design-
25 basis, whether that was the -- or the design-basis

1 when it was built. or if it was modified through
2 either the 50.59 process or through a license
3 amendment, then yes, you could issue the license
4 renewal. But in terms --
5 MS. KANATAS: Sorry. Assuming that we
6 also found that FENOC's AMP adequately managed the
7 aging effects as well.
8 MR. HARRIS: Yes.
9 JUDGE TRIKOUROS: Right now the shield
10 building is operable but non-conforming.
11 MR. BURDICK: Our view, we have updated
12 our design-basis documents to address both the laminar
13 cracking and the laminar crack propagation. So we
14 have updated. That is our design-basis. So it's part
15 of our updated safety analysis report. It's in the
16 Part 50 inspection process, but that doesn't change
17 the fact that that has been updated.
18 JUDGE TRIKOUROS: Right, but there's an
19 existing unresolved issue regarding the method of
20 analysis that was used.
21 MR. BURDICK: I don't think it's the
22 method of analysis. I think it's a process question.
23 It's not a substantive question about whether the
24 design evaluation was sufficient. It's almost a
25 licensing question or a process. Did we go through

1 our process as far as looking at the prior approvals
2 of the ANSYS, too. But based on the conclusion of
3 that inspection report I don't think there is a
4 substantive question here. It's just a process
5 question. But it still doesn't change the fact that
6 our design-basis addresses the propagation and the
7 laminar cracking.
8 MR. MATTHEWS: And it's a question, not a
9 finding. It's an unresolved issue, not an inspection
10 finding. It's not an apparent violation. It's a
11 question the staff had.
12 JUDGE TRIKOUROS: Right. I understand.
13 So there is a design-basis calculation using i would
14 say an advanced method of analysis that shows that the
15 design-basis of the shield building is intact with all
16 of the current cracking information included in the
17 analysis. The staff review of that in the inspection
18 of it indicated that they thought that that was
19 correct, that that conclusion was correct. However,
20 the method that was used didn't conform to the method
21 that was originally used in the UFSAR, and therefore
22 a URI was identified. Is that a correct statement?
23 MR. HARRIS: If you're talking about this,
24 that's the right way to describe it. That unresolved
25 item is in -- as FENOC just described it, it's sort of

1 a process question of how should that be put into the
2 FSAR. And it's a complicated question with some of
3 those codes and who has authority to approve different
4 uses of it.
5 JUDGE TRIKOUROS: So back to my original
6 question now, in this context will that URI have to be
7 resolved before the license amendment gets issued?
8 MR. HARRIS: Can you give me one second.
9 (Pause)
10 MR. HARRIS: Your Honor, I don't believe
11 that the unresolved item would have to be finalized
12 somehow some way before we could issue the license
13 amendment contingent on all the other findings that
14 have to be made.
15 JUDGE TRIKOUROS: So it's falling under
16 the umbrella of COB?
17 MR. HARRIS: Yes, Your Honor.
18 JUDGE TRIKOUROS: Okay.
19 JUDGE FROEHLICH: Mr. Kamps, a moment ago
20 you referred the Board to I guess footnote 5 on page
21 12 of your pleading.
22 MR. KAMPS: Yes.
23 JUDGE FROEHLICH: And I just took a look
24 at that. How does point (b) support the argument
25 you're making? 54.30(b).

1 MR. KAMPS: Well, as we have been from the
2 beginning in 2010, we've been focused on the 2017 to
3 2037 time period. So we've been accused by both
4 FirstEnergy and NRC staff that we're concerned about
5 current operations. We certainly are. We're very
6 concerned about them. But the basis of our
7 contentions throughout have been on the license
8 extension period.
9 And so what I'm hearing today is that
10 current licensing basis commitments under AMPs become
11 current licensing basis on April 23rd of 2017. And so
12 we're certainly going to challenge them. It's a part
13 of our contention's theme. I mean, it's throughout
14 this section F of our October 10th filing. Footnote
15 No. 7 is also relevant. The entire section is
16 relevant. The reason that I brought up the late 2011
17 internal NRC emails is to emphasize the significance
18 of the loss of current licensing basis. And I think
19 it's very telling that here we are three-plus years
20 later and this is still unresolved, very much so, and
21 appears that that will continue. If I heard you
22 correctly just now, Mr. Harris, that will continue
23 indefinitely into the future.
24 JUDGE FROEHLICH: Mr. Harris, how does
25 paragraph (b), Section 54.30 support the argument that

1 this is within the scope of license renewal.

2 MR. HARRIS: It doesn't. It doesn't

3 support that this was in the scope of the license

4 renewal. It's the shield building. For hypothetical

5 purposes if the shield building was non-conforming or

6 degraded or out of compliance, that is an issue for

7 current licensing basis inspection and 2.206

8 petitions, not for license renewal. The scope of

9 license renewal is limited to managing the aging

10 effects through AMPs or TLAAs, or some combination of

11 those structure systems and components that are

12 passive.

13 JUDGE TRIKOUROS: Okay. Let me just ask

14 this: If you decide that the new method is an

15 acceptable method for doing the design-basis analysis

16 for Davis-Besse shielding, would the applicant then

17 have to file a license amendment request to modify the

18 USAR to include that method as the new method?

19 MR. HARRIS: Well, I think -- and I don't

20 want to put words into FENOC's mouth -- is that

21 they've indicated that they think that they have

22 updated it already through the 50.59 process. That is

23 part of what the staff is looking at in terms of when

24 we went out to inspect that process. So through 50.59

25 you can make changes to your FSAR that are -- and I

1 don't want to quote or paraphrase that -- or not --
2 there's a big long list of how you go through that
3 process, but in terms of -- it sort of turns on safety
4 significance of whether or not that should require a
5 license amendment. So that is what the staff is
6 concentrating on.
7 MR. MATTHEWS: 50.59 allows different
8 methods if they have been previously accepted by the
9 staff. Judge Trikouros, I'm sure you've seen from the
10 inspection report FENOC looked at where the NRC had
11 accepted the ANSYS code and FENOC relied on that. The
12 staff has a question, or the inspection report
13 identified a question as to whether those were
14 appropriate, whether those were sufficiently formal
15 rigorous staff approvals in those applications for a
16 licensee to use it in this application. So the staff
17 is evaluating that question.
18 JUDGE TRIKOUROS: Well, how does the USAR
19 get updated? You just update it every two years and
20 say here's the new method?
21 MR. MATTHEWS: It's supported by a
22 detailed 50.59 evaluation. And that was a part of the
23 staff's inspection.
24 MR. BURDICK: The USAR is a licensee-
25 controlled document. And if we identify some sort of

1 update that we want to make or need to make, then we
2 go through a process, follow the regulations in 10 CFR
3 50.59 to see if that's something that we can make on
4 our own. There are certain screening criteria. If
5 it's a tech spec change, for example, we need a
6 license amendment. There's other things it can screen
7 out. Then if it passes that screening, we look at
8 these eight factors. If none of those are tripped --
9 there are certain ways that we control that document.
10 And then we provide reports to the NRC staff on --
11 JUDGE TRIKOUROS: My understanding is if
12 you use an entirely new method to do an analysis in
13 the FSAR that that isn't a simple 50.59 pass-through.
14 Now my understanding may be incorrect, but that USAR
15 says you're going to use method A. You've done the
16 analysis using method B. Are you saying the staff
17 doesn't have to review your analysis at all? Because
18 that's what --
19 MR. MATTHEWS: 50.59 allows applicants to
20 us methods previously accepted by the staff in
21 addition to the one identified in your license -- or
22 design-basis. Under 50.59 it evaluated the screening
23 review, the review of the evaluation. Under the
24 evaluation the regulation allows the licensee to apply
25 methods that have been accepted for use by the staff.

1 JUDGE TRIKOUROS: Now the inspector
2 looking at that said that this method of analysis has
3 been used in the past but never with tracks like this.
4 So that's part of this URI, I believe.
5 MR. MATTHEWS: That's correct.
6 JUDGE TRIKOUROS: And I'm trying to
7 understand how this whole thing closes, because I
8 think the petitioners are concerned about this. So,
9 so far we haven't determined the closure point.
10 MR. HARRIS: I think I now understand a
11 little bit more of what you're asking. It could close
12 in a number of different ways. The unresolved item
13 could be closed in basically a follow-up to the
14 inspection report that could find; and I'm not
15 prejudging, I'm not saying what we will find, that
16 there method of updating the FSAR through 50.59 was
17 allowable under the regs.
18 It could also find that using 50.59 to
19 update that analysis was not acceptable in the regs
20 and that there was some sort of violation in terms of
21 updating that way and that it would actually have
22 required a license amendment. And then the
23 expectation would be that they would submit a license
24 amendment under those situations. But it is an issue
25 that requires some amount of work on the staff to sort

of trace through this in terms of that particular part.

I think ANSYS -- and you probably can see from the inspection report, it was used in the ESBWER analysis. It was used in one of the new reactors analysis in terms of being approved in new reactors. And that's some of where FENOC is citing to the staff's previous approval of ANSYS for this kind of structural analysis. And that's what the staff is working through right now.

JUDGE TRIKOUROS: So one of the closure paths would include a license amendment that's filed?

MR. HARRIS: It could. Yes, Your Honor.

JUDGE TRIKOUROS: Right. In which case then the intervenors would have the opportunity to file a contention regarding that follow-up?

MR. HARRIS: Right. Now, the intervenors also under 50.59, even if we closed it as it was an acceptable allowance, they could still file a 2.206 petition that they're somehow outside the scope of their license. I mean, they're not foreclosed from challenging that change.

MR. KAMPS: Could we respond at some point?

JUDGE TRIKOUROS: Yes.

1 MR. KAMPS: Just the 2.206 process is a
2 black hole by design, apparently. I mean, our expert
3 Arnie Gundersen who's with us here on the steam
4 generator replacement at Davis-Besse in 2013-2014
5 confirmed that something on the order of 1 in 200
6 2.206 petitions have ever succeeded. So we don't have
7 the resources to waste on dead end by-design
8 processes.
9 The other rebuttal I'd like to put out
10 there is on the 50.59 itself. That was really at the
11 heart of our intention against the steam generator
12 replacement in light of the debacle at San Onofre.
13 And so the overlap of these concerns at Davis-Besse
14 are pretty astounding when you start to add up the
15 cracking of a Crystal River, the steam generator
16 experiment of a San Onofre. We've got it all going on
17 at Davis-Besse all at the same time. And in the very
18 tight strict by-design constraints of an LRA
19 proceeding we tried to raise our concerns.
20 We also raise our concerns about current
21 operations every chance we get. We raised our
22 concerns about high-level radioactive waste in the
23 Nuclear Waste Confidence Hearing in Perrysburg. But
24 I think we have an abundance of concerns right in this
25 LRA proceeding that deserve a hearing and have

1 deserved a hearing for three years at this point.
2 JUDGE FROEHLICH: Okay. Thank you.
3 Anymore?
4 JUDGE KASTENBERG: Not on that subject.
5 Given the time we might have before lunch
6 or so to begin a discussion of what I consider the
7 heart of your explicit proffered contention which has
8 to do with location, which is scope or location of the
9 bore holes, the number of bore holes, frequency of
10 inspection and the possibility of other means of
11 examination, which is to me at the heart of this, at
12 least as you explicitly stated it, could you kind of
13 summarize for me -- what basis do you have that the
14 scope, frequency and number are inadequate? What's
15 the technical basis, or at least enough of a basis
16 that would lead us to conclude that this was
17 admissible? Given all the other considerations aside,
18 why this would be admissible? On what basis would you
19 argue that this is admissible?
20 MR. KAMPS: Well, we've mentioned already
21 today that the surface area of the shield building is
22 280,000 square meters. Square feet. Square feet.
23 You have to add to that 30 inches of thickness of
24 thickness of the shield building. All that adds to a
25 very large volume structure. And we're talking about

1 before the cracking propagation 20 bore holes to try
2 to monitor the situation with the cracking. After
3 cracking propagation is admitted to and acknowledged
4 by FirstEnergy because of evidence that it's
5 happening, a 15-percent increase, 3 more bore holes on
6 a very small sample size.
7 And we've made this point for years now
8 that this exclusive focus on sub-surface laminar
9 cracking is already very limited. We've raised many
10 other forms of cracking that have been documented in
11 this proceeding. Today the micro-cracking has been
12 raised, the risk of radial-oriented cracking, the
13 synergisms between these various forms of cracking,
14 some of which in the course of this proceeding were
15 made public, things like August 1976, cracking at the
16 dome, pre-blizzard of 1978.
17 So the reason that we need a diversity of
18 testing methodologies. We've talked about the impulse
19 response testing being dated at this point. That was
20 a snapshot at a certain point in time. That was years
21 ago now. Cracking is worse now. What does that look
22 like across the full structure?
23 Back in 2012 we talked about the risks of
24 micro-cracking. And back then CTL Group, a contractor
25 for FirstEnergy, had identified micro-cracking

1 shallow in the wall, at a shallow level. And now it's
2 getting some acknowledgement in the PII Face report of
3 July 2014. But our concerns about the risks remain
4 about the synergisms of these various forms of
5 cracking that can only be detected if they're looked
6 for.
7 And I think that given that -- the phrase
8 that's used by both FirstEnergy and I think also by
9 NRC is this is a unique operating experience, a unique
10 operating experience in all of industry and that the
11 ramifications of that, if you're not looking for -- if
12 you're not curious about what could be happening. And
13 the July 2014 FACE report is a good example of this.
14 The worsening cracking was not expected even though
15 earlier today Mr. Harris said that some of these risks
16 were within the realm of possibility in 2012. Things
17 like freeze/thaw was on the radar screen.
18 In fact, the heart of our July and our
19 especially our two filings in July of 2012 were based
20 on the FOIA returns where NRC staff had 27 areas of
21 inquiry about other root causes that could be at play.
22 And that's another part of our bafflement at the
23 disinterest in root cause. Because if there had been
24 more concern about the possibilities, then perhaps
25 this rush to seal the building would have been better

1 thought through.

2 So my colleagues also want me to raise the
3 issue of the potential of the shield building
4 initiating an accident itself. I mean, the question
5 was raised earlier, Mr. Kastenberg, about the reactor
6 being shut down when the shield building failure
7 happens. And we want to get the point out there that
8 the shield building's collapse itself could be the
9 initiator of an operating reactor accident. So that's
10 why we've called for diversity of testing. The small
11 increases in number of tests are insufficient.

12 The frequency. Again, we made that point
13 earlier that if this lax attitude in the license
14 renewal period of every couple years, every four years
15 were to have been in play in the last couple of years,
16 the cracking growth would have been missed. We
17 wouldn't know about it and that the material change
18 that's happened since 2012 is before FirstEnergy and
19 NRC denied that cracking would get worse. They said
20 it happened in 1978. It's not going to get worse. In
21 2013 it was detected as getting worse. And finally in
22 July of 2014 it was explained the likely apparent
23 cause as to why.

24 So more interest, more curiosity, more
25 concern over the risks in the last few years could

1 have averted further damage to the building. I think
2 it's fair to say it's ironic that the only corrective
3 action, actual action that's been taken, the sealing
4 of the building, actually worsened the situation.
5 Didn't make it better.
6 JUDGE KASTENBERG: Before we ask the
7 licensee, I appreciate your argument, and to me it
8 feels like a rather set of general statements, and yet
9 your wording of the proffered contention is somewhat
10 specific regarding scope, frequency and sample size.
11 What in your view might be an adequate scope,
12 frequency and sample size? What would you actually
13 base a change on?
14 MR. LODGE: Can we take a moment?
15 JUDGE KASTENBERG: Sure.
16 (Pause)
17 MR. LODGE: One more moment, sir. Sorry.
18 (Pause)
19 MR. LODGE: We're trying to find the
20 location where we made the point, but in one of our
21 probably September filings, and probably September
22 8th, we made the point that there was no statistical
23 significance of doing 23 samples in an area this
24 large, in a potential problem area of the magnitude
25 that we have been talking about this morning. And I

1 guess we are not in a position to give you an express
2 number of what would be an adequate investigation.
3 And part of the reason is is that the intervenor's
4 position is that there has not been a comprehensive
5 investigation that identifies factually objectively
6 the status of the entire shield building. What you
7 have is this wait-and-see --
8 (Off microphone comments)
9 MR. LODGE: Ah, our first filing,
10 September 2nd, page 20, where we made the point that
11 the significance of the cracking problem demands that
12 there be --
13 JUDGE TRIKOUROS: This is page 20 of your
14 initial pleading?
15 MR. LODGE: Yes, of our September 2nd
16 filing, that a mere increase of three core bores to 23
17 is completely inadequate because there's not
18 statistical significance to the sampling methodology
19 that FirstEnergy is using. FirstEnergy has a wait-
20 and-see approach without understanding clearly, after
21 three years, the scope of the problem. You have
22 microscopic cracking that is in all likelihood going
23 to be continuing to expand and no longer be
24 microscopic while other microscopic cracking develops
25 in and around those areas, but you don't know what

1 areas of the shield building are affected.

2 There's an enormous circularity in the

3 arguments that I hear. We hear that the root cause

4 problem in 2012 was identified as the blizzard of '78

5 and there is a very dramatic explanation of why that

6 has to be the cause, that it enveloped the shield

7 building in a 360-degree storm with all kinds of high

8 wind penetration. But then we hear this morning that

9 it was more directional, or that it may been that

10 instead of comprehensively affecting the building that

11 the blizzard of '78 only caused laminar cracking that

12 we've seen. So you have this utility postulation

13 that, trust me, we have found everything.

14 It was wrong in 2012. The solution was

15 obviously flawed, the one corrective action that was

16 taken. And at some we believe the Licensing

17 Board must accept the proposition that there is not

18 enormous credibility that can be attributed to an

19 investigation of this very limited magnitude.

20 Again, they took perhaps thousands of

21 impulse types of readings, then did the coating of the

22 building and changed everything. So what is the value

23 of that data set now after the winter of 2013-2014?

24 What is the prospective potential for another vortex-

25 type of weather setup in future winters? And in fact,

1 maybe it's not even the vortex setup that one must
2 worry about. It's the climate change-induced mild
3 winters that have sharp periods of freezing
4 interspersed with sharp periods of thawing.
5 The PII report, the July 2014 disclosure
6 talks a lot about how the cracks extend with a
7 freeze/thaw type of cycle about five-and-a-half inches
8 a year. And when they use 0.4 inches and 0.7 inches,
9 we're calculating maybe they're discussing what, 10 to
10 13 freeze/thaw kinds of events per year? Ten degrees
11 penetrates a lot deeper into the building, depending
12 on how prolonged of a cold snap that is, than thirty-
13 one degrees would. But those are tons of unknowns
14 that have not been discussed.
15 Finally we're discussing ice wedging, but
16 what I'm seeing is that it's sort of now caused the
17 latest -- it's the latest explanation, it's the latest
18 rationale. But there's not redirecting that knowledge
19 into meaningful future projections and understanding
20 how much of the shield building is affected today and
21 how the building will be affected from April 23rd,
22 2017 on into the deeper future.
23 MR. KAMPS: And just real quickly to
24 follow up on that, the discussion of the deep
25 penetration of the freezing into the shield building

1 wall I wanted to mention because Mr. Trikouros earlier
2 had said that concrete has an insulative property, but
3 one of those 27 areas of inquiry in 2012 the NRC staff
4 raised and brought to our attention in the first place
5 was the poor quality, the subpar; as Mr. Lodge
6 referred to it earlier, quality of the Davis-Besse
7 shield building concrete to begin with, which has a 50
8 percent thermal diffusivity poor quality. The freeze
9 is able to get deeper into the concrete of the shield
10 building.
11 And as was mentioned; we could get into so
12 much more detail in a hearing, another detail that
13 hasn't come out yet is that the annular space of the
14 shield building, I think it goes against the scenario
15 that Mr. Trikouros painted earlier of the shield
16 building wall being heated to a certain extent or a
17 certain depth outward. Actually that annular space is
18 preventing the heat buildup in the wall to the point
19 where FirstEnergy has to install heaters in the
20 annular space to heat up the annular space. And many
21 of those, half of those heaters don't work, are
22 malfunctioning. So I think it's wrong to think that
23 heat is traveling outward and preventing the freezing
24 from traveling inward. I think especially given the
25 winter last year that the freezing of that shield

building wall probably went very deep into that 30 inches.

JUDGE KASTENBERG: Does the licensee have any comments regarding petitioner's statements?

MR. BURDICK: Of course.

JUDGE TRIKOUROS: I'm sure.

(Laughter)

JUDGE TRIKOUROS: Why do I ask? Yes, go ahead.

MR. BURDICK: We've heard a lot of topics here just now from the intervenor, a lot of different topics, and some of them sounded familiar and I think are at least raised their pleadings, but a lot of them are new, especially towards the end here talking about how the coating changes the impact or I guess the value of the earlier impulse response, things like climate changed-induced changes, these 27 inquiries, the poor quality. I think it's pore, P-O-R-E or -- anyway, I think a lot of these topics are found nowhere in Contention 7.

And so just the first point I wanted to make is this oral argument is here to look at whether the contention as already submitted by the intervenors is admissible. And they submitted the original contention, they submitted and amendment and I think

1 some errata to that. It's to determine whether that
2 is admissible. So they're simply not permitted to
3 bring up new topics here at this oral argument to try
4 to support their contention.
5 And I won't belabor the point because I
6 think it's pretty standard, but let me just provide
7 just on the record in response just one quotation from
8 a Commission case. And this is an LES case, CLI 04-
9 35, 60 NRC 619. And there the Commission said,
10 "Allowing contentions to be added, amended or
11 supplemented at any time would defeat the purpose of
12 the specific contention requirements by permitting the
13 intervenors to initially file vague and unsupported
14 and generalized allegations to simply recast, support
15 or cure them later." And I think that's what they're
16 trying to do here when given this opportunity. I
17 understand they're responding to a question by the
18 Board, but they're just simply not permitted to bring
19 in this new information.
20 Let me also on the contention
21 admissibility front -- we discuss this in extensive
22 detail in our answer, but one of the largest, most
23 significant deficiencies of this contention is they
24 fail to provide the alleged facts or expert opinion
25 that are required by 10 CFR Section 2.309(f)(1)(5),

1 and they also fail to demonstrate a genuine disputed
2 material issue, fact or law under Section
3 2.309(f)(1)(6). And we discuss that in detail. But
4 I think as we've listened to the intervenors describe
5 their contention, that's only been emphasized.
6 If I were to summarize their arguments,
7 they claim laminar cracking is bad and then they claim
8 you need to do more. There is no explanation for why
9 what we proposed in this Shield Building Monitoring
10 Program is insufficient or much less that it's not
11 enough to satisfy the NRC's license renewal
12 requirements. Instead, they're just claiming you need
13 more without providing that basis or that specificity.
14 This Board has rejected I think in both Contentions 5
15 and 6 in part because of the bare assertions and
16 speculations that the intervenors provided in those
17 contentions. That same conclusion applies here as
18 well. They simply provide conclusory statements on
19 these issues.
20 I'm happy to talk through any of these
21 topics in more detail, but I think some of them are
22 fairly obvious. In the section where they talk about
23 additional testing techniques, they provide one
24 sentence that identifies eight different possible
25 testing mechanisms, but there's absolutely no

1 discussion as to why they apply here, why they would
2 do more than we're doing, why they would be
3 preferable. One of them is even impulse response
4 testing. Well, we've done impulse response testing.
5 A couple others are electronic testing, or I think
6 there's ultrasonic testing. They don't explain why
7 are those different? What are they really talking
8 about as doing with those? Why are those better than
9 impulse response testing that we have done?
10 They identify some different testing to
11 look at I guess the quality of the concrete such as
12 the strength testing or tensile testing, pull testing
13 or creep test. They mention all of those, but again
14 they don't explain why that would help us to monitor
15 for laminar crack propagation. And in fact we have
16 done some of those testings throughout our evaluations
17 as we were looking at the quality of the concrete, but
18 now when we understand the mechanism, they don't
19 explain why should we be doing those things to look at
20 if there's propagational laminar cracking.
21 The same with chemical testing. They
22 mention chemical testing. Don't explain why what
23 we've done in the past is not sufficient or why that
24 is necessary to monitor for laminar crack propagation.
25 Instead it's just the bare assertions and conclusory

1 statements.

2 Your Honor, I guess I'll take your lead

3 whether you want me to try to walk through all of the

4 subject matters they have identified, but I think --

5 JUDGE KASTENBERG: Not necessary, but I do

6 have a follow-up question, I guess. Do I understand

7 correctly that the choice of frequency, number and

8 location is -- that you used the American country

9 society as the guide, that they have a standard and

10 that you use their standard to determine?

11 MR. BURDICK: So for frequency we sort of

12 looked at -- I think it's ACI report 349.3R, which

13 actually recommends a five-year inspection cycle. And

14 so we make the point in a few places, but including

15 our most recent response, we're actually shorter than

16 that. And so that factors into acceptability of our

17 frequency.

18 JUDGE KASTENBERG: So you feel you're

19 being conservative compared to this so-called accepted

20 standard?

21 MR. BURDICK: Yes, especially with

22 frequency.

23 JUDGE KASTENBERG: And the other question,

24 I think you referred to it as it's a standard that has

25 to do with concrete chimneys or concrete cylinders, I

1 think? Is that what you call it? A chimney? A
2 concrete chimney?
3 MR. BURDICK: I'm trying to recall if I
4 said anything specific on that.
5 JUDGE KASTENBERG: Well, I think in your
6 pleading you talk about that the standard applies to
7 concrete chimneys.
8 MR. BURDICK: Oh, I think that's right
9 that the shield building is a chimney-type structure.
10 There's nothing that's unique in the sense that it's
11 a cylinder, that it's reinforced concrete and steel.
12 And so we have looked at some of the standards for
13 those types of structures, and that factored into our
14 building of the AMP.
15 JUDGE KASTENBERG: And the standard just
16 talks about frequency and not about number and not
17 about location?
18 MR. BURDICK: I think it does talk about
19 frequency. Let me check with my --
20 (Pause)
21 MR. BURDICK: Your Honor, so with respect
22 to the ACI code, our understanding is we used the --
23 just for the frequency, that there's not a specific
24 location or number of inspections specified in that
25 code, is my understanding.

1 With respect to the location of the
2 inspections, some of that is discussed in a November
3 2012 RAI response when we first specifically
4 identified that we would do 20 inspections. And as
5 part of that we looked at where the laminar cracking
6 was most prevalent in the shield building. And some
7 of this is -- I mentioned earlier that there was more
8 prevalence on the southern exposure, and some of that
9 is due to the weather during the winter, that I think
10 the wind is prevailing in that direction, in addition
11 to on the top, the 20 feet, and then around the main
12 steam line penetrations because of the rebar
13 configuration. So we looked at that.
14 And there are some statements in the
15 record, for example, that we have core bores that we
16 inspect on I think 8 of the 10 shoulders that are on
17 that kind of southern exposure. And just to ensure
18 that we encompassed, we encompass a large percentage
19 of that. And so most of the core bores, or many of
20 them are done in pairs where one is un-cracked and one
21 is in a cracked area. And then there are some as well
22 in the flutes and then in that 20 feet and by the main
23 -- so we have done a representative sample for that
24 20. So we believe that it reflects the different
25 types of cracking around -- or different locations of

1 laminar cracking in the building.

2 The three that came about was related to

3 our identification in 2013 of the laminar crack

4 propagation. When we did the investigation, we looked

5 at all 80 core bores that are in the building once we

6 identified the propagation. I think we did 91

7 inspections in those 80, so some we inspected more

8 than once. And we identified that there were eight

9 locations where there was some amount of new

10 propagation, some new laminar cracking due to

11 propagation, due to this ice wedging.

12 In three of those locations the

13 propagation was in plain with existing laminar

14 cracking. So the laminar cracking is not an exactly

15 straight line, but some of it's weaving through the

16 rebar. And so it's not a perfect line. So we found

17 a couple places where there was kind of an offshoot of

18 the crack. Well, because that has no impact on our

19 strength calculation for the shield building, we

20 didn't do special or additional inspection for those

21 locations, because it's also where there's existing

22 cracking.

23 So then that left us with five places.

24 Two of those places were already bound by existing

25 core bores from the population of twenty. And so that

1 left us with three new locations of laminar crack
2 propagation. So those are the three that we've added
3 that go from 20 to 23. So we certainly have a basis
4 for doing that. And so we're inspecting that.
5 And here the AMP makes it very clear that
6 we put in these three new core bores into locations
7 that are un-cracked. We'll monitor for any cracking.
8 But these three there's a very specific commitment in
9 the Shield Building Monitoring Program. If there is
10 more propagation, these three will always be -- this
11 will be moved and added so there's always one on the
12 leading edge of any propagation, if there is
13 propagation.
14 JUDGE KASTENBERG: Is all this described
15 in the AMP?
16 MR. BURDICK: I think it describes the new
17 three and how these will be at the leading edge of the
18 concrete. So that's the explanation. And then I
19 believe some of the RAI responses, including the July
20 3rd have a little more description about the basis for
21 the three, and in addition a more recent RAI response.
22 JUDGE KASTENBERG: So one way; correct me
23 if I'm wrong, I could summarize what you've said is
24 that you have some rationale behind how you determine
25 the number, location and frequency?

1 MR. BURDICK: Certainly, yes.

2 JUDGE KASTENBERG: Without stipulating
3 whether that's a good rationale or not, but you have
4 some process that you're following to determine
5 number, frequency and location?

6 MR. BURDICK: That's correct.

7 MR. LODGE: Judge Kastenberg, if I may
8 respond to that? Conceptually what's going on is
9 FirstEnergy is chasing the cracking. They are not out
10 in front of the cracking. And our contention is that
11 they must be out in front of the cracking.

12 I've got the ACI reference open here. The
13 problem is that the frequency presumes that you may
14 have the beginnings of degradation, but it's time to
15 start monitoring at some frequency level to make sure
16 that things don't get worse.

17 Reading from chapter 6, which I believe
18 was the cited -- it has a little table which contains
19 that five-year frequency business in the ACI Committee
20 report, quote, "The established frequencies should
21 also ensure that any age-related degradation is
22 detected in an early state of degradation and that
23 appropriate mitigative actions can be implemented."

24 The one mitigative action that was
25 implemented has turned out to be a mistake and has

1 serious flaws, and in fact was something to which the
2 intervenors objected or mentioned as a potential
3 problem back in 2012 before the coating took place.
4 So the problem is is that the ACI
5 Committee report presumes not pristine conditions, but
6 not degraded with visible cracking present. It's fine
7 that there are inspections going on, but we contend
8 that the objective analysis of the entire structure
9 now is what is warranted, what is indicated. So the
10 ACI report should not be deemed very persuasive by
11 this Panel.
12 MR. HARRIS: Your Honor, just --
13 JUDGE KASTENBERG: Follow-up comment to
14 that by either staff or --
15 (Simultaneous speaking)
16 MR. HARRIS: Your Honor, my colleague will
17 follow up, but just for matters of keeping an adequate
18 record, can we have intervenors sort of indicate which
19 ACI report they were reading from?
20 JUDGE KASTENBERG: Oh, I'm sorry. Yes,
21 thank you very much.
22 MR. LODGE: One second here. It's ACI
23 349.3R-02. I think that was the -- it may have been
24 the one that was cited.
25 MS. KANATAS: Whenever -- staff would

1 obviously like the opportunity to comment on the
2 challenges to the AMP, but certainly whenever.
3 MR. BURDICK: Just real quick if I can
4 make a correction to something I said earlier. Just
5 when I was describing these core bores that will be
6 used and will ensure the leading, I said that the
7 three -- the specific ones, but it's really three of
8 the five. So it's a sample of three of the five where
9 there was additional laminar cracking. So just to
10 correct the record.
11 On this ACI report issue, I think from a
12 contention admissibility perspective, again this is
13 new information. So if they wanted to use this to
14 support their Contention 7, then they should have
15 submitted it in their Contention 7. And so they can't
16 supplement the record here. And I understand some of
17 this was responding to questions, but this cannot be
18 a basis for a new contention.
19 But as we discussed from the ACI report,
20 we were using it as support for our frequency. And we
21 have the five-year frequency, as we talked about in
22 the ACI report. We're actually starting with an
23 annual frequency, which is much more conservative.
24 And then with respect to the location and
25 number of core bores, it's not directly the ACI

1 report. It's other things that we've relied upon. So
2 even if this was a timely argument, I don't see why it
3 provides any basis for their contention.
4 JUDGE KASTENBERG: Would you like to
5 comment?
6 MS. KANATAS: I'll just cover the points
7 that I think haven't been covered. In terms of
8 specific challenges to the shield building monitoring
9 AMP, I think first a question that Judge Kastenberg
10 raised earlier about it seems that intervenors'
11 concern is that the AMP is inadequate because the July
12 8th submittal admitted that cracking propagation is
13 age-related. But there's no indication in the
14 Contention 7 of why the root cause of the cracking
15 propagation would impact the staff's license renewal
16 findings or why the shield building monitoring AMP,
17 which monitors cracks through multiple inspections
18 over the period of extended operation, is inadequate.
19 As we've repeated since 2012 in the
20 Contention 5 filings, the staff's Aging Management
21 Review focuses on managing the functionality of
22 structures and systems and components, not identifying
23 and mitigating aging mechanisms. So again, while
24 intervenors obviously have a problem with the full
25 apparent cause evaluation's conclusions, they don't

1 tie their concern with anything material to the
2 staff's license renewal decision.
3 Again, I think we've already covered that
4 testing frequency is called woefully inadequate and
5 intervenors request that annual inspections be
6 conducted, but in fact the July 3rd modifications
7 changed the inspections to annual inspections every
8 year for a minimum of four years starting in 2015, and
9 annual inspections would continue if aging effects
10 were identified. So this doesn't raise a genuine
11 dispute with the shield building monitoring AMP
12 because they're asking for something that's already
13 provided and they're also not indicating why what is
14 provided is inadequate.
15 We've already covered the core bores.
16 They make a few other claims to other
17 AMPs. For example -- or I guess this is actually
18 still Shield Building Monitoring Program. On page 31
19 of their Contention 7 they say that there needs to be
20 a comprehensive sealant AMP. So presumably they're
21 talking about the coating.
22 The parameters monitored an inspected
23 element of the Shield Building Monitoring Program
24 includes visual monitoring of condition of coatings at
25 five-year intervals. For loss of protective

1 effectiveness with quantitative accepted criteria
2 based on ACI 349.3R the coating will be replaced every
3 15 years. So again, the only claim is that a
4 comprehensive sealant AMP is needed, but one is
5 provided and there's no indication of why what is
6 provided is not comprehensive or adequate.
7 Likewise, at page 27 intervenors claim
8 that there's an astounding deficiency in the aging
9 management of the rebar. It appears that intervenors
10 are challenging FENOC's plans to manage the age-
11 related degradation of the rebar. The LRA provides
12 for visible inspection of the rebar and it seems as if
13 intervenors are saying that a measurement technique
14 should be used, but there's no indication of what
15 measurement technique or why a visual examination on
16 an opportunistic basis is inadequate.
17 The staff continues to ask questions and
18 I think some of -- Mr. Kamps has alluded to the fact
19 that the staff does not just take what is given to it
20 without a questioning eye. And for example, the
21 staff's most recent RAI was September 29th. I believe
22 that's the date. And the most recent response from
23 FENOC was October 28th. And in that response FENOC
24 provided further justification for the adequacy of the
25 opportunistic visual inspection.

1 So finally, as in Contention 6, Contention
2 7 raised anticipatory changes. Specifically the
3 motion to admit at page 2 intervenors said that they
4 seek to litigate the adequacy of FENOC's anticipated
5 modifications to the shield building monitoring and
6 structures monitoring AMP. The Board in its
7 Contention 6 order indicated that anticipatory
8 challenges are inadmissible. And so I'd just like to
9 note those. Thank you.
10 JUDGE FROEHLICH: My colleagues tell me
11 that they're hungry. I think what we'll do now is
12 take an hour for lunch. When we return we will
13 continue with the questioning, although we will focus
14 on the legal and factual foundations of the contention
15 going to the issue of whether there's a genuine
16 dispute here.
17 Just for parties that have been concerned,
18 obviously the decision on this is going to be based on
19 the pleadings that have been filed so far and the
20 regulations which apply to contention admissibility.
21 This is oral argument. We are here just to answer
22 questions and supplement the understanding of what's
23 in the filed pleadings.
24 So with that, we'll adjourn until 1:45.
25 (Whereupon, the above-entitled matter went

1 off the record at 12:35 p.m. to reconvene at 1:45 p.m.
2 this same day.)
3 JUDGE FROEHLICH: We'll be back on the
4 record. Mr. Trikouros.
5 JUDGE TRIKOUROS: Am I up?
6 JUDGE FROEHLICH: Yes, you're up.
7 JUDGE TRIKOUROS: There was an SER. I
8 guess there was a question of whether or not this
9 cracking problem should be addressed in the EIS and
10 the SER contention. But it did say EIS. I have the
11 question of the SER.
12 Are you going to address this at all?
13 MR. HARRIS: It depends on the nature of
14 the cracking problem. There are a couple of ways that
15 something like this might be addressed in the EIS.
16 There's what we talked about before in terms of SAMA
17 analysis. Should it be addressed in the SAMA
18 analysis? And what we've indicated is that this
19 cracking phenomenon really doesn't have any impact on
20 the SAMA analysis in terms of the overall consequences
21 of what would be considered a potential cost
22 beneficial mitigation measure.
23 You could I think from reading their
24 contentions that they would suggest that you should
25 account for the cost rebuilding/repairing the shield

1 building. And that would be addressed in the EIS.
2 But normally we would only do those things. That's not
3 an alternative issue. We would do that under
4 refurbishment should FENOC decide at some point and
5 indicate that it's going to do some sort of that major
6 reconstruction activity. So this kind of thing would
7 not normally impact or do something that would be
8 addressed in the EIS. Just the fact that there are
9 cracks.
10 JUDGE TRIKOUROS: Now the 2013 SER did
11 address cracking. Is there at least as of that time
12 going to be any additional supplementation of that or?
13 MR. HARRIS: I believe that there will be.
14 There is the potential for some additional
15 supplementation. The staff is still going through
16 that analysis and hasn't fully made up its mind in
17 terms of supplementing. The staff does try to update
18 and supplement as things are finalized. The cracking
19 is likely to be addressed in an updated supplement to
20 the SER.
21 JUDGE TRIKOUROS: But there are no firm
22 plans to do it. It's just you're thinking about it.
23 MS. KANATAS: I believe there's a schedule
24 to do that currently.
25 JUDGE TRIKOUROS: Oh you are?

1 MS. KANATAS: Yes, I believe so.

2 MR. HARRIS: I don't --

3 MS. KANATAS: Oh no. I'm sorry. There
4 might not be a firm schedule, but it -- I don't
5 believe the -- No.

6 MR. HARRIS: There's not a firm schedule
7 to do that. The staff is looking at that to
8 supplement, but has not made a decision to supplement.
9 But they're going through all the process of figuring
10 out whether to supplement.

11 JUDGE TRIKOUROS: Okay. All right. Now
12 I just had a few questions regarding the pleadings,
13 things I didn't quite understand. And if you'll bear
14 with me, I'll try and get that done.

15 In the petition on pages 18-19 regarding
16 the issue of new cracks that might develop, I'm
17 talking about the initial Intervenors' petition. Is
18 there a basis to conclude that no new cracks will
19 develop in other areas? Is that a going in
20 assumption? We sort of dealt with that this morning
21 but.

22 MR. BURDICK: Yes, the ice wedging
23 phenomenon identified in 20.13 requires an approval of
24 any laminar cracks. So any propagation would be at
25 the location of an existing laminar crack.

1 JUDGE TRIKOUROS: Right. But you're
2 making the assumption that given what you've done so
3 far that there won't be any laminar cracks developing
4 elsewhere.
5 MR. BURDICK: That's correct. And some of
6 that is based on our 20.13 investigation of that
7 laminar crack propagation where we looked at all 80
8 core bores and identified exactly the population of
9 core bores with additional laminar crack propagation.
10 We also did some impulse response testing at that time
11 to confirm those results. And based on that the
12 laminar cracking propagation that would happen
13 potentially due to ice wedging would be limited to the
14 existing laminar crack propagating.
15 JUDGE TRIKOUROS: Okay.
16 MR. MATTHEWS: Judge Trikouros, your point
17 though, your question, and this may have been a
18 background question but it kind of flips the argument
19 that contention should say a basis what the reason is
20 to believe or to suspect that there might be cracking
21 in these other places.
22 JUDGE TRIKOUROS: I think the contention
23 --
24 MR. MATTHEWS: The contention is you
25 shouldn't expect cracking before. So you can't

1 believe anything is kind of the basis of the
2 contention.
3 JUDGE TRIKOUROS: Right. I think the
4 contention though is arguing that the laminar cracking
5 had existed for a long time before you realized it and
6 that it might occur somewhere else and that the amp
7 didn't seem to them to be adequate to assure that
8 cracking anywhere else would be discovered.
9 MR. MATTHEWS: It's the might occur
10 somewhere else that is about basis in the contention.
11 JUDGE TRIKOUROS: Right.
12 MR. MATTHEWS: And as my partner indicated
13 FENOC did have a basis for identifying what it had.
14 The point was the question seems to flip the burden.
15 JUDGE TRIKOUROS: Yes, I understand. The
16 staff is okay with that.
17 MS. KANATAS: I'm sorry. The staff is
18 okay with --
19 JUDGE TRIKOUROS: There's a presumption
20 that the laminar cracking that occurred in the flute
21 shoulder areas would have to be monitored in the AMP,
22 but that there wasn't a need to go and look on a
23 regular basis for cracking elsewhere, laminar cracking
24 that might develop elsewhere in the shield building.
25 Is that the staff's understanding?

1 MS. KANATAS: That is.

2 JUDGE TRIKOUROS: All right. And clearly

3 the Intervenors are not happy with that.

4 All right. Well, there's a whole series

5 of pages in the petition that deal with that. I don't

6 think I need to go any further into that. Okay. This

7 is on page 31, bottom 31, top 32 of the petition. It

8 says -- It actually starts "FENOC has done nothing to

9 address the shield building cracking." That

10 paragraph.

11 But at the center of that it says, "Even

12 without flaws or degradation, however, FENOC has not

13 established that the whitewash coating, the exterior

14 of the shield building, actually insulated the side

15 wall thickness against freezing and thawing

16 temperatures." Was it the Intervenors' thoughts that

17 that coating was some sort of a thermal barrier? Is

18 that why you asked that?

19 MR. LODGE: May I ask again? Where is

20 that? Is that from the September 2nd filing?

21 JUDGE TRIKOUROS: Yes.

22 MR. LODGE: And it's on pages?

23 JUDGE TRIKOUROS: Thirty-two. Yes, it's

24 31.

25 MR. LODGE: Sorry.

1 JUDGE TRIKOUROS: It was at 31-32, bottom
2 of 31, top of 32.
3 MR. LODGE: All right.
4 JUDGE TRIKOUROS: It's the top of page 32.
5 MR. LODGE: The answer to your question --
6 JUDGE TRIKOUROS: That statement was on
7 the top of 32.
8 MR. LODGE: I see that. Thank you. The
9 answer to your question, sir, is that may have been a
10 poor choice of words. It was not my contemplation in
11 writing that that it insulates thermally rather than
12 seals the wall against --
13 JUDGE TRIKOUROS: All right. So given
14 that it read like thermal insulation, it's not.
15 MR. LODGE: No.
16 JUDGE TRIKOUROS: All right. Then that's
17 fine. Thank you.
18 In your motion to amend and supplement.
19 MR. LODGE: That's September 8th.
20 JUDGE TRIKOUROS: Yes.
21 MR. LODGE: Okay.
22 JUDGE TRIKOUROS: You refer to the
23 consideration of alternatives as well as in the SAMA.
24 This consideration of alternatives, are you referring
25 to alternative power sources other than Davis-Besse?

1 MR. LODGE: Yes.

2 JUDGE TRIKOUROS: And is it based on the
3 presumption that shield building may not be viable and
4 the plant would have to be shut down?

5 MR. LODGE: Correct. The economics, yes.

6 JUDGE TRIKOUROS: All right. We never did
7 talk about the details.

8 JUDGE KASTENBERG: Just as a follow-on to
9 that though, what you mentioned in terms of
10 alternatives not necessarily for the power plant, but
11 alternatives in terms of mitigating the cracking. Are
12 we talking about the same thing?

13 MR. HARRIS: No, I think we're talking
14 about the same thing. But you've got two different
15 things. You've got the SAMA which is a different part
16 of the EIS and then you have the Consideration of
17 Alternatives which was also alternative power
18 production.

19 JUDGE KASTENBERG: Right.

20 MR. HARRIS: Which the way I understand
21 the contention to be written is that the Intervenors
22 want us to consider the added cost of having to do
23 something with the shield building when you're
24 comparing it to other alternative energy sources.

25 JUDGE KASTENBERG: Is that correct?

1 MR. HARRIS: And I'm not trying to put
2 words in their mouths.
3 JUDGE KASTENBERG: I appreciate that. But
4 I was going to come back to that a little bit later.
5 But since it's brought up now, can we be a little more
6 precise about what it is that we're talking about in
7 terms of alternatives and costs?
8 MR. LODGE: I think the response to his
9 interpretation is that it wasn't our intention. Our
10 intention was SAMA considerations based on whatever
11 presumptions go into how the shield building is
12 treated in this severe accident mitigation analysis
13 and alternatives to a continued use of Davis-Besse
14 because of the non-functioning shield building.
15 PARTICIPANT: If I might, Judge
16 Kastenberg.
17 JUDGE KASTENBERG: But are you saying
18 both?
19 MS. KANATAS: Yes.
20 JUDGE KASTENBERG: It sounds to me like
21 you're mixing two ideas together, two separate things
22 together. I'm still confused. It's your contention.
23 MR. LODGE: Right.
24 JUDGE KASTENBERG: So what are we
25 evaluating here, alternatives to Davis-Besse or the

1 cost of alternatives of to dealing with the shield
2 building?
3 MR. LODGE: NEPA calls for both. So I
4 guess it is both. I'm just trying to recall what must
5 have been in my mind when I was drafting that.
6 JUDGE KASTENBERG: We certainly can't
7 recall it for you.
8 (Laughter)
9 MR. LODGE: Unfortunate, it may be
10 unanimous.
11 JUDGE KASTENBERG: Did you want to say
12 something here?
13 MR. MATTHEWS: Thank you, Judge
14 Kastenberg. Obviously, from our pleadings, they're a
15 contention. But we understood it as suggesting that
16 we had not considered the environmental analysis, both
17 the Applicant's and the staff's. We had not
18 sufficiently considered the no-action alternative, not
19 relicensing Davis-Besse.
20 And if that is part of the contention, (1)
21 it's timely. It could have been when cracking was
22 first identified. (2) It's not specified. There's no
23 reference to the no-action alternative that is clearly
24 discussed in both EER and the FSIS. There is no basis
25 articulated as to why what's there is not sufficient

1 authority, any of the other 2.309 criterion. It
2 doesn't address any of them.
3 And the same would be true even if the
4 Intervenors now tell us that it means refurbishment.
5 (1) They haven't articulated that to the point where
6 anyone here in the room who had studied it interpreted
7 it clearly that way. And again timely, no basis, no
8 authority, doesn't meet any of the criterion for an
9 admissible contention.
10 MR. LODGE: Your Honor, I maybe have found
11 the tiebreaker here. On page 19, we state that the
12 "Cracking phenomenon must be identified, analyzed and
13 addressed within the SEIS for the license renewal both
14 as part of the SAMA analysis and as part of the
15 Consideration of Alternatives to a 20 year operating
16 license extension." So no-action alternative I think.
17 JUDGE TRIKOUROS: Bear with me because a
18 number of these actually got resolved during the all
19 morning's conversation. So I'm trying to just skip
20 over them.
21 JUDGE KASTENBERG: While you do that I
22 have a different question or do you want to just keep
23 going?
24 JUDGE TRIKOUROS: Well, go ahead.
25 JUDGE KASTENBERG: I just want to hone on

1 this question of whether or not ice wedging is new or
2 old so to speak and whether or not in your view ice
3 wedging and freeze/thaw are the same thing. In other
4 words, my understanding is that there were words to
5 the effect that freeze/thaw was a possible phenomena
6 for cracking and that ice wedging was something that
7 came much later. If you could just clarify that since
8 you had mentioned this a number of times and since at
9 least as I understand it in the contention this is an
10 important part of the argument that this is timely.
11 So I just want to kind of hone in on that and be
12 clear.
13 MR. HARRIS: Right, and I think we ought
14 to step back a little bit from aging management
15 programs just before I addressed that. Aging
16 management programs like this they're designed to
17 monitor some particular event. And they're fairly
18 agnostic as to what the cause of the crack
19 propagation. They're measuring it. They're trimming
20 it. Really in a lot of ways it doesn't matter for
21 purposes of being able to monitor the cracking and
22 whether or not the building can meet its intended
23 function what is driving that growth in the crack.
24 For ice wedging, the same thing. Also
25 with freeze/thaw cycle. For a crack to propagate you

1 need a pre-existing crack. You need some form of
2 stress concentrator at the end of that crack. And in
3 the case of ice wedging, it's the water being there
4 frozen, expanding and creating that stress at the end
5 of that crack that causes this to open up and continue
6 to grow further.
7 The freeze/thaw cycle, as long as all
8 concrete buildings do have water in them and they
9 maintain water and they never really fully dry out
10 completely, you're going to have this kind of crack
11 propagation any place where you have water that can
12 collect in a crack. It will be able to grow. One of
13 the things that they were monitoring for was that
14 freezing of water that has permeated the concrete and
15 specifically they were looking at. And this is
16 referring back to the April 5, 2012 RAI response that
17 I had mentioned previously.
18 The parameters that they're monitoring
19 when they're talking about cracking in concrete from
20 freezing of water is the surface condition of the core
21 bores which is different than the laminar cracking,
22 the core bore samples, and the change in the crack
23 conditions in the core bores. And I've added in the
24 core bores, but I mean the change in the crack
25 conditions. It was looking at freeze/thaw cycles in

1 those particular cracks which is a function of ice
2 wedging. I look at that as freeze/thaw is a much
3 bigger description that includes the ice wedging
4 phenomena.
5 JUDGE KASTENBERG: Is that a -- I
6 appreciate that's the way you look at it. But is that
7 something that I can find in any of the documents?
8 MR. HARRIS: It is in the documents. It's
9 on potential --
10 JUDGE KASTENBERG: That explains that?
11 MR. HARRIS: That freezing thawing is ice
12 wedging?
13 JUDGE KASTENBERG: That ice wedging is
14 contained within the definition of --
15 MR. HARRIS: No, I don't think that there
16 is something that's explicit in there that says ice
17 wedging is the same as the freeze/thaw cycle. I don't
18 believe there's any language in the responses that
19 makes that.
20 MS. KANATAS: And, Judge Kastenberg, just
21 to add, I think one of the key points, too, of what we
22 keep reiterating of why the full apparent cause
23 evaluation does not constitute materially different
24 information is that Intervenors repeatedly claim that
25 it's the admission of an aging mechanism that brings

1 this into the scope. But this has been within the
2 scope. I mean as I'm pointing to the same page on the
3 April 5, 2012 AMP which says potential aging
4 mechanisms. So it's always contemplated a potential
5 aging mechanism even though it was put in place
6 following the laminar cracking which was determined
7 not to be the result.
8 JUDGE KASTENBERG: You would say that if
9 some new aging mechanism is discovered a year from now
10 it would never qualify as new information because
11 you've got a blanket statement.
12 MS. KANATAS: No, I don't think that's
13 what I'm saying. I think it's more of the assertion,
14 first the assertion, that the fact that there was an
15 aging mechanism at all brought this into the scope.
16 And I think that's a direct quote from their pleading.
17 And our position was always that regardless of the
18 mechanism how the laminar cracks would be managed, the
19 aging effects, was within the scope. And that's why
20 we initially said there was an omission which was then
21 mooted by the April 5, 2012 AMP which when submitted
22 indicated that it would be looking for potential aging
23 mechanisms.
24 And as Mr. Harris was describing, while
25 the freeze/thaw phenomenon doesn't explicitly say this

1 is ice wedging, it's looking for similar --

2 MR. HARRIS: And let me add just a little

3 bit to that and I hate to sort of go back and forth is

4 that the aging management programs aren't designed to

5 figure out necessarily the mechanism of particular

6 aging. It's designed to manage the impact of that

7 aging on the ability of the shield building in this

8 case to meet its intended function. So the aging

9 management program was never built to go this is ice

10 wedging or some other crack developing.

11 It's designed to be able to show that the

12 shield building will still meet its intended function.

13 The materiality of what's driving the crack really

14 doesn't affect whether or not the aging management

15 program could be effective.

16 Now could there be some aging mechanism

17 out in the future that we discover that might change?

18 It's a possibility. But I'm not sure. In this case,

19 I don't think it is.

20 JUDGE TRIKOUROS: But it's more than that.

21 There's a presumption that there won't be cracking

22 elsewhere. I mean didn't we just discuss that?

23 MR. BURDICK: Just to be clear, there is

24 a presumption that the ice wedging mechanism will not

25 exist in places that there's no laminar cracking. So

1 I think I agree with the staff of what they're saying
2 about the alternative purpose of the shield building.
3 It's always been a monitor for any changes in the
4 laminar cracking. And that's regardless of the
5 specific mechanism. In 2013, we specifically
6 identified the ice wedging mechanism. And one of the
7 requirements for that is to have a pre-existing
8 laminar crack. So it's a very specific mechanism
9 there.
10 Just to clarify, too, in the apparent
11 cause evaluation, we looked at a number of different
12 failure modes and similar process in the RCA1. We did
13 treat ice wedging as its own mechanism separate. We
14 looked at a few other freeze/thaw mechanisms. They do
15 have similarities as far as they're both dealing with
16 moisture in the concrete and freezing of that water.
17 And ice wedging is a very specific
18 mechanism where you do have this pre-existing laminar
19 crack and it's at the freeze event with the moisture
20 in the building that's causing to propagate. And
21 freeze/thaw refers to other things as well or refers
22 to mechanisms such as the micro-cracking we talked
23 about earlier. It's a different mechanism, but
24 they're related as they're both dealing with water
25 that's freezing in the concrete.

1 JUDGE TRIKOUROS: Are there other
2 structures, monitoring AMPs, that deal with the
3 broader expanse of the shield building?
4 MR. BURDICK: The shield building
5 monitoring program specifically focuses on the laminar
6 cracking, but it also covers things like the coating
7 on the exterior of the surface. There is also a
8 structure monitoring which is not a plant-specific one
9 but covers all in-scope structures on site, too. And
10 that's the AMP that would address microcracking.
11 There are certain inspections to look for evidence of
12 microcracking, spalling or things like that.
13 JUDGE TRIKOUROS: It comes up in the
14 pleadings in multiple places. The concern is you're
15 not looking for any new cracking. You're monitoring
16 all the existing cracking. Your entire program is
17 based on making sure that there's no propagation of
18 the existing cracking.
19 What I'm trying to understand is is there
20 a requirement to look for any new cracking on this
21 building.
22 MR. BURDICK: I think the answer is no.
23 You know our evaluations, our testing, our inspections
24 all identified the laminar cracking in 2011. And that
25 was a set amount. We concluded that that cause still

1 holds it. There was a set amount of laminar cracking.
2 Now in 2013 we've identified this one mechanism, this
3 ice wedging, that could cause that to propagate. So
4 we're watching monitoring for that.
5 Other cracking on the shield building, it
6 would be covered by the structures monitoring AMP
7 which has not been challenged by the Intervenors here.
8 So if there's some, for example, surface cracking
9 that's identified through an inspection, it's covered
10 by the structure monitoring AMP and not this AMP.
11 JUDGE TRIKOUROS: Does the staff agree
12 with that? That the broader expanse of the shield
13 building cracking is part of another AMP.
14 MR. HARRIS: That's correct, Your Honor.
15 The structure monitoring AMP would cover the things
16 like spalling and those kind of issues. Those kind of
17 inspections for the surface monitoring of the crack is
18 that the shield monitoring AMP was designed to look at
19 this particular event.
20 MR. LODGE: If I may respond on behalf of
21 the Intervenors. Judge Kastenberg, in direct response
22 I think to your initial question, in the full apparent
23 cause evaluation at page four of 80, it says,
24 "Contributing to the ice wedging cause is application
25 of the coating to the shield building." I would

1 remind the panel that the coating application occurred
2 approximately from August to October 2012 references
3 therefore to April 2012 AMPs. They didn't anticipate
4 they were going to have a problem with that particular
5 mitigation step and did.
6 Furthermore, the difficulty here is that
7 we have articulated in our pleadings and in discussion
8 earlier today the fact that there are other transitory
9 points for water, for moisture, into the annular space
10 as well as into the exterior of the building and down
11 through the walls. The shield building vacuum
12 propagation was enhanced, worsened, by the application
13 of the coating. The water is trapped. We're hearing
14 discussions of it dissipating, no particular analysis
15 of that, no expertise that is explaining exactly that
16 is going to happen and what the anticipated timetable
17 would be nor if there are any other mitigations set to
18 be taken.
19 We believe that ice wedging certainly
20 existed. I can't find the reference. But we've also
21 seen some mention I think in some FENOC document that
22 basically says in industrial concrete types of
23 applications this sort of problem is not well
24 identified or discussed.
25 (Off microphone comments)

1 Yes, the geological says no ice wedging,
2 but it hasn't come over into industrial engineering.
3 It may or may not be true. It may or may not be an
4 accurate statement, but it's a 2014 statement I think
5 if I'm recalling it. I guess it's in the 98 page
6 document from July 2014.
7 The point is it's new. Ice wedging may
8 have existed as an academic phenomenon. As it does
9 cause damage to the shield building it is new and
10 recent in terms of it being disclosed publicly.
11 JUDGE KASTENBERG: Any other comments on
12 ice wedging?
13 (No verbal response.)
14 JUDGE TRIKOUROS: Okay. Again, in the
15 original petition -- I'm sorry. This is the motion to
16 amend. It looks like it's on page eight. It's a
17 statement that says "PII concludes that a review of
18 engineering analysis documentation developed following
19 the initial laminar crack condition demonstrated that
20 the shield building remains structurally adequate for
21 the controlling load cases and is in compliance to the
22 current design and licensing bases." This is they're
23 quoting the FACE report, right?
24 MR. LODGE: Yes.
25 JUDGE TRIKOUROS: And Intervenors make the

1 statement "This statement is highly suspect and
2 probably false." Is there any basis for making that
3 statement or?
4 MR. LODGE: Yes. In the next paragraph,
5 we begin to explain in numerous comments by NRC staff
6 people relating to whether or not the shield building
7 conforms to its current design licensing bases. The
8 very next paragraph referenced to the Timothy Riley
9 email as one example.
10 JUDGE TRIKOUROS: Now we talked about this
11 this morning. And I was thoroughly satisfied with it.
12 I talked about the different paths. Do you still
13 believe that this is "highly suspect and probably
14 false"?
15 MR. LODGE: Yes. I don't think the
16 discussion this morning completely forecloses a
17 conclusion that perhaps the agency believes that
18 there's a conformance to current design and licensing
19 bases. You have a severely degraded building and as
20 I say an open-ended causation problem.
21 Incidentally, one other thing which we
22 didn't discuss this morning is that there are
23 significant out-of-plumb -- and we have mentioned this
24 in the pleading somewhere -- portions of the shield
25 building. It is not considered to be within plumb for

1 any longer runs than a few inches or a few feet at a
2 time. And when you're talking about something that
3 huge with that type of enormous density and weight,
4 that can be a very significant problem especially if
5 you have cracking phenomenon starting to crop up.
6 JUDGE TRIKOUROS: But you don't have any
7 separate analysis that you'd --
8 MR. LODGE: No.
9 JUDGE TRIKOUROS: You don't have anything
10 like that.
11 MR. LODGE: Our evidence is based upon --
12 JUDGE TRIKOUROS: Have you actually looked
13 at the calcs they were talking about? Were those
14 available to you? Those weren't put before you or
15 anything like that, right?
16 MR. KAMPS: We've been displeased with the
17 FOIA response to be honest with you.
18 JUDGE TRIKOUROS: All right. I think we
19 can go on from here. Okay. This has to do with --
20 This is your Intervenor motion on page 11. It has to
21 do with the fact that there are no corrective actions
22 being implemented in the AMP basically. And it
23 indicates that there would be a pass-through to the
24 corrective action program.
25 I would like to understand what your

1 problem is with that. You didn't -- I don't think
2 you elaborated on it, at least, not according to my
3 notes. What is your problem with their AMP not having
4 a corrective action program or not having any defined
5 corrective actions and a pass-through to the
6 corrective action problem? What is your issue there?
7 You seem to identify it as an issue but.
8 MR. KAMPS: Is this page 11 of the initial
9 petition?
10 JUDGE TRIKOUROS: No, the motion.
11 MR. BURDICK: September 8th.
12 JUDGE TRIKOUROS: No, the motion.
13 MR. LODGE: The current -- Even though in
14 the FACE evaluation, PII talks about how mitigating
15 steps being taken are monitored and revising the path
16 or pattern of monitoring depending on what the
17 monitoring showed. We think that's a plan to have a
18 plan. It's a return to our position that this is a
19 wait and see and see as little evil as possible in the
20 shield building until some new problem develops. The
21 utility is chasing the problem and not leading toward
22 some realistic analysis of what the status is and what
23 to do next.
24 If there were some comprehensive
25 evaluation undertaken in light of coating the building

1 and now we've got a micro-cracking problem. It's
2 possible the Intervenors wouldn't even be here. But
3 you have some analysis being done of the shield
4 building, application of the coating. Whoops, new
5 problems have cropped up and looks like we may have
6 caused them. And our solution is simply to engineer
7 15 percent expansion of the core borings and see what
8 happens. See what happens next. I don't think -- We
9 don't think collectively that that is a prudent way to
10 proceed with a license extension.
11 JUDGE TRIKOUROS: Okay. But my question
12 is dealing specifically with your comment that dealt
13 with not having corrective actions in the AMP. It's
14 a criticism of the AMP if you will. And you have a
15 problem with the pass-through to the corrective action
16 program.
17 Perhaps I could turn to the staff and the
18 Applicant to ask the question. Is it typical for an
19 AMP to include corrective actions in the body of
20 itself?
21 MR. BURDICK: Your Honor, we're confused
22 by the use of corrective actions. If the Intervenors
23 are saying that the AMP should have identified
24 additional corrective actions that we should have
25 taken in response to the laminar cracked propagation,

1 I'm not sure that's quite correct. Once we saw the
2 laminar crack propagation, we performed evaluation.
3 We performed the full apparent cause evaluation. In
4 there we identified certain corrective actions. Now
5 some of those corrective actions resulted in revisions
6 to the shield building monitoring program. That's
7 kind of one issue.
8 But certainly AMPs do utilize the
9 corrective action program. In fact, one of the ten
10 attributes of AMPs is the corrective action program.
11 And so that's certainly fundamental to the age
12 management program.
13 JUDGE TRIKOUROS: So is it typical to
14 include a section on corrective actions in that other
15 than to say it goes into the corrective action
16 program?
17 MR. HARRIS: I think typically with the
18 majority of the AMPs that they call send it to the
19 corrective action program for the plant and they don't
20 necessarily create a separate corrective action
21 program for that particular AMP.
22 JUDGE TRIKOUROS: All right. So your
23 comment that says there should be a corrective action
24 that's your opinion basically. You're not quoting any
25 authoritative. I'm just trying to understand you.

1 MR. LODGE: I understand, sir. It's fair.
2 I think the answer to your question is yes. But we're
3 mindful under Commissioner Jaczko's observation one
4 time that once you grant a license there's very little
5 further control that you have and certainly from a
6 public perspective, an Intervenor perspective, any
7 further problems that might crop up from the same line
8 of shield building cracking I can see the solution
9 will be to 2.206 petitions. And that is a highly
10 unsatisfactory type of method because it doesn't
11 reflect any potential for directly participating in
12 the regulating decisions.
13 JUDGE TRIKOUROS: All right. Well, I
14 think I understand where you're coming from now. It
15 wasn't clear when I read it just in a vacuum. You
16 indicate that there's a 0.4 to 0.7 inch crack growth
17 presumption probably in the FACE report I assume.
18 MR. LODGE: Yes, it is.
19 JUDGE TRIKOUROS: And which will lead to
20 you indicate 10.8 inches of additional cracking for
21 two years.
22 MR. LODGE: Yes.
23 JUDGE TRIKOUROS: I think here then -- I
24 wasn't sure where you were going with this. My
25 question really would be what are the implications of

1 this with respect to the design basis of the plant.
2 In other words, if one reestablishes the design basis
3 of the plant today, how does this comment factor into
4 that in terms of two years from now or four years from
5 now, that sort of thing. Does their design basis have
6 to be reevaluated to account for crack growth? How
7 does that work?
8 MR. BURDICK: The Aging Management Program
9 as it's written in the acceptance criteria, first you
10 look for if there are any changes in the nature of the
11 cracks and certain issues if identified can go into
12 the corrective action program. Part of that is also
13 to look at the design basis evaluation just to make
14 sure that it's acceptable with respect to what you're
15 seeing with cracking.
16 The design basis evaluation we've
17 discussed. That FENOC is completing with its
18 contractor. It's a strength calculation that looks at
19 some of the design basis events. So it addresses kind
20 of the design basis of these issues. But there is
21 certainly significant margin in that document. So
22 certainly FENOC if it identifies any cracking it will
23 consider that. But it's a very conservative large
24 margin design evaluation.
25 MR. MATTHEWS: It's assessed the condition

1 to assess whether it is within the design basis that
2 exists. It's not to go out and reestablish the design
3 basis. There is margin in the design basis to assess
4 whether it does. Again, to your question, a very
5 legitimate question and we appreciate the opportunity
6 to answer it. But the burden here, the Intervenors
7 haven't said why it's not. They haven't said what's
8 wrong with our calculation or any of the analysis of
9 why the AMP is insufficient, why that period of
10 checking after each winter is not sufficient.
11 JUDGE TRIKOUROS: I understand. Okay.
12 But the comment was made by you to what end? To say
13 there's going to be something wrong in two years? You
14 never really to my memory and to my notes gave us the
15 end point of that comment. You've made that statement
16 that I just read and then that was it. There was no
17 development.
18 MR. LODGE: One moment. I'm just thinking
19 it over here.
20 JUDGE TRIKOUROS: This is in your motion
21 on page 12.
22 PARTICIPANT: Top of page 12.
23 JUDGE TRIKOUROS: Yes, top of page 12.
24 MR. LODGE: Well, the context of it was
25 that we were referring to the two years, actually more

1 than two years time, during which the fact of the
2 propagation was kept rather quiet and certainly wasn't
3 known to the public to us as Intervenors and talking
4 about --
5 Essentially this is the apparent damage
6 that has happened during that stretch of time. It was
7 a credibility problem on the utilities part in terms
8 of this being a very serious problem three years ago
9 that was seriously litigated throughout 2012 with
10 additional information and revelations.
11 And then to learn in 2014 that indeed
12 during the period of time that we were litigating in
13 2012, FENOC knew that there was a propagation problem
14 cropping up. That's rather astonishing. And that's
15 the context in which that comment is made.
16 JUDGE TRIKOUROS: Okay.
17 MR. LODGE: Once again, we think that it's
18 a problem that the management of the problem is
19 designed to minimize the problem.
20 MR. BURDICK: Your Honor, I do take some
21 issue with this claim. And they make a similar one in
22 their contention seven document that somehow we were
23 withholding information from this Board, from the
24 parties. It's simply not true and they have not
25 identified any facts.

1 I certainly take issue with them claiming
2 there's some credibility. In some of their documents,
3 they claim that we've concealed information. We've
4 been through this before and it was in the reply to
5 contention five where they made similar claims of our
6 active concealment and fraudulent nature. And we
7 moved the Board to strike that and the Board did and
8 instructed them to not make these statements.
9 So I think we're hearing these statements
10 again. And they've presented no basis for that, only
11 speculation. Certainly, I take issue with that.
12 JUDGE TRIKOUROS: Okay.
13 MR. KAMPS: I'd like to respond briefly.
14 February of 2012 FirstEnergy knows that there's water
15 in the bore holes. We would have been very interested
16 in that information. In fact, with six filings that
17 year, we were very engaged on these issues. And the
18 only explanation for why that information was not
19 revealed until July 8, 2014 comes in the PII FACE
20 report which said that the belief was that the water
21 was atmospheric, that it was finding its way in from
22 the outside, which was hard to understand because
23 those bore holes were effectively sealed with caulking
24 and with plugs.
25 And then it was admitted even in the FACE

1 report that FirstEnergy realized that the water may be
2 internal to the walls. But it was deemed to be of
3 such a small quantity that it couldn't be significant.
4 And now we know because of the FACE report that it's
5 quite significant.
6 And the significance is that -- I'm
7 referring back to Abdul Sheikh and Pete Hernandez back
8 when cracking was first discovered -- they were
9 worried about collapse of the shield building. They
10 weren't worried about architectural impacts to the
11 shield building. They were worried about structural
12 integrity of the shield building.
13 And we've raised those emails numerous
14 times. But the two and a half year delay and the
15 revelation of this information we find very
16 significant given the engagement of everybody who is
17 sitting in this room at that time. How is that not
18 material information to be shared through discovery.
19 There are monthly discovery disclosures. There was no
20 document.
21 MR. BURDICK: Your Honor, that's simply
22 incorrect. There are no monthly discovery disclosures
23 in this proceeding.
24 MR. KAMPS: Documents that arise each
25 month are announced to the other parties. But it took

1 two and a half years for this information to be
2 shared.
3 JUDGE FROEHLICH: I believe he's referring
4 to admitted contentions.
5 MR. BURDICK: Yes. And there's nothing in
6 the contention on this.
7 JUDGE FROEHLICH: That provision which you
8 refer places an obligation upon parties to disclose
9 documents relevant to admitted contentions. I guess
10 the perspective of the Applicant here is that since
11 there was no admitted contention at that point in time
12 there was no monthly disclosure requirement. Is that
13 correct?
14 MR. BURDICK: That's correct. And the
15 Petitioner just read our explanation for the water in
16 the core bores. I don't think we need to say anything
17 more about that. But certainly concealment was not
18 part of that.
19 JUDGE FROEHLICH: I think we should move
20 on.
21 JUDGE TRIKOUROS: Okay. I'm satisfied
22 with that. I don't have any other comments on the
23 motion or on any other issues that I wanted to
24 understand. I'm going to go onto the Applicant's
25 answer. Most of my issues have been resolved on this.

1 So that's good.

2 I do have one question though on FENOC's

3 answer, page 41. The Intervenors use a term "full

4 spectrum investigation." And I would just like to

5 understand what full spectrum investigation means. Is

6 this something specific that we don't understand or?

7 MR. LODGE: No.

8 JUDGE TRIKOUROS: No, okay.

9 MR. LODGE: It does mean the global

10 investigation of the nature and extent of cracking.

11 JUDGE TRIKOUROS: Is this some specific --

12 MR. LODGE: It's not an engineering term,

13 sir.

14 JUDGE TRIKOUROS: It's not something that

15 -- All right. That's fine.

16 All right. This is a SAMA issue, but I

17 think we've cleared up for SAMA.

18 With respect to the difference between

19 this July 3rd AMP which is the AMP that you have

20 specifically wrote a contention on and previous AMPs.

21 In the Applicant's answer on page 52, they say "The

22 Commission and the licensing board also agreed that an

23 enhancement to an AMP should not be considered new

24 information to support a new contention." We touched

25 on this earlier this morning. The staff made exactly

1 the same comment if I remember correctly.

2 Could you tell us how the information from

3 this July 3rd AMP and the FACE report basically

4 validated that comment if in fact there is something

5 new and significant about the July 3rd AMP?

6 MR. LODGE: What page is that on, sir?

7 Fifty-three?

8 JUDGE TRIKOUROS: Fifty-two. This is the

9 FENOC answer on page 52.

10 (Off microphone comments)

11 MR. LODGE: I'm sorry. Is it -- I just

12 want to read the comment if I may. Is it 51 of the

13 PDF or is it the actual page 52?

14 JUDGE TRIKOUROS: I believe it's the

15 actual page 52.

16 MR. LODGE: Okay.

17 (Off microphone comments)

18 JUDGE TRIKOUROS: It's in the first

19 paragraph under A.

20 MR. LODGE: We understand the principle

21 that making some changes in the AMP does not create

22 some litigation opportunity. But that isn't the gist

23 of our contention. The gist of our contention is that

24 there are -- somehow we're not done with the matter of

25 identifying root cause. And it is difficult if not

1 possible to conclude at this point that the cracking
2 is actually going to cease. It is somehow going to be
3 frozen at whatever level. Poor choice of words, but
4 that it's going to stop and not worsen over time.
5 We were not -- We're quibbling with the
6 inadequacy of the AMP, but we are quibbling because
7 the underlying basis is considerably more troubling
8 than we believe is justified by three additional bore
9 holes and a little bit more frequent analysis being
10 performed.
11 We think that the root cause is a marked
12 departure from the earlier explanations of the
13 cracking. And the new root cause, the new improved
14 root cause, basically suggests that it is probably
15 going to be a continuing phenomenon that continues
16 indefinitely certainly into the 20 year period. It's
17 not at an end.
18 Therefore, the AMP is not adequate. I
19 understand that -- We're not saying you made changes
20 to the AMP. Therefore, we should be allowed to have
21 an admitted contention. We're saying there are
22 dramatic new explanations being offered and
23 essentially new points being conceded as to the aging
24 relatedness of this and the revelation that the
25 mitigation didn't work and in fact caused more

problems.

JUDGE TRIKOUROS: So it's the FACE report new information.

MR. LODGE: Yes.

JUDGE TRIKOUROS: Regarding the new mechanism that you view that as a --

MR. LODGE: Correct. And that is a misread by FirstEnergy of the thrust of our contention.

JUDGE TRIKOUROS: Okay. I don't have any more questions on the FENOC answer. These issues came up and I really would like to understand them.

The NRC staff answer on page 20, you make the statement that "The root cause is not determinative of the shield building monitoring AMPs adequacy." So you're saying there's no connection between the root cause and the AMP actions.

MR. HARRIS: Yes, Your Honor. In fact, we made those statements back the last time we were about this is the mechanism for the cracking in a program like this where you're monitoring and trending and comparing it to acceptance criteria is not necessarily going to tell you whether or not the AMP is adequate. The idea is not to arrest. You don't have to arrest the cracking. You have to make sure that the shield

building maintains its functions. And that does not require arresting the cracking.

JUDGE TRIKOUROS: And would the root cause have any effect on the type of analysis that you do? For example, whether you use just visual observations or what you refer to as enhanced optics, wouldn't the root cause be determined if it were that as well? I mean, do you really see there's no connection between the root cause and the AMP?

MR. HARRIS: There is some connection. So if you had some cracking that was not visible that you could not monitor and trend, of course, then a visual inspection would probably be insufficient. Yes, in principle, you can.

In this case for the shield monitoring AMP we're looking at the cracking propagation from this where you have it. It's been detected by visible. You're able to see it in trend the growth of those cracks. In this case, you're able to measure that trend. I don't know that the ice wedging would impact whether or not the monitoring of the crack growth is material to whether or not the AMP or the laminar crack propagation is adequate.

JUDGE TRIKOUROS: For me, this is related to the comments made by the Intervenors regarding the

1 need for additional testing evaluation methods.
2 Whatever methods are in the AMP, they have to be able
3 to see cracks regardless of the root cause. And the
4 question is in many cases it's just visual. And it's
5 not clear to me how that plays out.
6 MR. HARRIS: That would be true of almost
7 any structure is that there are lots of places in any
8 structure that you're not looking at. These
9 challenges could have been brought up before. This is
10 not a function of the crack propagation in terms of
11 monitoring for other cracks that are not visible.
12 That was true when they first discovered
13 it. It was true when they first put the AMP in place.
14 Those issues have been around since we started
15 discussing this issue.
16 JUDGE TRIKOUROS: Right. And the comments
17 were not made by the Intervenors regarding the
18 structures AMP in general. They were made
19 specifically regarding the shield building AMP which
20 is specifically geared toward certain root cause in a
21 sense. So I just wanted to make sure I understood why
22 you said that. That's all.
23 MR. HARRIS: There's no evidence that
24 there are cracks -- In terms of those cracks, the
25 Intervenors haven't put forward anything that would

1 suggest that the cracks, those laminar cracks, that
2 were characterized by the impulse response testing,
3 the core bores, that they haven't been located and
4 they can't be found by visual inspection. That there
5 is some crack that we're missing somewhere.
6 JUDGE TRIKOUROS: So, Applicant, do you
7 agree that the adequacy of the AMP is not related to
8 the root cause?
9 MR. BURDICK: Yes. And I think this goes
10 back to some of our earlier discussion that the shield
11 building monitoring program was put into place to
12 address this laminar cracking. And it's focused on
13 the laminar cracking and to see if there are any
14 change in the nature of that cracking.
15 When it was implemented or I should say
16 when it was submitted in April 2012, it already did
17 that. It still focused on the laminar cracking to see
18 if there were any changes in its nature. That hasn't
19 changed in 2013. There have been some enhancements,
20 but still it's looking for changes in the nature of
21 the laminar cracking.
22 JUDGE TRIKOUROS: If the AMP finds
23 something, then a root cause is usually done to
24 evaluate what's causing the problem. Then isn't it
25 true that the AMP would then be modified to reflect

1 anything learned from the root cause? I mean the
2 statement that they're just totally distinct I just
3 don't understand.
4 MR. BURDICK: If any of the acceptance
5 criterion in the AMP are I guess affected, if they see
6 a change in the width of a crack or the expansion of
7 the crack into an uncracked area, then certainly FENOC
8 would investigate that. It may not require a root
9 cause. It depends on what they find.
10 But they're investigate to look if
11 anything needs to change. Just like in 2013, still
12 the purpose and what's monitored and the focus on
13 laminar cracking didn't change in those circumstances.
14 JUDGE TRIKOUROS: All right. So where the
15 Intervenor has claimed that you need additional
16 testing methods, your position is that your current
17 testing methods are adequate. But that you would
18 implement new testing methods if there was an
19 observation of something new.
20 MR. BURDICK: I don't know.
21 JUDGE TRIKOUROS: I'm trying to
22 understand.
23 MR. MATTHEWS: Judge Trikouros, we're here
24 today because the monitoring program worked. It
25 identified changes in the crack. It identified crack

1 propagation. That was under the maintenance rule
2 program in the current period that is functionally
3 similar to the AMP and now identical. It found it and
4 put it in the corrective action program. Under
5 appendix B corrective action program, there was an
6 evaluation of the issue.
7 JUDGE TRIKOUROS: It found it because you
8 used enhanced optics.
9 MR. MATTHEWS: Yes.
10 JUDGE TRIKOUROS: I mean that
11 specifically.
12 MR. MATTHEWS: In the current program.
13 Even in our monitoring program, we used advanced
14 optics. Then when we identified indications of
15 cracking it was put in several condition reports into
16 the corrective action program. In the corrective
17 action program, then all the appendix B sections that
18 I think you're referring to all applied.
19 FENOC assessed whether this should be a
20 low tiered evaluation, whether it was an apparent
21 cause, whether it was root cause. This was a full
22 apparent root cause or full apparent cause evaluation.
23 Nonetheless, they used a contractor who did a root
24 cause to help support their apparent cause. And they
25 did extentive condition which they decided to do, a

1 more comprehensive core bore evaluation, look at all
2 the core bores.
3 In those areas where they suspected there
4 could be possibility of crack propagation, they did
5 impulse response testing which is not the same, not
6 better, than core bore. It's another datapoint. It
7 tells you something different about the concrete, not
8 necessarily that it's cracked. But it's an
9 indication. They used that.
10 So the short answer to your question is
11 yes. They would use the corrective action program to
12 evaluate what further methods would be necessary to
13 identify the cause and the extent of condition.
14 But can we tell you today sitting here
15 that if we found this crack they would do this many
16 more core bores or this area for the analysis that
17 might have to do with impulse response testing or
18 chemical testing or whatever else they might do? We
19 can't say that. It would be addressed under the
20 corrective action program appropriately as it was.
21 And that's why we're here.
22 MR. HARRIS: And, Your Honor, I think
23 maybe to clarify. What we were intending to say when
24 we were talking about the relationship of the cause of
25 cracking to the AMP was the method for the cracking is

1 not determinative of the adequacy of the AMP. Whereas
2 you could determine the adequacy of the AMP without
3 necessarily knowing the method of cracking.
4 Now does that feed into how fast the crack
5 may be growing? What's the particular mechanism in
6 terms of when you might challenge the acceptance
7 criteria? Of course. Should you feed that
8 information in as they did? Of course. But what
9 we're saying is you can determine the adequacy of the
10 AMP simply because the mechanism -- a new mechanism
11 has been identified.
12 JUDGE TRIKOUROS: Okay. I'm just trying
13 to correlate here the comments made by the Intervenors
14 that there should be additional methods of
15 investigation identified. And the fact that the AMP
16 itself pretty much says visual I believe I don't think
17 there is any -- I'd have to pull it out and look at
18 it. But I don't see -- There's a lot of visual
19 inspection using an ACI-approved method.
20 And yet here in this situation we had a
21 very astute consultant, PII, who chose to look at the
22 bore holes using an enhanced optics method which
23 identified the additional cracking only because of
24 that and then preceded to identify an additional root
25 cause, namely ice wedging.

1 MR. MATTHEWS: Judge Trikouros, there's
2 just a small factual piece of that that's flip. FENOC
3 used the enhanced method and identified the cracking
4 and referred to PII. And the PII used other methods.
5 JUDGE TRIKOUROS: I stand corrected.
6 MR. MATTHEWS: But FENOC on its own.
7 JUDGE TRIKOUROS: Okay. That's good to
8 know. So FENOC chose to use an enhanced optics method
9 and found the crack. That's good. But the point is
10 that if they hadn't the cracks would have gone
11 undiscovered or so it appears by reading whatever is
12 in front of me.
13 MR. MATTHEWS: And they have until the
14 next core bore inspection.
15 JUDGE TRIKOUROS: Again, I'm just trying
16 to relate this to the comment that we're dealing with,
17 the contention that we're dealing with, that is
18 addressing the need for additional methods of
19 investigation with respect to the AMP.
20 MR. MATTHEWS: But I think we're flipping
21 it again, Judge Trikouros. They haven't said why we
22 should expect cracking anywhere else other than on the
23 fringe of the existing laminar crack. We have
24 identified why the crack grew in those areas and
25 through the ACE explained that. They just said they

1 want these other testing methods in other areas but
2 not why it's necessary. Why that's a deficiency of
3 the shield building AMP or the structures AMP or any
4 AMP? They haven't told us why that's necessary at
5 all.
6 I understand your question why is FENOC
7 comfortable. But we don't need to look in other
8 places.
9 JUDGE TRIKOUROS: I agree that the comment
10 is very broad and broadly applied. Use other methods
11 and they mention -- you mention five or six. But you
12 don't identify one in particular or two in particular.
13 There's truth to that.
14 MR. MATTHEWS: And FENOC is not sticking
15 its head in the sand. FENOC has evaluated all the
16 core bores they had in response to this. They went to
17 all 80 and checked. They have a structure monitoring
18 AMP.
19 There's just no reason to suspect that
20 this laminar cracking phenomena may pop up somewhere
21 else. The building is not coated. So there won't be
22 wind driven rain into it to cause that saturation in
23 these other areas. The rebar is not at that spacing
24 in these other areas. Without that, FENOC doesn't
25 have a reason to start drilling holes all over the

1 shield building or any other building.

2 JUDGE TRIKOUROS: All right. I think I'm

3 okay with all the rest. Just for my own information,

4 the contentions five and six material, while we did

5 not admit those contentions for a variety of reasons

6 that we documented, what is your position regarding

7 the availability of that material for this contention?

8 MS. KANATAS: Certainly, it is

9 Intervenor's right to incorporate by reference past

10 filings. But that doesn't excuse Intervenors from

11 having to meet the contention admissibility standards

12 and indicate at this point since we're now almost four

13 years past the deadline for initial petitions for

14 intervention how that information is new and

15 materially different and how it supports admissibility

16 by raising a genuine material dispute with the

17 application within the scope of the proceeding.

18 And they did not do that. They simply

19 repeated their arguments that they've raised these

20 concerns before and they've possibly should have been

21 admitted before and that they show that there's a

22 problem. But they don't -- That's not enough I mean.

23 So it's certainly not our position that

24 they cannot cite to past pleadings. But again it

25 doesn't excuse the need to tie those pleadings to a

1 specific, adequately supported challenge to the
2 application as it stands now.
3 JUDGE TRIKOUROS: I understand. Okay.
4 But there's no problem with looking at that
5 information and making a determination as to how it
6 might or might not impact this.
7 MS. KANATAS: Well, it's for the -- This
8 is not -- Certainly, we can look at what they filed in
9 their pleadings in support of their contentions. It's
10 not for the staff or the Board or anyone else to build
11 a contention for them. They have proposed certain
12 claims based on those filings. And we are here. It
13 is our position that they have not demonstrated that
14 those filings raise a dispute.
15 JUDGE TRIKOUROS: Right. Now I
16 understand. Any comments on that?
17 MR. BURDICK: I agree with that. Their
18 contention is certain building requirements. We
19 talked about them multiple times today. There are
20 timeliness requirements. Those all have to be
21 satisfied for that information as well.
22 So there is a burden on the Intervenors to
23 demonstrate it is timely. If they're raising the
24 document to make an argument that they could have made
25 back when the information first became available then

1 that would be untimely. And if they try to use it,
2 for some reason it is timely and they try to use it,
3 they still have to meet the six other contention
4 admissibility factors including providing the alleged
5 facts and expert opinion or identifying the genuine
6 dispute. So they can't just cite the information or
7 incorporate it and assume that meets that hurdle.
8 They still have to demonstrate it. And that's
9 certainly one thing they have not done is try to pull
10 the argument together.
11 JUDGE TRIKOUROS: Okay. Now I have a
12 question on the Intervenor reply on -- It would be on
13 page four. I don't quite understand what you said
14 that 10 CFR 54.29 -- I'm sorry. It says "FENOC and
15 the NRC staff has made conjectural arrangements
16 commencing in 2017 to be predicated upon information
17 learned about the cracking FirstEnergy has not yet
18 identified much less absorbed." I didn't understand
19 that.
20 (Off microphone comments)
21 MR. BURDICK: Judge Trikouros, I think it
22 might be on the top of page 15 of the reply.
23 JUDGE TRIKOUROS: Yes.
24 MR. LODGE: Sorry. I didn't realize you
25 were still looking for it. It is the first full

1 sentence.

2 JUDGE TRIKOUROS: Okay. Sorry. I had the

3 wrong reference there. Could you explain that to me?

4 MR. LODGE: Yes sir. I apologize. This

5 is again draftsmanship.

6 JUDGE TRIKOUROS: Of what?

7 MR. LODGE: Of the meaning of that

8 statement was that FirstEnergy is proposing aging

9 management plan arrangements commencing for the 20

10 year renewal period based upon unknown unknowns. That

11 essentially until there's a baseline set of data

12 established as to the cracking status of the overall

13 shield building that to come up with in 2014 with an

14 aging management plan for 2017 is fatuous. That's

15 what we meant.

16 JUDGE TRIKOUROS: Okay. All right. On

17 page 16, you make the statement "Contention 7 must be

18 adjudicated by the Board not as a determination of the

19 adequacy of present CLB activities but to ascertain

20 whether there was reasonable assurance that the

21 present CLB efforts will tandem into the obligatory

22 shield building CLB activities." Perhaps you can give

23 me a little more on that.

24 MR. LODGE: We were respecting the fact

25 that it is by regulation not permissible to litigate

1 what is done by way of corrective action or the things
2 related to continuing license basis between now and
3 April 22, 2017. But we believe it's incumbent on the
4 Board in terms of an adjudication to determine whether
5 the continuing licensing basis activities in the
6 extension period are in any way logically related to
7 whatever happens over the next two and a half to three
8 year period.
9 We've haggled a lot today about the hands-
10 off circumstance over continuing license regulatory
11 activity between now and the end of the four year
12 period in our very limited recourse to question or
13 challenge that. But the FirstEnergy approach has been
14 to treat this as a day-to-day management problem.
15 We contend that so long as there is a lack
16 of comprehensive understanding of the status of the
17 structure that they get that pass. It would be a
18 different picture and it might even make the
19 Intervenors go away if there were comprehensive
20 knowledge of the status of the shield building. We
21 believe that after the coating was applied which was
22 a big game changer that that's a very different
23 circumstance which has apparently caused additional
24 cracking.
25 And I'd like to take this opportunity to

1 point out that from 1978 until 2011 either because
2 they weren't visible or because they weren't being
3 looked for cracking was not noticed. We're talking
4 about the blizzard of '78 setting up the preconditions
5 for the cracking to commence and have to presume that
6 it was under way continuously through 2011.
7 In 2002, there was a maintenance breach of
8 the shield building. The cracking is not noticed.
9 Perhaps it was not visible. But it existed. It had
10 to exist in some form. The deterioration was
11 happening.
12 So we're talking about decades where
13 cracking is not identified. And then we sort of get
14 into this anecdotal phase where in 2011 in a
15 maintenance breach circumstance laminar cracks are
16 noticed. And there is an investigation performed.
17 And even if you were to concede that the
18 impulse testing done at that time were done and it was
19 relatively comprehensive it was not the -- it
20 certainly was not exactly the best available
21 technology. But even if it were, the later technology
22 that has been applied has shown that there's
23 microcracking that has not been identified.
24 Our point is that this panel has to --
25 Certainly, we think it is relevant to look at what the

1 plan is right now, the aging management is at this
2 moment. But you have to make inferences as to its
3 adequacy during the 20 year period that would follow
4 if an extension were to be granted. And based upon
5 historical cracking, I think that there's a lot of
6 data that's missing that would be very necessary for
7 consideration in that proceeding.
8 (Off microphone comments)
9 JUDGE TRIKOUROS: Okay. I'm done with my
10 questions regarding the pleading. Just again to
11 understand this a little better, laminar cracking
12 appears the winter of '78. Does ice wedging not occur
13 from that point forward or does it occur?
14 MR. BURDICK: There is no evidence of ice
15 wedging prior to when it was identified in 2013.
16 JUDGE TRIKOUROS: Prior to what?
17 MR. BURDICK: Prior to when it was first
18 identified in 2013. So our conclusion from the root
19 cause evaluation in 2011-2012 was that there was the
20 one event laminar cracking that was by the '78
21 blizzard. Only through that event and the design of
22 the shield building that caused one laminar cracking.
23 So it was only after that point when the ice wedging
24 occurred. So after -- In the last couple of years.
25 JUDGE TRIKOUROS: What is it about the

1 last couple of years that's different.

2 MR. BURDICK: So the apparent cause

3 evaluation identifies the attributing cause as

4 coating. So there's the application of the coating to

5 the shield building. So there's no evidence that

6 there was any ice wedging before application of that

7 coating.

8 MR. MATTHEWS: Retrospectively to see if

9 there had been indications of step fracture prior to

10 2012 and did not find indications of step fracture

11 which would be indicative of ice wedging.

12 JUDGE TRIKOUROS: So really applying the

13 coating did it.

14 MR. MATTHEWS: The ACE concluded that was

15 a contributing cause.

16 JUDGE TRIKOUROS: Yeah, I've had trouble

17 understanding. I'm not a structural guy, but I've had

18 trouble understanding why applying the coating would

19 cause that to happen.

20 MR. MATTHEWS: And that same analysis

21 affirmed the evidence earlier of the initial freeze as

22 causing one continuous crack and not the suggestion

23 that's been tossed out here without basis that it's

24 some type of living phenomena.

25 JUDGE TRIKOUROS: Okay.

1 JUDGE FROEHLICH: At this stage, I would
2 propose that we take a ten minute break. If people
3 would please correct your closing arguments, we'll
4 hear them in the order of staff, the Licensee, closing
5 finally with the Petitioners. Then we'll call it a
6 day. We'll take ten minutes and then proceed directly
7 to closing arguments. Off the record.
8 (Whereupon, the above-entitled matter went
9 off the record at 3:13 p.m. and resumed at 3:26 p.m.)
10 JUDGE FROEHLICH: On the record. Start
11 from the top.
12 MS. KANATAS: Okay. Thank you, Your
13 Honors. This oral argument is about the admissibility
14 of Contention 7. Have Intervenors met their burden in
15 submitting an adequately supported contention that
16 raises a material, genuine dispute with FENOC's Davis-
17 Besse's license renewal application and meets the
18 Commission's standards for contentions filed after the
19 deadline for petitions to intervene.
20 The answer to that question is no.
21 Intervenors proposed Contention 7 should not be
22 admitted to this proceeding because Intervenors have
23 not shown that the contention is based on new and
24 materially different information or that the
25 contention raises a genuine material dispute with

1 FENOC's license renewal application. In support of
2 Contention 7, Intervenors incorporate all of their
3 Contention 5 filings and provide a history of the
4 shield building issues that led to the filing of
5 Contention 6.
6 While the staff recognized that Contention
7 5 raised a single admissible safety claim at the time
8 it was filed, that claim was mooted by FENOC's
9 submission of a shield building monitoring AMP. Since
10 April 2012, FENOC's application has included plant
11 specific shield building monitoring program to monitor
12 the shield building cracking during the period of
13 extended operation.
14 Intervenors claim that changes made to
15 this AMP by FENOC's July 3, 2014 submittal are new and
16 materially different information. Intervenors also
17 claim that the full apparent cause evaluation contains
18 new and materially different information given its
19 conclusions on ice wedging. However, Intervenors have
20 not shown that the changes made to the AMP or the
21 conclusions in the full apparent cause evaluation are
22 new and materially different information.
23 The shield building monitoring AMP always
24 contemplated the possibility of an aging mechanism and
25 increasing monitoring and augmenting inspections if

1 new cracks were identified. And this is exactly what
2 FENOC did in response to operating experience.
3 Intervenors could have and did raise challenges that
4 the scope, method and frequency of the testing was
5 inadequate prior to this September. But those
6 previous challenges were rejected. Under Oyster
7 Creek, Intervenors' attempts to challenge the
8 augmented shield building monitoring AMP must fail.
9 In terms of the coating being a
10 contributing cause to the crack propagation, the
11 Intervenors do not indicate why this suggests
12 inadequacy in the monitoring proposed by the shield
13 building monitoring AMP. Likewise, while Intervenors
14 might incorporate by reference their previous filings
15 on the shield building, that does not excuse them from
16 showing how that information is new and materially
17 different.
18 Intervenors do not indicate how any of the
19 information in the Contentions 5 or 6 filings is new
20 or materially different. Instead Intervenors repeat
21 arguments considered and rejected by the Board and
22 suggest that the Board was wrong to reject them in the
23 first instance.
24 This rehash of previous arguments does not
25 support admissibility of Contention 7. Even assuming

1 the Board finds that Contention 7 is based on new and
2 materially different information, Contention 7 should
3 still be found inadmissible. Intervenors have not
4 shown that the Contention 7 satisfies the Commission's
5 contention admissibility standards.
6 Intervenors' challenges to the shield
7 building monitoring AMP while in scope do not raise a
8 genuine material dispute with the application.
9 Intervenors only point to enhancements made to the AMP
10 and assert without support that more is needed, more
11 core bores, more monitoring, more tests or they raise
12 nonspecific and nonsupportive challenges that other
13 AMPs are inadequate. This is not enough to trigger an
14 adjudicatory hearing.
15 The rest of Contention 7 safety claims are
16 issues that are outside the scope of this limited
17 proceeding such as current operating issues, safety
18 culture claims and challenges to the staff's review.
19 This Board has made clear that these issues are not to
20 be adjudicated in this license renewal proceeding.
21 Even assuming these claims were in scope, Intervenors
22 claim that basis.
23 Intervenors do not explain why using facts
24 or expert opinion the shield building cracks impact
25 the shield building's ability to perform its intended

1 functions. Likewise, Intervenors' environmental
2 claims do not satisfy the Commission's contention
3 admissibility standards because their lack of support
4 and specificity and do not raise a genuine material
5 dispute with FENOC's environmental report and the
6 staff's draft environmental impact statement.
7 Intervenors assert that the SAMA is
8 inadequate, but Intervenors offer no support for this
9 assertion and do not point to any specific portion of
10 the SAMA or the DSEIS or indicate how those analyses
11 are inadequate. Likewise, Intervenors claim that the
12 alternatives analysis is inadequate, but do not
13 specify how the analysis is flawed. Instead
14 Intervenors claim that the shield building must be
15 repaired because it is not able to meet its design
16 basis functions.
17 But Intervenors do not offer support for
18 these claims or explain how using facts or expert
19 opinion the shield building cracking are connected to
20 an environmental impact that is relevant to the 20
21 more years of operating the plant. Therefore, it is
22 clear the Intervenors believe there are errors or
23 deficiencies in FENOC's license renewal application.
24 Intervenors have not indicated some significant link
25 between a claim deficiency and the health and safety

1 of the public or the environment.

2 While the staff has not made its findings

3 on the shield building monitoring AMP, Intervenors

4 have not raised a support of genuine dispute with the

5 AMP. The staff continues to review the shield

6 building monitoring AMP. FENOC's October 28, 2014

7 response to the staff's September 29th RAI and may ask

8 additional questions.

9 But this does not give rise to an

10 evidentiary hearing. The RAI process is routine and

11 customary in licensing reviews. To admit a contention

12 into this proceeding, Intervenors must do more than

13 point to FENOC's responses and claim that they are

14 inadequate.

15 In closing, I'd like to repeat a point

16 that I opened with. The staff recognizes that the

17 shield building is a structure within the scope of

18 license renewal and that is subject to aging

19 management review. The staff also recognizes that the

20 shield building performs important design basis

21 functions. The staff will not issue a renewed license

22 unless and until it finds that FENOC has met all

23 applicable requirements. Thank you.

24 JUDGE FROEHLICH: The Licensee.

25 MR. MATTHEWS: Thank you, Judge Froehlich.

1 FENOC appreciates this opportunity to address the
2 Board today. I'd like to recognize the zeal of the
3 Intervenors, the efforts on the part of the NRC staff,
4 staff counsel and also recognize the obvious effort of
5 the Board to dig into these issues so that we can have
6 this constructive discussion I think we had today.
7 As Judge Froehlich noted in his opening
8 remarks this morning, the only purpose for which we're
9 here this morning or today is to discuss the
10 timeliness and sufficiency of the Intervenors'
11 proposed contention. We touched on a lot of things,
12 but that's the only reason we're here.
13 As both the staff and FENOC explained in
14 their written briefs and discussed further today, the
15 Intervenors have not. The proposed contention should
16 not be admitted.
17 With respect to timeliness, the
18 Intervenors have not identified any materially
19 different, new information in FENOC's revised aging
20 management program or the full apparent cause
21 evaluation. FENOC has always been focused on
22 identification of any observable change in the laminar
23 cracks. The methods specified in the AMP worked. The
24 challenge is now to those inspection methods are
25 untimely.

1 Improvements practices in the AMP,
2 improvements in the AMP, do not open the entire AMP to
3 new attack as the Commission and the Board found in
4 the Oyster Creek proceeding.
5 With respect to sufficiency of the
6 proposed Contention 7, Intervenors also failed to meet
7 the requirements specified in 10 CFR 2.309(f)(1).
8 Many of the topics contained in the contention fall
9 well outside the scope of the license renewal
10 proceeding.
11 Most of those we have not spent time on
12 today addressing safety culture or NRC disclosure
13 practices. But we did spend some time on current
14 licensing basis, again outside the scope of license
15 renewal. In fact, they're specifically excluded from
16 license renewal under the sections of regulation we
17 talked about today.
18 To the extent Intervenors do refer to
19 FENOC's aging management program at all, they fail to
20 satisfy the requirements of 309(f)(1). They never,
21 not in their initial contention, not in the amended
22 contention, not in the reply brief and not here today
23 identified any reason, any basis, to say why FENOC's
24 AMP is not adequate for its purpose.
25 They don't say why they believe monitoring

1 of core bores is insufficient. Even in the face of
2 the demonstrated success, the identification of crack
3 propagation is why we're here today. They don't
4 identify any deficiency in the scope, method,
5 frequency, number or location of our inspections.
6 They say they want all of these aspects
7 expanded, but do not say why the enhancements FENOC
8 has already submitted are not sufficient. When
9 pressed today, they identified none.
10 Of course, without having identified any
11 deficiency nor have they identified supporting basis,
12 either expert opinion or other technical authority,
13 again pressed today, they found none. They have not
14 demonstrated how their concerns or curiosities as they
15 characterized them impact any finding the staff must
16 make in order to issue a renewed license.
17 There's been some discussion today about
18 other concrete failure mechanisms such as freeze/thaw
19 or microcrack. Intervenors never challenged the
20 structures AMP. If they had, that too would have been
21 without basis and probably untimely, but they did not.
22 This discussion today does not cure that deficiency.
23 The shield building monitoring AMP, there
24 was a couple of housekeeping issues I'd like to
25 address in this. The shield building monitoring AMP,

1 there was a question about limited to visual
2 inspection. And, Judge Trikouros, I think it was
3 yours. I think you'll see that it's not limited to
4 visual inspection. At page four of six, its visual
5 inspection supported by a nondestructive evaluation as
6 appropriate.
7 Similarly, the parallel program in the
8 current period took us to impulse response testing as
9 a nondestructive evaluation technique. So it is
10 certainly not -- FENOC is not constrained to visual
11 testing.
12 It does in fact refer indications to the
13 corrective action program. And the corrective action
14 program as the Commission recognized when
15 incorporating or continuing the current license basis
16 and the renewal term is sufficient for a monitoring
17 AMP.
18 FENOC has extent of condition evaluation,
19 extent of cause evaluation and its appropriate
20 developed correction actions under that appendix B
21 program. So there should be no concern about the
22 adequacy of the corrective action program to address
23 concerns, issues, technical changes should they be
24 identified.
25 There was also a reference today to the

1 thermal conductivity of the shield building and
2 whether we should be concerned about the depth of
3 freezing. I think you'll see in the original root
4 cause that you discussed earlier today, Judge
5 Trikouros, at page 26, paragraph four they discuss the
6 properties of the concrete and conclude that the
7 thermal conductivity of the shield building was within
8 the acceptable range.
9 With respect to the proffered
10 environmental contention, whether we call it the SAMA
11 contention, the no alternative or other, that
12 contention failed for all the same reasons I addressed
13 related to safety basis. And I won't repeat them.
14 There have been some suggestions today
15 that FENOC doesn't understand the status of the shield
16 building without basis. But those statements fall
17 into a pattern of tax on FENOC, the men and women of
18 FENOC. It's not the three attorney sitting at the
19 table. There are hard-working people at FENOC who
20 study these issues who have evaluated the condition of
21 the shield building, have looked at the calculations,
22 have assessed the calculations, answered the NRC's
23 questions. They've been very open. They've been very
24 honest.
25 We're here today because of the hard work

1 they did in identifying it, studying it and revising
2 the AMP. Those kinds of suggestions are without basis
3 and I wanted to bring that to the Board's attention.
4 There are real people behind these allegations that
5 are thrown around.
6 To that point, Intervenors challenge a lot
7 of things. They make allegations about the shield
8 building AMP. They make allegations about FENOC
9 disclosing information. They make allegations about
10 the staff's review. They even seem to be making
11 allegations about the Board's earlier decisions.
12 One thing they haven't really looked at is
13 the sufficiency of their own contention and explain
14 today why it should be admitted. For the reasons,
15 we've discussed in our briefs and here today, the
16 proposed Contention 7 should be rejected in its
17 entirety. Again, we appreciate this opportunity to
18 address you.
19 JUDGE FROEHLICH: Thank you.
20 MR. LODGE: Thank you. Let's dispose of
21 the simple issues first. We timely filed. We timely
22 filed within 60 days. Actually, it was 62 days, but
23 that was because of the Labor Day holiday. I didn't
24 take Labor Day off.
25 The timeliness requirements were met. The

1 new and material information. I guess there's no new
2 and material information if you ignore the damaging
3 revelation that coating the shield building worsened
4 the problem. That is new and material information.
5 The unanswered end of that, however, is
6 now what? What happens to the saturation status of
7 the outer 10 inches apparently 360 degrees around the
8 shield building? We've adequately supported in a
9 timely fashion with material new information our
10 contention.
11 And there is some very hard working people
12 no doubt at FirstEnergy. Intervenors question the
13 direction of those efforts. We still haven't heard
14 that there's been a comprehensive analysis of the
15 entire shield building.
16 And let me explain something. You heard a
17 little while ago the representations of FENOC's
18 counsel about ice wedging. "Ice wedging" -- and I'm
19 reading from the FACE analysis -- "requires the three
20 following conditions to occur: a preexisting crack,
21 water present in the crack at localized saturation, an
22 ice wedge cycle that contains a freezing condition."
23 So explain for me how it could be that there was no
24 ice wedging until they coated the shield building.
25 You had at some point laminar cracking.

1 You had subsurface laminar cracking. So you had
2 preexisting cracks. And you had water. And you had
3 freezing and thawing. So how can it be that we're
4 sitting here haggling as lawyers making
5 representations to the Board as to engineering or
6 scientific conclusions that we kind of have no
7 business making instead of adjudicating this thing.
8 I almost wanted to slip notes to the
9 Licensing Board as to cross examination questions to
10 ask counsel just to inquire behind that conclusory
11 assurance that FirstEnergy is giving you that "Oh no.
12 There's no ice wedging until we identified it from the
13 2012-2013 debacle"
14 In fact, I appreciate, the Intervenors
15 appreciate, the intensive scrutiny that the Board has
16 applied to this issue and before today and in 2012.
17 We're not trying to relitigate the findings that Board
18 rendered in 2012. We are simply trying to make sure
19 that the record contained the historic data, the FOIA
20 request of the facts. And the Board has certainly
21 reflected that it has gone back into the historic
22 filings and the historic facts which are quite
23 important and relevant to understanding things today.
24 PII has called the shield building
25 situation unique. And indeed when you think how could

1 it possibly be that more than 35 years after the
2 building is constructed someone apparently looks at
3 old specs and realizing "Oh my God. We didn't coat
4 the shield building" and then has to reconstruct how
5 it came to be that there were laminar cracks.
6 But the problem that follows upon that is
7 that FirstEnergy confined its investigation to laminar
8 and sublaminar cracking. The Intervenors did not
9 confine their analysis, their arguments and their
10 facts to merely laminar cracking. And we have been
11 proven, we've been vindicated, to some extent by what
12 has happened and the discoveries made with better
13 technology and the error made by FirstEnergy in
14 coating the shield building.
15 The ACI monitoring advice does not cover
16 the situation. I think that was pretty clearly shown.
17 And finally I often -- I've done a lot of
18 summary judgment and summary disposition litigation in
19 my career as have a lot of attorneys. And probably as
20 Judges, your eyes glass over as mine do when you read
21 the recitations of standards and what you may and may
22 not consider in the course of determining whether or
23 not to admit a contention.
24 And I found my admittedly rather
25 boilerplate discussion of contention admissibility

1 requirements at the end of I think our reply that was
2 filed October 10th. But I think these words mean
3 something. We have gone way into this issue today.
4 We have explored it through the helpful discussions,
5 arguments and points made by all of the attorneys
6 sometimes with the advice of experts.
7 But the threshold admissibility
8 requirements of a contention should not be turned into
9 a "fortress to deny intervention." And that's the
10 Power Authority of the State of New York was the most
11 recent recitation I could find of that from 2000 CLI-
12 00-22. But the principle has been elaborated and
13 applied since the mid '70s.
14 There's not a requirement on us, on the
15 Intervenors, on the Petitioners, today to have made
16 our substantial case at this stage. And very many
17 times during the course of the dialogue today, I've
18 had the distinct impression that we're being held to
19 this standard of proof beyond a reasonable doubt.
20 We have demonstrated from expert engineers
21 and perhaps other specialties in the employ of the NRC
22 and FirstEnergy a continuing history of -- I should
23 say a continuing saga that perhaps as I've said before
24 may not be concluded even now. We have three
25 different root causes. I agree and admit that there

1 is synergistic effect probably among some of those
2 causal factors.
3 But today isn't the day when you as the
4 jurists in this proceeding weigh the evidence and
5 decide whether or not the Intervenors should be
6 rewarded by a chance to go to trial or punished by
7 being denied that opportunity. Today is simply the
8 opportunity the Board has made for us to articulate in
9 detail what our respective positions are.
10 We believe that we aren't called upon to
11 make our case. We're here to indicate what facts or
12 expert opinions that we're relying on and we have
13 articulated a contention that we believe must be
14 adjudicated. That contention is that there are safety
15 -- SER and NEPA implications which were spelled out
16 but at least explained and mentioned and referenced in
17 the contention wording itself. There are Atomic
18 Energy Act implications.
19 The problem with the shield building is
20 that it is being treated as though it's pristine.
21 That despite incremental, damning evidence that there
22 is a deterioration going on notwithstanding the
23 warnings of engineers on the Commission's own staff
24 that there could be a crisis that there could be a
25 very serious problem, notwithstanding new cracking

1 actually caused by the utility company itself, these
2 are surmountable obstacles that simply can be ignored
3 because right now that building is standing and it
4 looks like it's performing its function. Therefore
5 the aging management plan up to the this point has
6 been a success.
7 I appreciate that the aging management
8 plan has identified further problems. Our concern
9 however is that there is not an end to the
10 identification of the damage that is being done that
11 is on going nor what the future holds in terms of
12 identification of new causes that follow upon new
13 problems. We respectfully request that the panel
14 admit Contention 7 and that this matter be allowed to
15 go to trial. Thank you.
16 JUDGE FROEHLICH: Thank you. At this
17 point, the Board would like to thank all parties for
18 their arguments today. The answers that were given
19 will be helpful to the Board deciding the
20 admissibility of this contention. The Board will take
21 the transcript of this argument together with the
22 pleadings that have been filed in this docket and hope
23 that we show our decision before the end of the year.
24 I want to thank the ACRS for allowing us
25 to use the facilities while the ASLBP courtroom is

1 being refurbished. I want to thank our court reporter
2 for his work today.
3 If there is nothing further, thank you
4 all.
5 MR. HARRIS: Your Honor, transcript
6 corrections.
7 JUDGE FROEHLICH: Transcript corrections.
8 We should have the transcript I believe within a week.
9 I consider just a day or perhaps one week to peruse it
10 and submit any transcript corrections. Will that be
11 acceptable to the parties?
12 MR. HARRIS: Your Honor, that may be. I
13 would mention that Mr. Lodge and both Ms. Kanatas and
14 I have an argument next week at Fermi. So that might
15 impact our ability to turn that around very quickly
16 depending on what day that came out.
17 JUDGE FROEHLICH: Why don't we make it
18 seven days from when it comes out and Fermi is an
19 argument one day.
20 MS. KANATAS: The 20th.
21 JUDGE FROEHLICH: Next Thursday.
22 MS. KANATAS: Yes. We'll be traveling on
23 the 19th and returning on the 21st.
24 JUDGE FROEHLICH: Proposed date for
25 transcript corrections, counsel?

1 MS. KANATAS: Happy Thanksgiving. No.
2 Your Honor, I'll leave it to you.
3 (Off microphone comments)
4 JUDGE FROEHLICH: What's the Monday after
5 Thanksgiving?
6 JUDGE TRIKOUROS: December 1st. Does that
7 work for everyone?
8 MR. LODGE: Sure.
9 MR. MATTHEWS: Fine.
10 JUDGE TRIKOUROS: For transcript
11 corrections. They're very controversial. December
12 1st for transcript corrections.
13 MS. KANATAS: All right. Thank you.
14 JUDGE FROEHLICH: Thank you. We are
15 adjourned.
16 (Whereupon, at 3:54 p.m., the above-
17 entitled matter was concluded.)
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