

In The Matter Of:
Petition from Chatfield Solar Fund, LLC

Regular Hearing
February 21, 2019

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STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Docket No. 1354

Petition from Chatfield Solar Fund, LLC, For a
Declaratory Ruling for the Proposed Construction,
Maintenance and Operation of a 1.98-megawatt Ac Solar
Photovoltaic Electric Generating Facility On
Approximately 25 Acres Located Generally South of Route
80 (North Branford Road) and East of Chestnut Hill Road
In Killingworth, Connecticut, and Associated Electrical
Interconnection to Eversource Energy'S Green Hill
Substation Located At 775 Green Hill Road, Madison,
Connecticut

Regular Hearing held at the Killingworth Fire
Station, Meeting Room, Number 333, Route 81,
Killingworth, Connecticut, Thursday, February 21, 2019,
beginning at 3:00 p.m.

H e l d B e f o r e :

JAMES J. MURPHY, JR., THE VICE CHAIRMAN

1 A p p e a r a n c e s :

2 Council Members:

3

4 ROBERT HANNON,

5 DEEP Designee

6

7 LARRY LEVESQUE, ESQ.

8 PURA Designee

9

10 ROBERT SILVESTRI

11 MICHAEL HARDER

12 EDWARD EDELSON

13 DR. MICHAEL W. KLEMONS

14 DANIEL P. LYNCH, JR.

15

16 Council Staff:

17 MELANIE BACHMAN, ESQ.,

18 Executive Director and Staff Attorney

19

20 ROBERT MERCIER,

21 Siting Analyst

22

23

24

25

1 A p p e a r a n c e s:(cont'd)

2 For Chatfield Solar Fund, LLC:

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11 and: SAMUEL R. VOLET, ESQ.

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1 THE VICE CHAIRMAN: May I have your
2 attention please? Ladies and gentlemen, this
3 hearing is called to order this Thursday, February
4 the 21st, 2019, at approximately 3 p.m. My name
5 is James J. Murphy, Jr. I am the Acting Chairman
6 of the Connecticut Siting Council.

7 Other members of the Council who are
8 here with us today are two designees of their
9 respective commissions, Robert Hannon, designee
10 for Commissioner Katie Dykes of the Department of
11 Energy and Environmental Protection; Larry
12 Levesque, who is the designee for Acting Chairman
13 John W. Betkoski, III, of the Public Utilities
14 Regulatory Authority.

15 Other members of the Council present
16 today are Robert Silvestri, Dr. Michael W.
17 Klemens, Edward Edelson, Michael Harder and Daniel
18 P. Lynch, Jr.

19 Members of the staff with us today are
20 Melanie Bachman, our Executive Director and Staff
21 Attorney; and Robert Mercier, our siting analyst
22 for this particular file.

23 This hearing is held pursuant to Title
24 16 of the Connecticut General Statutes and of the
25 Uniform Administrative Procedures Act upon a

1 petition from Chatfield Solar Fund, LLC, for a
2 declaratory ruling for the proposed construction,
3 maintenance and operation of a 1.98 megawatt solar
4 photovoltaic electric generating facility located
5 just south of North Branford Road and East of
6 Chestnut Hill Road in Killingsworth, and an
7 associated electrical connection to Eversource
8 Green Hill substation located at 775 Green Hill
9 Road in Madison, Connecticut. This petition was
10 received by the Council on October the 23rd, 2018.

11 As a reminder to all, off-the-record
12 communications with a member of the Council or a
13 member of the Council's staff upon the merits of
14 this petition is prohibited by law. The parties
15 or interveners to the procedure are as follows.

16 The petitioner is Chatfield Solar Fund,
17 LLC, represented by Bruce L. McDermott, Esq., of
18 the law firm of Murtha Cullina, LLP.

19 We will proceed in accordance with the
20 prepared agenda, copies of which are available,
21 and I believe they're up there in the corner.
22 Also available are copies of the Council's
23 citizens guide to Siting Council procedure.

24 At the end of the evidentiary session
25 this afternoon we will recess and resume at

1 6:30 p.m. for the public comment session. The
2 6:30 public comment session will be reserved for
3 all the public to make oral statements into the
4 record.

5 I wish to note that the petitioner or
6 parties including their representatives and
7 witnesses are not allowed to participate in the
8 public comment session. I also wish to note that
9 for those who are here and for the benefit of
10 their friends and neighbors who are unable to join
11 us for the public comment session, that you or
12 they may send written statements to the Council
13 within the 30 days of the date hereof, and such
14 written statements will be given the same weight
15 as if spoken at the hearing this evening.

16 A verbatim transcript will be made of
17 this hearing as well as the one this evening and
18 deposited with the town clerks in Killingsworth
19 and Madison for the convenience of the public.

20 Is there any public official here at
21 this time who would like to comment at this
22 juncture?

23
24 (No response.)
25

1 THE VICE CHAIRMAN: If not then we'll
2 move along. We have a request to make the
3 Killingsworth Advocates for Responsible Solar a
4 party in this proceeding.

5 Before this matter is taken up I would
6 like Attorney Bachman to comment upon the
7 application filed by the proposed party.

8 MS. BACHMAN: Thank you, Mr. Chairman.

9 With regard to the attachment to the
10 request for party status, there needs to be a
11 little clarification as to the applicability of
12 some of the statutes that are cited therein,
13 specifically with reference to substantive
14 objection number four.

15 This is Connecticut General Statute
16 Section 16-50PB1 and it only applies to cable
17 antenna television towers and telecommunications
18 towers when there is an application for a
19 certificate. It does not apply to this
20 proceeding.

21 With regard to procedural objections
22 numbers 4, 7, 8 and 14, there is no requirement
23 for a municipal consultation or a site selection
24 process. Those apply to applications for
25 certificates. There's also no requirement for a

1 public information meeting. Those apply only to
2 applications for certificates for
3 telecommunications towers. The public information
4 meeting that was held on Monday was done as a
5 courtesy, and it was not required to be publicly
6 noticed.

7 Procedural objection number twelve that
8 references Connecticut General Statute Section
9 1650P, subsection J, only applies to community
10 antenna television towers and telecommunications
11 towers, and they only apply for applications for
12 certificates for those types of facilities.

13 With that, Mr. Chairman, staff does
14 recommend that the party status request be
15 granted.

16 THE VICE CHAIRMAN: What's the pleasure
17 of the Council?

18 DR. KLEMENS: I recommend approval.

19 MR. HANNON: I'll second.

20 THE VICE CHAIRMAN: The motion has been
21 made to approve the application --

22 DR. KLEMENS: With the caveats expressed
23 by our attorney.

24 THE VICE CHAIRMAN: So the motion is to
25 admit the party under the standard procedure with

1 taking into account those items that our Executive
2 Director and Counsel have indicated are not
3 appropriate at this time, which has been seconded.

4 Any discussion on the motion to allow
5 them in as a party?

6

7 (No response.)

8

9 THE VICE CHAIRMAN: Hearing none, I'll
10 ask for a vote. All those in favor signify by
11 saying aye.

12 THE COUNCIL: Aye.

13 THE VICE CHAIRMAN: Those opposed?

14

15 (No response.)

16

17 THE VICE CHAIRMAN: The ayes have it.
18 They are therefore entered as a party.

19 Are they represented here today?

20

21 (No response.)

22

23 THE VICE CHAIRMAN: All right.
24 Administrative notices by the Council. I wish to
25 call to your attention those items shown on the

1 hearing program marked as Roman numeral IV, items
2 1 through and including 101.

3 Does the petitioner, and any party have
4 any objection to these items that the Council has
5 administratively requested to be noticed?

6 Mr. McDermott.

7 MR. McDERMOTT: Good afternoon, Vice
8 Chairman Murphy. No objection. I did want to
9 clarify. The petitioner had requested
10 administrative notice of two items. Do those
11 ultimately just remain as a separate
12 administrative notice list, and they're not
13 included in the Council's ultimate list?

14 MS. BACHMAN: That's correct. That
15 would be the petitioner's administrative notice.

16 THE VICE CHAIRMAN: We'll take that up
17 when they ask for it.

18 MR. McDERMOTT: With that, no objection.
19 Thank you.

20 THE VICE CHAIRMAN: Accordingly, the
21 Council hereby administratively notices those
22 existing documents, statements and comments as
23 listed and previously mentioned.

24 I believe, Mr. McDermott, that you've
25 got a panel with us today. So you want to proceed

1 to introduce and have your panel sworn in?

2 MR. McDERMOTT: Yes. Thank you very
3 much, Vice Chairman Murphy. Bruce McDermott from
4 the law firm of Murtha Cullina. With me is my
5 associate Sam Volet. We're appearing on behalf of
6 Chatfield Solar.

7 And I think it might just be easier if I
8 asked the first witness to my far right,
9 Mr. Geppi, to introduce himself and state his
10 title and business profession association, and
11 then we can just work our way down the table and
12 have all the members introduce themselves that
13 way. Thank you.

14 CHARLES GEPPI: Thank you, Bruce. My
15 name is Chuck Geppi. Charles Geppi with Standard
16 Solar. I'm a senior project manager overseeing
17 the due diligence, construction and handoff to
18 operation and maintenance to make sure that the
19 project goes seamlessly from inception to
20 operation and maintenance, and we look after that
21 as have for 25 years.

22 MR. McDERMOTT: Mr. Stevens, I'm going
23 to interrupt. If you could just do your name and
24 title and business association it will speed
25 things up a little. Thank you.

BRANDON STEPHENS: My name is Brandon Stephens. I'm a project manager with Standard Solar.

C.J. COLAVITO: C.J. Colavito, Vice President of Engineering at Standard Solar.

JOBIN MICHAEL: Jobin Michael,
Engineering Manager, Standard Solar.

ERIC PARTYKA: Eric Partyka, Director of Business Development at Standard Solar.

ALISA MORRISON: Alisa Morrison. I'm a technical associate Loureiro Engineering.

JAMES McMANUS: James McManus, certified professional soil scientist, JMM Wetland Consulting Services.

SIGRUN GADWA: Sigrun Gadwa working for
REMA Ecological Services, botanical surveys and
restoration planning.

GEORGE LOGAN: And George Logan,
principal with REMA Ecological Services, wetland
scientist and certified senior ecologist.

MR. McDERMOTT: Vice Chairman Murphy, yesterday -- or actually this morning, sorry, we filed a supplemental prehearing submission to provide the Council with Ms. Gadwa's CV.

So I talked to Mr. Mercier ahead of time

1 and we'd like to designate that Exhibit Number 9D
2 for identification if we could, please?

3 And also we received late yesterday from
4 the Department of Environmental Protection -- I
5 received it. It's dated February 19th, and I
6 apologize for not being able to submit it to the
7 Council ahead, but a letter from Dawn McKay,
8 Environmental Analyst three at Deep.

9 Further, the project -- or the subject
10 line, excuse me, is further NDDB comments
11 regarding incomplete and insufficient report for
12 proposed construction of Chatfield Solar Farm.
13 And we have a sufficient number of copies, and we
14 can provide the Council with that. And we'll make
15 the electronic filing when we return to the office
16 tomorrow.

17 You received it also? Oh, okay.
18 Awesome. Thank you. So shall we make that
19 Exhibit Number 10? Or is that going to be a
20 Council Exhibit?

21 THE VICE CHAIRMAN: We'll make it a full
22 Exhibit.

23 MR. McDERMOTT: Okay. So we'll make it
24 Exhibit Number 10 or is that going to be a Council
25 Exhibit.

1 THE VICE CHAIRMAN: We'll make it your
2 exhibit.

3 MR. McDERMOTT: Okay. We'll make it
4 Exhibit Number 10.

5 THE VICE CHAIRMAN: That would be number
6 9?

7 MR. McDERMOTT: Yes, nine, 9D.

8 Thank you. Shall we swear the panel,
9 and then I can introduce the exhibits? Or do you
10 want me to introduce and then swear?

11 THE VICE CHAIRMAN: Let's have them
12 rise. We'll swear them in. Then you can.

13 MR. McDERMOTT: Very good. Thank you.

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1 C H A R L E S G E P P I,
2 B R A N D O N S T E P H E N S,
3 C . J . C O L A V I T O,
4 J O B I N M I C H A E L,
5 E R I C P A R T Y K A,
6 A L I S A M O R R I S O N,
7 J A M E S M c M A N U S,
8 G E O R G E L O G A N,

9 called as witnesses, being first duly sworn
10 by the Executive Director, were examined and
11 testified under oath as follows:
12

13 MR. McDERMOTT: Thank you. And again,
14 Mr. Vice Chair, in order to be efficient with time
15 I think I'll try to introduce all the exhibits
16 through Mr. Geppi. He's the project manager, and
17 either was responsible for or did prepare the
18 various exhibits -- if that's okay with the
19 Council?

20 Mr. Geppi, with regard to Exhibits
21 Number 1, which is the petition; Number 2, which
22 is the petitioner's response to Council
23 interrogatory set 1; 3, petitioner's response to
24 Council interrogatories 69 and 70; the letter from
25 the project regarding extension of the PURA Z-REC

1 contract date, dated January 30th; Petitioner
2 Exhibit Number 5, the revised response to Council
3 interrogatories 17, 18, 53 and 67; Exhibit Number
4 6, the responses to Council interrogatory set 2;
5 Exhibit 7, the letter regarding the posting of the
6 sign at the project site; 8, the petitioner's
7 video walk-through of the site; and Number 10, the
8 DEEP letter that we just discussed.

9 Are you familiar with those documents?

10 THE WITNESS (Geppi): I am.

11 MR. McDERMOTT: And did you prepare or
12 oversee the preparation of those documents in your
13 capacity as the project manager?

14 THE WITNESS (Geppi): I did.

15 MR. McDERMOTT: And do you have any
16 revisions or corrections to any of those exhibits,
17 Mr. Geppi?

18 THE WITNESS (Geppi): Yes, I do.
19 CSC 1-13, we accidentally have that zoned as
20 commercial, when indeed it is a residential.

21 MR. McDERMOTT: Thank you. And other
22 than that revision to interrogatory response
23 number 13, Mr. Geppi, do you have any revisions to
24 any of the exhibits today?

25 THE WITNESS (Geppi): No.

1 MR. McDERMOTT: And do you adopt those
2 exhibits here today?

3 THE WITNESS (Geppi): Yes.

4 MR. McDERMOTT: Thank you.

5 And then Dr. Morrison, regarding
6 Exhibit 9A, which is a copy of your curriculum
7 vitae, are you familiar with that document?

8 THE WITNESS (Morrison): Yes.

9 MR. McDERMOTT: And any changes or
10 revisions to it?

11 THE WITNESS (Morrison): No.

12 MR. McDERMOTT: And do you adopt it here
13 today?

14 THE WITNESS (Morrison): Yes.

15 MR. McDERMOTT: And Mr. McManus, the
16 same questions. Are you familiar with Exhibit
17 Number 9B, which would be your resume?

18 THE WITNESS (McManus): Yes.

19 MR. McDERMOTT: And do you have any
20 changes or revisions thereto?

21 THE WITNESS (McManus): No.

22 MR. McDERMOTT: And Mr. Logan, with
23 regard to Exhibit 9C, are you familiar with that
24 exhibit?

25 THE WITNESS (Logan): I am.

1 MR. McDERMOTT: Any changes or revisions
2 thereto?

3 THE WITNESS (Logan): No.

4 MR. McDERMOTT: And Ms. Gadwa, the same
5 question with regard to Exhibit 9D. Do you have
6 any changes or revisions to your resume?

7 THE WITNESS (Gadwa): No, I don't.

8 MR. McDERMOTT: And do you adopt it here
9 today.

10 THE WITNESS (Gadwa): Yes, I do.

11 MR. McDERMOTT: Thank you.

12 So with that Mr. Vice Chair, I move
13 admission of Exhibits 1 through 10, including 9A,
14 B, C and D.

15 THE VICE CHAIRMAN: Is there any
16 objection?

17

18 (No response.)

19

20 THE VICE CHAIRMAN: Hearing none,
21 they're admitted into the record. Now we begin
22 cross examination with Mr. Mercier.

23 MR. MERCIER: Thank you. I just want
24 to, you know, given the large volume of material
25 that was submitted, and some of it conflicts given

1 the recent land surveys, I just want to clarify
2 some of the things that are submitted even in some
3 of the more recent plans. I'll start off doing
4 that.

5 Is the parcel sized 24.1 acres?

6 THE WITNESS (Colavito): Yes, correct.

7 MR. MERCIER: Okay. Thank you. Going
8 to the interrogatories, I was looking at number
9 104. And there was three phases of construction
10 listed, and there was acreage per phase given.
11 And that totals about 13.79 acres of land
12 disturbed.

13 However, when I flipped to response
14 number 106, there's a chart in there and it says
15 the amount of clearing is 13.4. So I'm trying to
16 figure out, is it closer to 13.8, or is it 13.4
17 acres that will be disturbed for a clearing at the
18 site?

19 THE WITNESS (Morrison): Could you
20 repeat that?

21 MR. MERCIER: Your response to 104 has
22 three phases listed with associated acreage per
23 phase of land disturbance and site clearing. But
24 then if I flip over to 106, there's a little chart
25 there, and it says 13.4.

1 Although it's a minor discrepancy, I
2 just would like to know if that actual number has
3 been finalized?

4 THE WITNESS (Colavito): I'm sorry. I
5 don't believe we can confirm at this point in time
6 the differential between the .2 acres or .4 acres.

7 MR. MERCIER: Okay. Thank you.

8 MR. LYNCH: Could you say that one more
9 time?

10 THE WITNESS (Colavito): Sure. We're
11 unable to confirm whether it's 13.8 or 13.4 acres
12 of disturbance, or within the area.

13 MR. MERCIER: Okay. I guess I'll move
14 on to the diagrams that are responses number 101
15 and number 102.

16 I'm looking at the diagram in number
17 101. It basically shows the site layout and
18 there's, you know, there's some groundwater
19 trenches and things of that nature and I'm looking
20 at the clearing limits. And around the vernal
21 pool two, which is in the center -- it's attached,
22 a large pool there.

23 It shows kind of a buffer zone around
24 that pool, but if I look at the revised plans in
25 102 there's no such buffer zone. The clearing is

1 shown right next to the vernal pool. So I'm
2 trying to determine what actually are you going to
3 be clearing at the site? If you look at 102, site
4 plan 1B, it points right at the vernal pool edge
5 as clearing.

6 THE WITNESS (Michael): We have a
7 50-foot buffer around the vernal pool number two.

8 MR. MERCIER: Okay. So the plan in 102,
9 plan 1B is not correct right now. The clearing
10 limits are not correct?

11 THE WITNESS (Colavito): That is true,
12 yes.

13 MR. MERCIER: Okay. So I noticed
14 there's other smaller discrepancies between the
15 two plans, but that was the major one. So I guess
16 we'll have to get a new, more detailed plan
17 submitted that clears up the discrepancies.

18 THE WITNESS (Colavito): Right.

19 MR. McDERMOTT: Mr. Mercier, could I
20 have just one second?

21 MR. MERCIER: Sure.

22 MR. McDERMOTT: So Mr. Mercier, we will
23 take it as a homework assignment to submit a
24 revised 102. I believe it's B you were
25 referencing. We'll correct that mistake and

1 resubmit.

2 MR. MERCIER: Okay. And also I believe
3 the witness just stated there's a 50-foot buffer
4 on the vernal pool, however I believe somewhere in
5 this document -- I don't have it marked right
6 here, but I think it said 40 in written form. So
7 if you could please clarify that also?

8 MR. McDERMOTT: We will do that.

9 MR. MERCIER: Now for the site clearing
10 along the north edge of site, that's where your
11 inverter pad and driveway is going to be going.

12 Are you clearing up to the roadway, or
13 is there a wooded strip going to remain between
14 the roadway and the inverter pad and clearing
15 line?

16 THE WITNESS (Michael): We -- we have a
17 tree buffer in between the roadway and the edge of
18 the clearing.

19 MR. MERCIER: Okay. So that's along the
20 entire linear length of your clearing, obviously
21 except for the driveway?

22 THE WITNESS (Michael): Yes, that's
23 correct.

24 MR. MERCIER: Okay. And do you know, is
25 that, like, a 15 or 20-foot buffer?

1 THE WITNESS (Michael): It's more than
2 that. At a minimum it is 30 feet.

3 MR. MERCIER: Oh, thirty feet wide at a
4 minimum?

5 THE WITNESS (Michael): Yeah, 30 feet,
6 but it's not covered, the interior woods. But
7 from the roadway to the clearing edge it's a
8 30-foot distance.

9 MR. MERCIER: Okay.

10 THE WITNESS (Colavito): But to confirm
11 that entire 30-foot distance is not forested 30
12 feet. There is some cleared area between the road
13 and the first trees.

14 MR. MERCIER: Okay. Given that and some
15 of, more the rural nature of the area, you know,
16 as we were out there today, is it possible to
17 plant any type of landscaping along the north edge
18 maybe along your fence line to maybe provide
19 screening if anybody is driving by and sees those,
20 through those open areas?

21 THE WITNESS (Colavito): Yes, that would
22 be possible and that's something we're
23 considering.

24 MR. MERCIER: Okay.

25 I'm going to look at site plan 1B that

1 was in number 102 that we just talked about.

2 I'm just looking down. I see your road
3 crossing and the trench, like a filling of the
4 wetland in that location. Just southeast of there
5 there's a panel row, and it just kind of touches a
6 small arm of a wetland that kind of projects up.

7 Do you plan on putting posts in that
8 wetland area to support the solar panel array?

9 THE WITNESS (Michael): It can go over
10 that little area. It's like a little notch, but
11 we can effectively move down, like, three feet
12 down to not touching that, but like that, yeah.

13 MR. MERCIER: You can shift it out of
14 there?

15 THE WITNESS (Michael): Yes.

16 MR. MERCIER: Okay. Would that require
17 you to shift the other roads further south also,
18 or just that row only?

19 THE WITNESS (Michael): We move the
20 interior area south. So we will be a little bit
21 in the shaded area, but we will move that
22 three feet down to not touching -- touching the
23 redlined area.

24 MR. MERCIER: Okay. And I noticed that,
25 the clearing line in that particular location is

1 right up to the wetland edge pretty much, and
2 that's pretty close to the solar array.

3 Is that correct? I mean, you're not
4 clearing in that wetland just north of that panel
5 we just talked about. Correct? That's at wetland
6 flag number 39 and 40. You're just clearing up to
7 the wetland according to your clearing map. Is
8 that right?

9 THE WITNESS (Colavito): Yes, that's
10 correct.

11 MR. MERCIER: Okay. Is there any
12 concern that, you know, the trees are growing in a
13 wet area. So if the trees maybe do not have a
14 properly supported root structure and some trees
15 could blow over in the wetland and fall onto your
16 solar array?

17 THE WITNESS (Colavito): That's a minor
18 concern. If that were to happen we would manage
19 that as the owner of the PV array. That's a risk
20 that we have to absorb.

21 MR. MERCIER: Given that your panels are
22 also pretty close, are you concerned about the
23 overhanging canopies shading up that array area,
24 that particular row? I mean, is there sufficient
25 space between the clearing zone?

1 THE WITNESS (Colavito): Because it's to
2 the north of the array it will have a minimal
3 impact. We have done 3-D modeling to analyze the
4 entire array and all the trees surrounding the
5 area to come up with what we expect the loss of
6 production due to shade from all the various
7 vegetation in the area. So we have accounted for
8 that.

9 THE VICE CHAIRMAN: Mr. Lynch?

10 MR. LYNCH: Mr. Colavito, when I hear
11 the term "minor" or "less" I kind of wonder how
12 you calculate that? What's a minor concern?
13 What's a major concern? What's less? It's a
14 generic term, and could you be a little bit more
15 specific?

16 THE WITNESS (Colavito): To be more
17 candid, the array would be insured. We would have
18 owners insurance on the array and insurance on the
19 array for storms and other types of disasters and
20 force majeure events. A tree falling would fall
21 within that category, and the cost of materials is
22 small compared to the cost of development,
23 construction, management, interconnection, et
24 cetera.

25 The areas that are very close to trees

1 are relatively small portions of the PV array and
2 one tree or some trees falling would have only an
3 impact on a small percentage of the entire array.
4 So we don't see that as a significant risk to the
5 entire project's viability or robust operation.

6 MR. LYNCH: That leads me to a question
7 I have later -- if Mr. Mercier would let me?

8 In the event of a major storm, whether a
9 blizzard or a hurricane, a lot of damage done to
10 your panels are done by not falling trees, but
11 projectiles from the trees. How do you deal with
12 that?

13 THE WITNESS (Colavito): The PV modules
14 are rated for 60 mile-per-hour one-inch hail
15 balls. They're extremely resilient.

16 And yes, a large tree or a large branch
17 falling on them would break modules, but the glass
18 on the PV modules is made of tempered glass. It
19 does not shatter. It stays together when it is
20 broken, and we would replace the broken modules
21 after the storm had subsided.

22 MR. LYNCH: The reason I ask is because
23 during the hurricane they had last year in Florida
24 there was a lot of damage to solar panels. Thank
25 you.

1 MR. MERCIER: Thank you. I'm just
2 staying with those site plans you were just
3 talking about. I'm actually going to flip to
4 sheet number two over in the notes, up on the
5 right-hand side.

6 There's a narrative and it talks about
7 the total number of panels. It says 6,732
8 modules, however elsewhere in the documents that
9 were submitted -- I think on January 2nd it said
10 6,552 modules. I'm trying to figure out which
11 amount you're installing?

12 THE WITNESS (Colavito): The current
13 design is for 6,552 modules.

14 MR. MERCIER: Okay. And that includes
15 32 inverters --

16 THE WITNESS (Colavito): Yes, that's
17 correct.

18 MR. MERCIER: -- or 34? Okay.

19 Okay. I understand there's three phases
20 of the project which are shown on the phasing
21 diagram. And I also read through this
22 construction sequence here, and on this 102, sheet
23 2, construction sequence notes. I was trying to
24 get a handle on actually how construction is going
25 to proceed.

1 So once you establish your temporary
2 entranceway and install your tracking pad and
3 clear out an area for the inverter pad, are you
4 then going to proceed with clearing trees from the
5 entire site? Or is tree clearing done in a phased
6 approach?

7 You know, I know you have three phases.
8 Is the tree clearing done in one? Or is it going
9 to be divided into three?

10 THE WITNESS (Geppi): I'm sorry. This
11 is Charles Geppi. The tree clearing will be done
12 in phases, but it will be a rolling phase. So
13 they'll start with the first phase, cut the trees
14 down, stabilize that first phase. Move to the
15 second phase, cut the trees, stabilize that, go to
16 the third and make sure that's stabilized.

17 MR. MERCIER: Okay. All right. We'll
18 stay with phase one. So once you remove all the
19 trees, you timber them, remove the logs. Then you
20 have to do some grubbing in certain locations.
21 Correct?

22 THE WITNESS (Geppi): No grubbing before
23 stabilization.

24 MR. MERCIER: Okay. So basically you're
25 going to chop down the trees. You might have some

1 perimeter controls. Is that what you're going to
2 do?

3 THE WITNESS (Geppi): Yeah. We would
4 put up the ENS controls around the side. And
5 before we start to grub that's when we would have
6 to -- oh, I'm sorry. We would grub and stabilize
7 each phase before moving onto the next phase.

8 MR. MERCIER: Grub and stabilize each
9 tree clear, one phase?

10 THE WITNESS (Geppi): Right.

11 MR. MERCIER: Grub, stabilize?

12 THE WITNESS (Geppi): Same phase.

13 MR. MERCIER: Phase two?

14 THE WITNESS (Geppi): Phase two, cut the
15 trees down, grub stabilize, then move to phase
16 three.

17 MR. MERCIER: Okay. That was my
18 question. When you go to grubbing I understand
19 you're going to be removing stumps that are in the
20 way of post locations. How are you going to
21 determine -- and are you determining in the field
22 where the posts are going to be? Or do you have a
23 generated site plan that says every ten feet I
24 have to remove a stump if it's in the way? How is
25 that accomplished?

1 THE WITNESS (Geppi): We will have a
2 survey layout the ends of the rows and essentially
3 lay out the whole array so we know all the
4 interferences and so forth as the design
5 progresses.

6 THE VICE CHAIRMAN: I think Dr. Klemens
7 had a question.

8 DR. KLEMENS: Two questions. What's the
9 acreage of each of these phases? That's my first
10 question. And my second question is, what do you
11 consider stabilized? Can you describe that, what
12 a stabilized site is?

13 THE WITNESS (Geppi): So to answer your
14 first part of the question, the phasing is in
15 interrogatory 2-104. So phase one is 4.02 acres.
16 Phase two is 4.86. Phase three is 4.91.

17 Now we do need to verify those numbers,
18 because they did not match earlier.

19 DR. KLEMENS: So you basically have just
20 slid underneath the state threshold for a
21 stormwater permit?

22 THE WITNESS (Geppi): No.

23 DR. KLEMENS: No? Isn't it five acres?

24 THE WITNESS (Stephens): We're applying
25 for a stormwater permit.

1 DR. KLEMENS: You are?

2 THE WITNESS (Stephens): Yes, we are.
3 Yes, we're in the DEEP review process right now.

4 DR. KLEMENS: Okay. So then could you
5 answer the question about stabilization, please?

6 THE WITNESS (Geppi): Sure. The
7 stabilization would be defined as, you know,
8 temporary stabilization. Not permanent
9 installation, not grass, but woodchips throughout
10 the whole site.

11 And we would work with our civil
12 engineer Loureiro to ensure that, you know, the
13 site is stabilized and we do have expert opinion
14 and give, you know, validating that.

15 DR. KLEMENS: I'll talk more about that
16 later.

17 MR. McDERMOTT: Mr. Murphy, maybe I can
18 just ask the witnesses to my left just to clarify
19 the phasing issue as relates to the stormwater
20 permit so the record is clear that we are not
21 phasing in order to avoid the stormwater permit.

22 The environmental team to my left can
23 describe why that is the case.

24 THE WITNESS (Morrison): We are applying
25 for a general permit. The DEP is requiring that.

1 Our phasing is -- as part of the general permit
2 they want us to stay under five acres per phase
3 and not keep more than five acres open at one
4 time, but we are applying for a general permit.

5 MR. McDERMOTT: Thank you.

6 MR. MERCIER: Thank you. Now back to
7 the stumps and the root balls. And when you
8 remove -- are you removing the root structures,
9 too, when you do removal of the stumps for the
10 posts?

11 THE WITNESS (Geppi): It all depends.
12 If it's in direct conflict with a foundation, then
13 yes, it would have to be removed.

14 MR. MERCIER: Where are you disposing of
15 that material? Off site or on site?

16 THE WITNESS (Geppi): On site. We chip
17 it up.

18 MR. MERCIER: Oh, chip it up?

19 THE WITNESS (Geppi): Yeah.

20 MR. MERCIER: Even the root balls and
21 stuff? Okay.

22 You know, when you're putting your posts
23 in -- I understand they might be in direct
24 conflict with the post location, and you tear that
25 out. Is there a certain distance away from a

1 stump you also have to take care of, like a foot,
2 two feet from a stump?

3 THE WITNESS (Geppi): It's generally a
4 straight line, a 45-degree from the depth of the
5 foundation. And as that has not been a
6 hundred percent finalized the depth is expected
7 between -- somewhere between four and six feet.

8 THE WITNESS (Colavito): To be more
9 specific, the distance from the post itself needs
10 to be equivalent to the depth. So depending on
11 how deep something is, is about how far it needs
12 to be up to the depth of the post.

13 So in a worst-case scenario for the
14 deepest post we expect it's probably about a
15 six-foot radius within a post, but that would be a
16 worst-case scenario.

17 MR. MERCIER: Thank you.

18 THE WITNESS (Colavito): And that is
19 still to be finalized by our structural engineer
20 for the foundation design.

21 MR. MERCIER: Now for the post
22 installation. I think you mentioned if there's
23 bedrock that's shallow you might do -- it's, like,
24 a screw type installation, or a drill
25 installation. Is that correct?

1 THE WITNESS (Colavito): That's correct.

2 MR. MERCIER: And how does that work?

3 It's just basically a mechanical drill that makes
4 a hole?

5 THE WITNESS (Colavito): That's correct.

6 They bring a small piece of equipment with a drill
7 attached to it. We expect that to drill a hole
8 right where the post needs to be. That's an
9 interference fit hole, and then they will drive
10 the screw into that hole.

11 MR. MERCIER: Is there any type of
12 vibrations that can carry a long way with that
13 type of activity?

14 THE WITNESS (Colavito): I can't say
15 that I'm an expert in that, but in my experience
16 it's minor impact.

17 MR. MERCIER: Okay.

18 MR. LEVESQUE: If you can't do the screw
19 one do you use a pneumatic hammer?

20 THE WITNESS (Colavito): No. There are
21 a handful of mitigation members -- measures. We
22 find that the drilling of bedrock is the most
23 extreme of those measures. Usually they drive the
24 screw directly in with a piece of equipment, and
25 through a lot of rock and tough soils we have --

1 we are able to drive the screws in. The screws
2 generally look like very large wood screws that
3 are custom made and designed for the soil type.

4 If that doesn't work or if we hit
5 refusal before we hit to the required depth, they
6 pull the screw out and then they predrill, and
7 then they run the screw back in.

8 MR. LEVESQUE: And if it's approved and
9 they abandon it sometime where you can't put more
10 efficient panels, or you don't have a long enough
11 lease, are those easier to extract, to clean the
12 side than one that's pounded in?

13 THE WITNESS (Colavito): Chuck, I
14 would -- I would assume that they're similar?

15 THE WITNESS (Geppi): Yeah. I would
16 have to say I'm not an expert on this, but yeah,
17 it would be very similar because it's designed for
18 the uplift forces. So that would be what it takes
19 to rip it out of the ground.

20 THE WITNESS (Colavito): But technically
21 with the screws they can be unscrewed. So it's a
22 little bit -- theoretically it could be a little
23 bit easier than pulling a pile out.

24 MR. MERCIER: I guess I was just
25 interested in any type of subsurface work that it

1 could affect potential nearby wells or
2 foundations. I mean, is this type of work, like I
3 said, causing great effect off the property?

4 THE WITNESS (Colavito): No. This is
5 not like a deep fracking well. We're talking
6 about hole sizes measured in -- in inches and
7 their depth is really no more than six or
8 seven feet.

9 MR. MERCIER: Thank you. At the
10 walk-through and also through the video and also
11 some of the photos I saw, you know, it was
12 identified there's quite a few stone walls there
13 and some, you know, bolder areas that are in the
14 solar field area. What's going to happen to those
15 materials?

16 Are you just bulldozing them into piles
17 on site, or are you removing that material? Or is
18 it in the way of the project, first of all?

19 THE WITNESS (Stephens): Yeah, so not
20 every wall is in the way of the project. There
21 will be some walls that will be affected. We will
22 remove those rocks, try to either, you know, give
23 them or sell them to local fencing contractors who
24 would want to take them. Ideally we would remove
25 them from the site.

1 MR. MERCIER: Thank you. Just flipping
2 back one sheet again to, you know, site plan 1A,
3 1B. You know, those are the plans that show the
4 sediment traps.

5 I'm just trying to figure out when the
6 sediment traps are going to be installed. At what
7 point of the project development will they be
8 implemented?

9 THE WITNESS (Geppi): The sediment traps
10 on the far east and the center?

11 MR. MERCIER: Yes, I'm basically
12 concerned about the main field which is basically
13 split into two phases. How are you going to
14 handle the phasing with the sediment traps?

15 THE WITNESS (Geppi): So it's very
16 similar to the phasing of taking the trees down
17 and prepping the site. So those trenches will be
18 starting in the first phase by the road, and then
19 as we progress to the second phase we continue
20 that trend down. And then down to the third phase
21 we would put that trench in.

22 MR. MERCIER: Okay. So you just
23 basically connect to them as you go to the next
24 phase?

25 THE WITNESS (Geppi): Correct. Correct.

1 MR. MERCIER: Okay. And then, you know,
2 the trenches are what they are. It's like a
3 gravel lip on the downslope end.

4 THE WITNESS (Geppi): Correct. Right.

5 MR. MERCIER: And a collection area
6 where you can clean up?

7 THE WITNESS (Geppi): Yes.

8 MR. MERCIER: And do they have to be
9 maintained for the duration of the actual solar
10 project installation?

11 THE WITNESS (Geppi): If they fill with
12 silt, absolutely.

13 MR. MERCIER: Okay. So how are you
14 going to install the posts and the wiring and
15 other things that require trucks and other
16 mechanical equipment? Are you going to drive over
17 the trenches to install the equipment? How is
18 that going to work?

19 THE WITNESS (Geppi): That we -- we've
20 proposed -- we're looking at a product called
21 MegaDeck that's in the petition. Basically it's
22 mats that utility companies will use to cut out --
23 cut a path through a forest to put in a cell tower
24 or something like that.

25 MR. MERCIER: So you're going to use

1 MegaDeck in certain locations over the trenches
2 where necessary?

3 THE WITNESS (Geppi): Correct, as we're
4 progressing throughout the build. So we would
5 have those on site so that way we're not
6 damaging -- what? The erosion controls.

7 MR. MERCIER: So would the use of that
8 product knock down the gravel, though? So you've
9 got to restore it? You know, the gravel lip we
10 just talked about, it's going to be raised up?

11 THE WITNESS (Geppi): Yeah, or we would
12 raise it up a little bit higher on the sides and
13 then just bridge it so that way we can cross over
14 that easily.

15 Sometimes we have, you know, it comes
16 down to human labor carrying it across.

17 THE WITNESS (Stephens): And these
18 trenches, while being maintained throughout
19 construction, if one is damaged, say, by crossing
20 it or by some other effort on site they'll be
21 restored. It's not the expectation that once
22 these are dug we just walk away from them.
23 They'll be actively maintained throughout the
24 course of construction.

25 MR. MERCIER: I guess now we're talking

1 about the trenches. Once you stabilize this site,
2 you construct all the solar arrays, you know,
3 you're done. The wiring is in. What happens to
4 the trenches at that point?

5 You remove the gravel lips and turn it
6 into an actual infiltration trench per se where
7 there's no containment, like sheet flow will come
8 down and hit the trenches and go theoretically
9 into the ground? Or are you going to maintain
10 those gravel lips for the life of the project?

11 THE WITNESS (Morrison): Yeah, we're
12 going to take down the -- the gravel lip and we're
13 going to spread it out on the downside to act as
14 an energy dissipator so the water will come into
15 the trench. It will act as an infiltration basin,
16 a water quality volume basin.

17 And then when that fills up, as the
18 water falls out the other side we'll have an
19 energy dissipator to slow down the water on the
20 downstream end.

21 MR. MERCIER: And these aren't very
22 deep?

23 THE WITNESS (Morrison): No, they're not
24 very deep at all.

25 MR. MERCIER: They're only two feet deep

1 or something? Two to three?

2 THE WITNESS (Morrison): Yeah. Less
3 than that. I think they're a foot, or a foot and
4 a half.

5 MR. MERCIER: Now just to confirm, I
6 think you mentioned earlier, you know, when you're
7 doing construction of the solar arrays themselves,
8 the racking, the wiring, what have you, the
9 temporary surface within the solar field which
10 you're driving your equipment on, it's going to be
11 woodchips or other, other types of mulch or
12 something to control erosion?

13 THE WITNESS (Geppi): Yes.

14 MR. MERCIER: Yes. All right. Staying
15 with the site plans on 1A and 1B. You know, I see
16 the -- going through the site there's something
17 marked E. That's the electrical line. Is that
18 the Chatfield conduit everybody is talking about?
19 Or is that an underground line? What is that?

20 Basically it goes to the main
21 transformer pad. You know, there's a couple arms
22 coming off from each other solar array.

23 THE WITNESS (Colavito): Yes, that's the
24 proposed main electrical run which would be an
25 above grade cable tray. That's going to collect

1 the DC conductors from the individual rows and
2 carry them towards the equipment pad at the north
3 side of the site.

4 MR. MERCIER: So these are set up under
5 the panels?

6 THE WITNESS (Colavito): Yes, it would
7 run beneath the rows.

8 MR. MERCIER: Okay. How high off the
9 ground are they typically?

10 THE WITNESS (Colavito): This isn't a
11 typical approach for PV rays. It's a unique
12 approach we're taking for the site due to the soil
13 conditions and the rockiness.

14 Jobin, I don't believe we've determined
15 a specific height above grade.

16 THE WITNESS (Michael): We usually put
17 up a last block under it and put the cable tray on
18 top of that. It could be eight-inch to twelve
19 inch.

20 MR. MERCIER: Eight to twelve inches?

21 THE WITNESS (Michael): Eight to twelve.

22 MR. MERCIER: Okay. So it's just
23 resting on blocks on the ground?

24 THE WITNESS (Colavito): Yes, it's a
25 ballasted system. It will be attached to the

1 blocks.

2 MR. MERCIER: Continuous blocks?

3 THE WITNESS (Colavito): No.

4 MR. MERCIER: Like every so many feet?

5 THE WITNESS (Michael): Every 10,
6 15 feet apart.

7 MR. MERCIER: Would you have to remove
8 stumps where the blocks are going also, or no?

9 THE WITNESS (Colavito): I wouldn't
10 expect that's required. The blocks' heights can
11 be adjusted. The cable tray is designed to be
12 able to roll with grade and things like that.

13 MR. MERCIER: You wouldn't put one on a
14 stump, though. Right?

15 THE WITNESS (Stephens): No. And
16 just -- and when the trees are cleared the trees
17 will be flush cut to grade. So we're not talking
18 about, you know, two or three feet of stump. It
19 will be -- but we'll just make sure that we are
20 avoiding the stumps.

21 MR. MERCIER: Yeah. I guess, my only
22 question also would be, you know, as time goes on
23 the stump would decay. Right?

24 THE WITNESS (Stephens): Sure.

25 MR. MERCIER: And create, like, a pitted

1 moonscape surface?

2 THE WITNESS (Michael): We can adjust
3 the spacing, because if it's like -- it's not like
4 every ten feet, we can -- like, eight feet or
5 six feet. Where -- so we can avoid where there's
6 a tree stump. We can make the support blocks as
7 needed.

8 MR. MERCIER: Okay. And were they
9 attached by clamps, I presumed, as to the blocks?

10 THE WITNESS (Colavito): We'll probably
11 use some sort of concrete anchor to attach into
12 the block, and then a clamp onto the tray.
13 There's many types of attachments that can be used
14 for the cable tray. It is a very versatile
15 system.

16 MR. MERCIER: Now I was also trying to
17 understand, you know, from the inverters that you
18 have, are you having aboveground cable trays from
19 the inverters to this main line also, the wiring
20 from your inverters to the main lines shown on
21 this map?

22 THE WITNESS (Colavito): The inverters
23 are at the main equipment pad.

24 MR. MERCIER: Oh, okay. I meant, the
25 string inverters there, the 32?

1 THE WITNESS (Colavito): Yes, this is
2 using a 1500-volt string inverter. Is that
3 correct?

4 THE WITNESS (Michael): That's a
5 thousand-volt.

6 THE WITNESS (Colavito): Sorry. A
7 thousand-volt. So I apologize. I have to defer
8 to Jobin -- to Mr. Michael.

9 THE WITNESS (Michael): Inverters are
10 usually grouped and put on different rows, like
11 four, five inverters in a group. And then the
12 collection of the inverter outputs are directed to
13 the main incoming part where there's -- we have
14 two additional interconnections from Eversource.
15 Each one has about one megawatt capacity. So
16 each -- like a breaker panel, we have 16 in orders
17 connecting 2.

18 MR. MERCIER: So they're all up in that
19 main pad area?

20 THE WITNESS (Colavito): Yeah. I
21 apologize. That's incorrect.

22 MR. MERCIER: Okay. They're not spread
23 out.

24 THE WITNESS (Colavito): My statement
25 was incorrect. Jobin's statement was correct. We

1 have a lot of different projects with different
2 concepts.

3 In this concept there are miniature
4 banks of inverters distributed throughout the
5 array to collect the DC conductors. The AC
6 conductors would have their own dedicated portion
7 of the cable tray for the AC run back to the main
8 equipment pad.

9 MR. MERCIER: Okay. So there's no other
10 cable trays. This is it?

11 THE WITNESS (Colavito): We expect all
12 our electrical equipment -- our electrical
13 conductors to run in that same area.

14 MR. MERCIER: Thank you. That was
15 confusing to me, but you cleared it up. Having
16 the aboveground cable trays, is that going to
17 impede any type of access for any type of
18 emergency vehicles or anything like to get around
19 this site?

20 THE WITNESS (Colavito): There will be a
21 pathway around the perimeter of the array. The
22 cable trays will have to cross at two points on
23 the main array. And that would require them to
24 pass around the opposite direction to cross where
25 the cable tray is, yes.

1 And in our experience it's extremely
2 atypical for an emergency vehicle to pass the
3 entire perimeter of the PV array in the highly
4 unlikely event of a fire.

5 MR. MERCIER: Are there conduits or
6 anything marked with like any type of paint or
7 danger sign, or anything, that says -- as anybody
8 is walking through there and --

9 THE WITNESS (Colavito): Yes. In
10 order -- we've marked them with placards in
11 intervals as required by the National Electric
12 Code.

13 MR. MERCIER: Okay. Just to clarify
14 again, why wouldn't you just do an underground
15 connection? Is it too costly?

16 THE WITNESS (Colavito): Because the
17 geotechnical reports that the site exhibits
18 significant bedrock and rocky soils. And our
19 expectation is that trenching would be very
20 difficult, more disruptive and more costly than
21 doing an above-grade cable tray.

22 MR. MERCIER: One other -- actually two
23 other questions. One had to do with somewhere in
24 the original petition, in the environmental report
25 it basically said that the petitioner was reaching

1 out to the state archaeologist which is, you know,
2 the State Historic Preservation Office.

3 Was a response ever received based on
4 that inquiry? This was in the actual original
5 submittal on page 2.8 of the environmental report.
6 So I wasn't sure who did that, and was a response
7 ever received?

8 THE WITNESS (Morrison): Yes, it was
9 submitted. We did a phase 1B assessment of the
10 site.

11 MR. MERCIER: And as mentioned earlier
12 there was a public information meeting February
13 18th. I think it was a Monday. I was just
14 wondering what the turnout was from the public and
15 the local officials, if anybody has that
16 information?

17 THE WITNESS (Partyka): I was present at
18 the meeting. There was about 40 to 50 residents
19 at the meeting.

20 MR. MERCIER: Were there any public
21 officials there, too?

22 THE WITNESS (Partyka): The town
23 selectwoman. I think folks from the energy task
24 force in the town.

25 MR. MERCIER: Great. Thank you. I

1 don't have any other questions at this time.

2 THE VICE CHAIRMAN: Councilmembers,
3 questions?

4 Mr. Levesque?

5 MR. LEVESQUE: The Chatfield Solar Fund
6 expressed concern over fire hazards. Can you
7 address how you communicate with the local fire
8 department in preparation of building such a site?

9 THE WITNESS (Stephens): Yeah. So
10 typically we'll meet with the fire chief and fire
11 Marshal. I have been in conversations with the
12 fire marshal here in Killingworth.

13 Before the site gets -- gets started we
14 typically have a sitdown meeting and just kind of
15 walk through what we're looking at, phasing
16 construction schedule. And then once the project
17 is completed we would provide on-site training to,
18 you know, make sure that the fire department is
19 fully up to speed on how the system works, how
20 safe the system is and what to do, you know, if in
21 the rare case there was an issue, what to do in
22 that case.

23 MR. LEVESQUE: Let's say a speeding
24 truck hits an electric service pole of the primary
25 cables and the poles in the street. How does that

1 compare to a fire risk of somebody knocking down
2 the live wires and hits one of those poles
3 compared to one of your service trucks hitting
4 your cable box?

5 THE WITNESS (Colavito): There's
6 actually no difference between hitting the pole
7 which serves the site and hitting any other
8 electric distribution pole within the area.

9 The solar PV inverters are designed to
10 be compliant with UL-1741 for anti-islanding and
11 within milliseconds of detecting an interruption
12 in the grid they're required to immediately shut
13 down. So all power of direct current electricity
14 from the PV array through the inverters and to the
15 point of interconnection would cease within less
16 than a second if there was a power outage caused
17 by anything.

18 MR. LEVESQUE: And how about the concern
19 of Chatfield Solar about contaminants from the
20 solar panels, or any other equipment?

21 THE WITNESS (Colavito): The solar PV
22 modules are primarily made up of glass and with
23 aluminum frames. There's an EVA, or
24 ethylene-vinyl acetate polymer adhesive
25 encapsulate layers surrounding the solar cells and

1 adhering the back sheet to the cells.

2 There's really very few chemicals or
3 very, very small quantities, trace amounts in --
4 in solder for the electrical connections. I
5 believe it's silver solder paste in most PV
6 modules. The modules are extremely resilient.
7 They're warranted for 25 years.

8 As I stated earlier, if a module is to
9 be impacted by a tree branch or anything else it
10 does not splinter or explode. It's tempered glass
11 and it stays together. It's not -- I can't
12 foresee a way that the materials from the PV
13 module can actually enter the ground unless they
14 were buried into the ground intentionally.

15 At the end of the PV array's service
16 life the modules would be removed from site,
17 disassembled and recycled.

18 THE VICE CHAIRMAN: Can I interrupt you?

19 MR. LEVESQUE: Sure.

20 THE VICE CHAIRMAN: Mr. Lynch had a
21 question. I'm sorry, Larry.

22 MR. LYNCH: I just want to revisit the
23 training for the fire department. The Town here
24 has a volunteer fire department, but I would like
25 to know what type of training you're going to

1 offer them, because I've dealt with paid fire
2 departments and also with Eversource. And they
3 are offering -- they do extensive training as far
4 as solar panels are concerned. The caveat being
5 most of them are on homes or buildings.

6 What type of training would the
7 volunteer fire department get from your service?
8 And then I have a followup.

9 THE WITNESS (Colavito): We have not
10 formulated a specific training program for them at
11 this time, however we would do it in concert with
12 the folks here with input on what they deem as
13 necessary and appropriate.

14 I imagine that the most appropriate type
15 of training would include a portion of maybe an
16 hour or so of instruction with diagrams, figures
17 and pictures in a classroom setting that would
18 also be accompanied or followed by a field visit
19 to walk the site, see the equipment, the
20 disconnection locations and other types of safety
21 measures in the field with representatives from
22 the fire department.

23 MR. LYNCH: You mentioned earlier that
24 the inverters would shut down?

25 THE WITNESS (Colavito): Yes.

1 MR. LYNCH: But the concern I hear from
2 other fire departments is that even though they're
3 shut down, they're not hot -- those panels are
4 still hot. How do you deal with that?

5 THE WITNESS (Colavito): That is
6 accurate. Any time there's light on the solar PV
7 modules there is live voltage. There isn't
8 necessarily current flow unless there is a ground
9 fault condition, but there is live voltage.

10 There's no -- unlike on a rooftop
11 there's no reason to axe through a particular
12 module. There's no venting requirements in a
13 field array, and the PV modules are essentially
14 separated into separate systems because of the
15 string inverter architecture.

16 So each inverter is 125 kilowatts AC
17 output. The number of modules feeding each one of
18 the inverters, they're all separately feeding from
19 one another. And they're string inverters, so
20 strings of modules in groups of, I believe, 18 in
21 this case are connected in one string with a
22 positive and negative wire which run back to the
23 inverter.

24 So in any case when the inverters are
25 shut down there's no more current available in

1 those conductors than from 18 modules in series.
2 And the current does not add as modules are
3 connected in series. Only the voltage. So the
4 current output on a single string is something shy
5 of ten amps, even in short-circuit condition.
6 Correct?

7 THE WITNESS (Michael): That's correct.

8 MR. LYNCH: So in other words, you're
9 telling me that even though these panels are hot
10 and they're fighting a fire with water, there's no
11 possibility of any type of electrocution or
12 anything?

13 THE WITNESS (Colavito): I believe
14 Brandon has spoken with the fire marshal more in
15 detail about this.

16 THE WITNESS (Stephens): Yes. So with
17 the PV system being an electrical system you
18 actually wouldn't use water to put out the fire.
19 You would use a chemical foam.

20 MR. LYNCH: That would be part of the
21 training, I'm assuming?

22 THE WITNESS (Stephens): Yes, that would
23 be part of the instruction.

24 MR. LYNCH: So the volunteer fire
25 department here would have to have those chemicals

1 on hand to fight the fire?

2 THE WITNESS (Stephens): Yes, sir.

3 MR. LYNCH: All right. Thank you,
4 Mr. Chairman.

5 THE VICE CHAIRMAN: I think Mr. Hannon
6 has a follow-up question.

7 MR. HANNON: The question is about the
8 foam that would be used. I'm assuming -- or at
9 least I would recommend that it's not containing
10 p-Phos materials, because the last thing you want
11 to do with some wetlands in this area is create
12 some contamination.

13 THE VICE CHAIRMAN: Thank you.

14 I guess we're back to you, Larry.
15 Sorry.

16 MR. LEVESQUE: Thank you. So how about
17 what has happened to the materials and
18 technologies of electric transformers over the
19 decades to decrease hazardous waste?

20 THE WITNESS (Colavito): I don't believe
21 I can specify -- I can testify to that
22 technically. The transformers are going to be
23 provided, installed and maintained by Eversource.
24 They will not be owned by the solar company, nor
25 maintained by us. So we are not specifying those

1 transformers.

2 The only thing I can speak to is that
3 when Standard Solar deploys a transformer we use
4 FR3 Envirottemp fluid for the coolant, which is
5 different from typical mineral oil, and it's
6 biodegradable and more sustainable. But we don't
7 control the transformer deployed to site for this
8 project.

9 MR. LEVESQUE: But they meet the modern
10 code?

11 THE WITNESS (Colavito): I imagine they
12 do, and they're consistent with probably the
13 regulations that PURA uses for requirements to
14 Eversource.

15 MR. LEVESQUE: Thank you. I'm all set,
16 Chairman.

17 THE VICE CHAIRMAN: Mr. Silvestri?

18 MR. SILVESTRI: Thank you, Mr. Chairman.
19 A couple of followups from the questions from
20 Mr. Levesque.

21 Is there lead solder involved in any of
22 the system?

23 THE WITNESS (Colavito): I cannot
24 confirm if there is or is not in the PV module. I
25 assume there's some lead solder in the inverter

1 within the printed circuit boards and electrical
2 components inside the inverters, but I would have
3 to check into that to confirm for you that -- very
4 small amounts in general compared to the entire
5 system.

6 MR. SILVESTRI: Yeah. When we try to
7 quantify things I don't really know what small is,
8 but --

9 THE WITNESS (Colavito): Well, consider
10 it compared to the mass of the glass, silicon
11 cells, aluminum and steel on the site. It's
12 infinitesimal amounts.

13 MR. SILVESTRI: Compared to the other
14 components?

15 THE WITNESS (Colavito): Yeah.

16 MR. SILVESTRI: Going back also to the
17 chemical foam that was mentioned, is the foam
18 produced with water?

19 THE WITNESS (Stephens): Can you repeat
20 the question, please?

21 MR. SILVESTRI: You mentioned chemical
22 foam would be used in the event that there was a
23 fire. The chemical foam, is it produced with
24 water? You know, years ago when I used to work in
25 the utility business, we had tank farms. Tank

1 farms had this --

2 THE WITNESS (Stephens): I would
3 honestly have to check --

4 MR. McDERMOTT: Let him finish the
5 question.

6 MR. SILVESTRI: Yeah. Tank farms had
7 this great product that we called catgut, but to
8 get it to work as a foam you had to mix the catgut
9 with the water and then it spread out into the
10 tank farm. Does the chemical foam basically
11 depend on water to be effective?

12 THE WITNESS (Stephens): I'll have to
13 check into that. To be honest, typically the fire
14 departments that we work with, they just knew the
15 foam that they needed to use, and it wasn't an
16 instruction from our side of, you have to use this
17 form to fight the fire.

18 MR. SILVESTRI: Okay. Where I'm leading
19 on that is the overall water issue, that the fire
20 marshal had expressed concerns with no on-site
21 water being available. If chemical foam is indeed
22 needed, it begs the question where does the water
23 come to try to mix it with the foam to produce
24 whatever they need to put out a fire?

25 In general, or specifically have you had

1 additional conversations with the fire marshal
2 regarding their concerns about water for fire
3 suppression, or in this a case maybe for chemical
4 foam along fire access roads and everything else?
5 I mean, is there more than just a letter that we
6 received from the fire marshal?

7 THE WITNESS (Stephens): Those talks are
8 in progress. I've had two phone -- phonecalls
9 with the fire marshal here in Killingsworth. We
10 discussed the on-site water concern. I talked
11 about, you know, what is located on site and the
12 wetlands around, and the fire marshal seemed to
13 think that that was sufficient for his -- for what
14 he had brought to our attention.

15 For access, the space between the solar
16 modules and the fence in most locations is
17 between, you know, 10 to 20 feet. Typically
18 20 feet. That will be cleared and stumped, and
19 then grass seeded. It will be a -- we refer to it
20 as a service lane.

21 So when we deploy trucks to service the
22 equipment they're typically four-by-four pickup
23 trucks. So the intent is, is that a four-by-four
24 pickup truck can access all, all parts of the
25 site.

1 So if the rows themselves are 14 feet,
2 you know, each row has a 14-foot clearance. You
3 know you can drive a pickup truck down through
4 that. We are discussing the -- what will be under
5 the arrays right now. And we're still working
6 through that one, but for the rest of his concerns
7 we have had, at least to this point, addressed
8 them verbally, but we still have to finalize
9 things.

10 MR. SILVESTRI: Do you anticipate we'd
11 have some type of written followup, either from
12 the fire marshal and/or from the applicant at some
13 point in the future?

14 THE WITNESS (Stephens): Correct, yes.

15 MR. SILVESTRI: And that we would have
16 access to that?

17 THE WITNESS (Stephens): Yes,
18 absolutely. It would be from the fire marshal
19 saying that what we have proposed meets his
20 requirements.

21 MR. SILVESTRI: Okay. Let me move onto
22 when we had the field review. And I had asked the
23 question about the interconnection to the
24 distribution lines and want to pose it again for
25 the record.

1 So again, how will the proposed system
2 tie into the distribution poles, or distribution
3 system?

4 THE WITNESS (Michael): Eversource is
5 giving us 480-volt service on site. So Eversource
6 will tap one of the overhead cords on the other
7 side of the road and get an overhead line to our
8 property, and then install an Eversource
9 transformer, and we are connecting to the
10 secondary side of the transformer.

11 MR. SILVESTRI: So again, the connection
12 across the road is aboveground or underground?

13 THE WITNESS (Michael): Aboveground, so
14 far I know.

15 MR. SILVESTRI: Aboveground?

16 THE WITNESS (Michael): Aboveground.

17 MR. SILVESTRI: Okay. I thought I heard
18 underground during the field walk through. Okay.

19 With that, if I can turn your attention
20 to page 8 of the application? It states that the
21 new transformer service conductors and metering
22 have been installed by Eversource for the
23 interconnection. Is that true, that those items
24 have already been installed?

25 THE WITNESS (Colavito): No.

1 THE WITNESS (Michael): No, it will be
2 installed.

3 MR. SILVESTRI: All right. That's not
4 what it says in the application, which is why I
5 brought up the question. So that's a typo, then?

6 THE WITNESS (Colavito): That's correct.
7 That is -- that needs to be corrected.

8 MR. SILVESTRI: All right. I have
9 another issue with the use of past tense that's on
10 page 11 of the application. And I'll quote,
11 erosion controls have also been installed at the
12 limit of the project disturbance. Is that true?

13 THE WITNESS (Stephens): No, sir, they
14 have not. We have not done anything to the site
15 because we are waiting for, you know, we're
16 waiting for Siting Council approval before we do
17 anything.

18 MR. SILVESTRI: So that's another typo?

19 THE WITNESS (Stephens): Correct.

20 MR. SILVESTRI: Or whatever you want to
21 call it, that's not correct?

22 THE WITNESS (Stephens): Correct.

23 MR. SILVESTRI: Going back to questions
24 from Mr. Mercier on the inverters, page 5 of the
25 application states that the racking system would

1 be driven into the ground and no concrete
2 foundations are required, but I thought I heard
3 that you're going to use concrete blocks?

4 THE WITNESS (Colavito): There will be
5 no foundations out of concrete to support the PV
6 array mounting system, but there will be some
7 above grade concrete block used to support the
8 electrical cable tray.

9 MR. SILVESTRI: All right. So this one,
10 the clarification here is that you're not going to
11 put forms in the ground and pour concrete. You're
12 going to bring in a concrete block and place it
13 somewheres?

14 THE WITNESS (Colavito): That's -- that
15 is the current plan, yes.

16 MR. SILVESTRI: Okay. And another
17 clarification. If I heard correctly, the
18 inverters would not be all located at the main
19 equipment pad?

20 THE WITNESS (Colavito): That is
21 correct.

22 MR. SILVESTRI: Okay. And they're going
23 to be installed again on the concrete blocks?

24 THE WITNESS (Colavito): No.

25 MR. SILVESTRI: No?

1 THE WITNESS (Colavito): We would
2 typically drive additional piles or screw
3 additional foundations into the ground and then
4 build a rack out of steel, and mount the string
5 inverters on the rack in groups or banks directly
6 behind the north side of one of the rows. So
7 they're tucked partially under the modules.

8 MR. SILVESTRI: But they would be a
9 certain amount of distance, feet or inches off the
10 ground?

11 THE WITNESS (Colavito): Yes, typically
12 24 to 36 inches from the bottom of the inverter to
13 grade.

14 MR. SILVESTRI: On a post?

15 THE WITNESS (Colavito): Sitting on a
16 rack usually made with several vertical posts and
17 then connected together by steel strut, light unit
18 strut.

19 MR. SILVESTRI: Gotcha. Okay. Let me
20 move on. On page 2-9 of the environmental
21 assessment which was dated October 2018, it
22 mentions that the site is located in an area to be
23 determined to be outside the 0.2 percent annual
24 chance floodplain as indicated on the FEMA flood
25 insurance rate map.

1 The first question I have for you, what
2 is the date of the map?

3 THE WITNESS (Morrison): I'm not sure.
4 The most recent one.

5 MR. SILVESTRI: I don't know what that
6 means.

7 THE WITNESS (Morrison): I'm not sure.
8 I can check. Let me clarify that.

9 MR. SILVESTRI: Then the related
10 question, how does the 0.2 percent annual chance
11 relate to both the hundred year and the 500-year
12 floodplains?

13 THE WITNESS (Morrison): It's -- it's
14 the 100 floodplain, 100-year floodplain.

15 MR. SILVESTRI: All right. Am I correct
16 in saying then that the project is outside the 100
17 year, but it would be in the 500 year --

18 THE WITNESS (Morrison): Oh, no. I'm
19 sorry. It's outside of all of them.

20 MR. SILVESTRI: It's outside of all of
21 them?

22 THE WITNESS (Morrison): Yes, yes. It
23 doesn't map in any zone.

24 THE WITNESS (Colavito): Ms. Morrison,
25 is the 0.2 percent chance -- isn't that equivalent

1 to the 500 year.

2 THE WITNESS (Morrison): 500. Did I say
3 100?

4 THE WITNESS (Colavito): Yeah, you said
5 100.

6 THE WITNESS (Morrison): Oh, I'm sorry.
7 500. I'm sorry.

8 THE WITNESS (Colavito): I'd like to
9 correct that to indicate a 500 year.

10 MR. SILVESTRI: Okay. So it's outside
11 of both?

12 THE WITNESS (Morrison): Yes, it's
13 outside of both. It's not mapped, yes.

14 MR. SILVESTRI: Okay. Since the
15 submittal, the original submittal we have, the
16 original application, a lot of changes have been
17 proposed for this project. And the big question I
18 have is, what prompted all these changes?

19 THE WITNESS (Colavito): I'm sorry.
20 Could you please repeat the question? We were
21 reviewing.

22 MR. SILVESTRI: Yeah, from the original
23 application that we received until when you look
24 at everything that's in front of us right now for
25 the proposed project a lot of changes have taken

1 place. What prompted all the changes?

2 THE WITNESS (Colavito): New information
3 that we were made aware of through a lot of the
4 environmental research surveying, civil work, and
5 continuous information that we've been receiving
6 throughout the process, and we made adjustments
7 accordingly.

8 MR. SILVESTRI: I think I heard you.

9 THE WITNESS (Colavito): Specifically a
10 neighbor identified a problem with the mapping and
11 we adjusted and verified that that map needed to
12 be adjusted, and adjusted the entire array --
13 array layout and plan as a result.

14 MR. SILVESTRI: When you say, problem on
15 mapping, could you be more specific as to what the
16 problem was?

17 THE WITNESS (Michael): It's -- the
18 original boundary survey is based on the DEEP map.
19 I think --

20 THE WITNESS (Morrison): The original
21 boundary survey we used was based on the GIS
22 mapping from the Town that was the State parcel
23 map that was done. And subsequent to that we
24 performed an A2 survey which is a survey standard
25 that's a more exact boundary, and it shifted the

1 lines.

2 MR. SILVESTRI: Okay. Based on that --

3 THE WITNESS (Morrison): Based on --
4 based on our surveyors going out to actually
5 survey it instead of the parcel boundaries that we
6 got from the DEP website -- the GIS statewide
7 website.

8 MR. SILVESTRI: Gotcha. Thank you.

9 Going back to a question from
10 Mr. Mercier, I want to make sure I'm correct on
11 this. The current proposal is for 355-watt
12 panels -- at approximately 6,552. Is that
13 correct?

14 THE WITNESS (Colavito): Yes. That's
15 correct.

16 MR. SILVESTRI: Why did you chose
17 355-watt panels?

18 THE WITNESS (Colavito): Based on
19 availability, pricing and appropriateness of that
20 cell technology.

21 MR. SILVESTRI: Earlier on when you were
22 talking about trees falling on panels, I heard you
23 say that the cost of materials is small. What
24 material were you referring to?

25 THE WITNESS (Colavito): The racking

1 system in the PV modules make up -- let me do some
2 mental math here -- maybe 30 percent of the PV
3 system total cost, but a tree falling on a small
4 portion of the array would represent a small
5 fraction of a percentage of the total cost of the
6 PV array.

7 MR. SILVESTRI: Let me ask in a bigger
8 picture. Is there a potential to use 400-watt
9 panels?

10 THE WITNESS (Colavito): There is a
11 possibility, though we determined that it was not
12 economically viable because the cost of a 400-watt
13 panel -- when we talk about wattage of panels it's
14 usually assumed that the panels are about the same
15 size, three feet by six feet in size.

16 And the higher the wattage the higher
17 the quality cell, and the higher the efficiency of
18 the cell. Usually with a higher efficiency cell
19 you pay a premium for that PV module. And in this
20 case the cost difference from the highest wattage
21 module available which is pretty close to about
22 400 watts -- to the 355-watt module was a
23 significant price difference and was not feasible
24 for the project.

25 MR. SILVESTRI: Did you do a cost

1 evaluation on, say, the 395 to 400-watt panels
2 knowing that if you put those in you would be
3 using less panels, approximately 5,815.

4 So what happens is the overall footprint
5 gets reduced. Your overall construction gets
6 reduced. Your conduit runs get reduced. I'm
7 looking at that and saying it might be a wash, but
8 I don't know if you did the cost analysis.

9 THE WITNESS (Colavito): Yes, we do a
10 very detailed cost analysis of costs to install,
11 the material savings, cost of racking system
12 foundations, wire and labor to determine what
13 module is the most appropriate.

14 Right now availability is a major issue
15 that even if I could get competitive 400-watt
16 modules, having them delivered at the appropriate
17 time and available is risky. Those are probably
18 the highest wattage commercially available modules
19 that are available from more than one
20 manufacturer, and we rarely would specify those in
21 non-rooftop applications.

22 Rooftops applications are usually the
23 most space constrained and require -- more often
24 would warrant the highest efficiency modules
25 available.

1 MR. SILVESTRI: So what I'm saying is a
2 lot of the applications coming forward, is that
3 the 395 to 400 is becoming the standard?

4 THE WITNESS (Colavito): For projects
5 that are much farther out in the future, for
6 larger projects, if it's 18 plus months from now I
7 would agree with that, but the intent for this
8 project is to have it operational in this calendar
9 year. And we think that the 355-watt module is
10 appropriate for this project.

11 MR. McDERMOTT: Mr. Silvestri, could I
12 have one second?

13 MR. SILVESTRI: Sure.

14 MR. McDERMOTT: Thank you.

15 MR. LYNCH: Mr. Silvestri?

16 MR. SILVESTRI: Yeah, go ahead.

17 MR. LYNCH: Just a follow-up question to
18 Mr. Silvestri. If you use Moore's Law, or Moore's
19 Principle that everything changes, all technology
20 changes within 18 months, if new technology comes
21 along in the solar panel field would you refit
22 your solar panels?

23 THE WITNESS (Colavito): No, we would
24 not. We think of this as buying energy today for
25 use over the next 30 years, and once you've bought

1 it there's little additional investment once
2 you've constructed the PV system.

3 MR. LYNCH: Thank you. I just had to
4 ask. Thank you, Mr. Silvestri.

5 MR. SILVESTRI: I have a couple other
6 clarifications based on the project's original
7 application than what we have now. The first one,
8 does the carbon debt analysis that's on page 3-6
9 of the environmental assessment need to be revised
10 to reflect the changes that we have now?

11 THE WITNESS (Morrison): No.

12 MR. SILVESTRI: Nothing changed on
13 megawatts produced?

14 THE WITNESS (Morrison): No, nothing
15 changed.

16 MR. SILVESTRI: Trees clears, nothing
17 like that?

18 THE WITNESS (Morrison): No. It was
19 based on trees per acre and it was the same -- it
20 was the same numbers and did not get revised. It
21 did not need to be revised.

22 MR. SILVESTRI: Okay. Thank you. If
23 you could reference the response to interrogatory
24 number 23 and compare that to Attorney McDermott's
25 letter to the Council that's dated December 19th

1 of 2018, there seems to be a discrepancy.

2 And I'll pose the question, is the
3 facility designed for 1.98 megawatts AC as stated
4 in the interrogatory response? Or is it
5 1.92 megawatts AC as stated in the letter?

6 THE WITNESS (Michael): It is 1.92.
7 Since we moved the system based on the boundary
8 survey we actually reduced the number of panels.
9 You can see from 6,700 or something to 6,552
10 panels right now. So actually the system size
11 reduced and by -- the result of that, our array
12 system size is 1.92.

13 MR. SILVESTRI: Nine-two. Okay. That's
14 what I say. A lot of this changed, in my opinion,
15 from when it was originally submitted to what we
16 have now, which is why I have a number of these
17 questions. Thank you for that.

18 If I could have you reference
19 interrogatory number 19 and its response. Part of
20 the response said, it is expected that in leaf-off
21 conditions abutting properties may be able to see
22 the project. My question for you, are there
23 provisions for screening?

24 THE WITNESS (Colavito): We have not yet
25 formalized provisions for screening, but we are

1 evaluating that at this moment.

2 MR. SILVESTRI: So there may be
3 screening?

4 THE WITNESS (Colavito): Once we have a
5 plan for screening we will submit that.

6 MR. McDERMOTT: Mr. Silvestri, I'm
7 sorry.

8 We expect to have that completed between
9 now and the second hearing, and we'll submit that
10 as a late-filed exhibit.

11 MR. SILVESTRI: Thank you. If I could
12 stay with responses to interrogatories number 35,
13 and you have the contour DB racking system
14 technical specification sheet.

15 The sheet itself lists a wind load range
16 of 90 to 150 miles an hour. Does that imply that
17 the racking system can be tailored to a specific
18 wind load such as the 120-mile an hour wind speed
19 that's listed in the response?

20 THE WITNESS (Colavito): Yes.

21 MR. SILVESTRI: Okay. So you would take
22 that and you would tailor it to 120 and set it up
23 that way?

24 THE WITNESS (Colavito): Yes.

25 MR. SILVESTRI: Okay. Staying on

1 responses to the interrogatories, and Mr. Geppi I
2 wanted to go back to your comment in the beginning
3 of the hearing with interrogatory number 13. And
4 the response verbally that you had was that the
5 response kind of was changed from commercial to
6 residential. Am I correct on that one?

7 THE WITNESS (Geppi): Correct, yes.

8 MR. SILVESTRI: All right. So if I go
9 back to the question that was posed on number 13,
10 what type of development and minimum lot size is
11 permitted per the zoning designation? We had
12 answered it before -- you had answered it before
13 as commercial. What would the answer be for
14 residential?

15 THE WITNESS (Geppi): Hold on one
16 second.

17 THE WITNESS (Morrison): The lot uses in
18 a residential zone?

19 MR. SILVESTRI: Well, the question we
20 had posed is, what type of development and minimum
21 lot size is permitted for the zoning designation?
22 The answer that came in was based on commercial,
23 which is not the zone for that property.

24 THE WITNESS (Morrison): Yes.

25 MR. SILVESTRI: So the question I'm

1 posing to you is, if you say in residential then
2 how do you answer that question?

3 THE WITNESS (Morrison): I'd have to
4 look at the zoning regulations and see
5 specifically what's allowed in a residential zone.
6 I think it's two acres. I'm not -- I can't answer
7 that without looking.

8 Oh, hold on one sec.

9 It's two-acre zoning in a residential
10 use zone.

11 MR. SILVESTRI: And what type of
12 development is permitted per the zoning
13 designation?

14 MR. McDERMOTT: Mr. Silvestri, could I
15 ask you to go onto your next question or two, and
16 then we'll effort that as you're asking your other
17 questions?

18 MR. SILVESTRI: Or you could get back to
19 us, as you stated before with the other questions
20 that I had posed.

21 MR. McDERMOTT: I'll take that as my
22 preference then. Thank you. I admit I had it
23 with me and I meant to hand it out, but I've
24 forgotten to do that. So I take the blame and
25 we'll get you that answer.

1 MR. SILVESTRI: Okay. Let me move on
2 then. And I want to target right now
3 interrogatory number 65.

4 It states in part that site disturbance
5 is estimated to be less than one acre, no general
6 permit application is necessary. So the question
7 I have is -- the tree clearing proposal
8 encompassed more than one acre, much more.
9 Wouldn't that be considered site disturbance and
10 hence trigger a general permit of a stormwater
11 management plan?

12 THE WITNESS (Stephens): Yes, it does.
13 And that's why we -- after conversations with the
14 DEEP we both thought it was appropriate to apply
15 for a stormwater permit, and that's what we're in
16 the process of doing right now.

17 MR. SILVESTRI: So the application also
18 brings up the phenomenon of potential thermal
19 impacts. Do you have an estimate as to how much
20 of a temperature increase is anticipated prior to
21 any mitigation measures?

22 THE WITNESS (McManus): I don't have a
23 precise answer. So we'll need to look into it,
24 but the drip line will be about three, or less
25 than three feet off the ground. So it's not

1 really going to flow. It's more going to drip,
2 but we need to look more into the temperature
3 actually coming off of that.

4 MR. SILVESTRI: All right. When you
5 look at that -- because if you came back to me and
6 said no, the question I would pose then would be,
7 how do you know the mitigation measures would
8 work? So if you combine that together then maybe
9 you can get back to us.

10 THE WITNESS (McManus): Yeah.

11 MR. SILVESTRI: All right. Let me have
12 you turn to interrogatory number 69. This talks
13 about the infiltration trench. I can envision a
14 scenario -- and I think we might have had one
15 within the past three weeks and the weather
16 systems that have come by -- but say in the winter
17 to spring seasons that the ground would be frozen,
18 yet the air temperature is going to be
19 sufficiently high that it's going to rain.

20 So the question I have for you, how does
21 an infiltration trench function in the event that
22 the ground is frozen when it's raining out?

23 THE WITNESS (Morrison): They're not
24 infiltration trenches. There they're sediment
25 trenches with their water quality basins to

1 capture the first runoff of water. So they
2 capture the first one inch of runoff.

3 MR. SILVESTRI: So the words that were
4 there from infiltration are not correct? That
5 it's --

6 THE WITNESS (Morrison): Oh, no. I
7 mean, it will infiltrate. When -- if it's frozen
8 it will evaporate eventually.

9 MR. SILVESTRI: I don't quite understand
10 what you're saying?

11 THE WITNESS (Morrison): Well I mean, if
12 the ground is frozen obviously it's not going
13 to --

14 MR. SILVESTRI: The ground is frozen.
15 You have a trench.

16 THE WITNESS (Morrison): Right. It's
17 not going to infiltrate. It won't infiltrate.

18 MR. SILVESTRI: So where does the water
19 go?

20 THE WITNESS (Morrison): It stays in the
21 trench.

22 MR. SILVESTRI: Only if the trench is
23 deep enough?

24 THE WITNESS (Morrison): It's designed
25 to capture the first one inch of -- to hold the

1 first one inch of water.

2 MR. SILVESTRI: One inch?

3 THE WITNESS (Morrison): One inch of
4 runoff from the site.

5 MR. SILVESTRI: So anything more than
6 one inch could cause a problem?

7 THE WITNESS (Morrison): It will flow
8 out of the trench and it will run -- it will run
9 down the hill. And that's why we're putting a
10 gravel apron on the downside to -- as an energy
11 dissipator to slow down the water as it comes out
12 of the trench.

13 MR. SILVESTRI: There's an interesting
14 phenomenon that could occur from my experience
15 that if you look at an issue with runoff or
16 flooding with a parcel of, say, undisturbed land
17 it's difficult for a neighbor to point a finger
18 and say it's your fault.

19 But if you start owning a property and
20 something happens, it's very easy then for a
21 neighbor to go back and say, hey, it's your
22 problem. And what we're looking at is trying to
23 avoid anything like that happening in the future.

24 So I would hope that whatever measures
25 that you're proposing, if this goes through, would

1 satisfy that part of it.

2 THE WITNESS (Morrison): Uh-huh.

3 MR. SILVESTRI: Let me move on a little
4 bit. Going back to the Loureiro report -- if I
5 said that correctly -- the calculation for
6 stormwater flow appears to be geared with a
7 12-inch pipe for a 25-year storm. Is that
8 correct?

9 THE WITNESS (Morrison): For the
10 wetlands crossing.

11 MR. SILVESTRI: For a 25-year storm?

12 THE WITNESS (Morrison): Yes.

13 MR. SILVESTRI: Are there calculations
14 for stormwater flow for the site itself both pre
15 and post-construction?

16 THE WITNESS (Morrison): Yes, there are.

17 MR. SILVESTRI: They're in there?

18 THE WITNESS (Morrison): Yes, they're in
19 the drainage report for the -- for the design of
20 the water quality basin, or the water quality
21 trenches.

22 MR. SILVESTRI: I might have to go back
23 and look at that, because I don't recall seeing if
24 for the site itself?

25 THE WITNESS (Morrison): Oh, for the --

1 they were designed for each of the water quality
2 basins, which are separated into their own
3 watersheds, because they're all flowing.

4 You know, each -- each trench is a
5 watershed basically. So the water from above the
6 trench is flowing into the trench. So we designed
7 it for each one. We didn't take the whole site as
8 a whole. We broke it up per trench.

9 MR. SILVESTRI: Per trench. All right.

10 THE WITNESS (Morrison): Per trench, and
11 then we designed the wetlands crossing, for the
12 water going into the wetlands crossing.

13 MR. SILVESTRI: All right. If I read
14 correctly on the stormwater part of it, I believe
15 there's an assumption that the peak discharge will
16 increase because the ground cover will change from
17 forested to grassy areas. Is that correct so far?

18 THE WITNESS (Morrison): It will
19 increase minimally based on the changes.

20 MR. SILVESTRI: But then it goes on to
21 say, but the combination of grass cover
22 infiltration methods will maintain status quo?

23 THE WITNESS (Morrison): It said it will
24 change -- it will change minimally because the
25 water is still hitting the ground. The ground is

1 still -- is still going to be vegetated as it is
2 now.

3 MR. SILVESTRI: Now is that done with
4 modeling or calculations?

5 THE WITNESS (Morrison): Calculations.

6 MR. SILVESTRI: That's in there, too?

7 THE WITNESS (Morrison): Yes.

8 MR. SILVESTRI: I'm going to have to go
9 back and look at that. But how does it take into
10 effect, or into account that your stone walls are
11 there? The stone walls have to act as some type
12 of a barrier, I would think, for runoff. And if
13 those get removed what happens with your flows?

14 THE WITNESS (Morrison): Well, we're
15 looking at quantity of flow. So the stone walls
16 don't affect the quantity of flow. They may
17 affect how it runs off.

18 And so the sediment, the infiltration
19 basins are acting as almost check dams as well.
20 So as the water runs down. They'll hit the
21 sediment basins, the infiltration basins, slow
22 down and then go over the energy dissipators.

23 MR. SILVESTRI: So your determination of
24 where it's going to go as far as flow takes into
25 account the removal of some or all of the stone

1 walls, that it's going to get to your trenches and
2 go on from there. Is that correct?

3 THE WITNESS (Morrison): Yes. Yes.

4 MR. SILVESTRI: All based on a 25-year
5 storm?

6 THE WITNESS (Morrison): Yes.

7 MR. SILVESTRI: What happens with a
8 hundred-year storm?

9 THE WITNESS (Morrison): You'll have
10 more water.

11 MR. SILVESTRI: And?

12 THE WITNESS (Morrison): The water
13 quality basins, as required to be designed for,
14 are for one inch of runoff. And that one inch of
15 runoff happens whether it's a five-year storm,
16 ten-year storm, hundred-year storm. It's the same
17 volume of water.

18 We designed the wetlands crossing for
19 25-year storms, but the pipe is also -- it will
20 hold a hundred-year storm as it crosses.

21 MR. SILVESTRI: So going back to
22 September 26th of last year some areas in
23 Connecticut got eight inches of rain. I did where
24 I live in Hamden. My concern is that we're going
25 beyond the 25-year storm in a lot of the weather

1 events that have occurred, and that's almost
2 becoming the norm.

3 So the question I have for you, if you
4 look more at a hundred-year storm or, you know,
5 you get these big deluges that are coming in, does
6 your design take into account the rain amount and
7 runoff that could happen from those and that the
8 areas around in there, and the neighbors'
9 properties would be protected?

10 THE WITNESS (Morrison): I'm going to
11 say, yes. We're not changing the -- the direction
12 the water is flowing. So as the water comes off
13 the panels it's going to hit, and we're not --
14 we're not regrading the property. So it's still
15 going to traverse over wetlands, vegetation.

16 It will infiltrate. It will slow down
17 and then it will go to the wetlands on the eastern
18 side. We're not changing that at all, the flow
19 direction.

20 So the hundred-year storm is still going
21 to pass through. We're not really -- we're not
22 increasing the amount of runoff with the
23 hundred-year storm. We're cutting down trees, but
24 we're still keeping a grassed vegetated base,
25 which is still going to affect -- it's still going

1 to act to slow down the water to allow sheet flow,
2 to allow it to infiltrate as it traverses, as it
3 does now. Ground frozen, ground thawed, it's
4 still going to do the same thing.

5 MR. SILVESTRI: So the last question on
6 this topic for you is, did you consider saturated
7 soils when you did your modeling and calculations
8 and how that pertains to significant rainfalls?

9 THE WITNESS (Morrison): We used -- we
10 used the soil types that are out there and -- and
11 as we modeled appropriately.

12 MR. SILVESTRI: I'm going to move onto a
13 couple other questions that I have left.
14 Construction hours based on interrogatory 84's
15 response are listed as 7 a.m. to 5:30 p.m. My
16 understanding is that you wouldn't be doing
17 piledriving to put in your racks, but you'd be
18 doing some type of screw mechanism, drilling, if
19 you will, to go in.

20 I don't know what the noise factors
21 would be from drills, but the overall question is,
22 would you be willing to adjust time periods for
23 potential noisy or disturbing noise installations
24 to avoid, like, early morning hours of children
25 getting off the bus stops, or getting onto buses,

1 that type of thing?

2 THE WITNESS (Geppi): Absolutely, yes.
3 And we have done that on other projects.

4 MR. SILVESTRI: Okay. Going back to
5 post-construction. Do you have a plan for the
6 control of invasive species?

7 THE WITNESS (Colavito): I would have to
8 defer to Ms. Morrison if there's any plan or --

9 THE WITNESS (Morrison): I would defer
10 to -- I'm going to defer to our biologist and soil
11 scientist.

12 THE WITNESS (Logan): George Logan, and
13 Sigrun here. She might pipe in.

14 Specifically right now there is no plan
15 for control of invasive species, although there's
16 plentiful on this site and specifically the
17 Japanese barberry. However, we've been having
18 some internal conversation about producing such a
19 plan. So within the next 30 days you'll probably
20 see something coming from us.

21 MR. SILVESTRI: Thank you. Going back
22 to questions on conduits and the conduit runs. Am
23 I correct that these are all above ground?

24 THE WITNESS (Colavito): That is
25 correct. That's the current plan.

1 MR. SILVESTRI: Even with the wetland
2 crossings, those are going to be aboveground, too?

3 THE WITNESS (Colavito): That is
4 correct.

5 MR. SILVESTRI: Okay. You had answered
6 the question how you think they'd be placed
7 without interfering with access. A question I
8 have is that the conduits and the racks, they're
9 all metal. The equipment is metal. How do you
10 guard against lightning strikes, or what happens
11 if lightning strikes?

12 THE WITNESS (Colavito): The best
13 protection for lightning strikes is to have a well
14 grounded system to dissipate that energy. The
15 above grade cable tray is not going to be
16 something that would attract lightning, or incite
17 a lightning strike. It's not a lightning rod. It
18 won't be the highest point on the site.

19 The best practices we find are to
20 provide excellent grounding throughout the system,
21 which we always do. There will be some surge
22 protection devices on sensitive electrical
23 equipment to prevent damage.

24 MR. SILVESTRI: How do you ground it?

25 THE WITNESS (Colavito): With grounding

1 electrodes and equipment grounding conductors
2 throughout all conductive metal parts, or parts
3 that are likely to be energized in the event of a
4 fault.

5 MR. SILVESTRI: So the electrodes will
6 be driven into the ground?

7 THE WITNESS (Colavito): That's correct.

8 MR. SILVESTRI: What will they consist
9 of?

10 THE WITNESS (Colavito): Usually copper
11 or copper coated steel. Or what do we do? Tinned
12 copper sometimes.

13 THE WITNESS (Michael): Copper clad.

14 MR. SILVESTRI: And these would
15 deteriorate over time and have to be replaced at
16 some point in the future?

17 THE WITNESS (Colavito): I can't opine
18 on that.

19 THE WITNESS (Michael): Usually -- I
20 mean, I had it within a little bit of a surge, and
21 it's 40 years for a normal downing rod -- lasts.

22 MR. SILVESTRI: So the related question
23 I would have is that, I don't know how many of
24 these you would have, how big they would be. My
25 concern is how much metal actually goes into the

1 ground or potentially into groundwater? If
2 they're designed to erode, if you will, what would
3 be the answer to that?

4 THE WITNESS (Colavito): Typically the
5 grounding electrodes are put in at each inverter
6 bank location of which -- how many do we have
7 right now? Is it four?

8 THE WITNESS (Michael): Yes.

9 THE WITNESS (Colavito): Four inverter
10 bank locations, and then usually there's a ground
11 ring around the equipment pad which would include
12 four electrodes. Depending on the configuration
13 and requirements for Eversource there could be
14 another couple of electrodes for their
15 transformers and equipment.

16 Throughout the array we don't typically
17 drive additional electrodes beyond the equipment
18 foundations, because there's steel screws every so
19 often throughout the entire site that are going
20 approximately six feet deep, and they have a lot
21 of contact with the soil of the site.

22 Those provide excellent connectivity and
23 dissipation to ground for any surges or lightning
24 strikes. And we do not intend to add additional
25 electrodes throughout the array.

1 MR. SILVESTRI: Why wouldn't the metal
2 racks themselves act as some type of grounding
3 system?

4 THE WITNESS (Colavito): That's exactly
5 what I just described.

6 MR. SILVESTRI: Okay. That's what I
7 thought, but I had to make sure.

8 THE WITNESS (Colavito): Yes.

9 MR. SILVESTRI: All right. Thank you.
10 The last set of questions I have for you kind of
11 target the responses to interrogatories number 7
12 through 11, inclusive.

13 There's no purchase power agreement.
14 Correct?

15 THE WITNESS (Partyka): Yes, sir.
16 That's correct.

17 MR. SILVESTRI: There's no contract to
18 sell electricity?

19 THE WITNESS (Partyka): No, sir.

20 MR. SILVESTRI: All right. Where would
21 the electricity go, I guess, is one of the
22 questions I have for you? And who pays for it?

23 THE WITNESS (Partyka): There's a
24 program in Connecticut called the 980 Program
25 where you can the sell the power on a merchant

1 power basis. So that's where it would go into the
2 grid technically and be sold on a merchant power
3 basis.

4 MR. SILVESTRI: So are you under any
5 obligation to supply a set amount of power to
6 anybody that's out there?

7 THE WITNESS (Partyka): I wouldn't say
8 we're under an obligation to sell power, but we're
9 under an obligation to generate the Z-RECs for the
10 environmental attribute of the power.

11 MR. SILVESTRI: Yeah, could you explain
12 Z-REC aspect as to how it pertains to this
13 project?

14 THE WITNESS (Partyka): Sure. So
15 through the State's renewable portfolio standard
16 utilities are required to acquire renewable
17 energy, solar being one of those things. And they
18 use a Z-REC contract to acquire the environmental
19 attributes of the product which are sold on a
20 kilowatt hour or megawatt hour basis.

21 MR. SILVESTRI: So the more kilowatt
22 hours that are produced the more Z-RECs that you
23 would have?

24 THE WITNESS (Partyka): Correct, but it
25 is limited. It is capped. There's a limit on

1 that. But yes, sir.

2 MR. SILVESTRI: Capped based on what?

3 THE WITNESS (Partyka): The Z-RECs
4 agreement itself. It caps the amount of energy.
5 We could make more energy, but we wouldn't be able
6 to sell it -- or more environmental attributes, I
7 should say.

8 MR. SILVESTRI: All right. Let me try
9 to put it another way so I totally understand it.
10 You're geared towards a 1.92-megawatt AC system?

11 THE WITNESS (Partyka): Right.

12 MR. SILVESTRI: And with that I'm sure
13 you had some calculations to say, we're going to
14 generate X amount of kilowatts over the course of
15 the year based on projected weather conditions, et
16 cetera, et cetera?

17 THE WITNESS (Partyka): Correct.

18 MR. SILVESTRI: So is that number that
19 you came up with what you're targeting to get for
20 Z-RECs? Say all that came out to, let's just say
21 one gigawatt.

22 THE WITNESS (Partyka): We're
23 estimating the production of the system. Yes,
24 sir. Every year we're, you know, we're making the
25 estimate of how much we think the system will

1 generate to meet the -- the requests of that
2 contract. We can make less than that, but we
3 can't make -- we can make more, but we wouldn't be
4 reimbursed for excess Z-RECs.

5 MR. SILVESTRI: And if you make less
6 you're only getting reimbursed for what you make.

7 THE WITNESS (Partyka): That's correct.

8 MR. SILVESTRI: All right. That's fine.
9 That's all I have, Mr. Chairman. Thank you.

10 THE VICE CHAIRMAN: Mr. Harder, please?

11 MR. HARDER: Thank you, Mr. Chairman. I
12 want to follow up on the point you were just
13 discussing with Mr. Silvestri. It's a question I
14 had, and I guess the last point you made I want to
15 make sure I understand.

16 You have a contract to provide a certain
17 number, or a certain amount of Z-RECs, which would
18 be based on a certain amount of power that's
19 generated. Is that correct?

20 THE WITNESS (Partyka): Correct.

21 MR. HARDER: You could go down to a very
22 low amount of power and still be in compliance
23 with that contract. You just wouldn't get paid as
24 much.

25 THE WITNESS (Partyka): Correct.

1 MR. HARDER: So you wouldn't void the
2 contract. You wouldn't be in violation or
3 anything like that?

4 THE WITNESS (Partyka): I'd have to
5 verify that there's no minimum, but I believe
6 you're correct in that.

7 MR. HARDER: The reason I'm asking is
8 I'm wondering if through some of the comments we
9 make today, or comments and concerns raised by
10 others you would need to change the proposal to
11 reduce the number of panels and potentially reduce
12 the amount of power. Could that put you in
13 jeopardy of that contract?

14 THE WITNESS (Partyka): I don't believe
15 it would jeopardize the contract, but it would
16 jeopardize the economic viability of the project
17 overall. Yes, sir.

18 MR. HARDER: Can you at least give us a
19 sense of where that tipping point might be?

20 THE WITNESS (Partyka): We're -- we're
21 very deep into this economically. So you know,
22 changing the panel size to -- 355 to 400 and
23 requiring that cost adder could certainly
24 jeopardize a project, as an example, because the
25 price variation on those, those panels is very

1 wide.

2 MR. HARDER: Okay. The fact that you're
3 now applying for a stormwater permit addresses a
4 number of the questions and, I guess, the comments
5 I was going to make, but I just want to double
6 check on a few of them.

7 The petition and the environmental
8 assessment both had indicated -- it made the point
9 pretty explicitly that there were no surface
10 waters on the site. And I guess one question I
11 have is, does the fact that you're now applying
12 for a stormwater permit mean that that statement
13 is void?

14 THE WITNESS (Morrison): No, there are
15 no surface waters as mapped on the site.

16 MR. HARDER: I guess I question that.
17 Well, let me ask a question first. If there were
18 surface waters on the site would you do anything
19 different in terms of the protections, stormwater
20 controls or anything like that?

21 THE WITNESS (Morrison): Let me
22 rephrase. There is a stream that runs along the
23 eastern edge of the property.

24 MR. HARDER: Okay. That's why I'm
25 asking, I guess. At least one of the videos, I

1 think, showed a flowing stream. The petition and
2 perhaps the environmental assessment describe one
3 or more of the streams as perennial or possibly
4 "semi-perennial," I think was the terms used.

5 If you apply those to, or compared those
6 terms to the definitions of surface water in state
7 statutes and the water quality standards, those
8 are surface waters?

9 THE WITNESS (Morrison): Yes.

10 MR. HARDER: And so that's why I'm
11 asking. Would you do anything differently if you
12 conclude that there are surface waters on the
13 site?

14 THE WITNESS (Morrison): No, we're
15 protecting the surface waters in the plan. We're
16 putting in appropriate erosion control measures.
17 We'll have a full-time erosion control specialist
18 out there during construction to monitor turbidity
19 and anything going on in the streams.

20 THE VICE CHAIRMAN: Mr. Hannon has a --

21 MR. HANNON: Just to follow up on
22 Mr. Harder's question.

23 I mean, the plan, the information that
24 has been submitted specifically states there are
25 no surface waters on this site. So I'm having a

1 hard time understanding, one, what your definition
2 is of surface water; and two that if statutorily
3 that is something that is required, how do you
4 reference those two different points?

5 MR. McDERMOTT: Just to be clear,
6 Mr. Vice Chair, the petition at page 20 does say
7 no surface water bodies are present at the
8 property, but it does describe an intermittent
9 stream associated with the inland wetlands area as
10 running through northeast corner of the property
11 in a southerly direction. So perhaps somewhat
12 inconsistent, but it does -- perhaps the
13 difference is on the word "body" versus stream.

14 So to be clear, it does contain
15 reference to the stream in the petition.

16 MR. HANNON: But a pond can also be a
17 surface body. A pond can also be a service water
18 body. So this is why I'm a little confused with
19 specifically what was put in here because my
20 understanding of the definition of surface water
21 isn't consistent with what's in here and I'm just
22 trying to get those two points together.

23 THE WITNESS (Morrison): When we were
24 looking at surface bodies of water, we were
25 looking at the maps' surface bodies of water as

1 per the DEP mapping. There are potential vernal
2 pools. There's a small farm pond, and those were
3 mentioned in the report, in the environmental
4 assessment.

5 MR. HANNON: Yeah. But again, when you
6 say on one hand there are no surface waters there,
7 or surface water bodies it just seems to conflict
8 with what you're saying now.

9 I understand these other things are
10 picked up and that's kind of the reason why I'm
11 wondering what your definition of water bodies
12 would be. That's all.

13 THE VICE CHAIRMAN: Mr. Lynch has a
14 question that he wanted to ask.

15 MR. LYNCH: I apologize. I have to
16 leave in a few minutes. I want to get in one
17 question out of my few here. With all the work
18 being done on storage batteries by Tesla, UTC, GE,
19 is this something that your group is looking into
20 for operating on a 24-hour basis, to use storage
21 batteries?

22 THE WITNESS (Colavito): Is that
23 question in general to the solar PV technology, or
24 specific to the project?

25 MR. LYNCH: No -- well, both. Let me

1 put it that way.

2 THE WITNESS (Colavito): On a 24-hour
3 basis, no. But on a shorter duration basis,
4 absolutely. And for this specific project, no
5 we're not evaluating energy storage technologies.
6 That doesn't appear to be an appropriate revenue
7 stream or incentives infrastructure setup to make
8 that economically viable at this point in time.

9 MR. LYNCH: But some time in the future,
10 and if it does seem economically viable would you
11 incorporate it?

12 THE WITNESS (Colavito): It's certainly
13 something we would explore. We are investing in
14 energy storage technology when coupled with solar
15 PV systems at other sites.

16 MR. LYNCH: All right. Thank you very
17 much. Thank you, Mr. Chairman.

18 THE VICE CHAIRMAN: You're all set
19 there? Go ahead.

20 MR. HARDER: Okay. Thank you. I guess
21 just to beat a dead horse here, I would suggest
22 submitting revisions that delete the reference
23 to -- at least delete the statements that there
24 are no surface waters. I think it's just causing
25 more confusion than we need.

1 And the definition of surface water
2 applies to just about everything except --
3 actually, it says -- there's a statement in there,
4 something like it doesn't include groundwater, but
5 just about everything else is included. So just
6 for clarity and lack of confusion I think you
7 ought to just delete that.

8 MR. McDERMOTT: Thank you, Mr. Harder.
9 We'll do that.

10 MR. HARDER: Just a couple of points
11 that I think are addressed by the fact that you're
12 submitting an application for a stormwater permit.
13 I just want to bring to your attention there's a
14 couple of vague terms.

15 The response to interrogatory 37, the
16 interrogatory said something to the effect of,
17 what is the steepest slope within the eastern
18 portion of the construction area? The response
19 is -- I'm paraphrasing here -- there are small
20 pockets of steep slopes where arrays are located.

21 But it doesn't quantify it, and I think
22 it would be useful to know how steep the slopes
23 are, where those are.

24 Similarly interrogatory 59, the
25 response. I don't remember what the question is,

1 but the response is, a majority of the panels are
2 in areas with slopes less than 8.3 percent. What
3 does majority mean? Is it 51 percent?
4 99 percent? You know, where are you in that
5 range? Let's see.

6 THE WITNESS (Colavito): The areas where
7 the steepest slopes are, you know, within the
8 array or in the eastern portion and the
9 southeastern portion of the array closest to the
10 array edge.

11 The racking system, as designed in most
12 PV systems, fixed tilt racking systems have a
13 maximum slope tolerance of about 20 percent in the
14 east-west direction. So we're constrained by that
15 limit on where we can put that PV array without
16 changing the grade of the site, which we intend
17 not to change.

18 In areas where it's just over the edge
19 we have some adjustment by lengthening the ground
20 clearance to the down -- the lower post within our
21 rack to make sure that we're within the 20 percent
22 slope for the racking system.

23 MR. HARDER: Okay. That makes me raise
24 another question, I guess. And I don't know
25 exactly where it is in your submittal, but there's

1 a color-coded sheet that kind of generally shows
2 slope, the different slope areas and ranges of
3 slopes.

4 I thought the most significant slope
5 area or areas were in the range of something less
6 than 30 or 31 percent. And I thought that showed
7 arrays in those areas, which is why I'm asking the
8 question. And it also said that, you know, I
9 think typically 20 percent is the maximum. So how
10 do you --

11 THE WITNESS (Colavito): Those are very
12 localized areas. I believe they're small sections
13 and we intend to basically adjust in field with
14 the PV array to allow it to be installed within
15 its tolerance by lengthening some posts and
16 adjusting maximum ground clearance in some areas
17 to make sure that it works.

18 And that's pretty typical for arrays on
19 sites like this where we would make adjustments in
20 the field and select a system that has that
21 flexibility.

22 MR. HARDER: So you'd deal with that
23 issue by the construction, not by grading?

24 THE WITNESS (Colavito): That's correct.

25 MR. HARDER: Okay. That helps. Thank

1 you.

2 You were discussing earlier, or the
3 petition, anyway, discusses the wetland crossing.
4 And during construction you're going to be using
5 some temporary arrangements while you're
6 constructing the system. And then after
7 construction you'll have a permanent structure or
8 a permanent arrangement.

9 How frequently -- aside from emergency
10 access, how frequently would you anticipate
11 needing to use -- vehicles use that wetland
12 crossing for whatever reason?

13 THE WITNESS (Colavito): During the life
14 of the system after construction is complete we
15 expect to do preventative maintenance typically
16 once per year, sometimes more.

17 Reactive maintenance would only be
18 necessary when we have alerts through our
19 monitoring system or identify faults in the
20 system, or equipment that needs maintenance
21 because it has failed in some way.

22 I would expect typically you're going to
23 cross for vegetation management more frequently
24 than actual operations and maintenance of the PV
25 system. I would estimate maybe a dozen or so

1 times a year that we're crossing, but it really
2 depends on the vegetation management plan that is
3 agreed upon with the fire marshal, and what's
4 necessary for the vegetation that's put in that
5 area. I think that's going to dominate the
6 crossings.

7 MR. HARDER: I guess the point or the
8 thought I was getting to was if it's going to be
9 used infrequently, whatever that means, is there
10 anything to be gained? Is it feasible to think of
11 not constructing a permanent crossing, but using
12 something that's more akin to what you use during
13 construction, the temporary arrangement?

14 You know, would that provide any benefit
15 to the wetland and the function of the wetland and
16 you know, potentially prevent adverse impacts, you
17 know, compared to a permanent crossing?

18 THE WITNESS (Colavito): I think the
19 temporary crossing is really just that. I don't
20 believe it's a sustainable long-term solution, and
21 there will be different types of folks who are
22 crossing, whether it's someone doing vegetation
23 management versus someone doing preventative
24 maintenance or reactive maintenance.

25 Those measures are not intended to be

1 left there permanently. They would have to be
2 removed and reinstalled, and we would also need to
3 make sure we can provide fire access according to
4 the fire marshal's comments. I just don't think
5 it would be realistic from a robust system design
6 to have a temporary crossing.

7 MR. HARDER: Okay. Thank you. The last
8 question I have, I guess, is probably for
9 Ms. Morrison since you were talking about the
10 erosion control arrangements -- and I guess I'm a
11 little confused.

12 You show at least in some of the
13 drawings temporary sediment traps and then the
14 gravel energy dissipaters. Could you describe --
15 and then I don't know if you were referring to one
16 of them, or if there was something else you talked
17 about. You said basins, which at least in the
18 drawings I'm looking at aren't shown.

19 Could you describe what provisions you
20 are proposing both during construction and after
21 construction? Just what's going to be there and
22 what functions those will provide?

23 THE WITNESS (Morrison): Sure. So the
24 very first thing we do when we go out when they
25 start construction is they put in the construction

1 pad and an anti-tracking pad for the driveway for
2 all the vehicles to come in. And that's where
3 they're going to use their access road anyway.
4 And we'll also put up erosion controls around all
5 the wetlands, silt fence, hay bales, just to start
6 off. And so all the wetlands are all protected on
7 the upstream sides of those.

8 And then we'll put in the sediment
9 traps -- sorry. The sediment trenches. So
10 sometimes I'll say, sediment basins, but it's all
11 the same thing. Sediment basins, sediment
12 trenches. It's the long -- the long basins shown
13 on the plan. And those are intended to slow down
14 the water during construction and after
15 construction, and to catch any sediment that's
16 running off the site during construction.

17 And then after construction -- and
18 those, those will be monitored. They'll be
19 cleaned out once they fill up. You know, once
20 they start getting filled with sediment they come
21 in and they clean it out to make sure that they're
22 working properly.

23 We'll have an inspector out there all
24 during construction to make sure that all the
25 erosion controls are working properly. After big

1 rain storms they'll -- they'll check out all the
2 fences around wetlands to make sure the
3 sediment -- sediment basins are all working.

4 After construction and after everything
5 is stabilized the sediment trenches turn into
6 water quality basins. So they're still in the
7 same location.

8 Does that answer your question?

9 MR. HARDER: Well, at least partially.
10 Then you have the energy dissipators.

11 THE WITNESS (Morrison): Right. Yes.
12 So --

13 MR. HARDER: My question, I guess was --
14 you're probably going to answer it -- but those
15 are proposed to be there longterm?

16 THE WITNESS (Morrison): Yes.

17 MR. HARDER: Okay. What about the
18 infiltration trenches?

19 THE WITNESS (Morrison): Yes, those are
20 there longterm, forever.

21 MR. HARDER: Okay. Are they installed
22 at the outset along with --

23 THE WITNESS (Morrison): There they're
24 the same as the sediment trenches. So during
25 construction they act as sediment trenches and

then after construction -- because we just change the name of them to infiltration basins.

And so what they look like before -- while the construction is going on as the water comes down, and then it's a trench and then there's a lip to stop the water and hold back the sediment. And then when construction is finished and everything is stabilized the -- the lip, the gravel lip is spread out to be -- to turn into the energy dissipator because it's gravel.

MR. HARDER: If your infiltration trench is basically the same or it's below the sedimentation basin, won't it become blinded and after a certain period of time no longer act as an infiltration trench?

THE WITNESS (Morrison): It will be cleaned out after -- once it's all stabilized, before it turns into the infiltration we'll go in and clean it all out to get rid of the accumulated sediment.

MR. HARDER: If you've got a stone trench you're going to be able to remove sediment that's above the trench.

THE WITNESS (Morrison): Yes.

MR. HARDER: But you're not going to go

1 in and remove the sediment that's down in, you
2 know, in the interstitial areas of the trench
3 blinding it up. I mean, I don't see how that can
4 longterm act as an infiltration trench. And I
5 guess there's two concerns. One is the water
6 won't infiltrate anywhere near as much as you
7 would hope, at least -- or as it was initially.

8 And the other thing is I think in one of
9 the parts of the petition when you were discussing
10 thermal impacts, one of the mitigating provisions,
11 I guess, for thermal impacts was to reduce the
12 amount of warmer water, I guess, that would flow
13 into the wetland that would infiltrate into the
14 trenches. But if the trenches are blinded that's
15 not going to be the case anywhere as near as much
16 as it might be initially.

17 So I'm wondering, you know, how can you
18 really be sure that those infiltration trenches
19 are going to perform as they need to if my concern
20 is true? Maybe my concern isn't true, but it
21 seems like it is.

22 THE WITNESS (Morrison): The thermal
23 impacts, a lot of that will be dissipated as the
24 water runs off the panels, hits the ground. It
25 takes -- it's going to take time for the water to

1 run into the trenches. So as the water hits the
2 ground off the -- off the panels it will cool down
3 and -- and get into the infiltration.

4 Now we call them infiltration trenches,
5 but they're more -- they're water quality basins.
6 So there, they're not designed to hold all the
7 water. They're designed to hold the first one
8 inch of runoff. And it will hold that there and
9 it will fill up for the one inch, and anything
10 over the one inch of runoff, it will go over the
11 other side of it.

12 MR. HARDER: Okay. Thank you. That's
13 all the questions I had, Mr. Chairman. Thank you.

14 THE VICE CHAIRMAN: At this point I'm
15 going to recess this meeting until 6:30.

16 The 6:30 meeting, as we've already
17 announced, is to hear comments from the public.
18 So there will be no evidentiary session this
19 evening. And the next date that this matter has
20 been scheduled for the Council to be heard -- is
21 March the 26th, and starting at 1 p.m.

22 But at this point we don't know whether
23 we'll have public comment or evidentiary hearing
24 at one. We'll have to just wait and see at that,
25 Mr. McDermott.

1 MR. McDERMOTT: Very good. Thank you
2 very much, Mr. Chairman.

3 THE VICE CHAIRMAN: See we'll see you
4 back at 6:30 for those who are going to be here.
5 Thank you.

6
7 (Whereupon, the above proceedings were
8 concluded at 5:05 p.m.)

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CERTIFICATE

I hereby certify that the foregoing 113 pages are a complete and accurate computer-aided transcription of my original verbatim notes taken of the Regular Hearing in Re: Petition No. 1354, PETITION FROM CHATFIELD SOLAR FUND, LLC, FOR A DECLARATORY RULING FOR THE PROPOSED CONSTRUCTION, MAINTENANCE AND OPERATION OF A 1.98-MEGAWATT AC SOLAR PHOTOVOLTAIC ELECTRIC GENERATING FACILITY ON APPROXIMATELY 25 ACRES LOCATED GENERALLY SOUTH OF ROUTE 80 (NORTH BRANFORD ROAD) AND EAST OF CHESTNUT HILL ROAD IN KILLINGWORTH, CONNECTICUT, AND ASSOCIATED ELECTRICAL INTERCONNECTION TO EVERSOURCE ENERGY'S GREEN HILL SUBSTATION LOCATED AT 775 GREEN HILL ROAD, MADISON, CONNECTICUT, which was held before JAMES J. MURPHY, JR., THE VICE CHAIRMAN, at the Killingworth Fire Station, Meeting Room, Number 333, Route 81, Killingworth, Connecticut, Thursday, February 21, 2019.

Robert G. Dixon, CVR-M 857
Notary Public
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My Commission Expires: 6/30/2020

I N D E X

WITNESSES

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C.J. Colavito

Jobin Michael

Eric Partyka

Alisa Morrison

James McManus

George Logan

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