

In the Matter Of:

Affordable Wire Management, LLC vs

Cambria County for the Blind & Handicapped

JOSHUA WEINER

November 12, 2024



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UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

AFFORDABLE WIRE MANAGEMENT,)
LLC,)
)
Petitioner,)
)
VS.)
)
CAMBRIA COUNTY ASSOCIATION)
FOR THE BLIND AND)
HANDICAPPED, INC.,)
)
Patent Owner.)
_____)

IPR2024-00139
Patent 10,177,551
IPR2024-00178
Patent 11,349,291

IN-PERSON DEPOSITION OF
JOSHUA WEINER
TUESDAY, NOVEMBER 12, 2024

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INDEX OF EXAMINATIONS		
		PAGE
MR. FLYNN		4
MR. DIXON		164
--oOo--		
Witness's Changes or Corrections		165
Reporter's Certificate		167
--oOo--		
E X H I B I T S		
EXHIBIT	FOR IDENTIFICATION	PAGE
Exhibits 2061 -	Shoals Technologies Group,	38
and 2067	LLC, Exhibit 2001	
Exhibits 2062 -	Shoals Technologies Group,	143
and 2068	LLC, Exhibit 2024	
--oOo--		

1 BE IT REMEMBERED that on TUESDAY, the 12TH DAY OF
2 NOVEMBER, 2024, at the hour of 9:37 a.m., of said day, at
3 101 Jefferson Drive, Menlo Park, California 94025, before
4 me personally, CHRISTA YAN, a Certified Shorthand
5 Reporter, State of California, personally appeared JOSHUA
6 WEINER, who was examined as a witness in said cause; that
7 said transcript format was prepared in accordance with
8 California Code of Regulations Section 2473.

9 --oOo--

10 JOSHUA WEINER,
11 the Witness, called on behalf of the Patent Owner, being
12 duly sworn to state the truth, the whole truth, and
13 nothing but the truth, testified on oath as follows:

14 EXAMINATION

15 BY MR. FLYNN:

16 Q Good morning, Mr. Weiner.

17 A Good morning.

18 Q We have met informally, but just for the record,
19 my name is Ed Flynn, and I represent the patent owner in
20 two separate IPRs that we're here about today. And
21 that's -- the IPR is captioned Affordable Wire Management,
22 LLC, as petitioner, and Cambria County Association For the
23 Blind and Handicapped as patent owner.

24 And we're here on two separate IPRs in which you
25 have submitted declaration. One IPR is IPR 2024-00178,

1 and it relates to U.S. Patent Number 11,349,291. The
2 other IPR is IPR 2024-00139, and it relates to U.S. Patent
3 Number 10,177,551.

4 I'm going to be -- you have submitted
5 declarations in both of these IPRs, correct?

6 A Yes, sir.

7 Q And you have submitted, I believe, the identical
8 declaration in each IPR; is that right?

9 A Yes. With the exception of the number.

10 Q Yes. Yeah, that's right. In terms of the
11 substantive declaration, it relates to -- each declaration
12 relates to both the '291 patent and the '551 patent.
13 There's no difference between the two declarations?

14 A Yes, sir.

15 Q Okay.

16 MR. FLYNN: And you might as well get those out.

17 MR. SCHMIDT: Sure. (Indicating.)

18 BY MR. FLYNN:

19 Q You have -- you're testifying on behalf of -- the
20 acronym we use for Affordable Wire Management is AWM, and
21 you're testifying on behalf of AWM as an expert in these
22 IPRs, correct?

23 A Yes.

24 Q You have testified in depositions before?

25 A Yes.

1 Q Have you testified in depositions in patent cases
2 before?

3 A Yes.

4 Q Have you testified in depositions specifically
5 involving IPR or inter partes review proceedings?

6 A I've submitted reports in IPRs and PGRs.

7 Q Okay. But you have not testified in deposition
8 in IPRs or PGRs?

9 A No.

10 Q Okay. How many times have you testified in
11 deposition in any kind of matter, approximately?

12 A Between two and four.

13 Q So that includes nonpatent as well as patent
14 related matters; is that right?

15 A Yes, that's right.

16 Q So you're familiar generally with the rules of
17 deposition testimony. You realize you're under oath here
18 today, you've sworn to tell the truth, and that your
19 testimony may be submitted to the board in these IPR
20 proceedings for their consideration, correct?

21 A I understand those rules.

22 Q Okay. We will -- I will be asking you a number
23 of questions today relating to your declaration testimony
24 in these IPRs. We certainly can take breaks throughout.
25 We don't have to go from beginning to end without any

1 breaks. If you want a break, need a break, certainly feel
2 free to ask for one. Your counsel, I'm sure, will ask for
3 one if we go too long anyway.

4 The only thing I would ask is that if I'm in the
5 middle of a line of questions, we finish that line before
6 we take the break, and then we can take the break at your
7 convenience. Okay?

8 A Understood.

9 Q You're also -- well, maybe you're not since you
10 haven't testified in IPR deposition before. You realize
11 that during any break that we take during the IPR
12 deposition, you're not permitted to consult with your
13 counsel regarding the substance of your testimony or how
14 to respond to any particular questions?

15 A Understood.

16 Q Okay. When you have testified in the other
17 patent related matters before, has it always been in the
18 capacity of an expert witness?

19 A Yes.

20 Q Where you have rendered your opinions regarding
21 the subject matter of the proceeding based upon your
22 qualifications and experience?

23 A Yes.

24 Q Okay.

25 MR. FLYNN: All right. Now, we'll take the

1 declarations.

2 THE STENOGRAPHIC REPORTER: Do you want me to mark
3 those?

4 MR. FLYNN: These are previously marked.

5 THE STENOGRAPHIC REPORTER: Okay. Okay.

6 MR. FLYNN: So we're actually --

7 MR. SCHMIDT: That's one of each. Yeah.

8 MR. FLYNN: No, I mean, in both IPRs?

9 MR. SCHMIDT: Correct. He has both there.

10 MR. FLYNN: So -- okay. Okay.

11 BY MR. FLYNN:

12 Q You'll have to forgive the somewhat tattered
13 condition of at least one of those exhibits in front of
14 you. We had a slight mishap getting out of the car today,
15 we dropped them all in the parking lot. So -- but
16 hopefully that won't interfere with your ability to
17 testify to them.

18 I've put in front of you two declarations. One
19 is Exhibit 1038 in the IPR 2024-00178, which from now on I
20 will just refer to as the 178 IPR, as well as the
21 declaration from IPR 2024-00139, which I will refer to as
22 the 139 IPR. Okay?

23 A Okay.

24 Q And those two declarations are the ones we were
25 just talking about a minute ago. Those are the two

1 declarations that are identical that you have submitted in
2 each of those IPRs, correct?

3 A Yes, with the caveat that the numbers are
4 different -- the patent numbers are different.

5 Q On the face sheet of the declarations?

6 A Yes. Yes. And the dates are different.

7 Q Right. And for convenience and full disclosure,
8 there's only one word difference throughout that
9 declaration, and I think it was an unintentional
10 difference, but I think it was in paragraph -- I think it
11 was in paragraph 14.

12 And you see the reference to Exhibit 2028,
13 paragraph 32?

14 A I do.

15 Q And by the way, you should be -- well, yeah, look
16 at each of them. And then you see the reference to
17 Exhibit 2033, paragraph 8? This is in the 178
18 declaration.

19 A Yes, yes.

20 Q Now, if you look at that same paragraph in the
21 other declaration --

22 A Yes.

23 Q -- that 2033 actually says 2028, but I think it's
24 supposed to be 2033.

25 A I see what you're describing.

1 Q Yeah. That's the only other difference that at
2 least we have noticed between the two declarations.

3 A Understood.

4 Q So for convenience, you know, when I ask you
5 questions about your declaration today and refer you to a
6 particular paragraph, you can just look at one of them as
7 opposed to having you look at both. I mean, feel free if
8 you want to look at both of them, but you're not going to
9 have to.

10 A I'll take your word for it.

11 Q Okay. If I have to resort to that kind of thing,
12 I'm in trouble.

13 All right. So in each of these declarations,
14 Mr. Weiner, you render your opinions first about the --
15 relating to the aboveground cable management system of
16 patent owner Cambria County Association For the Blind and
17 Handicapped -- CCABH is what we use for the acronym --
18 correct? If you look at page 8 of your declaration.

19 A Yes. I start my opinion of CCABH's aboveground
20 cable management system on page 8, yes.

21 Q And are you aware of which of the two patents the
22 CCABH's aboveground cable management system relates to,
23 the '291 patent or the '551 patent?

24 A No.

25 Q Okay. You also render your opinions starting on

1 page 19 of your declaration relating to CCABH's integrated
2 grounding system, correct? That's page 19.

3 A Yes. I see on page 19 where my opinion of
4 CCABH's integrated grounding system begins.

5 Q And the same question for that, are you aware of
6 which of those patents CCABH's integrated grounding system
7 relates to, the '291 or the '551 patent?

8 A No, I don't know which number it relates to.

9 Q Have you reviewed the two patents that these IPR
10 proceedings relate to?

11 A What do you mean by review?

12 Q Have you read them?

13 A Not -- no. Not substantively. I've glossed over
14 them.

15 Q Okay. So on page 7 of your declaration,
16 Section 2, you identify the materials you considered in
17 rendering your opinions in these IPRs, correct?

18 A Yes. I list the materials considered in addition
19 to my knowledge and background, yeah.

20 Q Okay. So I'll ask you when you indicate the
21 title of that section, materials considered, what do you
22 mean by considered? What did you do in terms of
23 considering them?

24 A Thank you.

25 Yeah, so I read the four declarations at the top

1 four bullet points of the materials considered. Those
2 declarations made reference to exhibits. I looked at the
3 exhibits.

4 Q Did you read the exhibits or just glance at them?

5 A It depends.

6 Q Okay.

7 A Some exhibits I glanced at. Some I read more
8 thoroughly than others.

9 Q Do you recall as you sit here now which ones you
10 read more thoroughly, which exhibits to these four
11 declarations I'm talking about?

12 A The one that stands out the most that I did read
13 the most thoroughly, I would say, would have been William
14 Brooks's white paper that he refers to. And I believe
15 there were two versions of it, and I read both versions.
16 I remember a few other details about a few other exhibits,
17 but that was the big one.

18 And then the rest of the bullet points here were
19 items as I was reading these declarations, brought back a
20 lot of memories. And so the rest of the bullet points
21 were materials I considered that I thought were relevant.

22 Q Other than the -- regarding the four
23 declarations, the declaration of Mitchel Bowman, William
24 Brooks, Joseph William Novak, and Allen Garrett Smith,
25 regarding the exhibits to those declarations, other than

1 the two Brooks white papers, do you recall reading more
2 thoroughly any of the other exhibits attached to any of
3 those declarations or cited by those declarations?

4 A I don't --

5 MR. DIXON: Objection; form.

6 THE WITNESS: I recall reading the William Brooks
7 white papers. As I sit here, I can't tell you -- I can't
8 remember if I read any other exhibits as closely as that
9 one.

10 BY MR. FLYNN:

11 Q Okay. Whether as closely as that one or not, can
12 you recall any other specific exhibits that you read?

13 A I seem to remember a PowerPoint presentation, or
14 what appeared to me to be some kind of presentation like a
15 PowerPoint presentation.

16 Q Do you remember what the subject matter was?

17 A The CCABH system, some kind of analysis on it.

18 Q Did it have to do with an economic analysis, cost
19 analysis, or just about what the system was?

20 MR. DIXON: Objection; form.

21 THE WITNESS: I don't recall.

22 BY MR. FLYNN:

23 Q Okay. Within the materials considered section of
24 your declaration in paragraph 12, I think consistent with
25 what your testimony has been, you did not consider the two

1 patents involved in these IPRs; is that correct? Let me
2 rephrase that question.

3 Neither of the patents involved in these IPR
4 proceedings were identified in this section materials
5 considered in your declaration; is that right?

6 A I don't see the patents explicitly listed in
7 paragraph 12.

8 Q Are there materials that -- well, let me ask you
9 this: When you say that you considered these materials as
10 you've identified that caption in your declaration, are
11 the materials that you considered materials that you
12 relied upon in rendering your expert opinions in these
13 matters?

14 A Yes.

15 Q Are there any other materials that you relied
16 upon in rendering your opinions that are not included in
17 Section 12 of your declaration?

18 A This is the -- this is the most complete list of
19 materials considered that I can recall.

20 Q Okay. Thank you.

21 Do you know who Omid Beik is? Have you heard
22 that name?

23 A Could you say that name again.

24 Q Omid, O-m-i-d, Beik, B-e-i-k?

25 A No.

1 Q Do you know whether Dr. Beik has rendered his
2 opinions as an expert on behalf of AWM in these IPR
3 proceedings (indiscernible utterance)?

4 THE STENOGRAPHIC REPORTER: I'm sorry. I'm sorry.
5 Could you repeat that?

6 MR. FLYNN: Sure.

7 BY MR. FLYNN:

8 Q Do you know whether or not Dr. Beik has rendered
9 his expert opinions on behalf of AWM in these IPR
10 proceedings as well?

11 A I don't know that.

12 Q So you have not heard of Dr. Beik before?

13 A That's correct, I have not heard of him.

14 Q It's a him.

15 Is it your understanding that you are replacing
16 any expert that AWM has retained to express or to render
17 expert opinions in these proceedings?

18 MR. DIXON: Objection; form.

19 THE WITNESS: That is not my understanding.

20 BY MR. FLYNN:

21 Q Are you aware of any experts who have rendered
22 opinions on behalf of CCABH in these IPR proceedings?

23 A I am only aware of the four declarants that I
24 mention in my materials considered, and I'm not an
25 attorney. I don't know if I would call them expert

1 witnesses or fact witnesses.

2 Q Sure.

3 A But they are four declarations I reviewed and
4 relied upon.

5 Q Okay. And you're not aware of whether there were
6 any other declarants who have rendered any kind of
7 opinion, expert opinion, on behalf of CCABH in these
8 proceedings; is that right?

9 A I'm not aware of any other declarants in this
10 case. These are the only four as shown in paragraph 12
11 that I'm aware of.

12 Q Are you familiar with the name Edward Kern,
13 K-e-r-n?

14 A No.

15 Q Have you ever heard of Dr. Kern before?

16 A No.

17 Q Okay. Are you familiar with the name Joshua
18 Phinney?

19 A I don't recall that name.

20 Q And you don't recall ever having heard his name
21 in the past in any context?

22 A Not as I sit here right now, no.

23 Q And you, just to confirm, would not have
24 considered or read any declarations that would have been
25 submitted by Dr. Kern or Dr. Phinney in these proceedings;

1 is that correct?

2 A I'm only aware of the four declarations listed in
3 my materials considered. That's what I reviewed.

4 Q Okay. Mr. Weiner -- and excuse me. By the way,
5 it is Mr., right? You don't have some other title that I
6 am not referring to that I should be referring -- using
7 when I'm addressing you, do you?

8 A You're being very respectful. That's totally
9 fine. It's all great. Yeah.

10 Q Okay. If -- in your opinions regarding CCABH's
11 aboveground cable management system, as you have titled it
12 in your declaration, it's your opinion that there is
13 nothing novel or unique about CCABH's aboveground cable
14 management system that uses a messenger wire from which
15 cable hangers are suspended to support current wires; is
16 that correct?

17 MR. DIXON: Objection; form.

18 THE WITNESS: Could you state the question again?

19 BY MR. FLYNN:

20 Q Sure.

21 It's your opinion, is it not, that CCABH's
22 aboveground cable management system that uses a messenger
23 wire from which cable hangers are suspended to support
24 current wires, that there is nothing novel or unique about
25 CCABH's system?

1 MR. DIXON: Objection; form.

2 THE WITNESS: My understanding of CCABH's aboveground
3 cable management system is that there is nothing new,
4 novel, or unique about it in my experience.

5 BY MR. FLYNN:

6 Q Okay. In fact, that's what you state in
7 paragraph 20 of your declaration, if you will turn to
8 that, please. The last three lines of paragraph 20
9 indicate, I do not consider the messenger supported cable
10 support system manufactured by CCABH to be the first cable
11 system of its kind, novel, nor unique as the declarants
12 claim, correct?

13 A That's what I say, yes.

14 Q Okay. And that's your opinion in this -- in
15 these -- in this IPR proceeding?

16 A Yes, sir.

17 Q Do you understand that CCABH's aboveground cable
18 management system does use a messenger wire from which
19 cable hangers are suspended to support current wires?

20 A That is a part of my understanding of the --
21 CCABH's cable management system, yes.

22 Q What else do you understand about CCABH's cable
23 management system?

24 A In your description, you used the phrase current
25 conductors, I think?

1 Q Current wires.

2 A Or current wires. And I'm not exactly sure what
3 you mean by that phrase, which is why I say in part in
4 case you're leaving something out, which I'm not sure if
5 you are or not.

6 Q Okay. So instead of current wires, I'll say
7 electrical conductors.

8 Are you -- is it your understanding that CCABH's
9 aboveground cable management system employs a messenger
10 wire from which cable hangers are suspended to support
11 electrical conductors extending from solar panels in a
12 solar array?

13 A That's consistent with my understanding.

14 Q Okay. And it's your opinion that CCABH's
15 aboveground cable management system that employs a
16 messenger wire from which cable hangers are suspended to
17 support electrical conductors extending from solar panels
18 in a solar array is not the first of its kind, correct?

19 A It is my understanding that what you described is
20 not the first of its kind.

21 Q So it's your opinion that before CCABH's
22 aboveground cable management system, there were others who
23 employed an aboveground cable management system that
24 consisted of a messenger wire from which cable hangers
25 were suspended to support electrical conductors extending

1 from solar panels in a solar array?

2 MR. DIXON: Objection; form.

3 THE WITNESS: I'm trying to answer your question with
4 a mind to the time frame. You're using -- you used the
5 phrase before, and I want to make sure we're clear on what
6 before -- before what? What before means.

7 BY MR. FLYNN:

8 Q Fair enough. Fair enough.

9 A What I can say is between 2010 and 2013 when I
10 was head deep into this kind of stuff, I had seen many
11 systems that look similar to CCABH's.

12 Q Well, let me try to break that down a little bit.

13 A Okay.

14 Q So in that time frame, 2010 to 2013 --

15 A Okay.

16 Q -- had you seen cable management systems, other
17 than CCABH's, that employed a messenger wire from which
18 was suspended cable hangers that supported electrical
19 conductors extending from solar panels in a solar array?

20 A Yes.

21 Q Whose systems were they?

22 A What do you mean by whose system? The owner of
23 the project? The manufacturer of one or multiple
24 components? I don't know which -- I actually don't know
25 what you mean.

1 Q However you can best identify what those systems
2 were that you say you had seen in that 2010 to 2013 time
3 frame.

4 A I couldn't give you a name. I'd seen them, but I
5 couldn't give you a label.

6 Q Can you give me a name of a project?

7 A I can't.

8 Q Can you give me a name of a product?

9 A I can't.

10 Q Can you give me any form of identifying
11 information regarding this kind of cable management system
12 that you personally saw in the 2010 to 2013 time frame?

13 A Yes.

14 Q What information would that be?

15 A I seem to remember seeing systems that remind me
16 of CCABH systems that look similar. I seem to recall
17 seeing them or designing them into utility scale projects
18 that covered a wide area. Like acres, meaning physical
19 area. Also gas stations, where it is difficult to trench.

20 Q So we'll take the utility scale project first.

21 Do I understand correctly that your testimony is
22 that you remember seeing them and maybe even designing
23 them in the context of the utility scale project in the
24 2010 to 2013 time frame where the system employed a
25 messenger wire from which cable hangers were suspended to

1 support electrical conductors extending from solar panels
2 in a solar array?

3 MR. DIXON: Objection; form.

4 THE WITNESS: That's consistent with my understanding.

5 BY MR. FLYNN:

6 Q But other than saying you seem to recall seeing
7 them or designing them in a utility scale project context,
8 is there any other identifying information you can provide
9 to me about them?

10 A I recall a messenger being utilized with the
11 hangers, as you call them. I remember they were circular.

12 Q The hangers were circular?

13 A Mm-hmm.

14 Q Like rings?

15 A Yes, like rings. And the conductors sat inside
16 the rings where the rings were supported by a messenger.
17 Yes, I remember -- and I also remember -- actually, I
18 can't remember if the messenger and the rings were from
19 different component manufacturers or from the same
20 manufacturer. I don't remember that detail.

21 Q So that we're on the same page in our use of
22 terminology, when you say a messenger, do you mean
23 messenger wire?

24 A I don't necessarily mean messenger wire.

25 Q What other kind of structure would you mean by

1 messenger other than a messenger wire?

2 A Assuming I know what you mean by wire in this
3 context, I don't see a difference in this context between
4 messenger and messenger wire in this context.

5 Q Well, when you say assuming that you know what I
6 mean by wire, when I refer to a messenger wire, I'm
7 talking literally about a wire or a cable.

8 A I'm not sure I know what you mean by wire or
9 cable in this context.

10 Q When you say in this context, what do you mean in
11 this context?

12 A Wire and cable are loaded terms for me in the
13 context of codes, like health and safety codes, but we're
14 not talking about codes yet. So the use of the term wire
15 and cable invokes meaning to me that I'm not sure I should
16 be using it in your context -- in the context of your
17 question.

18 So I'm being --

19 Q Sorry --

20 A -- careful when we start to bring in words like
21 wire and cable, and I want to be careful.

22 Q So what is your understanding, then, of the
23 meaning of the term messenger wire?

24 A I'm not sure yet in this context. I'm -- I'm not
25 sure how we mean it in this context yet.

1 Q Well, in the context of aboveground cable
2 management systems for organizing, supporting, separating
3 electrical conductors in a solar array, in that context,
4 what's your understanding of the meaning messenger wire?

5 A Something that is supporting -- providing
6 mechanical support to conductors vis-à-vis saddles and
7 rings, cradles.

8 Q Do you have an understanding as to whether the
9 messenger that provides mechanical support to conductors
10 can be something that is a rigid bar? Would that be
11 within the scope of your understanding of messenger wire?

12 A I suppose it could be.

13 Q So in these other instances that you recall
14 seeing and/or designing in a utility scale project context
15 where you saw or designed a messenger that used hangers
16 suspended from the messenger to support electrical
17 conductors in a solar array, do those instances and
18 projects that you recall, do they employ rigid bar-type
19 structures as the messenger?

20 MR. DIXON: Objection; form.

21 THE WITNESS: I don't recall that level of detail.

22 BY MR. FLYNN:

23 Q Okay. If you look at paragraph 28 of your
24 declaration, this is the first paragraph of your opinion
25 regarding CCABH's integrated grounding system, correct?

1 A Yes.

2 Q And you also opine that CCABH's integrated
3 grounding system -- strike that. Let me start over.

4 You also opine that there was nothing novel or
5 unique about CCABH's integrated grounding system, correct?

6 A Yes.

7 Q And, again, so that we're clear that we're
8 talking about the same thing, when we talk about CCABH's
9 integrated grounding system, I'm referring to a system
10 that uses a messenger wire both as a support structure
11 that supports cable hangers and current wires or
12 electrical conductors, and at the same time acts as an
13 equipment grounding conductor.

14 Is that your understanding of what CCABH's
15 integrated grounding system does?

16 A That's consistent with my understanding, yes.

17 Q And so I will ask you with respect to CCABH's
18 integrated grounding system -- strike that.

19 I'll ask you prior to the 2017 time frame if you
20 recall seeing or designing any grounding systems that
21 employed a messenger wire that served that dual capacity
22 of supporting cable hangers and electrical conductors at
23 the same time that it was acting as the equipment
24 grounding conductor?

25 A I do recall working on such a system.

1 Q What can you tell me about that system?

2 A What I can tell you is what I put in my report
3 related to the work I did with a company called SPG.

4 Q You're referring to paragraph 32 of your
5 declaration -- actually, 31 and 32 of your declaration?

6 A I wasn't referring to any specific paragraph.

7 Q So whatever you articulated in your declaration
8 about your work with SPG, those are the projects that you
9 recall that you were involved with a grounding system that
10 employed a messenger wire to be both a support structure,
11 and at the same time an equipment grounding conductor; is
12 that correct?

13 A Yes. Starting on paragraph 28.

14 Q Yeah.

15 A So paragraphs 28 to 34 should contain the
16 relevant -- my relevant experience in that regard.

17 Q Okay. So what kind of a project or application
18 was it that used the messenger wire in that dual capacity
19 that you can recall?

20 A It was a tracker, a single axis tracker.

21 Q And so did that single axis tracker employ first
22 a messenger wire?

23 A I worked on a messenger wire system for that
24 tracker.

25 Q And, again, when we're talking about messenger

1 wire, are you including within the scope of the meaning
2 messenger wire a bar or rigid-type structure that you
3 would consider to be a messenger wire?

4 A Yes.

5 Q Mr. Weiner, are you rendering your opinion in
6 this matter or your opinions in these matters that the
7 '291 patent and '551 patent would have been -- that the
8 claimed inventions of those patents would have been
9 obvious to a person of ordinary skill in the art at the
10 time of the inventions?

11 MR. DIXON: Objection; form.

12 BY MR. FLYNN:

13 Q Let me reask that question.

14 Is it your opinion in these IPR proceedings that
15 the two patents that these proceedings relate to, the '291
16 patent and the '551 patent, that the claimed inventions of
17 those patents would have been obvious to a person of
18 ordinary skill in the art at the time of the inventions?

19 A That is not my opinion.

20 Q Well, then I'm trying to understand, then, what
21 is the scope of your opinion? How would you distinguish
22 what your opinion is that you've rendered from what I just
23 asked you?

24 A I was engaged by counsel to render opinions based
25 on my past experience of working with systems like

1 CCABH's, and my experience of working on systems that are
2 similar to CCABH's or the same as.

3 Q So are your opinions what you have personally
4 observed and been involved with respect to these kinds of
5 systems as you've already testified about?

6 MR. DIXON: Objection; form.

7 THE WITNESS: Could you ask the question one more
8 time?

9 BY MR. FLYNN:

10 Q Sure.

11 Are your opinions in these matters anything more
12 than what you recall having personally involved -- start
13 over.

14 Are your opinions in these proceedings anything
15 more than what you recall having personally observed or
16 been involved with designing as you have testified so far
17 today?

18 A My opinions are based on that, what you just
19 said, and the materials I considered.

20 Q So your opinion that there is nothing novel or
21 unique about CCABH's aboveground cable management system
22 is based at least in part on what you recall having
23 personally observed or been involved in designing -- is
24 that right? -- in the 2010 to 2013 time frame?

25 A In part, yes. My opinion's also based on what I

1 read in the materials considered section of my report.

2 Q Okay. So that's the part now I want to ask you
3 about.

4 What about the materials that you considered also
5 served as a basis of your opinion that there was nothing
6 novel or unique about CCABH's aboveground cable management
7 system?

8 A The statements made by the declarants.

9 Q What specific statements are you referring to?

10 A The declarations they submitted that I read.

11 Q Yes, but, I mean, are you thinking about any
12 particular statements that they made within those
13 declarations?

14 A I'm not thinking of any specific statements they
15 made. I'm thinking of my understanding of the whole
16 declaration that I remember -- that I read.

17 Q And is that understanding based upon what you
18 read from each of those declarants, that, essentially,
19 they say that CCABH's aboveground cable management system
20 was the first of its kind, and nobody else had done it
21 before CCABH did it?

22 A I don't remember those specific words.

23 Q But in essence, is that what you're referring to?

24 A That could be at least a part of what I'm
25 referring to.

1 Q Is there any other part that you can specifically
2 remember?

3 A I remember a lot of discussion about the
4 unpopularity in one form or another of aboveground cable
5 management systems. I remember discussion and statements
6 around trenching and how CCABH's system more or less saved
7 the day on trenching, got -- helped get the solar industry
8 out of doing cumbersome, expensive trenches to some
9 degree. And along the same lines, the integration of
10 grounding being new or different in some way.

11 And I remember statements around skepticism about
12 CCABH's system from the industry. I remember reading
13 statements like that. There's probably more, but I don't
14 recall all of them as I sit here today.

15 Q Okay. Have you read any of the filings that AWM
16 has made in these IPR proceedings? And when I say
17 filings, I'm referring to the petition that AWM filed or
18 the reply to CCABH's patent owner response. Have you read
19 any of those filings in either or both of those IPR
20 proceedings?

21 A I don't recall reading those.

22 Q Okay. Are you rendering any opinion about
23 whether a person of ordinary skill in the art at the time
24 of the invention would have been motivated to combine any
25 of the prior art references asserted by AWM in these

1 proceedings?

2 A I have no opinion of that.

3 Q Do you know whether your -- I'm sorry.

4 Do you know whether AWM's reply cited to your
5 declaration in support of a motivation to combine
6 argument?

7 A I'm unaware of any motivation to combine
8 arguments.

9 Q You have testified as an expert witness before in
10 an ITC proceeding regarding a Shoals product?

11 A Yes.

12 Q And that was just earlier this year, 2024?

13 A Yes. I think the deposition was -- it might have
14 been late December or early January, and then the trial
15 was March of this year, if I recall correctly.

16 Q So were you deposed in the ITC proceeding before
17 you testified at the hearing?

18 A Yes.

19 Q And you were testifying on behalf of the patent
20 owner in that proceeding, correct?

21 A Yes.

22 Q Okay. And that's Shoals. You were testifying on
23 behalf of Shoals who was the patent owner?

24 A Yes.

25 Q And you were testifying specifically on issues of

1 whether the challenged patent was valid, correct?

2 A Yes.

3 Q And you supported Shoals' position that the
4 patent was valid, is valid?

5 A Yes.

6 Q Do you recall that the patent that was at issue
7 in that ITC proceeding related to Shoals' lead assembly
8 device?

9 A Yes. I remember that painfully.

10 Q And you recall that the -- and I'm obviously
11 summarizing this briefly, not to make it any more painful
12 than it needs to be -- that the objective of Shoals'
13 device, the lead assembly device, was to obviate the need
14 for a combiner box in a solar installation?

15 MR. DIXON: Objection; scope.

16 THE WITNESS: Of the many things we did in that case,
17 what you just said reminds me of one such thing that we
18 touched on, yes.

19 BY MR. FLYNN:

20 Q Is it the case that that proceeding, that ITC
21 proceeding, was the first patent related matter that you
22 testified in?

23 A Yes. As an expert, yes.

24 Q Okay. There was also a PGR proceeding relating
25 to the Shoals' device that you provided testimony in; is

1 that correct?

2 Let me rephrase that.

3 A Okay.

4 Q There was also a PGR proceeding relating to the
5 Shoals' device where you provided a declaration on behalf
6 of Shoals; is that right?

7 A It was a PGR or an IPR or both. Because there
8 were multiple, I think -- but generally, broadly, yes.

9 Q And so when I first said that you provided
10 testimony, I meant by form of declaration, by way of
11 declaration. You didn't get deposed in either the PGR or
12 the IPR in those proceedings, correct?

13 A That's correct.

14 Q When did you first become aware of CCABH?

15 A I'm not sure.

16 Q Were you aware of CCABH before you were retained
17 by counsel to provide a declaration in these proceedings?

18 A I'm not -- I'm not sure.

19 Q When were you retained in these proceedings?

20 A Earlier this year. I don't recall the date of my
21 agreement, but a few months ago.

22 Q Do you recall whether it was before or after July
23 of this year?

24 A I don't recall the date of my agreement with
25 counsel, so I don't know when I was specifically retained.

1 I do know generally when I made these declarations.

2 Q Okay. When did you generally start working on
3 these declarations?

4 A October.

5 Q So you don't recall whether you were aware of
6 CCABH before October of this year?

7 A That's right.

8 Q So you can't tell me whether you were aware of
9 CCABH outside of the context of these IPR proceedings and
10 the declarations that you're submitting in them?

11 A That's right. I could not tell you that.

12 Q When was the first time you became familiar with
13 AWM?

14 A When I was hired by counsel or by AWM.

15 Q So you had never heard of AWM, Affordable Wire
16 Management, before you were hired by counsel to render
17 your opinions in these proceedings; is that correct?

18 A That's correct.

19 Q Did you know or had you heard of the name Scott
20 Rand before you were hired by counsel to provide
21 declarations for these proceedings?

22 A I had not heard that name.

23 Q How about Peter Ruby? Had you heard that name?

24 A No.

25 Q Dan Smith?

1 A No.

2 Q Had you heard of or were you familiar with any
3 individual associated with AWM prior to the time that you
4 were engaged in this matter?

5 A I don't know that I know who or isn't affiliated
6 with AWM.

7 Q In your work with Shoals -- for Shoals -- strike
8 that.

9 Other than the testimony that you provided on
10 behalf of Shoals in the ITC proceedings and the related
11 PGR and IPR proceedings, had you done any other work with
12 or on behalf of Shoals prior to or since that time?

13 A No. Not directly with Shoals, no. They supply a
14 lot of products, so it's very possible I may have designed
15 a system utilizing a product of theirs. Being aware of it
16 or even not aware of it, that could have happened.

17 Q But you don't recall ever having done any
18 consulting work with Shoals or anything like that outside
19 of your litigation experience with them?

20 A I agree with what you just said. That's correct.

21 Q Now, you have done work with Snake Tray in the
22 past; is that right?

23 A I have not consulted directly with Snake Tray in
24 a professional capacity. I've looked at their products,
25 though, on behalf of, for example, SPG Solar, which I talk

1 about in my declarations.

2 Q Okay. All right. In your work with Shoals, did
3 you ever have any discussion with anybody about CCABH?

4 A I'm not sure how to answer that for a couple of
5 reasons. One, I don't want to -- I'm being cognizant of
6 my agreements, and I don't want to share anything that
7 might be under work product privilege.

8 If you could ask the question in a way that
9 doesn't call out my agreement with Shoals somehow.

10 Q Yeah, and I'm certainly not interested in trying
11 to have you walk that tight rope.

12 But -- so I'm not asking about any specific
13 discussions or substance of these specific discussions.
14 I'm asking first on a more general level, was there ever
15 any discussion about CCABH, or did CCABH come up during
16 your work with Shoals?

17 A I don't recall CCABH ever coming up in anything I
18 did with -- related to the ITC case with Shoals or any --
19 like, any case I've worked on. Yeah.

20 Q So I guess I'll just go back and ask you again,
21 do you have any recollection -- now that I tried to jog
22 you a little bit with some other questions. Do you have
23 any recollection of whether or not you had heard of CCABH
24 prior to the time that you were engaged to render your
25 opinions in these IPR proceedings?

1 A Could you ask the question one more time?

2 Q Do you have any recollection of whether prior to
3 the time that you were engaged to provide your
4 declarations and opinions on behalf of AWM in these
5 proceedings you had heard of CCABH in any fashion?

6 A I have no recollection of that.

7 Q One way or the other --

8 A Prior to this proceeding.

9 Q One way or the other?

10 A I don't know what you mean by one way or the
11 other.

12 Q You don't have any recollection of what you did
13 one way or the other?

14 A Correct.

15 Q And forgive me if I've asked this at one point
16 already, but just to make sure, other than your work in
17 providing your declarations and opinions in these
18 proceedings, have you done any other consulting work with
19 or on behalf of AWM?

20 A No. I had never heard of them until this case.

21 Q And even since this case, outside of the context
22 of this litigation, you're not or have not consulted with
23 them in any professional capacity?

24 A That's correct.

25 Q Mr. Weiner, if you look at paragraph 11 of your

1 declaration, please, you are being compensated in this
2 matter at the rate of \$950 per hour; is that right?

3 A Yes.

4 Q That is more than what you were being compensated
5 for in your work with Shoals in that litigation; is that
6 correct?

7 A I don't remember. I don't remember.

8 Q Okay.

9 MR. FLYNN: Let me just have -- well, for any new
10 exhibit, since, again, it's the same thing, we're just
11 going to have -- I don't know if you heard that part of
12 the conversation. We're just going to have two stickers
13 placed on the exhibit --

14 MR. DIXON: Yeah.

15 MR. FLYNN: -- for each IPR.

16 MR. DIXON: That makes sense.

17 (Whereupon Deposition Exhibits 2061
18 2067 were marked for identification.)

19 BY MR. FLYNN:

20 Q All right. Mr. Weiner, I'm going to have you
21 take that one and hand that one to your counsel.

22 A Okay. (Indicating.)

23 Q Now, Mr. Weiner, I've handed what we have marked
24 as Exhibit 2061 in the 178 IPR and 2067 in the 139 IPR.
25 It is a copy of the declaration that you submitted in the

1 Shoals PGR proceeding. PGR 2024-00022, relating to U.S.
2 Patent Number 11,689,153, which was marked as Exhibit 2001
3 in that proceeding.

4 Do you follow me on all of that?

5 A I follow you.

6 Q Okay. If you would just take a look at this to
7 whatever degree to need to confirm that you recall that
8 this is the declaration that you submitted in that
9 proceeding.

10 A This looks generally very familiar. As much as
11 I've tried to block it out, it's coming back to me. So
12 thank you for that. But this does generally look
13 familiar.

14 Q Once again, I will try my best to limit the
15 painful experiences that I -- or memories that I invoke by
16 asking you any questions about this, but for now would you
17 just turn to paragraph 3 of your declaration in that PGR?

18 A Okay.

19 Q And paragraph 3 indicates that for that work that
20 you were being compensated at your standard hourly rate of
21 \$650 per hour for your services, correct?

22 A I see that, yes.

23 Q Okay. Does that refresh your recollection that
24 that's what you were being paid in that proceeding
25 compared to the \$950 an hour that you're being paid in

1 this proceeding or these proceedings?

2 A I guess it does, yes.

3 Q Okay. Is \$950 an hour, is that your standard
4 rate?

5 A For patent cases, yes.

6 Q PGR was a patent case, right?

7 A Yes.

8 Q So has your standard rate gone up by \$300 an hour
9 since this PGR declaration?

10 A Every six -- yes. I believe it was in -- I can't
11 remember when it is, but once a year, we change our rates,
12 our standard rates. And we do them by case -- or law
13 type. So I have a rate for patent cases, construction
14 cases, civil. Yeah.

15 Q Is the patent cases the highest rate?

16 A I -- I'm not sure. I think so. I would have to
17 check. I think it -- I think it is.

18 Q It's okay.

19 So the declaration that you submitted in the PGR
20 when your standard rate was 650 an hour was dated July 11,
21 2024, correct? Go to the last page.

22 A Yes.

23 Q And so between July and when you submitted your
24 declaration in this case, October 4, 2024, for the 178 IPR
25 that's when your standard rate increased by \$300 an hour?

1 A I don't know. The dates on these reports don't
2 dictate which of my billing rates are applicable. It's
3 dictated by the contract I sign with my clients.

4 Q You mean the date of those contracts?

5 A I -- yeah, I believe -- and I'm going off of
6 memory, so it's possible I could have some of these
7 details wrong, but I believe my contract with -- and I
8 also want to be care -- I need to be careful about work
9 product privilege.

10 So what I will say is generally, broadly, my
11 engagement, my contracts with my clients, there are
12 provisions for rate changes in my contracts, and the terms
13 and conditions of those rate changes have delineated in
14 those contracts. The date on this declaration, I don't
15 recall if there's any relationship with this date and the
16 contracts with my clients.

17 Q Mr. Weiner, there are different segments, I
18 believe, what you have referred to as verticals in the
19 solar industry; is that correct?

20 A Can you show me where I used that phrase?

21 Q Okay. Don't blame me for bringing back another
22 painful memory.

23 Let me ask you this: Would you agree that within
24 the solar industry, that there are different segments, one
25 segment being residential, another being

1 commercial/industry and another being utility scale?

2 THE STENOGRAPHIC REPORTER: Another being what?

3 MR. FLYNN: Utility scale.

4 THE WITNESS: Sitting here today, I might characterize
5 those as different market segments. Verticals maybe.

6 Could also -- I could see somebody using that, including
7 myself. I might have used that. So yeah, if we're
8 talking about residential versus commercial versus utility
9 scale, I know what you mean.

10 BY MR. FLYNN:

11 Q Okay. So I don't need to bring that up.

12 You've worked in all three segments, correct,
13 throughout your career?

14 A Yes.

15 Q Is it fair to say that you have worked more in
16 residential than you have in the other two segments?

17 A No.

18 Q So I'm going to hand you what has already been
19 marked in these proceedings as Exhibit 1039 in the 178
20 IPR -- I don't know what it was in the 139 -- and
21 Exhibit 1053 in the 139 IPR.

22 This is a copy of your CV or résumé that you
23 included with your declaration, correct?

24 A This looks like my résumé, yes.

25 Q Okay. If you -- on the first page, towards the

1 bottom there's the caption projects. Do you see that?

2 A Yes.

3 Q And so under project, it says, 1,000-plus, in
4 parentheses, 5-plus megawatt residential system designed.

5 Do you see that?

6 A I see that.

7 Q And then underneath that, it's 200-plus, 50-plus
8 megawatt commercial, industrial, agricultural systems
9 designed.

10 Correct?

11 A I see that.

12 Q And underneath that, it's 12-plus, 70-plus
13 megawatt utility scale designed.

14 Correct?

15 A I see that.

16 Q So does that indicate that you have worked more
17 in the residential segment than in the commercial and
18 utility scale segments?

19 A Not to me, but I suppose it depends on your
20 definition of more. For example, on this page, I can see
21 that there are more quantities of residential systems I've
22 worked on than quantities of commercial, utility scale,
23 and the rest. However, I see that I have more megawatts
24 of experience with nonresidential systems than I do with
25 residential.

1 So when you say more, more than -- let's -- I
2 don't know what you mean by more.

3 Q Okay. With respect to the megawatts, by the way,
4 for each of those parentheticals quantifying the
5 megawatts, 5-plus megawatts for the residential, 50-plus
6 megawatts for the commercial, 70-plus for the utility
7 scale. Do I correctly assume that that's the amount of
8 megawatts in the aggregate for these projects?

9 A I believe that's accurate. The 5-plus megawatt
10 number next to the 1,000-plus number in the residential
11 system is meant to represent something like the total
12 capacity of residential solar systems I've designed.

13 Q Right. You're not talking about 5-plus megawatts
14 for each residential project?

15 A Yes, sir, exactly.

16 Q Okay. So when you say you don't know what I mean
17 by more, would you say that you have spent a greater
18 amount of time throughout your career working on
19 residential projects than either commercial or utility
20 scale?

21 A So I need you to define what you mean by time.
22 The time I spend on a single residential project is much
23 smaller than the time I spend on a single commercial
24 project.

25 Q So what's the average amount of time you spend on

1 a residential project?

2 A With my expert services, it can take months.
3 With design engineering work, it can take hours. It
4 depends on my engagement on that residential project and
5 what my scope of work is and who my client is, and so
6 it's -- it can range from hours to months.

7 Q Okay. So in the aggregate, then, just like the
8 megawatts is in the aggregate, the time that you have
9 spent in the 1,000-plus residential projects that you've
10 been involved in, would that have been in the aggregate of
11 those 1,000 projects more time that you spent in the
12 aggregate on the 200 commercial projects?

13 A I don't know.

14 Q When was your first utility scale project?

15 A 2010 or 2009.

16 Q Is that project anything that you described in
17 your declaration, or was that something separate?

18 A I don't recall mentioning my very first utility
19 scale project that I've ever designed in my declaration in
20 this case.

21 Q So what was that 2009 first utility scale project
22 that you designed? What was the project?

23 A It was a utility scale solar project.

24 Q Yes, but what project? Where was it? What was
25 the name of the project? Who was it for? Whatever other

1 identifying information you can provide?

2 A I'm pretty sure it was a California project. It
3 was in California. Probably, oh, I want to say most
4 likely in Southern California somewhere because there was
5 a lot of activity in those days.

6 Q Do you know the size of the project?

7 A It was single digit megawatts, so between one and
8 ten.

9 Q So what did you design with respect to that
10 project?

11 A I designed the electrical design of the system.

12 Q What does that mean?

13 A Typically, solar systems from an engineering
14 discipline perspective are characterized as a combination
15 of electrical, structural, and civil systems. A power
16 plant that delivers electricity, so that's electrical, but
17 they sit on a structure. That's structural engineering.
18 And those structures and utility scale systems often get
19 anchored to the earth. There's the civil engineering.

20 So when I say I designed the electrical side of
21 the system, I'm saying I -- I'm differentiating electrical
22 design from structural and civil engineering disciplines,
23 which I believe I hired out. I subcontracted those out.

24 Q Was that part of your SepiSolar consultation --

25 A Yes.

1 Q -- consultation or consultancies?

2 A Yes. My very first utility scale project was
3 performed through my role at SepiSolar at the time.

4 Q So when you designed the electrical then. So I
5 understand and I appreciate you explaining to me the
6 difference between the structural and mechanical, but what
7 exactly, then, did you design with respect to the
8 electrical part of the system?

9 A Many things. For example -- but one example
10 would be what we called the design development plans or
11 the design plans.

12 Q What are they for?

13 A Those are blueprints that are commonly done in
14 construction that are submitted for various purposes, like
15 for permitting, for utility and connection, for costing
16 out and bill materials, development, and procurement
17 support, long lead time, major components that need to be
18 ordered, so logistics, supply chain.

19 So I designed the electrical system on paper for
20 distribution to various parties for the processing and
21 regulatory approvals of that system.

22 Q Did the electrical design include designing
23 anything with respect to the electrical conductors
24 extending from the solar panels?

25 A Yes.

1 Q What? I mean, explain what that was, I mean.
2 What did you design about them?

3 A Oh, electrical conductors are part of an
4 electrical system, so I would have specified the
5 conductors, their quantities, their types, their
6 materials. I would have performed calculations on that
7 among many other things.

8 Q So what kinds of electrical conductors were
9 involved in that first utility scale project that you
10 designed from the electrical perspective?

11 A I don't recall for that specific project what
12 electrical conductors --

13 Q They would have included DC conductors, I assume?

14 A Yes.

15 THE STENOGRAPHIC REPORTER: I'm sorry. Did you say DC
16 conductors?

17 MR. FLYNN: DC conductors, yes.

18 THE STENOGRAPHIC REPORTER: Thank you.

19 THE WITNESS: As in direct current, yes.

20 BY MR. FLYNN:

21 Q Would they have involved AC conductors at that
22 time?

23 A As an alternating current conductors, yes.

24 Q Where would the AC conductors have been?

25 A Depending -- after the inverter or before the

1 inverter, depending on your perspective. Let's say
2 between the inverter and the point of connection to the
3 local electric grid, those would have been the AC
4 conductors.

5 Q Any other type of electrical conductors that were
6 involved in your electrical design of that first project
7 that you did in 2009?

8 A I don't recall the specifics, but at least DC and
9 AC conductors like you said, at least.

10 Q You sold the majority of your engineering
11 contracts in SepiSolar in May 2024; is that correct?

12 A Yes.

13 Q And what exactly does that mean, the majority of
14 your engineering contracts?

15 A It means that I ramped down my -- the volume of
16 my engineering services. I basically eliminated or
17 stopped servicing several clients, and I turned those
18 contracts with those clients over to another or other
19 engineering firms.

20 Q Why did you do that?

21 A Quality of life.

22 Q Does SepiSolar still exist?

23 A Oh, yes.

24 Q Are you still performing consulting services
25 through SepiSolar?

1 A Yes.

2 Q So you -- by selling the majority of your
3 contracts in May of 2024, you were just cutting back on
4 your workload?

5 A That's right, that's right.

6 Q Okay. Is it true that you -- that currently,
7 you're working primarily for companies operating in the
8 utility scale solar space?

9 A Could you repeat the question?

10 Q Is it the case that currently, most of your work
11 is with companies operating in the utility scale solar
12 space?

13 A No.

14 Q Is it correct that most of your work currently is
15 for companies operating primarily in the product
16 development and utility scale solar power production
17 space?

18 A No. I do a lot of work in those areas. I'm not
19 sure I would say most. I don't know what you mean by
20 most.

21 Q In the PGR declaration that you still have in
22 front of you, just take a quick look at paragraph 9.
23 That's the paragraph I'm referring to that I'm asking you
24 about and what you meant by that.

25 A I don't like the word primarily. I do work for

1 many companies operating the product development and
2 utility scale space. Now I know where your use of the
3 word most comes from, but I'll admit, I don't like the use
4 of the word primarily in this paragraph.

5 Q So you're still working, then, on residential and
6 commercial projects?

7 A Yeah, I still work on residential, commercial,
8 utility scale, product development, in that -- in those
9 spaces and on different sides of the proverbial fence with
10 the developer of those systems as well as the owners and
11 the recipients of those systems.

12 Q Okay. Mr. Weiner, would you agree that
13 technology from non-PV, photo voltaic, electrical
14 generation environments isn't necessarily so easily
15 transferrable to PV environments?

16 MR. DIXON: Objection; form.

17 THE WITNESS: Could you repeat the question?

18 BY MR. FLYNN:

19 Q Let's do this instead. Take a look -- take a
20 look at paragraph 51 of your PGR declaration,
21 Exhibit 2061.

22 A Sorry. Which paragraph?

23 Q 51, page 20.

24 A The fact that --

25 Q Yes.

1 A Okay.

2 Q So you see in that first sentence of
3 paragraph 51, you're talking about the transferability of
4 technology from non-PV environments to PV environments,
5 correct?

6 A Okay. Please repeat your question one more time.

7 Q In the first sentence of that paragraph, you're
8 talking about, you're referring specifically to the
9 transferability of technology from non-PV environments to
10 PV environments, correct?

11 A I see where I say evaluating the transferability
12 of technology from non-PV environments to PV environments.
13 I see that.

14 Q And then you also refer to EBOS components,
15 E-B-O-S, correct?

16 A I see that.

17 Q And you're talking about BOS or EBOS components,
18 that are -- that generally have much greater outdoor
19 environmental exposure than turbine BOS. Unlike turbines,
20 you say, solar panels cannot be housed in a dam or power
21 plant building, correct?

22 A I see where I say solar panels cannot be housed
23 in a dam or power plant building, yes.

24 Q And so one of the things that you would need to
25 consider in evaluating whether non-PV technology can be

1 transferred to PV technology, one of the factors that
2 you'd have to consider is environmental exposure of the
3 BOS or EBOS components; is that right?

4 A Yes. Among many other things, yeah.

5 Q You state further in paragraph 52 of Exhibit 2061
6 that regulatory considerations amplify the weight of the
7 technical distinctions between PV and non-PV
8 installations, correct?

9 A I see where I say in paragraph 52 regulatory
10 considerations amplify the weight of the technical
11 distinctions, sorry, between PV and non-PV installations
12 described above.

13 Q And you agree with that statement; is that right?

14 A Yes.

15 Q And the second to the last sentence of
16 paragraph 52 starting with the word regulations change, do
17 you see that?

18 A Yes.

19 Q And it says, Regulations change with the
20 evolution of the technology and understanding the risks
21 associated therewith. This is particularly true of PV
22 installations in the past several decades as the
23 technology has undergone technological shifts commensurate
24 with burgeoning widespread technology.

25 Do you see that?

1 A I see that.

2 Q And so those changing regulations and the
3 evolution of the solar industry are another consideration
4 that you have to take into account when considering
5 whether you can transfer technology from non-PV
6 environments to PV environments. Would you agree with
7 that?

8 A I don't know if I agree with that or not.

9 Q How is that different than what you're saying in
10 paragraph 52 of your declaration, your PGR declaration?

11 A Your question sounds more broad in an abstract
12 whereas this declaration was about a specific case. But
13 your question sounded more hypothetical or broadly
14 speaking outside of this specific case, so I'm not sure I
15 know what you mean.

16 Q But paragraph 52 only talks generally about PV
17 and non-PV installations, correct?

18 A I see a discussion about regulatory
19 considerations in paragraph 52. Paragraph 52 is in the
20 context of this declaration, so I'm sure I was saying that
21 for a reason.

22 Q Would you also agree, Mr. Weiner, that conditions
23 for utility scale PV installations outdoors are much
24 different than indoor applications or installations?

25 MR. DIXON: Objection; form.

1 THE WITNESS: Again, your question is kind of -- it's
2 too broad. I can think of systems that are exactly the
3 same indoor or outdoor. I can think of other systems that
4 are completely different when they're placed indoor versus
5 outdoor. It depends on the specific system we're talking
6 about.

7 BY MR. FLYNN:

8 Q Would you agree that with EBOS for utility scale
9 PV installations, that the EBOS components are going to be
10 subjected to far more extreme environmental conditions
11 than BOS systems that are indoor?

12 A It depends on which part of the system we're
13 talking about.

14 Q How about the part of EBOS that deals with
15 managing or organizing or supporting the electrical
16 conductors extending from solar panels in the solar array?

17 MR. DIXON: Objection; form.

18 BY MR. FLYNN:

19 Q Would that type of -- let me start over.

20 MR. DIXON: Sorry.

21 MR. FLYNN: It's okay.

22 BY MR. FLYNN:

23 Q For the EBOS components that relate to the
24 support and organization of electrical conductors
25 extending from solar panels in the solar array in an

1 outdoor utility scale installation, would those components
2 be subjected to more extreme environmental conditions than
3 BOS components in an indoor application that relate to
4 cable management or organization?

5 MR. DIXON: Objection; form.

6 THE WITNESS: Broadly speaking, single insulated
7 conductors outdoor will be subjected to different
8 environmental conditions more rigorous, usually
9 environmental conditions, than if those same single
10 insulated conductors were placed indoors.

11 BY MR. FLYNN:

12 Q So if you look at paragraph 101 of your PGR
13 declaration, Exhibit 2061.

14 A Paragraph 101?

15 Q Yes.

16 A Okay. I'm there.

17 Q So you're referring to outdoor rated devices for
18 solar applications, and you make the statement, In my
19 experience, outdoor related -- I'm sorry. Let me start
20 over.

21 You state, In my experience, outdoor rated
22 devices for solar applications need to withstand severe
23 environmental conditions including, for example, severe
24 heat and cold, temperature cycling, rainy environments,
25 humid environments, dry environments, wind, et cetera.

1 Do you see that?

2 A I do.

3 Q And those are the kinds of factors you don't have
4 to consider with indoor applications, correct, or indoor
5 rated devices for applications?

6 A I have been concerned about the indoor rated
7 devices, indoor being subjected to severe heat and cold
8 and temperature cycling. Not rainy environments. I think
9 in the context of this report, I was referring to a
10 specific prior art reference and was making a point about
11 its usability indoor versus outdoor, which is why I was
12 talking about that in paragraph 101.

13 So, again, as we go from the context of this
14 report to something else, I just want to be careful that
15 we don't take the context along with -- I want to make
16 sure I'm clear on how we're treating the context that
17 comes along with it or doesn't come along with it.

18 Q If you go to paragraphs 121 of your PGR
19 declaration.

20 A 121?

21 Q Mm-hmm.

22 A And when we get to a convenient stopping point
23 for a break, I could use the men's room.

24 Q We can do it right now. That's fine.

25 A Oh, okay. Thank you, thank you.

1 (Recess taken.)

2 BY MR. FLYNN:

3 Q Mr. Weiner, if you would go to paragraph 14 of
4 your declaration, please.

5 A Yes, I'm there.

6 Q In paragraph 14, somewhat in the middle of the
7 paragraph, you quote Mr. Brooks' statement from his
8 declaration, CCABH's aboveground cable management system
9 was the first cable management system in the solar
10 industry to use messenger wire supported cable hangers.
11 And you cite to his Exhibit 2033, paragraph 8.

12 Do you see that?

13 A I see that.

14 Q You know Mr. Brooks, right?

15 A I know of -- I know him in a professional manner.

16 Q That's what I mean. You know him in a
17 professional manner. You actually worked with him on the
18 Shoals matter, did you not?

19 A We both testified in the case. I wouldn't say we
20 worked together.

21 Q Okay. Had you known of Mr. Brooks before the
22 Shoals litigation?

23 A Yes.

24 Q How did you know of him?

25 A I think I took -- I -- I first learned of him, I

1 think, by way of an NABCEP training I attended for part of
2 my continuing education credits that I have to do as part
3 of my NABCEP certification.

4 Q What was the context in which you learned of him
5 doing your NABCEP certification?

6 A I think he took taught a course that I took or a
7 class.

8 Q Do you know otherwise of Mr. Brooks or his
9 reputation in the solar industry?

10 A Yes.

11 Q What's your understanding or what's your opinion
12 of his reputation in the solar industry -- that's a
13 terrible question. I withdraw it.

14 Do you consider Mr. Brooks to be an expert in the
15 solar industry?

16 A Yes.

17 Q Do you consider him to be a renowned authority in
18 the solar industry?

19 A Yes.

20 Q Do you consider him to be an expert and renowned
21 authority in the National Electrical Code?

22 A Yes.

23 THE STENOGRAPHIC REPORTER: National Electrical, what
24 was that?

25 MR. FLYNN: Code.

1 THE STENOGRAPHIC REPORTER: Code.

2 BY MR. FLYNN:

3 Q So obviously, you -- Mr. Brooks's declaration is
4 something that you did carefully consider and rely upon in
5 rendering your opinions in this case, correct?

6 A Yes.

7 Q And you had mentioned previously that you had --
8 you recall reviewing Mr. Brooks' white papers, correct?

9 A The white paper he referenced in his declaration
10 and may have been referenced in one or more of the other
11 declarations.

12 Q And what do you recall about that white paper,
13 and what about it did you rely upon in referencing your
14 opinions in these proceedings?

15 MR. DIXON: Objection; form.

16 THE WITNESS: What I recall most about Mr. Brooks'
17 white paper in his declaration was a review of the code.

18 BY MR. FLYNN:

19 Q The National Electrical Code or NEC?

20 A I'm pretty sure that was the main code. He might
21 have referenced other ones. I don't remember. But
22 certainly the National Electrical Code, yes. And I recall
23 him doing what I might call a code review of the CCABH
24 system as it was described in that white paper, and he
25 discussed its conformance to or application of the

1 National Electrical Code in some form or fashion.

2 Q Was there anything that you disagreed with or
3 took issue with Mr. Brooks' evaluation of the various
4 provisions of the National Electrical Code from his
5 declaration?

6 A I don't recall having any hesitation or -- I
7 don't recall reading the agreement -- reading the white
8 paper and disagreeing with a code interpretation he made.
9 That, I don't remember doing. It might have happened, but
10 I don't remember it.

11 Q I think you said that you read two versions of
12 the same white paper. Did I hear that correctly?

13 A Yes.

14 Q Do you know what year the white paper or the
15 version of the white paper?

16 A No, I don't recall as I sit here the years.

17 Q If I told you it was 2014, would that sound
18 right?

19 A Yeah. I have no reason to disagree with that, if
20 you...

21 Q Do you recall -- other than discussing the
22 provisions of the NEC in light of CCABH's system, do you
23 recall what specifically Mr. Brooks' white paper was
24 directed to, what questions he was trying to answer?

25 A Broadly speaking, I think he was answering the

1 question -- at least one question he was answering was,
2 does this CCABH system comply with the National Electrical
3 Code?

4 Q And the CCABH system that you're talking about is
5 the CCABH aboveground cable management system using the
6 messenger wire and hangers from the messenger wire; is
7 that correct?

8 A That sounds consistent with what I recall. It
9 would be whatever -- however the CCABH system was
10 described in the -- in Brooks' white paper.

11 Q Okay.

12 A So if that's consistent with that, then yes.

13 Q Do you recall reviewing from Mr. Brooks'
14 declaration his statements about how much effort it took
15 to overcome industry resistance to -- of this kind of
16 system like CCABH's aboveground cable management system?

17 A I wouldn't be surprised if it's in there, but I
18 don't recall that in Brooks' white paper. I do seem to
19 remember something, though, about resistance from one of
20 the four declarations I read.

21 Q Okay.

22 A One or more of the declarations I read.

23 Q Do you know why Mr. Brooks was doing this white
24 paper for CCABH?

25 A I remember reading in the declarations Mr. Brooks

1 learned of CCABH's system at, I think, a trade event or a
2 conference, maybe Solar Power International, known as SPI.
3 I believe he may have learned of CCABH, as he described in
4 his declaration, at that show, a trade event, and gained
5 some interest in it for some reason, and subsequently was
6 hired to write this white paper about it.

7 Q And do you know what the objective was in doing
8 the white paper?

9 A I -- the one thing that jumps out at me that --
10 is that he was reviewing the CCABH system to do what I
11 would call a code review to determine its compliance to
12 the National Electrical Code.

13 Q And you also understand that he was doing that to
14 assure, reassure, or confirm to the industry in general
15 that this type of system, CCABH's system, would be code
16 compliant?

17 A The first part of your question I'm not sure
18 about. To reassure the industry? I don't know if he was
19 trying to reassure anybody. I don't recall that. I do
20 know he looked at it through the -- at the CCABH system
21 through the lens of code compliance and wrote a white
22 paper in that regard. That, I remember.

23 Q Do you recall when you read the other
24 declarations that you've identified in paragraph 12 of
25 your declaration the statements of other declarants,

1 including particularly Mr. Smith, that CCABH commissioned
2 Mr. Brooks to do the white paper to give that type of
3 level of assurance to the industry that CCABH system would
4 be code compliant?

5 A I seem to recall something like that from one of
6 the other declarations, and I'll -- if that was the Smith
7 declaration, I -- I'll take your word for it.

8 Q Do you recall any of the other declarants
9 indicating that there was industry resistance or
10 skepticism regarding CCABH's system?

11 A I seem to remember in one or more of the
12 declarations there being a claim of industry skepticism.
13 I seem to remember something along those lines, yes.

14 Q I've asked you about Mr. Brooks. Did you know or
15 had you heard of Mr. Bowman prior to reviewing the
16 declaration in this case?

17 A No.

18 Q Had you heard of or were you familiar with
19 Mr. Novak prior to reading his declaration in this case?

20 A No.

21 Q Do you have any reason to doubt the truthfulness
22 of what Messrs. Bowman and Novak were saying about
23 industry resistance and skepticism?

24 A Could you repeat that question one more time?

25 Q Do you have any reason to doubt the truthfulness

1 of what Messrs. Bowman and Novak were saying about
2 industry skepticism regarding CCABH's aboveground cable
3 management system?

4 A I have no reason to doubt -- I have no reason
5 to -- well, my understanding of these declarations is
6 they're written -- I have no reason to doubt they were
7 being honest and truthful when they made those statements.
8 I disagree with their statements, though.

9 Q Okay. What were you going to say that your
10 understanding of these declarations that they're written
11 for?

12 A I was going to say, I think they're written under
13 oath or something like that, and I think there's a
14 standard paragraph that -- yeah. So, like, at the back of
15 my declaration, I further declare that these statements
16 were made with the knowledge that willful false statements
17 and the like are punishable.

18 So in terms of the truthfulness and honesty of
19 the declarants, I have no reason to think they were lying,
20 and I don't recall if they're subject to the same section
21 and title of this code and punishable by fines and
22 imprisonments. I don't recall off the top of my head if
23 they're subjects to these fines and imprisonment
24 provisions. But I think for the sake of my testimony here
25 today, I've assumed that they were.

1 Any statements they made in these declarations I
2 assume were made honestly and truthfully, but I have many
3 reasons to believe that there was -- in my personal
4 experience of myself and my colleagues, we were not
5 skeptical of these kinds of systems in the 2010 to 2013
6 time frame.

7 Q And when you say these kinds of systems, again,
8 we're talking about the same kind of systems that we were
9 talking about earlier today, the ones that you personally
10 observed and/or been involved in designing; is that
11 correct?

12 A Yes. The systems we've described here today
13 include the ones I recall being described in Bill Brooks'
14 white paper. The systems I talked to you about I'd seen
15 or worked with before in my past design experience. What
16 I understand from the reading of the declarations and my
17 materials considered, these systems, that's what we're
18 talking about.

19 Q What systems were described in Mr. Brooks' white
20 paper that you're referring to?

21 A Aboveground cable management systems like the
22 ones we're talking about here about CCABH.

23 Q Is it your understanding that Mr. Brooks' white
24 paper was discussing an aboveground cable management
25 system other than CCABH's?

1 A No. It's my understanding he was referring to
2 CCABH's cable management system.

3 Q So in paragraph 15 of your declaration, you say
4 that in your experience, these statements that you
5 referred to from Mr. Novak and Mr. Bowman and Mr. Brooks
6 are categorically false, correct?

7 A In paragraph 15, I see, yeah, the statement
8 categorically false.

9 Q So based upon your prior answer, do I take it
10 correctly, then, when you say categorically false, you
11 just mean you disagree with them? You don't think that
12 they were being untruthful, whether they were
13 misrepresenting what they were saying?

14 A In -- what I was saying here is in my experience,
15 aboveground cable management systems were popular, not
16 unpopular. In my experience.

17 Q And the aboveground cable management systems are
18 the ones that you described earlier today in your
19 deposition testimony; is that correct? The ones that you
20 personally observed and the ones that you were involved in
21 designing?

22 A And the one -- yes. And the ones I've read about
23 through my reading of the various declarations itemized in
24 my materials considered section.

25 Q So, again, I have to ask you, what other systems

1 are you talking about in the declarations of the other
2 declarants in these matters other than the CCABH system?

3 A None other than the CCABH system.

4 Q Okay. So then do I understand that what you're
5 saying is, based on your own personal experience, you
6 disagree that there was any resistance to CCABH's
7 aboveground cable management system?

8 A I don't claim to know what resistance CCABH
9 experienced. I'm not CCABH. I don't know what they
10 experienced in that regard. What I know is in my review
11 of the description of their system, CCABH's system, in my
12 own work on systems very -- that look very close to
13 CCABH's system, and in the perspective of the many
14 colleagues and industry professionals I worked with on
15 those systems, we, -- that is me and these colleagues, and
16 my experience of the industry -- did not have skepticism
17 of these -- of the systems I described I've worked on in
18 the past, or what I understand CCABH's systems are to be
19 based on my reading of the materials considered in my
20 report.

21 Q Okay. So if I can summarize that back to make
22 sure I understood your answer correctly, neither you nor
23 the colleagues with whom you were working were skeptical
24 about the type of aboveground cable management system,
25 correct?

1 A That's right.

2 Q But you have no reason to disagree with the
3 statements of Messrs. Bowman and Novak and Smith and
4 Brooks about their experience encountering industry
5 resistance to CCABH's aboveground cable management system;
6 is that correct?

7 A Could you state that one more time?

8 Q But you have no reason to disagree with the
9 statements of Messrs. Bowman and Novak and Smith and
10 Brooks about their own experience encountering industry
11 resistance to CCABH's aboveground cable management system;
12 is that correct?

13 A I have no reason to doubt their truthfulness and
14 honesty in the representations they made, but I disagree
15 with their represent -- I disagree with the conclusions
16 they draw.

17 Q You know Mr. Brooks has been around a long time,
18 right? I'm sure he would love to hear me say that, but
19 you're aware that he's been around a long time, correct?

20 MR. DIXON: Objection; form.

21 BY MR. FLYNN:

22 Q Yeah, I should probably actually thank him for
23 that objection.

24 A Me too. Should Bill ever read this.

25 Q Let me rephrase that question since your counsel

1 insists.

2 You would agree that Mr. Brooks has longstanding
3 experience in the solar industry, would you not?

4 A I agree he has longstanding industry experience.

5 Q And his amount and level of experience in the
6 solar industry has been far greater than yours. Is that a
7 fair statement?

8 A I don't necessarily agree with that statement. I
9 believe in the diversity of experiences.

10 Q I'm sorry. What?

11 A I believe in the diversity in our experiences. I
12 believe he and I have very different experiences, and we
13 share similar experiences. I wouldn't -- I don't know
14 that I would say he has more or less.

15 Q With respect to utility scale solar
16 installations, would you agree that the amount of
17 Mr. Brooks' experience is far greater than the amount of
18 experience that you've had in utility scale outdoor solar
19 installations?

20 A Again, I don't think I can say more, but I can
21 say -- I can say we've had different experiences.

22 Q Would you believe that Mr. Brooks has experience
23 in more than 12 utility scale installations?

24 A In what capacity?

25 Q Would you believe -- well, your CV, your résumé,

1 Exhibit 1039, indicates that -- under projects, it says
2 12-plus utility scale designed, right?

3 A I see that.

4 Q Do you have an understanding as to whether
5 Mr. Brooks would have been involved in the design of more
6 than 12 utility scale projects?

7 A I wouldn't have that understanding, and I also
8 don't know that I understand involved -- the phrase
9 involved with design.

10 Q Well, you've used that phrase, so what do you
11 mean by involved in designing or involved with design?
12 Not in your CV, but in your answers today, you've
13 indicated a few times that you were involved in designing.
14 What do you mean by that?

15 A I'm not sure I know what you're referring to, but
16 in the CV, I know I designed -- I wasn't involved. I
17 actually was the designer of record for 12 utility
18 systems. So I was in responsible charge of a significant
19 amount of work -- design work that I undertook myself and
20 coordinated with subcontractors.

21 This 12-plus utility scale design comment in my
22 CV, I have no -- I don't have an understanding of
23 Mr. Brooks' experience as compared to this.

24 Q Okay. Got it.

25 I think you told me before, if I remember

1 correctly, that the first utility scale project you
2 designed was in 2009?

3 A That sounds right.

4 Q And were you the designer of record, the
5 principal person that designed that project?

6 A Yes.

7 Q And that was a single digit megawatt
8 installation, I think you said, correct?

9 A Yes.

10 Q What about -- and is that first one included
11 among this 12 that you've identified in your résumé?

12 A Yes.

13 Q Are the majority of these 12 projects that you
14 identify in your résumé, did they occur -- in which you --
15 start that one all over.

16 So all of these 12 projects, if I understand you
17 correctly, you were the designer of record on these
18 projects; is that correct?

19 A Yes.

20 Q Do you know whether the majority of these
21 projects occurred before or after 2014?

22 A I believe the majority of them happened before
23 2014. 2014 and before, yeah.

24 Q In the 2010 to 2013 time frame, how many of these
25 12 occurred during that time frame?

1 A About half.

2 Q Okay. Are you aware in that 2010 to 2013 time
3 frame that there were significant issues and concerns
4 relating to cable management in outdoor utility scale
5 solar installations?

6 A What do you mean by concerns?

7 Q Would you agree that in that 2010 to 2013 time
8 frame, many in the solar industry -- strike that.

9 Would you agree that in the 2010 to 2013 time
10 frame, there were significant issues that the solar
11 industry had to deal with in connection to -- in
12 connection with cable management in outdoor utility scale
13 PV installations?

14 A What do you mean by significant issues?

15 Q If someone made the statement cable management in
16 such outdoor utility scale PV installations was the
17 Achilles heel of the industry, would you agree with that?

18 A It depends on the context. I might agree or
19 disagree with it depending on the context.

20 Q Did you -- is one of the exhibits that you
21 reviewed that were cited by one of the declarants as
22 identified in paragraph 12 of your declaration, did you
23 review an article that we have referred to as the SolarPro
24 article from 2013?

25 A I don't recall the SolarPro article. If it was

1 an associated -- if it was an exhibit in any of these
2 declarations, I would have at least glanced at it.

3 Q Okay.

4 THE STENOGRAPHIC REPORTER: Are we marking this?

5 MR. FLYNN: No, it's already been marked --

6 THE STENOGRAPHIC REPORTER: Okay.

7 MR. FLYNN: -- as Exhibit 2060 and the 178 IPR and
8 Exhibit 2160 and the 139 IPR as well.

9 BY MR. FLYNN:

10 Q Mr. Weiner, I've handed you what we've previously
11 marked as Exhibit 2060. This is the 2013 -- I'm sorry,
12 February -- February/March 2013 edition of the SolarPro
13 article relating to array wire management. Do you see
14 that?

15 A I do.

16 Q Is this one of the exhibits, then, that you
17 reviewed and among the materials that you considered and
18 relied upon in rendering your opinions in these
19 proceedings?

20 A I don't remember this one yet, but if it was one
21 of the exhibits in one of four declarations mentioned in
22 my materials considered, then I would have glanced at
23 this, yes.

24 Q As you sit here today, do you remember anything
25 about the content of this publication or the articles in

1 the publication that stood out to you relating to wire
2 management?

3 A Yeah, I'm -- it's intense. These images have a
4 way of triggering memories, but let me see.

5 Q You can feel free to page through as much of this
6 as you want. I'm only going to ask you a few questions
7 from certain pages.

8 A Okay.

9 Q And I'll direct you to the page, but you can look
10 at...

11 A Oh, this isn't coming back to me. Not yet. I
12 don't remember looking at this. I -- it's possible I
13 looked at them. I just don't remember as I sit here.

14 Okay. Now I'm getting surprised that I don't
15 remember this because...

16 Q Why is that?

17 A Because the tracker we were talk -- that I
18 mentioned in my declaration is in here.

19 Q What page is that in there?

20 A Page 53 of 84. So I guess my answer is, I don't
21 recall reviewing this, but it's possible I did. I just
22 don't recall.

23 Q Okay.

24 A Yeah, I don't recall.

25 Q Okay. Can you go, please, to page 33 of 84 of

1 that exhibit?

2 A Yes, I'm there.

3 Q You see at the top bubble caption thing up there,
4 it talks about how PV systems are expected to have a
5 25-year life span. Do you see that?

6 A I do.

7 Q And that array wire management solutions should
8 match this expectancy?

9 A I see that.

10 Q It then says, However, designers and installers
11 face persistent challenges to managing free air conductors
12 within the PV array.

13 Do you see that?

14 A I see that.

15 Q Do you agree with that statement as of the time
16 of this, which was in February/March 2013?

17 A I'm not sure if I agree with it yet or not. I --
18 I need to understand the context that that statement's
19 being made within, which probably means I should -- I
20 would need to read more of this article.

21 Q I'm going to direct you to certain statements
22 made in the article, and again, you can feel free to
23 review as much as you want. I'm not trying -- I'm only
24 going to ask you about things I care about, but you can
25 read as much for context as you want.

1 A Okay.

2 Q But so as a general statement, you don't know
3 whether you agree or disagree with the statement that
4 designers and installers -- again, as of
5 February/March 2013 -- were facing persistent challenges
6 to managing free air conductors within the PV array; is
7 that correct?

8 A It's correct that I don't know if I agree or
9 disagree with that statement, yeah. Yes.

10 Q So the first sentence, then, of the article,
11 Implementing a safe, reliable, and code compliant wire
12 management system for exposed PV conductors is not an easy
13 task.

14 Do you generally agree with that statement,
15 again, as of that time frame?

16 A I don't agree with it yet, but I also don't -- I
17 don't know enough yet to say if I disagree with that first
18 sentence or not.

19 Q So is it fair to say that you don't agree with it
20 as a general statement, across the board, that it was not
21 an easy task to implement a safe, reliable, and code
22 compliant wire management system for exposed PV
23 conductors; is that right?

24 A In a vacuum, devoid of any context as a broad
25 blanketed statement in a vacuum, I disagree with the

1 sentence implementing a safe, reliable, and code compliant
2 wire management system for exposed PV conductors is not an
3 easy task.

4 Q Do you see the sentence, Within the PV array,
5 these various conductors are often secured to module
6 frames, support rails, and other racking system
7 components? Do you see that, in that same first
8 paragraph?

9 THE STENOGRAPHIC REPORTER: You said racking system
10 components?

11 MR. FLYNN: Racking.

12 THE STENOGRAPHIC REPORTER: Thank you.

13 THE WITNESS: You're starting at within the PV array?

14 BY MR. FLYNN:

15 Q That's correct.

16 A I would agree with the sentence that in many PV
17 arrays, various conductors are often secured to module
18 frames, support rails, and other racking system
19 components. Sure.

20 Q And as of this time frame, in
21 February/March 2013, how were the conductors secured to
22 the module frames, support rails, and other racking system
23 components, in your experience?

24 A With code compliant systems that are suitable for
25 use.

1 Q And what did those systems consist of? What
2 means of securing the conductors to the module frames and
3 support rails and other racking components were used?

4 A Are we talk -- what kind of solar system are we
5 talking about? Utility scale? There's an image of a roof
6 mounted system. Can you give me a little bit of context?

7 Q Well, let's talk about outdoor utility scale
8 systems.

9 A Okay. I mean, one example are just -- in this
10 time frame, one of the means of securing conductors to
11 module frames -- actually, I don't remember seeing a lot
12 of conductors fixed module frames. But maybe racking --
13 support rails and other racking system components, there
14 are clips and ties and devices fitting -- yeah, clips and
15 ties are what I would call them that were commonly used.

16 Q You see in the second paragraph there, the
17 beginning sentence refers to UV rated plastic wire ties.
18 Do you see that?

19 A I do.

20 Q Is that the kind of thing you're talking about?

21 A Sure. Yeah, yeah.

22 Q And then next sentence refers to stainless steel
23 cable clips. That's what you're talking about, correct?

24 A Yeah. It can include those, yeah, stainless
25 steel cable clips. Not sure I agree with the use of the

1 word cable in that context, but fine.

2 Q Why don't you agree with the use of the word
3 cable in that context?

4 A I haven't read the -- this looks like a technical
5 article, or it's going to be a technical article once it
6 gets past some of the broad introductory statements. And
7 cable has a more specific definition in the --

8 Q I'm sorry.

9 A -- in the context of the National Electrical
10 Code. So we just went from, in my mind when I was
11 answering your question, I was thinking single conductor
12 cable -- single conductors, and now we're switching to
13 cables. And so my mind is switching because they're -- a
14 conductor and a cable are different things to me in the
15 context of the National Electrical Code.

16 Q So what's a cable in the context of the NEC to
17 you?

18 A It's short for a multiconductor cable assembly.
19 A cable can include multiple conductors. That's the
20 biggest difference.

21 Q Okay. The last full paragraph that starts at the
22 bottom of the page that starts with unfortunately, do you
23 see that?

24 A Yes.

25 Q Unfortunately, the PV industry lacks consistent

1 standardized wire management solutions for free air
2 conductors within the array. Coupled with the harsh
3 environmental conditions that PV array conductors are
4 exposed to, UV radiation, high winds, and extreme ambient
5 temperatures, and ice, snow, and other debris, wire
6 management continues to be the Achilles heel of the
7 majority of PV installations.

8 Do you see that?

9 A I see all that that you read, yeah.

10 Q Do you disagree with that, in the 2013 time
11 frame?

12 A No. It doesn't even look consistent with itself
13 in the previous paragraph where they just talked about
14 standardized wire management solutions for free air
15 conductors within the array by talking about the ties and
16 clips we were just talking about. So I'm a little
17 confused why the article talks about ties and clips, then
18 says there's no standards.

19 But I haven't closely read this whole article
20 from beginning and end, so maybe I'm missing something.

21 Q Well, in the preceding paragraph, and it talks
22 about the UV plastic wire ties, it says they're not a
23 permanent answer and require inspection and replacement,
24 correct?

25 A I see where they say that.

1 Q Do you agree with that?

2 A I'll agree with the portion of that sentence,
3 that says they require regular inspection and replacement.
4 I think effective operations and maintenance is important
5 for any solar system. So it wouldn't just be limited to
6 ties and clips. I would want to inspect the entire system
7 in many ways throughout the life of the project.

8 Q Do you agree with the portion of the statement
9 that says that the plastic wire ties are not a permanent
10 answer?

11 A I don't know what that means.

12 Q Well, it refers to the stainless steel cable
13 clips. The article says, But this solution is often
14 limited to supporting only one or two conductors at a
15 time, and not all modules have frames.

16 Do you see that?

17 A In the context of this paragraph, I'll agree with
18 it because they're -- I think they're referring to a
19 specific kind of stainless steel cable clip, the kind that
20 attach to module frames. So assuming that's what they
21 mean by that sentence, I'll agree with it.

22 Q And so leading up, then, to that next sentence
23 where it says, Unfortunately, the PV industry lacks
24 consistent standardized wire management solution for free
25 air conductors within the array, do you agree with that

1 statement?

2 A No.

3 Q Do you agree that wire management continues to be
4 the Achilles heel of the majority of PV installations due
5 to the harsh environmental conditions that PV array
6 conductors are exposed to?

7 A No. I think energy regulations are the Achilles
8 heel to solar installations, and what kind of incentives,
9 rules, and regulations are being written and authorized by
10 state and national governments. I think that's the
11 Achilles heel. That's a very -- the solar industry's a
12 very policy driven industry. Highly regulated.
13 Regulation makes or breaks our industry in many ways. Not
14 a cable management. I think cable management's important.
15 I don't know that I would call it the Achilles heel.

16 Q The next sentence refers to -- that the author of
17 the article checked several PV industry experts from code
18 gurus and inspectors to O and M providers. Do you see
19 that?

20 A I do.

21 Q And if you turn to the next page, page 34 of 84,
22 on the left-hand column at the very bottom, Mr. Brooks is
23 one of the industry experts that was consulted. Do you
24 see that?

25 A I do.

1 Q In that left-hand column, the paragraph beginning
2 with the harsh environment, do you see that?

3 A I see that.

4 Q And do you know or have you heard of John Wiles?

5 A I have heard of him, and I used to know him at a
6 professional level, yeah.

7 Q Would you agree with the classification of him as
8 an industry expert?

9 A Yes.

10 Q Mr. Wiles goes on to discuss at length the
11 environmental conditions that -- of the outdoor
12 environment, that exposed PV conductors must survive. Do
13 you see that?

14 A Where he says, We must address the fact that the
15 outdoor environment that expose PV conductors must survive
16 is one of the most difficult? That one?

17 Q Yes.

18 A Okay. I see that.

19 Q And then below that sentence, he talks about all
20 the different temperature ranges and other conditions,
21 correct?

22 A I -- I see that.

23 Q And the temperatures can range from minus
24 76 Fahrenheit to plus 194 Fahrenheit. Do you see that?

25 A I see that.

1 Q And it talks about the UV irradiance may exceed
2 2,000 hours per year, winds and gusts of 30 to 130 miles
3 per hour not being uncommon. Do you see all that?

4 A I do.

5 Q And he talks about the physical abuse of
6 wind-driven sleet, snow, rain, hail, sand?

7 A I see that.

8 Q As well as mother nature's living creatures,
9 squirrels, rats, rabbits, and birds. Do you see all that
10 discussion?

11 A You forgot raccoons.

12 Q Did I forget raccoons? Oh, he forgot raccoons.

13 A Yeah, yeah.

14 Q Do you agree with all of those conditions and
15 that they present significant challenges to wire
16 management in outdoor PV installations?

17 MR. DIXON: Objection; form.

18 BY MR. FLYNN:

19 Q Let me rephrase the question.

20 Do you agree with -- that all of the conditions
21 that are discussed in the article that we just reviewed
22 present significant challenges to wire management in an
23 outdoor PV installation in the 2013 time frame?

24 A I don't know if I agree with that. I don't
25 know -- it didn't feel like a significant challenge for me

1 or my colleagues. If the audience of this article are a
2 layperson or somebody who doesn't know very much, maybe I
3 could see this kind of stuff looking scary and being
4 characterized as challenging.

5 But for professionals who do this day in and day
6 out, I can tell you from my personal experience and the
7 experience of my colleagues and many people I worked with
8 around the time, these are known issues. They're not -- I
9 just don't know what you mean -- I don't know what it
10 means -- it's not a challenge.

11 I mean, I could argue it as a challenge and not a
12 challenge. You know, it's a -- it's a challenge to design
13 solar energy systems. You know, they're -- it's not
14 something you wake up knowing exactly how to do. You got
15 to study, you got to learn, you got to take some courses,
16 you got to do it yourself.

17 There's -- you know, but you -- I -- it wasn't a
18 challenge for me to design negative 60-degree to positive
19 194-degree Fahrenheit conductors exposed to 2,000 hours of
20 UV irradiance with 90 to 139-mile per hour winds and
21 gusts. It wasn't a challenge to me because I design and
22 engineer solar systems all over the world, and we put
23 conductors in these environments every day, all the time.

24 Q Have you ever designed a cable management system
25 as part of the EBOS of an outdoor utility scale PV

1 installation?

2 A Yes.

3 Q And did you design a cable management system that
4 included a messenger wire, not a rigid bar, but a
5 messenger wire -- a tensioned messenger wire from which
6 cable hangers are suspended with multiple cable carrying
7 surfaces to support the electrical conductors extending
8 from the solar panels in a solar array?

9 MR. DIXON: Objection; form.

10 THE WITNESS: Could you ask the question one more
11 time?

12 BY MR. FLYNN:

13 Q Sure.

14 Did you ever design a cable management system for
15 an outdoor utility scale PV installation that employed a
16 tensioned messenger wire from which cable hangers with
17 multiple cable carrying surfaces are suspended in order to
18 support electrical conductors extending from solar panels
19 in the solar array?

20 A I do think some of the work I did with SPG in
21 2010 to 2013 is consistent with what you just said.

22 Q I'm not asking you if it's consistent. I'm
23 asking you if you actually designed a system that used a
24 tensioned messenger wire from which cable hangers with
25 multiple cable carrying surfaces were suspended to support

1 the electrical conductors coming from the solar panels in
2 the solar array.

3 Did you ever design that system?

4 A Yes.

5 Q When?

6 A Between 2010 and 2013.

7 Q And that was with the SPG tracker; is that
8 correct?

9 A Yes.

10 Q And that's what's discussed in your declaration;
11 is that right?

12 A Yes.

13 Q Okay. Before we get to that, you mentioned about
14 the audience of the SolarPro article. Is it your
15 understanding that the audience of the SolarPro
16 publication are laymen?

17 A I don't know what the readership of SolarPro was
18 at this time period.

19 Q Were you familiar with SolarPro?

20 A Yes. I knew of it, and I read an article or two
21 out of it from time to time.

22 Q But that was not a publication that you regularly
23 consulted?

24 A Not regularly, no, but occasionally.

25 Q So do you think that the statements that were

1 made in this SolarPro article that we were discussing a
2 few minutes ago are directed to laypeople about the
3 challenges of cable management?

4 A I don't know. I don't know who the author was
5 intending to speak to in this article.

6 Who is the author? Yeah, I don't know.

7 Q Okay.

8 A I see where Bill Brooks' name is mentioned in
9 that article, but was he also the author of it, do you
10 know?

11 Q So actually, if you go to page 32 of 84, that's
12 actually the cover page of that particular article.

13 A I see.

14 Q It looks like the author is Tommy Jacoby. Do you
15 know that person? Have you heard of that person?

16 A No. So I don't know what his background is, what
17 his expertise is, and I don't know who he was intending to
18 speak to with this article.

19 Q So you don't know generally who the targeted
20 audience is or was intended to be, at least in this time
21 frame, of the SolarPro publications; is that correct?

22 A That's correct. And I just have to say, I love
23 Mr. Brooks's comment down here, New mistakes are invented
24 every day. Can't help but notice that.

25 Q Do you agree with that statement? Since you

1 can't help but notice it, I have to ask you if you agree
2 with it.

3 A Fair, fair. I think there's a lot of truth to
4 that statement.

5 Q Okay. Off the record.

6 (Recess taken.)

7 BY MR. FLYNN:

8 Q Welcome back, Mr. Weiner.

9 A Thank you.

10 Q Okay. If you would, please, go to paragraph 15
11 of your declaration. And you refer to -- at the bottom of
12 page 8 and over to the top of page 9, you refer to your
13 personal knowledge of the existence of an aboveground
14 management systems -- for instance, messenger supporting
15 systems -- including those manufactured by Snake Tray in
16 the 2017 time period. Do you see that?

17 A I do.

18 Q Now, Snake Tray -- the Snake Tray systems that
19 you're referring to in that time period were cable trays;
20 is that correct?

21 A No.

22 Q What were they?

23 A I considered them messenger systems. Messenger
24 cable support systems in the 2010 to 2013 time period.

25 Q Did Snake Tray manufacture cable trays in that

1 2010 to 2013 time system?

2 A I believe they did. I'm not 100 percent sure. I
3 seem to remember seeing some cable tray looking devices
4 from Snake Tray, but the reason I don't remember those
5 very well and my memory is foggy is because I wasn't
6 interested in those systems from them. I was interested
7 in what I was -- what I think of as the messenger based
8 systems that they were working on. They had a lot of --
9 they had several different products from what I remember.

10 Q Well, if you go to paragraph 24 of your
11 declaration, you're talking about your research at SPG in
12 the 2011 to 2012 time frame, correct?

13 A Yeah.

14 Q And you say in that paragraph that you noticed
15 various embodiments of the messenger supported concept
16 available in the electrical industry, and you refer to
17 cable tray-like assemblies provided by Snake Tray. Do you
18 see that?

19 A Yes.

20 Q So when you say cable tray-like assemblies, is
21 that something different than Snake Tray's cable trays?

22 A Yes.

23 Q How was the Snake Tray cable tray-like assembly
24 different than the Snake Tray cable tray?

25 A The tray-like assembly included a messenger that

1 included mechanical supports for electrical conductors,
2 and resembled the image I put in my declaration on page 14
3 and 15 to show a picture of it.

4 Q So the Snake Tray cable-like assemblies -- excuse
5 me, the Snake Tray cable -- Snake Tray cable tray-like
6 assemblies are depicted in the photographs that you
7 include in your declaration at pages 14 and 15; is that
8 correct?

9 A Not exactly. Yeah.

10 Q I thought you had said -- I believe that you had
11 said that when I asked you how was the Snake Tray cable
12 tray-like assembly different than the Snake Tray cable
13 tray, you answered that the tray-like assembly included
14 the messenger that included mechanical supports for
15 electrical conductors and resembled the image I put in my
16 declaration on page 14, 15 to put a picture on it.

17 Is that still a correct answer?

18 A It is. It is.

19 Q So which answer are we going with? That the --
20 what you have in your declaration is the Snake Tray cable
21 tray-like assembly that you're referring to?

22 A I'll expand a little bit.

23 Q Okay.

24 A So in the sentence in the middle of 24 where it
25 starts, I noticed various embodiments.

1 Q Yes.

2 A I noticed various embodiments, and one of those
3 was -- one of those embodiments was a cable tray-like
4 assembly. I noticed it.

5 Q A cable tray-like assembly provided by Snake
6 Tray?

7 A Correct. Upon noticing this cable-like tray
8 assembly provided by Snake Tray, I discovered Snake Tray
9 offers a lot of products and components, including -- if I
10 remember correctly, I think they may include cable trays
11 or things that look like cable trays.

12 And then they also provided things that look
13 like -- that are the images on page 14 and 15. So I think
14 of it as kind of a progression. There was cable trays
15 maybe provided by Snake Tray or others, then there were
16 cable tray-like things that I saw at Snake Tray that got
17 my attention because, honestly, I didn't care too much
18 about cable trays.

19 So I saw something that was cable tray-like but
20 better from Snake Tray, and upon further investigation,
21 found what I would call the messenger system that I show
22 on page 14 and 15.

23 Q That's also provided by Snake Tray?

24 A Yes, sir.

25 Q Okay. So that -- what is shown on pages 14 and

1 15 of your declaration, they're not modifications of Snake
2 Tray products; is that correct? In other words, they are
3 products that Snake Tray sold and provided?

4 A I don't know what they sold or provided, but I
5 saw -- I spoke to Snake Tray's staff, and they presented a
6 lot of products to me that caught my interest, including
7 the one I'm showing here. And, no, I didn't -- I don't
8 recall modifying it.

9 Q Okay. That's all I wanted to know. You didn't
10 modify this Snake Tray product that's shown on pages 14
11 and 15 of your declaration?

12 A The only thing I don't remember are the clamps in
13 the image just above -- so you see there's, like --

14 Q Yeah.

15 A -- a horizontal running metallic rod of some
16 kind, and then there are the saddles. Then above that
17 assembly is a clamp in the image on page 15, and I don't
18 remember who actually provided the clamp, if that came
19 from Snake Tray or myself or someone else. I don't
20 remember.

21 Q When I saw the photo on page 15, you're talking
22 about the top photo, correct?

23 A Actually, either one of them applies to my
24 comment.

25 Q Oh, I see. Well, focusing on the top photo

1 because that's where I can see the clamp the best --

2 A Yes.

3 Q -- I assume -- tell me if I assumed
4 incorrectly -- that that clamp was just used -- this is a
5 mockup in this photo, correct?

6 A Yes.

7 Q This photo is showing a mockup, correct?

8 A Yes.

9 Q And I assume that that clamp was used as part of
10 the mockup to connect the Snake Tray product to whatever
11 that clamp is clamped to. Am I correct in that
12 assumption?

13 A I -- I think that's accurate.

14 Q Did you erect this mockup?

15 A Yes.

16 Q And so are you the one that used the clamp to
17 connect it to the structure?

18 A Yes.

19 Q Okay. And what is that structure that the clamp
20 is connected to?

21 A Actually, I don't recall the structure in page 14
22 or the top of page 15, but the structure at the bottom of
23 page 15 is definitely another mockup of a portion of the
24 SPG single axis tracker.

25 Q It looks like an I-beam type structure; is that

1 correct?

2 A Yes.

3 Q That's part of the tracker?

4 A Yes.

5 Q Or at least a part of the mockup of the tracker?

6 A Yes.

7 Q And so you refer to the saddles, and the saddles
8 are what in that Snake Tray product that's shown on
9 pages 14 and 15?

10 A When I say saddle, I'm referring to the -- on
11 page 14 in the image, what I'm calling the saddle or the
12 hanger is that metallic component that hangs down below
13 the messenger that's running horizontally in the image.

14 Q Does the term saddle have an understood meaning
15 of what that's referring to in solar?

16 A Like most things in my experience, depending on
17 the context, in context, yes. I think words like saddle
18 would have meaning in context.

19 Q It would require specific context for this to be
20 considered by somebody skilled in the art in solar to
21 consider this a saddle, wouldn't it?

22 A I don't know that they need to be skilled in the
23 art or not.

24 Q Well, whether they need to be skilled in the art
25 or not, it would take specific context for someone to look

1 at this and think that that's a saddle, wouldn't it?

2 A I think if I showed this picture on page 14 to
3 some of my colleagues around the time of 2010 to 2013 and
4 said, Hey, check out this messenger system, do you see the
5 saddles in this image? I think they might say yes.

6 Q Well, if you didn't ask them what me in my
7 profession would say is a leading question, if you just
8 showed them and said, What do you understand this to be,
9 do you think they would say saddle?

10 A I don't know.

11 Q Okay. So the messenger -- I think you've already
12 told me, but I'll just confirm it to make sure I heard it
13 correctly. The messenger that you're referring to in this
14 product is the metal rod; is that right?

15 A Yes.

16 Q These what you call saddle or hanger portions
17 that extend below the metal rod, they're welded to the
18 metal rod, are they not?

19 A I think in this image, this product may have been
20 welded. I mean, that's very possible and likely.

21 Q If you look at page 13 right above the
22 photograph.

23 A Oh, okay. Okay. Yeah.

24 Q That confirms for you that these were welded to
25 the rod, correct?

1 A Yes, it does.

2 Q And so was this rod with these what you call
3 saddles or hangers welded to them, was that, like, in
4 sections? In other words, is this product in sections
5 that consist of the metal rod and so many different
6 saddles or hangers welded to that rod?

7 MR. DIXON: Objection; form.

8 THE WITNESS: In each of these images, I -- in the
9 image on page 14, for example, I don't think we're seeing
10 the entire assembly. We're only seeing a snippet of it.
11 It continues outside of the frame of the camera. Is
12 that --

13 BY MR. FLYNN:

14 Q But even if it extends outside the frame of the
15 camera, if you were using this not in a mockup but in an
16 actual system, would they be in different sections,
17 however long the sections may be?

18 A What do you mean by section?

19 Q From terminal point A to terminal point B, if
20 you're using this kind of a product that has a metal rod
21 to which these hangers are welded, would it go in one
22 continuous metal rod section from terminal point A to
23 terminal point B, or would there be multiple sections of
24 rod to which the hangers are welded?

25 A Either. Either is very doable.

1 Q Well, I'm not asking what you think is doable.
2 I'm asking you what this was, or what this was meant to
3 illustrate.

4 A Well, this was meant to illustrate a messenger
5 supported cable system.

6 Q Okay.

7 A And this is a mockup, so it's not a finished UL
8 certified, commercialized, funded, everything. This is --
9 in the context of these photos and my work on it, it was
10 an R&D product, really, research and development project.
11 So whether it came in sections, as you call them, or not,
12 wasn't a limitation I or any of my colleagues put on the
13 component in this embodiment of it.

14 Q So in paragraph 25 of your declaration, right
15 above the photograph on page 14, you indicate that it
16 includes a messenger-like metal rod to support saddles or
17 hangers that were at the time welded to the messenger
18 cable; is that correct?

19 A I see that.

20 Q And, again, the reference to messenger cable is
21 referring to the messenger-like metal rod?

22 A What's your -- what was the question again?

23 Q Your reference in that statement in your
24 declaration that the support saddles are hangers were at
25 the time welded to the messenger cable, that's your word,

1 correct?

2 A I see messenger cable, yeah.

3 Q And you're referring to the messenger-like metal
4 rod as the messenger cable, correct?

5 A Yes.

6 Q Did you ever implement this mockup in a real
7 system?

8 A By real system, you mean a system installed in
9 the field and interconnected with a local utility company
10 and producing -- actively producing power?

11 Q Yes, thank you.

12 A I did not do that myself. I believe -- hold on.
13 I know I didn't do that. I didn't install a mockup or a
14 commercial -- I didn't go to a commercially operating
15 system and put any Snake Tray devices on it myself. I do
16 believe a colleague of mine did.

17 After I built this mockup, this was like a
18 Level 1, and Level 2 was, okay, I don't see any fatal
19 flaws here. Maybe there's a fatal flaw in the field.
20 Can -- hey Bob or Frank or whoever it was, can you do what
21 I did here and do this out in the field and tell me which
22 issues you run into?

23 Q And do you know if that happened?

24 A Yes, because I got feedback, but I don't remember
25 the feedback or who it was.

1 Q Or when it was?

2 A Oh, it would have been around the same time as
3 this, 2011 to 2012 time frame.

4 Q But you don't know who it was that did it; is
5 that correct?

6 A It would have been an SPG employee.

7 Q You don't know --

8 A But I don't know the name of the person who would
9 have done it.

10 Q You don't know the physical location where it was
11 done?

12 A I can think of a couple probable locations, but I
13 don't know for sure.

14 Q And you got feedback?

15 A I got feedback, yes.

16 Q What was the feedback?

17 A There was a lot more feedback, but I think part
18 of the feedback was this could work.

19 Q So when it was installed, you think, you believe,
20 out in the field, was it still installed in the field but
21 still as a mockup situation as opposed to whether it was
22 actually used in the field to support electrical
23 conductors?

24 A We're still in the mockup arena.

25 Q So do you know whether or not this was ever

1 implemented in the field in an actual installation where
2 it actually supported electrical conductors in a system
3 that was connected to the grid?

4 A We installed actual -- yeah, I think the answer
5 is yes. The device we used was itself not a fully
6 commercialized product, but we installed this Snake Tray
7 device in an actual system operating in the field really,
8 truly working in commercial, and we did actually plug this
9 into that to -- and routed actual conductors through it.

10 Q But you're saying that was -- that's what you
11 were referring to that we were still in the mockup arena,
12 though; is that correct?

13 A What I mean -- what I meant by mockup arena is
14 I'm not taking a fully developed, commercialized product
15 and putting it on a fully commercialized, developed
16 project. I'm taking an R&D component and putting it on a
17 fully developed, commercialized project. But the product
18 itself was not yet fully developed because I'm still in
19 the R&D space.

20 Q Okay.

21 A But are you familiar with TRL, technology
22 readiness levels? Like, there's bench testing, and then
23 there's field testing, and then there's commercial
24 testing. So I was going up the chain of tests with this
25 device. We're seeing a lower level test in this

1 declaration. There were higher level tests performed with
2 more developed projects and components that I don't show
3 in my declaration.

4 Q After this R&D product was installed in the field
5 still in the mockup arena, do you know whether they kept
6 it there installed, or was it subsequently taken down?

7 A I'm sure it was subsequently taken down.

8 Q So is -- what's shown on pages 14 and 15 of your
9 declaration, is that what you would refer to as the Snake
10 Tray cable tray-like product?

11 A The image on page 14?

12 Q Mm-hmm, and top of 15 -- or both of those on 15,
13 I guess.

14 A I don't think so because, like I said, I first
15 learned about Snake Tray, then I learned about Snake
16 Tray's cable-like devices. Then upon further exploration,
17 discovered what I now think of as not just cable
18 tray-like, it's messenger based. And that's what I'm
19 showing these images.

20 So I don't think this -- the images in page 14
21 and 15 are the cable tray-like device. That was a
22 precursor to getting me to discover the messenger device.

23 Q So what you're -- excuse me. What you're showing
24 on pages 14 and 15, they would be in the category of
25 messenger based cable management systems in your view,

1 correct?

2 A Yes.

3 Q As you understand them?

4 A As I -- yes.

5 Q So what is, then, your understanding of what a
6 cable tray is?

7 A The word ladder comes to mind. In fact, I think
8 a lot of cable trays are described as ladder-type cable
9 trays. So whereas a messenger includes -- I guess, think
10 about a ladder. That's a cable tray. A cable tray looks
11 like a ladder. Very high level.

12 Q I confess that I can envisualize a ladder and a
13 lot of different shapes of ladders, but I'm not sure I'm
14 making the connection between ladder and a cable tray.

15 A Two vertical -- two vertical -- imagine two
16 parallel vertical aluminum extrusions, and then imagine
17 horizontal aluminum extrusions running perpendicular at
18 intervals.

19 Q As if they were the rungs of a ladder?

20 A Thank you.

21 Q So how does that describe a cable tray?

22 A It describes it by using a ladder analogy to
23 visualize what a cable tray looks like.

24 Q So what's the function of the cable tray? What
25 does it do and how does it do it?

1 A A cable tray supports wiring.

2 Q What do you mean by wiring?

3 A Conductor -- conductors or cables. So cable
4 trays, raceways, wire ways. These are all different
5 technical terms used in the National Electrical Code to
6 describe different ways of wiring, or I think they are
7 different types of wire protection systems. Is what
8 they're called?

9 So a conduit is a type of raceway.

10 Q So the cable tray that you've described or
11 analogized as a ladder structure, describe to me
12 functionally how it is that the cable tray supports the
13 various kinds of wires and wiring.

14 A Well, the ladder is a rigid body that rests or is
15 mounted hor- -- well, typically, broadly, cable -- I've
16 seen a lot of cable trays in a lot of applications, but I
17 would say the most popular -- the most popular application
18 of a cable tray I'm used to seeing in solar is a
19 ladder-type cable tray lying flat, and it can be suspended
20 from the ceiling or anchored into points at the end or
21 both.

22 And the wire -- and it supports the wires laying
23 on top of it, on the rungs of the ladder, as you called
24 it, the rungs. Those conductors or the cables could rest
25 on those rungs. And as the cable tray bends and turns,

1 the wires bend and turn with it. So the cable tray's
2 always underneath the conductor.

3 Q I understand what you're describing.

4 Okay. So how does your photograph on page 14 of
5 your declaration differ from a cable tray?

6 A Well, I describe -- well, we just said in the
7 cable tray description, there were rungs to a ladder.
8 There are no rungs to a ladder in this. That's one
9 difference.

10 Q And this photograph only shows one metal rod as
11 opposed to two rigid metal structures of a ladder that run
12 parallel to one another. That would be another
13 difference; is that right?

14 A I'd agree with that.

15 Q So you don't consider metal -- you don't consider
16 cable trays to have those structures that you call hangers
17 as shown in the photograph on page 14 of your declaration;
18 is that correct?

19 A I don't see anything in this image on page 14
20 that depicts a rung or a ladder structure like what we
21 were just talking about, the two parallel beams or the
22 rungs.

23 Q So for you to be a cable tray, it has to be those
24 two parallel beam-like structures with perpendicular rungs
25 going from one beam to the other; is that correct?

1 A I don't know that it has to be that way, but it
2 can be that way.

3 Q Well, I'm talking about what somebody would
4 ordinarily understand a cable tray to be. So if you said
5 cable tray to someone, that's what they would envision
6 what you described with the analogy to the ladder; is that
7 correct?

8 A I suppose the answer to that question depends on
9 who I'm talking to and in what context. If I'm speaking
10 to a layperson, they may -- if I say the word cable tray,
11 I have no idea what's going to pop into their head. If
12 I'm talking to a professional, I think it's very possible
13 that a ladder-type cable try might pop into their head.
14 There might be other types of cable tray that pop into
15 their head. I don't want to speak for all people's heads
16 and what goes on in there.

17 I know when you mentioned -- if I hear the word
18 cable tray, the first word that jumps into my mind is the
19 ladder type, but there are other types of cable trays too.
20 But the ladder type for some reason comes first.

21 Q What other type of cable trays are there?

22 A I don't know off the top of my head.

23 Q So -- I'm sorry.

24 A The National Electrical Code I think has a good
25 description of cable tray in it because there was a whole

1 article on it. There are product catalogs I've seen with
2 a lot of different shapes and sizes. Like, sometimes --
3 sometimes the rungs of a ladder are circular. Sometimes
4 they're flat. Sometimes they're...

5 Q Did you say that sometimes the rungs of the
6 ladder are circular?

7 A Yeah. Or flat.

8 Q How does circular work?

9 A I don't know.

10 Q What would that look like?

11 A A ladder.

12 Q With circular rungs?

13 A I think I've seen circular rungs of a ladder --
14 of a ladder-type cable tray.

15 Q So let's -- Mr. Weiner, I'm handing you what
16 we've previously marked as Exhibit 1009 in IPR 178.

17 A Okay.

18 Q And it's Exhibit 1007 in the 139 IPR. Excuse me.

19 A So where am I going or where --

20 Q No, I just wanted to hand you the NEC first.

21 A Oh, okay.

22 Q Because you mentioned that there's an article on
23 cable trays, and that would be Article 392. Would that be
24 correct?

25 A Look at that. Yeah, Article 392, cable trays.

1 Q And do you see the cable tray defined in this
2 article?

3 A I see 392.2 definition, cable tray system. A
4 unit or assembly of units or sections and associated
5 fittings forming a structural system used to securely
6 fasten or support cables and raceways.

7 Q But to you, that definition of a cable tray in
8 Article 392.2 would not cover what you show in the
9 photograph on page 14 of your declaration; is that
10 correct?

11 A I don't know. I don't have an opinion on that.
12 I need to study this. There's a few words used in this
13 definition I'm not sure I understand the definitions of
14 them. Like a unit or sections, like, associated fittings.
15 I think I know what forming a structural system means
16 (indiscernible utterance).

17 THE STENOGRAPHIC REPORTER: Forming a what?

18 THE WITNESS: Forming a structural system.

19 THE STENOGRAPHIC REPORTER: Thank you.

20 BY MR. FLYNN:

21 Q What's a wire way?

22 A There's another section of the NEC on that, but
23 it's more trough-like. A wire way is more trough -- so
24 when you say cable tray, I'll think of a ladder. If you
25 say wire way, I'll think of a trough. Like a gutter, an

1 enclosed gutter system of some kind.

2 Q When you say enclosed, you mean it has a cover on
3 it?

4 A I don't recall if they always have to have a
5 cover, but I do think of wire ways as having covers. I
6 don't know if the NEC requires it to have a cover or not
7 off the top of my head.

8 Q Do you know what article covers wire ways of the
9 NEC?

10 A It's got to be close. Not -- oh, 376.

11 Q Okay. And 376.2 defines metal wire ways, does it
12 not?

13 A It does.

14 Q And is that definition consistent with your
15 understanding of what a wire way is?

16 A Yes.

17 Q Including the hinged removable cover for housing
18 and protecting, correct?

19 A Mm-hmm. Yes. Sorry. Yes.

20 Q And metal wire ways like the cable trays house,
21 protect, support electrical wires and cable, correct?

22 A Say that one more time.

23 Q Metal wire ways like cable trays are for the
24 purpose of housing and protecting and supporting
25 electrical wires and cable; is that right?

1 MR. DIXON: Objection; form.

2 THE WITNESS: The housing and protecting part seems to
3 apply to metal -- to wire ways, but not to cable trays
4 based on my reading of the definitions in the NEC.
5 Protecting and housing show up in 376.2, but housing and
6 protecting does not show up in 392.2 for cable trays.

7 BY MR. FLYNN:

8 Q What's your understanding of what portion of the
9 wire way houses the electrical wiring and cables?

10 A Well, the wire ways are enclosed, so I think of
11 maybe the enclosure of a wire way as being housing.

12 Q You mean the trough? Is that what you mean?

13 A Trough? So -- yeah, so the -- so a wire way --
14 looking at a cross section of a wire way, it looks -- in
15 my mind, it looks like a square of sheet metal, and the
16 wire going in the center of the square is being housed and
17 protected on all four sides of the square.

18 A cable tray doesn't have that. Cable tray is
19 not a square. It's a ladder or ladder-like, and it's flat
20 and open. So it doesn't feel protected or housed.

21 Q In either case, the cable tray and the wire way
22 is for purposes of supporting the electrical wiring and
23 cable, correct?

24 A One more time, sorry. What was the question one
25 more time?

1 Q The cable tray and the wire way are both for the
2 purpose of supporting the electrical wiring and cables?

3 A Yes.

4 Q Okay. So when you refer to conventional cable
5 trays in your declaration, is that the ladder-like
6 structure that you're thinking of that you described?

7 A That's just the first embodiment that pops into
8 my head when you say cable tray. I immediately think of
9 the ladder-type cable tray first.

10 Q So in paragraph 23 of your declaration -- I'm
11 sorry, paragraph 24 of your declaration, and this is,
12 again, referring to your research at SPG in 2011 to 2012.
13 You said you and your colleagues identified messenger
14 supported wiring systems as an opportunity to replace wire
15 ways and conventional cable trays.

16 Do you see that?

17 A I do.

18 Q And when you refer to conventional cable trays,
19 are you referring to the ladder-like structure that you
20 described?

21 A Yes.

22 Q And when you refer to wire ways, you're referring
23 to the wire ways as you describe them and as defined in
24 the NEC; is that right?

25 A That's right.

1 Q And when you say that you identified messenger
2 supported wiring systems as an opportunity to replace wire
3 ways and conventional cable trays, you're talking about
4 what's shown in the photographs on pages 14 and 15 of your
5 declaration, correct?

6 A Yes. At least in part.

7 Q What do you mean in part?

8 A There were other types of messenger supported
9 wiring systems aside from just the images that I also
10 considered.

11 Q But you didn't include them in your declaration?

12 A No, I did.

13 Q Oh, you did?

14 A Like the -- so bottom of page -- of paragraph 24,
15 parentheses, like the Air Guard product line manufactured
16 by Prysmian cables. There's some more.

17 Q I'm glad you brought that up. Let me show you,
18 that is exhibit...

19 A And there might be one more too, actually.

20 Q Mr. Weiner, let me show you what we've marked as
21 Exhibit 1043 in the 178 IPR.

22 A Okay.

23 Q And it's Exhibit 1057 in the 139 IPR.

24 This is the Air Guard product that you're
25 referring to, correct?

1 A Yes.

2 Q So the Air Guard product is what's shown on the
3 bottom left of page 1 of Exhibit 1043, right?

4 A Oh, the image?

5 Q Mm-hmm. Yes.

6 A I guess that's an image of the product. Mm-hmm.

7 Q And that product is a -- consists of a two
8 conductor cable and a separate copper grounding conductor,
9 correct?

10 A Are you reading that -- oh, the two conductor
11 cable -- what you just said sounds consistent with the
12 description I'm reading in this document, yeah.

13 Q And then there's insulation around the -- that
14 assembly?

15 A Yeah.

16 Q Right?

17 A Yeah.

18 Q So when you say that that is a messenger
19 supported concept, how does that product reveal to you a
20 messenger supported concept?

21 A Well, I considered this product as a part of a
22 messenger based cable support system. This is just one
23 part of it. We're not seeing the whole assembly here.

24 Q What other parts that we're not seeing would make
25 it the messenger supported based system?

1 A Yeah, so if I remember correctly -- it's going
2 back a while -- I remember learning from Prysmian, I
3 guess, the manufacturer -- it might have been -- well, I
4 can't remember if I was working with Prysmian directly or
5 one of their suppliers, but they knew I was investigating
6 messenger based systems. And somebody there said, You
7 should take a look at this.

8 And when I was speaking with the supplier about
9 this product and going through its construction and
10 function -- in fact, if I remember, they said this was
11 often used in locomotive applications. For whatever
12 reason, this product that we're looking at on this page
13 was a commonly used component in locomotive applications
14 on trains.

15 And they said -- I think they said what they've
16 done with this product on trains was make it part of the
17 messenger system. And if I remember correct -- so --
18 yeah, okay. So one of my requirements was that it needed
19 to be UL listed, which means that the information on the
20 spec sheet actually has -- can be relied on.

21 So when I saw -- when I was told this product
22 might work for what you're describing you need, and, look,
23 on the spec sheet, it works with messenger cables or
24 messenger systems, when I asked, Show me, I want to see
25 this with that messenger system, it was described to me

1 like a standard messenger system.

2 Nothing strange or out of the ordinary. You take
3 a messenger, you take rings, or saddles or support devices
4 of some kind, and you can attach those to the messenger
5 with this cable, running through the support structure.

6 Q And you remember seeing that from what they
7 showed you?

8 A I remember us talking about it. I don't remember
9 if they showed me images or pictures, but I remember we
10 talked about it.

11 Q Were there other ways to use a messenger to
12 support this kind of cable, which is the Air Guard cable,
13 other than attaching rings or hangers to a messenger to
14 support the electrical conductors?

15 A I don't know about this product specifically
16 because it's UL listed, and whatever we do with it has to
17 conform to whatever UL listed instruction manuals come
18 with it, which I don't have it. But I am aware of
19 messenger based systems that don't require rings or
20 saddles or hooks or any --

21 Q How does the messenger support the conductor like
22 the Air Guard conductor in that context?

23 A I mean, actually, right out of the window where
24 we're sitting, there might be -- I see overhead power
25 lines, and very commonly wires are wrapped around

1 messengers. That happens.

2 Q So they're latched together, the messenger and
3 the conductors are latched together?

4 A That happens, yes.

5 Q There's nothing in Exhibit 1043, which is the
6 entirety of the exhibit that AWM submitted in these
7 proceedings, there's nothing in there that talks about
8 rings or hangers suspended from a messenger wire to
9 support the Air Guard conductor cable, is there?

10 A I don't see what you're -- in this document, I
11 don't see a more specific description of the messenger
12 option that talks about wrapping versus ring terminals
13 versus some other way.

14 But I do remember this product in particular
15 because it was pretty versatile. So I -- I mean, I was
16 led to believe there were a lot of options, and I struggle
17 to remember the details. Other than the locomotive
18 application, you know, and the various phone calls and
19 webinars I had around it.

20 Q If you could go, please, to paragraph 24 of your
21 declaration -- I'm sorry, paragraph 25, I believe. Yeah,
22 paragraph 25.

23 Again, you're talking about your conversations
24 with Snake Tray in this 2011 to 2012 and '13 time frame;
25 is that right?

1 A Yes.

2 Q And you said that you discussed different code
3 interpretations with Snake Tray and the applications of
4 their various product lines that they offer, correct?

5 A Yes.

6 Q And, again, are the product lines the
7 conventional cable trays, the cable tray-like products, or
8 the products that you show in your declaration?

9 A The cable tray-like products and the ones shown
10 in the images on page 14 and 15. Those were the two I was
11 more interested in.

12 Q So you state that due to interpretation and
13 application issues associated with Article 392, cable
14 trays, and various solar grounding requirements, we
15 specifically discussed modifying Snake Tray's product in
16 order to align with other non-Article 392 NEC sections,
17 including but not limited to Article 396.

18 Correct?

19 A Yeah.

20 Q So first of all, when you say that you discussed
21 modifying Snake Tray's product, it goes back to what I was
22 asking before. Did you either on your own or in
23 conjunction with Snake Tray or others at SPG modify Snake
24 Tray's products?

25 A No.

1 Q Then what's that referring to that you discussed
2 modifying Snake Tray's product?

3 A I remember Snake Tray had a lot of products, and
4 like most product manufacturers, when they have catalogs
5 of hundreds and hundreds of lines in it, I just ask them.
6 I just say, Hey, this is what I'm looking for. Point me
7 to where in the catalog you've got something like this.

8 And so they point me somewhere. They say, Here's
9 the product for you, Josh. It's amazing. Here you go.
10 And I look at it and go, Do you have something that -- and
11 I start to modify it verbally. Do you have something that
12 instead of this, has a that, or instead of a that, has a
13 this? And I get more specific with my requirements, and
14 we start a conversation. We talk about what's possible,
15 what's practical, what might get too expensive or
16 cumbersome or what might fall out of compliance or out of
17 conformance with the code.

18 And that we should -- so we have these dynamic --
19 you know, I was playing the role of an architect. They
20 were a manufacturer. So we're playing with the -- what's
21 possible and what's realistic, and I'm coming at it from a
22 needs perspective and a requirements perspective. This is
23 what I know my client needs. They're coming at it, well,
24 this is what we build. This is what we can supply.

25 So supply and demand. I'm representing the

1 demand side of the equation. They're representing the
2 supply side of the equation. I'm trying to see where we
3 meet in the middle. I have conversations like that all
4 the time, and it's -- I enjoy it. And I remember having
5 something like that with Snake Tray.

6 Q So there was no modification of Snake Tray's
7 products? That's really what I'm trying to confirm.

8 A Oh, we discussed -- that's right. There was no
9 modification of Snake Tray products. Through the
10 discussion of modification, we got to a product that we
11 all agreed might suit our needs.

12 Q And that's what's shown on the photographs in
13 pages 14 and 15 of your declaration?

14 A I think it's one of them. There may have been --
15 there were a lot I was looking at, a lot of systems like
16 these. So this is one of them. There may have been
17 others.

18 Q And that's the only one you included from Snake
19 Tray in your declaration; is that correct?

20 A This was the best documented one, I would say,
21 yeah.

22 Q Okay. So what were you referring to when you
23 said, Due to interpretation and application issues
24 associated with Article 392 cable trays?

25 A Sorry. What was the question?

1 Q Paragraph 25, second sentence of paragraph 25,
2 you say, Due to interpretation and application issues
3 associated with Article 392 cable trays.

4 What were the application and interpretation
5 issues that you were referring to in that portion of your
6 declaration?

7 A Oh, in my conversations with Snake Tray in the
8 2011 time frame, we discussed different code
9 interpretations and applications. And your question is,
10 what do I mean by that?

11 Q No.

12 A No. Sorry.

13 Q Second sentence, Due to interpretation and
14 application issues associated with Article 392 cable
15 trays, what did you mean by that?

16 A Okay. Oh, I didn't like cable trays because of
17 the interpretation and application -- oh, so in my
18 experience at the time, inspectors, I remember having
19 trouble getting cable trays approved from a local building
20 inspector for solar applications. Part of the reason that
21 I remember why that was so hard was because so many cable
22 trays were indoor rated, and the solar panels are outdoor.

23 So -- yeah, so I wanted to stay away from cable
24 trays as much as possible, basically, when I was
25 investigating these systems for SPG because I knew they

1 had -- I was going to be arguing with an inspector
2 someday, and I was concerned about the logistical
3 challenges more so than the technical.

4 Q So then do I understand your testimony to be that
5 cable trays used in outdoor solar application presented
6 challenges with getting the necessary approval on too many
7 occasions that you wanted to stay away from cable trays
8 and find something better than that?

9 A It might have been a problem with the cable tray
10 or the way I was presenting it to the inspector. I don't
11 know what the problem was, but it was, like, me and my
12 designs and cable trays did not mix.

13 Q And the various solar grounding requirements,
14 what were you referring to there?

15 A All the solar grounding requirement -- all the
16 grounding requirements in the National Electrical Code
17 that apply to solar of which there is a lot.

18 Q What concerns did you have about cable trays and
19 the various solar grounding requirements?

20 A If I remember, cable trays and grounding didn't
21 work terribly well. It was -- there were complications
22 with cable trays. One of them was grounding them. There
23 were extra hardware, extra components involved. And then
24 inspectors had differences of opinions on how those would
25 be applied.

1 So I wasn't worried that -- I knew it could
2 technically work. I could have gotten cable tray to work,
3 absolutely. No problem. I just didn't want -- I'm lazy.
4 I wanted something better.

5 Q So you thought that if you were able to avoid
6 Article 392, that that was going to enhance your ability
7 to get around issues, interpretation, and application of
8 code issues, make it easier to be code compliant and to
9 get the necessary approval from the various authorities;
10 is that correct?

11 MR. DIXON: Objection; form.

12 THE WITNESS: I would replace the word you used
13 enhance with streamline, and then I agree with it. It
14 felt more streamlined, simpler, to get out from under this
15 cable tray world.

16 BY MR. FLYNN:

17 Q Paragraph 22 of your declaration. By the way,
18 all of this work that you were doing in this 2011 to 2013
19 time frame with SPG was all centered around its tracker;
20 is that correct?

21 A No. SPG did other -- had other systems aside
22 from trackers.

23 Q Paragraph 21 of your declaration, you indicate
24 that between 2010 and 2013, you were engaged by SPG Solar
25 to support the development of its single axis tracker

1 product, right?

2 A Mm-hmm. Yes.

3 Q And you say, My role at SPG Solar was to design
4 and engineer solutions with the electrical balance of
5 systems components for the trackers DC powered
6 distribution system.

7 Right?

8 A Yes.

9 Q So you were focused around the tracker as part of
10 your engagement with SPG?

11 A I would agree that was my focus.

12 Q And at the bottom of page -- I'm sorry. At the
13 bottom of paragraph 22, you state it was your job to be
14 aware of and utilize cost effective, efficient, and code
15 compliant components and systems in the EBOS design of
16 SPG's tracker, correct?

17 A I see that.

18 Q That was a statement you made; is that right?

19 A Yes.

20 Q And in paragraph 23, you said that -- you say
21 that SPG Solar in 2010 had standardized its tracker's
22 cable support system around metallic wire ways as allowed
23 by Article 376 of the NEC, correct?

24 A Yes.

25 Q And the tracker's cable support system, the

1 cables that would need to be supported as part of the
2 tracker's cable support system, would they be AC cables?

3 A DC, actually. They were DC. Well, both,
4 actually, DC and AC. Because they were still using
5 motor -- AC power supplies for their motor. So there was
6 some AC cabling and DC cabling.

7 THE STENOGRAPHIC REPORTER: I'm sorry. When you're
8 saying tracker's cable support system, is that tracker's
9 apostrophe S or trackers plural?

10 MR. FLYNN: Plural.

11 THE STENOGRAPHIC REPORTER: Thank you.

12 MR. FLYNN: Actually, I think in the way I asked the
13 question, it was apostrophe S.

14 THE STENOGRAPHIC REPORTER: Okay. Thank you.

15 THE WITNESS: Yes.

16 MR. FLYNN: Yes, it is apostrophe S.

17 THE STENOGRAPHIC REPORTER: Okay.

18 BY MR. FLYNN:

19 Q Okay. So back to paragraph 25, you said -- you
20 refer to other non-Article 392 NEC sections, including but
21 not limited to Article 396, correct? In your -- a portion
22 of your declaration, it indicates that you discussed
23 modifying Snake Tray's product in order to align with
24 other non-Article 392 NEC sections, correct?

25 A Yes.

1 Q Including but not limited to Article 396, right?
2 What's Article 396 applied to?

3 A That's what I'm looking for. Oh, messenger
4 supported wiring. That's right. Okay.

5 Q You said including but not limited to
6 Article 396. What other articles -- what other
7 non-Article 392 sections other than Article 396 did you
8 consider or discuss?

9 A I don't recall off the top of my head, but I do
10 remember browsing through this -- these articles, the
11 300s, to get some insight on other options that could be
12 advantageous.

13 Q Article 396 is the only other non-Article 392
14 section that you identify, correct?

15 A In the declaration, I specifically mention
16 Article 396. I don't specifically mention any other
17 non-392 articles.

18 Q Okay. By the way, you didn't like Article 392
19 pertaining to cable trays. Did you have the same
20 preference to avoid Article 376 that applies to wire ways?

21 A Good question. Let me -- the problem -- there
22 were different -- I had problems with both three -- I had
23 problems with both wire ways and cable trays, but they
24 were different problems. Cable trays, I was frustrated
25 with their interpretation amongst the code community.

1 Wire ways, I didn't like because of how cumbersome they
2 were. There were a lot of components -- a lot of
3 components with metallic wire ways.

4 And I was looking at both of those and going,
5 there's just got to be an easier way.

6 Q Was it the lot of metallic parts that made up
7 wire ways that was what made it cumbersome?

8 A Not necessarily the metallic part of it. Just a
9 lot of parts. Because I think there's nonmetallic. I
10 think -- yeah, so Article 378 has nonmetallic wire ways.
11 Yeah, I looked at those.

12 Yeah, I was -- I don't remember what I did with
13 that. But wire ways, metallic or nonmetallic, just had a
14 lot of parts.

15 Q So did you consider Article 396 to be the most
16 streamlined or beneficial for your purposes?

17 A There seemed to be a pressure, or like a, I'll
18 call it, aligning of the stars perhaps. There was some
19 kind of alignment happening between products, like, from
20 Snake Tray and maybe Air Guard and one or two others at
21 the time that seemed to work well with Article 396 and
22 with the subject of the tracker, I was doing all this
23 around.

24 And it just -- the numbers were aligning, and the
25 feedback was more positive, and there was just sort of --

1 it -- there was something there. Sometimes in R&D, I've
2 had this experience where you just start to get a good
3 feeling because things start aligning and working. And,
4 oh, that component complies and didn't take much extra
5 work to do that, and things start falling into place. And
6 I don't know how else to -- it's just the easy-ish
7 feeling.

8 The require -- when I think in hindsight of those
9 days, I think there was some kind of an agreement. In my
10 world, in design and engineering, you're dealing with so
11 many requirements. Technical requirements, customer
12 requirements, market requirements, code and safety
13 requirements, and all these requirements have to agree
14 with each other on every single project.

15 And so in combining a Snake Tray thing with a
16 tracker thing with these different articles of a code and,
17 there was just this syncing up that was happening. And it
18 was -- it happened more often than not with Article 396.
19 It happened not -- it didn't happen like that with the
20 other articles.

21 Q Mr. Weiner, is it your opinion or your testimony
22 that Article 396 of the NEC applies to what you showed in
23 the photographs on page 14 and 15 of your declaration?

24 A Yes. I would say this image, as I'm looking at
25 it here on page 14 of my declaration and comparing it to

1 396.2 of the NEC, they look consistent with each other.

2 Q Okay.

3 A I mean, there's a lot more parts of the NEC a
4 product like this would have to conform and comply with.
5 But just looking at that section of the NEC and this
6 image, I would say that looks like it fits paragraph 1 of
7 the 396.2 definition, a messenger with rings and saddles
8 for conductor support.

9 Q So 396.2, definition of messenger supported
10 wiring, is an exposed wiring support system using a
11 messenger wire to support insulated conductors, correct?

12 A By any one of the following, and then -- one,
13 two, three, four -- yes.

14 Q Okay. And then photograph -- on page 14 of your
15 declaration, that rigid metal rod you believe is the
16 messenger wire that Article 396.2 refers to; is that
17 right?

18 A Yes.

19 Q You then in paragraph -- strike that.
20 Metal rod messenger, in your view, is synonymous
21 with messenger wire; is that correct?

22 A When you say metal rod, we're talking about this,
23 right?

24 Q That's a metal rod, right? You're pointing to
25 the photograph on page 14 of your declaration, correct?

1 A Yeah, yes. Yes. Page 14, there's a horizontal
2 metal -- I mean, I don't mind calling it a rod or a wire.

3 Q Well, you do call it a rod, a metal rod, do you
4 not?

5 A I do. I'm -- yeah, I do. Messenger-like metal
6 rod.

7 Q And then on page --

8 A And cable, I guess.

9 Q -- 17 -- yes, you also refer to it as cable.

10 On page 17 of your declaration under the
11 photograph, you state, Though the mockups depicted above
12 make use of a solid rod as a messenger to support the wire
13 hangers, any deployment of this system could -- and I
14 emphasize could -- have made use of a variety of messenger
15 types, including stranded messenger wire, right?

16 A Yeah.

17 Q So you're distinguishing between a solid metal
18 rod and a stranded messenger wire, are you not?

19 A Yes.

20 Q Paragraph 26 of your declaration refers to the
21 design drawing for your idea of the cable support systems
22 for SPG's tracker, correct?

23 A Could you repeat the question?

24 Q Paragraph 26, you are referring to the design
25 drawing for -- excuse me, for the standardized layouts of

1 SPG's tracker, is that right?

2 A Yes.

3 Q It says, showing these cable support systems for
4 the purposes of estimating material costs and labor
5 efficiency, right?

6 A Yes.

7 Q And what you're referring to, again, are the
8 cable support systems that you are depicting in the prior
9 paragraph and the photos included in paragraph 25; is that
10 right?

11 A Yes.

12 Q Now, we've talked before that what you did in the
13 photographs of the mockup is you attached this metal rod
14 assembly to the portion of the tracker in the mockup and
15 as shown in the photographs, correct?

16 A Yes.

17 Q But in the design drawing that you include in
18 paragraph 26 of your declaration, you're attaching that
19 metal rod assembly not to the structure of the tracker as
20 shown in the photographs, but, as I understand it, to the
21 driveline; is that correct?

22 A The mockups on page -- that I show on page 15 and
23 16 and 17 of my declaration, those mockups show the Snake
24 Tray device connected to the driveline.

25 Q Oh, that's the driveline in those photographs?

1 A Yeah.

2 Q Oh, okay.

3 A I know. That tracker had so much metal on it.

4 Q Okay. So that driveline in the photographs shown
5 on pages 15 -- did you say 14 as well? No, no. Just 15,
6 16, and 17, they are the driveline indicated in the
7 drawing that you include in your declaration?

8 A Yes.

9 Q Okay.

10 A So in my SPG drawing on page 18, there's a blue
11 line that runs horizontally in the middle of the red
12 annotated box I put around it.

13 Q Yes.

14 A That blue line that runs left to right in the SPG
15 drawing is the I-Beam in -- on page 15, 16, and 17 that
16 the Snake Tray device is hooked onto.

17 Q Got it. Thank you.

18 A Yeah.

19 Q Do I take it that you have seen in the field
20 since 2014 and up to present time cable management systems
21 in utility scale solar PV, PV installations, that use a
22 stranded messenger wire as you refer to in your
23 declaration separate and apart from a metal rod from which
24 cable hangers are suspended and hangers support the
25 electrical conductors in the solar array?

1 A Yes.

2 Q And would you agree that that cable management
3 system in PV installations has become the most predominant
4 form of cable management over other types of cable
5 management, including trenching, wire ways, cable trays,
6 conduit?

7 A In which time frame? Like, today?

8 Q Since 2014 to today, has that type of system
9 become the most predominant form of cable management
10 system?

11 A I see it often. I just -- I'm hesitating on
12 whether to call it the most predominant. I see messenger
13 based systems very often.

14 Q You would agree that it has significant
15 advantages over trenching, would you?

16 A Yes. As do a lot of aboveground cable management
17 systems.

18 Q And would you also agree that it has advantages
19 over cable trays and utility scale solar PV installations?

20 A I don't have an opinion on that today. I haven't
21 looked at recent messenger cable systems and recent cable
22 tray systems to say one's better than the other today. I
23 did a lot of it in 2010 to 2013 time frame.

24 Q So in that 2010 to 2013 time frame, would you
25 agree that the kind of system that I just described using

1 the stranded messenger wire from which cable hangers are
2 suspended is advantageous over the cable trays that you
3 studied in the 2010 to 2013 time frame?

4 A It sounds like it does have a lot of advantages
5 over cable tray in that time frame.

6 Q And also wire way?

7 A It might.

8 Q Paragraph 27 of your declaration, you refer to
9 the 2020 version of the NEC and its definition of
10 messenger or messenger wire.

11 A Which page?

12 Q Paragraph 27, page 19.

13 A Oh, okay. Sorry. What was the question?

14 Q You refer to the 2020 version of the NEC and its
15 definition of messenger or messenger wire?

16 A I see that.

17 Q And the definition of messenger or messenger wire
18 is a wire that is run along with or integral with the
19 cable or conductor to provide mechanical support for the
20 cable or conductor. Do you see that?

21 A I do.

22 Q That's the verbatim definition in the 2020 NEC of
23 messenger or messenger wire.

24 And do you understand that the word wire in that
25 definition includes the metal rod that you show in the

1 photographs on pages 14 and 15 of your declaration?

2 A Yes.

3 Q Would you characterize that metal rod that you
4 see in pages -- on pages 14 and 15 of your declaration as
5 a tensioned support structure, a support structure that is
6 placed under tension?

7 A The one in the photo?

8 Q Mm-hmm. The metal rod in the photo.

9 A Is that metal rod in the photo under tension, or
10 would I consider it under --

11 Q Would you consider that to be a tensioned member,
12 a structure that is tensioned?

13 A I haven't thought about that. I haven't thought
14 about the role of tension.

15 Q Okay. By the way, I neglected to ask you, when
16 you talked about in -- what paragraph was it -- yeah,
17 paragraph 25 about your discussions about modifying Snake
18 Tray's product in order to align with Article 396, what
19 did you conclude from those discussions as to whether the
20 Snake Tray product would align with Article 396?

21 A Oh, I concluded and the folks around me I was
22 working on this, we all internally agreed with each other
23 that the Snake Tray device we were -- that I show in this
24 photo on page 14 met the definition of a messenger
25 supported wiring system, the Article 396. And that if it

1 was properly developed through R&D and standard product
2 development processes, it could make a -- it could be an
3 improvement on the tracker system at the time. It would
4 have been better than wire ways.

5 I think that's where this -- where we concluded
6 the code compliance part of this.

7 Q Were there ever -- were there any disadvantages
8 or potential disadvantages with Article 396 that you
9 discussed?

10 A Not that I remember.

11 Q So if Article 376, 392, the other non-Article 392
12 NEC sections that you don't identify specifically, of all
13 of those, Article 396 you determined to be the most
14 favorable article of the NEC for your purposes; is that
15 correct?

16 A Sounds -- I guess so. It sounds weird to
17 describe an article -- the NEC is my most favorable
18 article. It's not that I enjoy the National Electrical
19 Code all that much. It was more like I was looking for
20 the right product, and when that product seemed to align
21 with a -- I guess, a favorable definition, that's where
22 the stars aligned.

23 So it's not like a got hooked on this article and
24 tried to find products that fit it. It was the other way
25 around. I was looking for products that would work well

1 or got close, and then looked and see what the article of
2 the code it conformed to to see if that presented the
3 fatal flaws. So yeah.

4 Q You indicate in your declaration that all of
5 those photographs that you incorporated into your
6 declaration were taken by you in 2011, and you identify
7 Exhibit 1044, correct? Right below the photo on the next
8 page. The following page. Well, that page.

9 A Sorry. What was your question again?

10 Q I don't know. Oh, that all of those photographs
11 that are shown in pages 14, 15, 16, 17, they were all
12 taken by you, and they are the same as the photos of
13 Exhibit 1044?

14 A I don't remember what Exhibit 1044 --

15 Q Let me show it to you. Right there (indicating).

16 A Oh, okay.

17 Q Okay.

18 A Yes.

19 Q So now I'm going to show you Exhibit 1044 in the
20 178. I don't know what it is -- 1058 in the 139.

21 A Okay.

22 Q 1044 actually includes a few more photographs
23 than what you included in your declaration, right?

24 A Yeah. Yes.

25 Q If you go to, let's say, page 13 of this

1 Exhibit 1044.

2 A Page 16?

3 Q Page 13. It's the next to the last page of the
4 exhibit.

5 A Okay. I'm there.

6 Q There's a whole bundle of cables in that support
7 structure, correct?

8 A I see a lot of conductors, yeah, cables.

9 Q And what are those conductors -- are they
10 actually connected to something, or were they just put in
11 there as part of the mockup?

12 A I think they were thrown in there as part of the
13 mockup.

14 Q And do you know what kind of conductor cables
15 they were?

16 A I don't remember. Something outdoor rated,
17 though. It would have been something I had in the
18 warehouse, so there was a lot of USE-2 laying around. It
19 might be USE-2.

20 THE STENOGRAPHIC REPORTER: A lot of what laying
21 around?

22 THE WITNESS: There was a lot of --

23 THE STENOGRAPHIC REPORTER: You said USC-2?

24 THE WITNESS: USE-2.

25 THE STENOGRAPHIC REPORTER: Thank you.

1 THE WITNESS: Yeah. It might be USE-2. Pretty sure
2 it was USE-2. Because I think I was trying to see how
3 many wires I could actually fit in this thing, just
4 quantity, sheer bulk quantity.

5 Oh, and, sorry, the reason why that matters is
6 because the different insulation types have different
7 thicknesses. So if I want to find out how many wires fit
8 in this thing, I better use the right or close to the
9 right wire type, insulation type.

10 BY MR. FLYNN:

11 Q Okay. I'm going to shift a few moments to
12 (indiscernible utterance)?

13 THE STENOGRAPHIC REPORTER: I'm sorry. I didn't hear
14 that. Shift what?

15 MR. FLYNN: To CCABH's integrated grounding system.

16 THE STENOGRAPHIC REPORTER: Thank you.

17 BY MR. FLYNN:

18 Q Have you ever seen CCABH's aboveground cable
19 management system installed in an actual installation?

20 A I don't know.

21 Q Are you aware of how aboveground cable management
22 systems that utilized -- that utilize a stranded messenger
23 wire from which cable hangers are suspended to support
24 electrical conductors in the solar array, how those
25 systems were grounded before CCABH's integrated grounding

1 system?

2 A Messengers or messenger wires or messenger
3 cables, messengers --

4 Q Well, I'm specifically talking about messenger
5 wires in the way that I had been referring to messenger
6 wires as the -- and what you distinguished in your
7 declaration as stranded messenger wire from a metal rod.
8 So I'm talking about a messenger wire from which cable
9 hangers are suspended to support electrical conductors
10 extending from solar panels?

11 MR. DIXON: Objection; form.

12 THE WITNESS: So I'm aware of solid wires, course
13 stranded wires, fine stranded wires. These are all wires,
14 but they have different quantities and sizes of strands.

15 Which of these three wires are you -- you sound
16 like you're picking a very specific device, and I want to
17 make sure I'm in the same world as you are. What type of
18 wire are we talking about?

19 BY MR. FLYNN:

20 Q So when you say there are solid wires, that's the
21 solid metal rod that you're talking about that you
22 consider to be a solid wire; is that right?

23 A No. Solid wire could be, like, an equipment
24 grounding conductor. Like a solid --

25 THE STENOGRAPHIC REPORTER: I'm sorry. Like an

1 equipment what?

2 THE WITNESS: An equipment grounding conductor.

3 So ground equipment, bare copper wires, for
4 example, when you hear somebody use the phrase bare copper
5 ground, if you look at that, it will look like what you're
6 calling a solid rod. It's a bare copper ground, which is
7 a type of equipment grounding conductor that is around
8 this time was used prevalently on a lot of solar systems.
9 It's a solid copper wire.

10 There's no strand. Well, there's one strand, and
11 it's very big. So we've been calling it a rod. But ask
12 Mr. Brooks, those are bare copper grounds. It's a
13 solid -- that's a copper wire.

14 BY MR. FLYNN:

15 Q Yeah.

16 A And then there's stranded copper wire, and when
17 we say stranded, we typically mean course stranded, and
18 then the code defines stranded cable which some people
19 call, like, speaker wire (indiscernible utterance) --

20 THE STENOGRAPHIC REPORTER: I'm sorry. You're
21 speaking really fast. I'm really sorry.

22 THE WITNESS: Yeah, sorry. Where did I lose you?

23 THE STENOGRAPHIC REPORTER: We typically mean course
24 stranded, and the code defines --

25 THE WITNESS: Fine stranded, as in f-i-n-e, fine

1 stranded wire. So when we use the word wire, those are
2 the three types that come to mind. So --

3 BY MR. FLYNN:

4 Q So all three of those types that you've just
5 described, would it be accurate to refer to them to
6 varying degrees as flexible wires that you can bend?

7 A Arguably, the difference between them is the
8 amount of flexibility they have, maybe.

9 Q The metal rod that you show in your photographs
10 in your declaration, that would not be considered to be a
11 flexible wire even in your view, would it?

12 A I don't know. It's not as flexible as a fine
13 stranded cable. It might be as flexible as a bare copper
14 ground wire, which is not very flexible, but you can still
15 do -- you can still flex it. So this metal rod we're
16 talking about, it's got flex. I mean, actually, you can
17 kind of see it in the image. It's deflecting a little
18 bit.

19 So there is some flex to it, but not as much as
20 fine stranded or course stranded cables or wires, yeah.

21 Q So let's try it this way: We talked about the
22 Shoals ITC proceeding, and we talked about the Shoals PGR
23 proceeding, and I think we also identified that you
24 provided a declaration in the Shoals IPR proceeding,
25 correct?

1 A Yeah, I think there was an IPR and a PGR.

2 Q Right.

3 A And I think I provided declarations for both of
4 those.

5 Q Yes.

6 A I think.

7 Q So I'm going to show you what was marked in the
8 Shoals IPR proceeding, IPR 2024-00876, which is the
9 proceeding that you provided the declaration for.

10 A Okay.

11 Q What was marked as Exhibit 2024 in that
12 proceeding, and this is...

13 (Whereupon Deposition Exhibits 2062
14 and 2068 were marked for
15 identification.)

16 BY MR. FLYNN:

17 Q The pages of this exhibit are actually right
18 under the photographs on each page. It starts with Shoal
19 and then a number. Do you see that?

20 A Yes.

21 Q So I'd like you to turn, please, to -- it's
22 actually the fifth page of this exhibit, Shoals 00002243.

23 A 00002243?

24 Q Yes.

25 A Okay. I'm there.

1 Q So do you see -- first of all, do you know
2 what -- do you recognize that as an aboveground cable
3 management system that uses a messenger wire from which
4 cable hangers are suspended to support current wires in a
5 utility scale PV installation?

6 A It certainly appears to look like that.

7 Q If you look at the middle photograph on that
8 page -- well, first of all, before I ask you that, do you
9 know whose system that is, that aboveground cable
10 management system it is?

11 A No.

12 Q If you look at the middle photograph on that
13 page, do you understand that the cable hanger is suspended
14 from the messenger wire? I'll stop there first. Or,
15 actually, you can look at any photographs on at that page
16 if you want. I'm not just --

17 A Okay. So it appears to be a messenger supported
18 wiring system of some kind.

19 Q And do you see that the hanger is suspended from
20 the messenger wire?

21 A It's these red things. You're calling the red
22 things hangers?

23 Q I am calling them hangers. Would you agree that
24 they're hangers? Would you call them hangers?

25 A These red things look like something that

1 supports wires, conductors, and is connected to a
2 messenger cable or a messenger wire. And it altogether
3 looks like a messenger supported wiring system of some
4 kind. It all appears that way.

5 Q But are you hesitating referring to those red
6 things, as you called them, hangers?

7 A No. I don't mind calling them hangers or support
8 devices or saddles or rings.

9 Q You would call those red things saddles or rings?

10 A I don't mind calling them those things.

11 Q Well, whether you would mind calling them those
12 things or not, if you would take a look at that red thing,
13 is that the first thing that would come to your mind when
14 you look at it, a saddle or a ring?

15 A No. The first thing that comes to mind is red
16 thing.

17 Q What would be the second thing?

18 Okay. You don't have to -- okay.

19 Middle photograph if you would, please.

20 A Yes.

21 Q Do you have an understanding if that's depicting
22 how this cable management system's being grounded?

23 A I couldn't tell you how this system is being
24 grounded. Just based on this image alone, no.

25 Q Do you understand that before CCABH's integrated

1 grounding system, an aboveground cable management system
2 as depicted in these photographs would be grounded by
3 having a separate equipment grounding conductor running
4 parallel to the messenger wire and to the electrical
5 conductors to provide an effective ground fault current
6 path (indiscernible utterance)?

7 THE STENOGRAPHIC REPORTER: I'm sorry. I didn't hear
8 that. To provide an effective?

9 MR. FLYNN: Ground fault current path.

10 THE WITNESS: I'm sorry. And your question is, would
11 I recognize that as a --

12 BY MR. FLYNN:

13 Q Do you understand that before CCABH's integrated
14 grounding system, the way the cable management system as
15 shown in this photograph would be grounded, would be for
16 there to be a separate equipment grounding conductor
17 running adjacent to the messenger wire and parallel with
18 the electrical conductors to provide an effective ground
19 fault current path?

20 A It makes sense to me why somebody would run an
21 equipment grounding conductor in parallel to the messenger
22 wire to facilitate the ground fault path. I don't think I
23 would look at this image and think running an equipment
24 grounding conductor in parallel to the messenger is the
25 only way to ground the system.

1 Q Well, let me ask you this first.

2 A Okay.

3 Q Before I've shown you this photograph, have you
4 ever seen an aboveground cable management in a utility
5 scale solar installation that looks like this?

6 A The red is really throwing me off. I'm not used
7 to seeing a lot of red like that.

8 Q Okay. Well, other than the amount of red, have
9 you ever seen an aboveground cable management system that
10 uses, like, something like these red things suspended from
11 the messenger wire supporting electrical cables extending
12 from the solar panels in the array?

13 A I have seen systems that look like this.

14 Q When you say look like this, different than this,
15 the same as this?

16 A Different, but similar.

17 Q How different?

18 A No red, for one thing.

19 Q Was there something in place of what's red?

20 A I don't remember the exact shape of these red
21 things, and I'm used to seeing black or gray or -- yeah.

22 Q So the only thing that's different, if I'm
23 understanding you, is the color of the hangers and the
24 shape of them?

25 A And also I'm not -- I don't think I'm used to

1 seeing them this low. I don't know if that's common. I
2 don't know when this picture was taken, but if I were
3 designing a system like this, I'm not sure I would have it
4 that low to the ground and to all this vegetation nearby.

5 Q Well, the only question I'm asking you is whether
6 you've seen systems that look like this, the only
7 difference being the color of the hangers?

8 A And the shape and maybe the -- I've seen systems
9 that look like this, but there are differences.

10 Q And have you understood how those systems were
11 grounded? Did you ever look to see how they were grounded
12 or ask -- make inquiries about how they were grounded?

13 A The systems I've seen that have systems like
14 these, I did not investigate grounding on those systems.

15 Q Okay. So in that middle photograph, do you also
16 see a copper jumper splice from the equipment grounding
17 that goes over to the metal pile?

18 THE STENOGRAPHIC REPORTER: Metal what?

19 MR. FLYNN: Pile, p-i-l-e.

20 THE STENOGRAPHIC REPORTER: Thank you.

21 THE WITNESS: No. I'm not sure I see what you just
22 described.

23 BY MR. FLYNN:

24 Q May I point to you?

25 A Sure.

1 Q (Indicating.)

2 Right there. Here. Going over to this portion
3 of the pile, and there's also a jumper coming off the
4 grounding conductor there.

5 Do you see those?

6 A I see something. I see something -- I see what
7 you pointed to. I don't know that I can identify it as
8 whatever you called it. You called it a bonding jumper?

9 Q I just called it a jumper. I think I might have
10 called it a grounding jumper.

11 If that were a copper -- if that were a copper
12 conductor that were -- was spliced into the copper
13 equipment grounding conductor and then spliced over to the
14 pile, would you understand what the purpose of doing that
15 would be?

16 MR. DIXON: Objection; form.

17 BY MR. FLYNN:

18 Q Let me ask the question this way: I'm asking you
19 to assume that the copper colored cable in this photograph
20 that is running adjacent the messenger wire and parallel
21 the electrical conductors is a copper conductor serving as
22 an equipment grounding conductor. Okay?

23 A Okay.

24 Q And I'm asking you to assume that there are
25 copper conductor jumpers from the copper equipment

1 grounding conductor over to the pile.

2 A Okay.

3 Q With those assumptions, would you understand what
4 the purpose of those jumper splices from the equipment
5 grounding conductor over to the pile would be?

6 A From that description alone?

7 Q Yes.

8 A No.

9 Q Do you have -- well, do you have an understanding
10 as to what that copper jumper from the equipment grounding
11 conductor over to the pile, what it could be for?

12 MR. DIXON: Objection; asked and answered.

13 THE WITNESS: I mean, I can think of a lot of
14 possibilities, but...

15 BY MR. FLYNN:

16 Q What's the one that comes first to your mind?

17 A Lightning protection (indiscernible utterance).

18 THE STENOGRAPHIC REPORTER: I'm sorry. I can't hear
19 you.

20 THE WITNESS: I suppose one possibility of this system
21 could be a lightning protection system.

22 BY MR. FLYNN:

23 Q I'm not asking you the purpose of the system.
24 I'm specifically asking the purpose of the jumper splice
25 from the copper equipment grounding conductor over to the

1 pile.

2 A Yeah, the National Electrical Code has provisions
3 for lightning protection and what's also called auxiliary
4 grounding, not part of the equipment grounding. So
5 there's other systems. Unless you -- if you hadn't told
6 me these are bonding jumpers or bond or this is equipment
7 grounding conductor running parallel -- if you hadn't
8 given me any of that, I would not have necessarily jumped
9 to this being an equipment grounding system.

10 Q You mentioned the term bonding jumper. Do you
11 consider one of the possibilities that that jumper over to
12 the pile is for purposes of bonding?

13 A Possible, sure. Yeah, it's possible. With
14 enough time and money, a lot of things are possible.

15 Q Okay. As you look at this, do you have an
16 understanding of what CCABH's integrated grounding system
17 that uses the messenger wire as the -- both the -- a
18 support structure that's supports the cable hangers and
19 the electrical conductors, and that serves as the
20 equipment grounding conductor, would you have an
21 understanding as to how that kind of system would be
22 different than what's shown there in the photograph?

23 MR. DIXON: Objection to form.

24 THE WITNESS: I have an understanding of what I think
25 CCABH's integrated grounding system is, but not with these

1 pictures in mind.

2 BY MR. FLYNN:

3 Q Okay.

4 A Are you asking me to connect my understanding to
5 this --

6 Q Well, if you don't have an understanding with
7 those pictures in mind, if you need to disconnect from
8 those pictures, disconnect and tell me what your
9 understanding of CCABH's integrated grounding system is.

10 A My understanding of CCABH's integrated grounding
11 system is an aboveground messenger supported wiring
12 system.

13 Q That's it?

14 A That's it. Because the messenger supported
15 wiring section of the NEC Article 396 already has
16 provisions for equipment grounding.

17 Q I'm not sure I follow that one.

18 A Well, Article 396.30, paragraph C, has an entire
19 paragraph dedicated to using the messenger as an equipment
20 grounding conductor. So to me, the whole idea of an
21 integrated grounding conductor to a messenger supported
22 wiring system is no different than a messenger supported
23 wiring system.

24 Q I think I understand.

25 So to you, any aboveground cable management

1 system that is using the messenger wire is showing the
2 messenger wire being used as not only the support
3 structure, but also the equipment grounding conductor; is
4 that correct?

5 A Not all messenger supported wiring systems use
6 the messenger as the EGC, equipment grounding conductor.

7 Q Do you understand that CCABH's does?

8 A I understand CCABH's does now, or as of 20 --
9 whatever the priority date was on the grounded patent.
10 The -- sorry. The -- there's 178 --

11 Q The '551 patent?

12 A Yeah.

13 Q The 139 IPR?

14 A If that's the one that has the CCABH --

15 Q Yeah, let me see it on -- let me see. Which one?
16 You have the 178. Go to -- go to page 3 of your
17 declaration, the introduction.

18 A Thanks. Page 3?

19 Q Yeah, the introduction, right there.

20 A Oh, oh.

21 Q The very first paragraph, you identify the two
22 patents, correct?

23 A Yes. One of those two covers the grounding
24 component of the CCABH system. I forget.

25 Q The '551 patent, that goes with the 139 IPR.

1 A Okay. Thank you. Yeah.

2 So I understand the '551 includes a grounding
3 component whereas the '291 did not.

4 Q Okay. So when you say that as of 2017, the
5 priority date, you're talking about the priority date of
6 the '551 patent?

7 A Yes. But I might have the 2017 -- I'm fuzzy on
8 the 2017 year.

9 Q But, again, you didn't read these patents, you
10 didn't review these patents, right?

11 A No. But I seem to remember the declarations
12 making reference to the two patents in different time
13 frames.

14 Q Okay.

15 A And that's why I also remember Bill Brooks had
16 two versions of the white paper because I think he
17 published one before it was an integrated grounding
18 system, and then I think he revised it when that grounding
19 component was added.

20 So he enhanced or augmented his white paper, I
21 think is what I remember the version control of that
22 document was. And so there were just some dates
23 mentioned, and I'm referring to those.

24 Q Okay.

25 THE STENOGRAPHIC REPORTER: When there's a good

1 stopping point, can we take a quick bathroom break?

2 MR. FLYNN: Sure. Absolutely.

3 THE STENOGRAPHIC REPORTER: Thank you. Thank you.

4 MR. FLYNN: Take five.

5 (Recess taken.)

6 BY MR. FLYNN:

7 Q Mr. Weiner, do you recall seeing in the field in
8 an actual installation a messenger wire employed that both
9 supports cable hangers that supports electrical
10 conductors, and at the same time acts as an equipment
11 grounding conductor?

12 A I don't recall -- I don't know if I've seen that.

13 Q Okay. In paragraph 30 of your declaration,
14 you're referring to UL 2703, and the suggestion to you
15 that UL 2703 was paving the way -- I think it's supposed
16 to be for the solar industry to convert structural
17 hardware into a consolidated grounding system; is that
18 right?

19 A Yes.

20 Q And the structural hardware, you also say, is
21 prevalent and standardized in a tracker system, right?

22 A Yes.

23 Q And you also state in paragraph 30 of your
24 declaration that to you, it resembled a grounding system
25 of an automobile where you're using the frame of the

1 vehicle which forms the grounding foundation to which all
2 the other components electrically bond to facilitate a
3 grounding connection, correct?

4 A I say it a little -- sorry. Could you repeat the
5 question?

6 Q I actually read from your declaration, but I'll
7 quote it to be sure. This, to me, resembled the grounding
8 system of an automobile where the frame of the vehicle
9 forms the grounding foundation to which all other
10 components electrically bond to facilitate a grounding
11 connection.

12 A I see that.

13 Q That's the way you phrased that in your
14 declaration, correct?

15 A Yeah.

16 Q So what you then go on to say is that you aimed
17 to use UL 2703 to convert the structural hardware frame of
18 a solar tracker into a functionally equivalent car frame
19 where all the tracker components act as a consolidated
20 grounding system, correct?

21 A That's what I write, yes.

22 Q And so you're referring to all of those metal
23 frame structural frame components of the tracker system to
24 form the integrated grounding system, correct?

25 A Yes.

1 Q And those structural frame components, structural
2 hardware frame components of the solar tracker, that
3 doesn't include any kind of messenger wire that is acting
4 as a support structure for the cable hangers supporting
5 electrical conductors and also as an equipment grounding
6 conductor, right?

7 THE STENOGRAPHIC REPORTER: I'm sorry. And all what?

8 MR. FLYNN: And also as an equipment grounding
9 conductor.

10 MR. DIXON: Objection; form.

11 BY MR. FLYNN:

12 Q Let me reask it.

13 When you're talking about the structural hardware
14 frame of the solar tracker, you're not talking about the
15 messenger wire that supports cable hangers and that is
16 also acting as an equipment grounding conductor?

17 A I was thinking of messenger supported wiring
18 systems with that statement.

19 Q The messenger supported wiring systems that you
20 previously discussed and are shown in the photographs in
21 your declaration?

22 A I don't -- I don't know about the images in my
23 declaration, but in this context when I refer to the
24 structural hardware frame of the solar tracker forming the
25 grounding foundation to which all other components

1 electrically bond, I was thinking of the messenger
2 supported wiring system as being one of many components to
3 electrically bond.

4 Q And so the messenger supported wiring system that
5 you're referring to in your answer, are you talking about
6 the kind of -- what you call messenger supported wiring
7 system that's shown in the photographs in your
8 declaration?

9 A It could include that system in my photograph.

10 Q So what you're saying, then, is that would be one
11 of the components that everything would be bonded
12 together, and by virtue of all of these metal components
13 being bonded together, there, you would have your
14 integrated grounding system; is that correct?

15 A More or less. More or less.

16 Q Okay. Paragraph 31 of your deposition --
17 declaration, you refer to grounding braids. Do you see
18 that?

19 THE STENOGRAPHIC REPORTER: I'm sorry. Grounding
20 what?

21 MR. FLYNN: Braids, b-r-a-i-d-s.

22 THE STENOGRAPHIC REPORTER: Thank you.

23 THE WITNESS: In paragraph 31?

24 BY MR. FLYNN:

25 Q I'll just strike the question.

1 Yeah. Paragraph 31, the last sentence of that
2 paragraph.

3 A Oh.

4 Q You said, We subsequently tested grounding
5 braids. Do you see that?

6 A Oh, yes. We subsequently -- yes.

7 Q I just want to make sure that we're on the same
8 page. Grounding braids aren't a messenger wire, are they?

9 A No, they are not.

10 Q Okay. So having all of the metal parts of the
11 tracker system bonded together, and thereby forming the
12 integrated grounding system, you find that to be
13 comparable and similar in both structure and function to
14 the CCABH integrated grounding system; is that correct?

15 A The integrated grounding I was doing with the
16 tracker steel hardware I would say is similar in function
17 to the integrated grounding I was envisioning with the
18 supported wiring system. I wouldn't say they were related
19 in structure because the tracker is big, thick steel, and
20 the messenger cable is tubular, long, and flimsy or
21 flimsier.

22 So there are differences. I would say those two
23 things specifically, the grounding of the tracker and the
24 grounding of messenger supported wiring system are very
25 similar in function, not in structure.

1 Q You ended your tenure with SPG in 2013; is that
2 correct?

3 A That sounds about right.

4 Q And by the way, I apologize if I asked you this
5 before, that -- your engagement with SPG, that was
6 SepiSolar that was engaged with SPG; is that correct?

7 A I actually don't know if it was Josh Weiner or
8 SepiSolar. I don't recall. It was probably SepiSolar, I
9 estimate.

10 Q Was it just you and SPG people that were part of
11 this R&D group? The R&D group that we've been discussing
12 today in this deposition.

13 A Okay. So you ask a simple question, you get a
14 simple answer.

15 Q I really thought that would be a real quick one.

16 A I know. I know.

17 And I actually refer -- so there's another
18 organization called TTI, and I actually refer to the TTI
19 tracker somewhere in here, I think. But TTI -- I don't
20 know what the legal -- I didn't see the articles of
21 incorporation or the operating agreements.

22 But there were two -- my understanding is there
23 were two entities: SPG Solar, TTI Solar. SPG Solar was
24 the installer, builder, developer, service and
25 maintenance, lots of guys in trucks and cranes and big

1 burly guys with tool belts, and -- you know.

2 And then TTI Solar were the -- we were the
3 product development department, but I think we had our
4 own -- it might have been its own entity. So it was a
5 little weird because, actually, I got hired at SPG, but I
6 worked day in and day out with the TTI people.

7 Q But that was part of the SPG?

8 A It was all -- we were in the same office and the
9 same address. We shared resources. It was great because
10 I could do product development on this -- on the west
11 wing, walk over to the east wing, and get feedback from
12 real installers on the ground floor, and there was a lot
13 of cross talk.

14 Q So your R&D group, whatever -- we'll just call it
15 the big SPG umbrella.

16 A Okay.

17 Q It was you and the people under the SPG Solar or
18 TTI Solar group, correct?

19 A Yeah, and then you can say there were suppliers,
20 like Prysmian and Snake Tray, you know, and I would
21 interact with them to get, yeah, for information and
22 pricing.

23 Q Okay. Why did your tenure with SPG end in 2013?

24 A I don't remember. I can't remember.

25 Q Do you remember whether you terminated it with

1 them or they terminated with you? Or whether it was
2 mutual?

3 A I actually don't even -- I don't even know that
4 we officially terminated it. How do you define terminate?
5 I mean --

6 Q Did there come a time in 2013 when you were no
7 longer doing work -- you were no longer engaged by SPG?

8 A Yeah, I think -- so I was always a contractor or
9 SepiSolar or myself was a 1099 contractor to SPG, so it
10 was hourly based. So I think -- I think I got to the end
11 of my work. You know, I developed documents and costs and
12 spreadsheets and drawings, and I said, Here's a pretty
13 amazing wiring system. I mean, it would be cool if you
14 deployed it. You know, it's -- and I think it was
15 something like, great, yeah, let's do some more testing,
16 and we'll call you if we have any questions.

17 It just kind of sort of -- it started to fizzle
18 out. I sort of completed all my objectives, and I was
19 putting less and less time. And I stopped getting calls
20 to come in and help with stuff, and I moved on to other
21 things. And so it was -- it wasn't like there was a
22 termination point. It sort of just fizzled, I guess, in a
23 way. It's how I remembered it.

24 Q So you told me you recall, you think, you believe
25 that someone did install this mockup of you -- of what you

1 referred to as your messenger supported wiring system in
2 the field, and that ultimately, you believe it was taken
3 down. I believe you also told me that you got feedback,
4 and that you were told this could work.

5 Do you recall any feedback that expressed any
6 concerns or questions about that kind of system in an
7 actual installation?

8 A There were, and I just don't remember what they
9 are. But they were -- I do remember getting some feedback
10 or criticism, constructive criticism, and I don't remember
11 the detail of it. And I remember incorporating that
12 feedback. I love -- I live and die by feedback. I like
13 feedback. And I remember -- and I responded to it. And I
14 remember basically resolving any concerns. There were
15 concerns. I don't remember what they were, but I remember
16 getting them resolved.

17 Q After SPG took the system down from the field,
18 they never put it back up or reinstalled it?

19 A I wouldn't know.

20 Q I think that's all I have. No further questions.
21 And it's up to your attorney whether he wants to
22 ask you any questions, but, you know, at least for now.

23 A And we know how he likes to drag things long. So
24 let's see what he's got to say.

25 MR. DIXON: Should we go off the record really

1 quickly?

2 (Recess taken.)

3 EXAMINATION

4 BY MR. DIXON:

5 Q So I just have two questions for you, Mr. Weiner.

6 Do you recall being asked about the Air Guard UL
7 multiconductor cable assembly specification, Exhibit 1043?

8 A Yes.

9 Q Where did you get this document?

10 A This paper I think came from counsel, but I
11 originally remember seeing this during my tenure at SPG.
12 I believe I got it from a supplier.

13 Q And at what point in your tenure at SPG did you
14 receive this document? I'm looking for a date.

15 A It -- sometime between 2011 and 2013. That's --
16 that period, I was doing all this work with SPG. It was
17 the same time period.

18 Q Okay.

19 A 2011 to 2013.

20 MR. DIXON: I have no further questions.

21 MR. FLYNN: I have no further questions.

22 (WHEREUPON THE DEPOSITION WAS

23 CONCLUDED AT 4:20 P.M.)

24

25

1 Please be advised I have read the
2 foregoing deposition, pages 1 through
167, inclusive.

3 I hereby state there are:

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(Check one)_____ no corrections

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JOSHUA WEINER

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WITNESS'S CHANGES OR CORRECTIONS

NOTE: If you are adding to your testimony, print the exact words you want to add. If you are deleting from your testimony, print the exact words you want to delete. Specify with "Add" or "Delete" and sign this form.

Deposition of: JOSHUA WEINER
Case Title: AWM V. CAMBRIA
Date of Deposition: NOVEMBER 12, 2024

I, _____ have
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CERTIFICATE OF SHORTHAND REPORTER/STENOGRAPHER

I, Christa Yan, Certified Shorthand/Stenographic Reporter within and for the State of California do hereby certify:

That Joshua Weiner, the Witness whose deposition is hereinbefore set forth, was duly sworn by me before the commencement of such deposition and that such deposition was taken before me and is a true record of the testimony given by such witness.

I further certify that both parties were represented by counsel at the deposition.

I further certify that the deposition of Joshua Weiner, occurred 101 Jefferson Drive, Menlo Park, California 94025 on November 12, 2024 commencing at 9:37 a.m. to 4:20 p.m.

I further certify that I am not related to any of the parties to this action by blood or marriage, I am not employed by or an attorney to any of the parties to this action, and that I am in no way interested, financially or otherwise, in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this 14th day of November 2024.



CERTIFIED SHORTHAND/STENOGRAPHIC REPORTER
IN AND FOR THE STATE OF CALIFORNIA

	13 97:21 117:24 137:25 138:3	2014 61:17 72:21,23 132:20 133:8
\$	130 85:2	2017 25:19 90:16 154:4,7,8
\$300 40:8,25	139 8:22 38:24 42:20,21 74:8 108:18 113:23 137:20 153:13,25	2020 134:9,14,22
\$650 39:21	139-mile 86:20	2024 4:2 31:12 40:21,24 49:11 50:3 143:11
\$950 38:2 39:25 40:3	14 9:11 58:3,6 92:2,7,16 93:13,22,25 94:10 95:21 96:9,11 97:2 98:9 99:15 103:8,11,20,24 106:4,17,19 109:9 113:4 118:10 120:13 128:23,25 129:14,25 130:1 132:5 135:1,4,24 137:11	2024-00022 39:1
-	15 67:3,7 90:10 92:3,7,16 93:13,22 94:1,11,17,21 95:22,23 96:9 103:8, 12,21,24 113:4 118:10 120:13 128:23 131:22 132:5,15 135:1,4 137:11	2024-00139 5:2 8:21
--000-- 4:9	16 131:23 132:6,15 137:11 138:2	2024-00178 4:25 8:19
0	17 130:9,10 131:23 132:6,15 137:11	2024-00876 143:8
00002243 143:22,23	178 8:20 9:17 38:24 40:24 42:19 74:7 108:16 113:21 137:20 153:10,16	2028 9:12,23
1	18 132:10	2033 9:17,23,24 58:11
1 100:18 114:3 129:6	19 11:1,2,3 134:12	2060 74:7,11
1,000 45:11	194 84:24	2061 38:17,24 51:21 53:5 56:13
1,000-plus 43:3 44:10 45:9	194-degree 86:19	2062 143:13
10,177,551 5:3		2067 38:18,24
100 91:2	2	2068 143:14
1007 108:18	2 11:16 100:18	21 123:23
1009 108:16	2,000 85:2 86:19	2160 74:8
101 4:3 56:12,14 57:12	20 18:7,8 51:23 153:8	22 123:17 124:13
1038 8:19	200 45:12	23 112:10 124:20
1039 42:19 71:1	200-plus 43:7	24 91:10 92:24 112:11 113:14 117:20
1043 113:21 114:3 117:5	2001 39:2	2473 4:8
1044 137:7,13,14,19,22 138:1	2009 45:15,21 49:7 72:2	25 99:14 117:21,22 121:1 125:19 131:9 135:17
1053 42:21	2010 20:9,14 21:2,12,24 28:24 45:15 66:5 72:24 73:2,7,9 87:21 88:6 90:24 91:1 97:3 123:24 124:21 133:23,24 134:3	25-year 76:5
1057 113:23	2011 91:12 101:3 112:12 117:24 121:8 123:18 137:6	26 130:20,24 131:18
1058 137:20	2012 91:12 101:3 112:12 117:24	27 134:8,12
1099 162:9	2013 20:9,14 21:2,12,24 28:24 66:5 72:24 73:2,7,9,24 74:11,12 76:16 77:5 78:21 81:10 85:23 87:21 88:6 90:24 91:1 97:3 123:18,24 133:23,24 134:3 160:1 161:23 162:6	2703 155:14,15 156:17
11 37:25 40:20		28 24:23 26:13,15
11,349,291 5:1		291 5:12 10:23 11:7 27:7,15 154:3
11,689,153 39:2		3
12 13:24 14:7,17 16:10 63:24 70:23 71:6,17 72:11,13,16,25 73:22		3 39:17,19 153:16,18
12-plus 43:12 71:2,21		30 85:2 155:13,23
121 57:18,20		300s 126:11
12TH 4:1		31 26:5 158:16,23 159:1
		32 9:13 26:4,5 89:11
		33 75:25

34 26:15 83:21 376 110:10 124:23 126:20 136:11 376.2 110:11 111:5 378 127:10 392 108:23,25 118:13,16 120:24 121:3,14 123:6 125:20,24 126:7,13, 18 136:11 392.2 109:3,8 111:6 396 118:17 125:21 126:1,2,6,7,13,16 127:15,21 128:18,22 135:18,20,25 136:8,13 152:15 396.2 129:1,7,9,16 396.30 152:18 4 4 40:24 5 5-plus 43:4 44:5,9,13 50-plus 43:7 44:5 51 51:20,23 52:3 52 53:5,9,16 54:10,16,19 53 75:20 551 5:12 10:23 11:7 27:7,16 153:11, 25 154:2,6 6 60-degree 86:18 650 40:20 7 7 11:15 70-plus 43:12 44:6 76 84:24 8 8 9:17 10:18,20 58:11 90:12 84 75:20,25 83:21 89:11	9 9 50:22 90:12 90 86:20 94025 4:3 9:37 4:2 A a.m. 4:2 ability 8:16 123:6 aboveground 10:15,19,22 17:11,13, 22 18:2,17 19:9,15,22,23 24:1 28:21 29:6,19 30:4 58:8 62:5,16 65:2 66:21, 24 67:15,17 68:7,24 69:5,11 90:13 133:16 139:18,21 144:2,9 146:1 147:4,9 152:11,25 absolutely 123:3 155:2 abstract 54:11 abuse 85:5 AC 48:21,24 49:3,9 125:2,4,5,6 accordance 4:7 account 54:4 accurate 44:9 95:13 142:5 Achilles 73:17 81:6 83:4,7,11,15 acres 21:18 acronym 5:20 10:17 act 156:19 acting 25:23 157:3,16 actively 100:10 activity 46:5 acts 25:12 155:10 actual 98:16 102:1,4,7,9 139:19 155:8 163:7 added 154:19 addition 11:18 address 84:14 161:9 addressing 17:7 adjacent 146:17 149:20 admit 51:3	advantageous 126:12 134:2 advantages 133:15,18 134:4 affiliated 35:5 Affordable 4:21 5:20 34:15 aggregate 44:8 45:7,8,10,12 agree 35:20 41:23 51:12 53:13 54:6, 8,22 55:8 70:2,4,8,16 73:7,9,17,18 76:15,17 77:3,8,14,16,19 78:16 79:25 80:2 82:1,2,8,17,21,25 83:3 84:7 85:14,20,24 89:25 90:1 106:14 123:13 124:11 128:13 133:2,14,18,25 144:23 agreed 120:11 135:22 agreement 33:21,24 36:9 61:7 128:9 agreements 36:6 160:21 agricultural 43:8 aimed 156:16 air 76:11 77:6 81:1,14 82:25 113:15, 24 114:2 116:12,22 117:9 127:20 align 118:16 125:23 135:18,20 136:20 aligned 136:22 aligning 127:18,24 128:3 alignment 127:19 Allen 12:24 allowed 124:22 alternating 48:23 altogether 145:2 aluminum 104:16,17 amazing 119:9 162:13 ambient 81:4 amount 44:7,18,25 70:5,16,17 71:19 142:8 147:8 amplify 53:6,10 analogized 105:11 analogy 104:22 107:6 analysis 13:17,18,19 anchored 46:19 105:20 and/or 24:14 66:10 annotated 132:12
--	---	--

answering 61:25 62:1 80:11 answers 71:12 apologize 160:4 apostrophe 125:9,13,16 appeared 4:5 13:14 appears 144:6,17 145:4 applicable 41:2 application 26:17 56:3 60:25 105:17 117:18 118:13 120:23 121:2,4,14,17 122:5 123:7 applications 54:24 56:18,22 57:4,5 105:16 115:11,13 118:3 121:9,20 applied 122:25 126:2 applies 94:23 126:20 128:22 apply 111:3 122:17 approval 122:6 123:9 approvals 47:21 approved 121:19 approximately 6:11 architect 119:19 area 21:18,19 areas 50:18 arena 101:24 102:11,13 103:5 Arguably 142:7 argue 86:11 arguing 122:1 argument 31:6 arguments 31:8 array 19:12,18 20:1,19 22:2 24:3,17 55:16,25 74:13 76:7,12 77:6 78:4,13 81:2,3,15 82:25 83:5 87:8,19 88:2 132:25 139:24 147:12 arrays 78:17 art 27:9,18 30:23,25 57:10 96:20,23, 24 article 73:23,24,25 74:13 76:20,22 77:10 80:5 81:17,19 82:13 83:17 85:21 86:1 88:14,20 89:1,5,9,12,18 108:1,22,23,25 109:2,8 110:8 118:13, 17 120:24 121:3,14 123:6 124:23 125:21 126:1,2,6,7,13,16,18,20 127:10,15,21 128:18,22 129:16	135:18,20,25 136:8,11,13,14,17,18, 23 137:1 152:15,18 articles 74:25 126:6,10,17 128:16,20 160:20 articulated 26:7 assemblies 91:17,20 92:4,6 assembly 32:7,13 80:18 91:23,25 92:12,13,21 93:4,5,8 94:17 98:10 109:4 114:14,23 131:14,19 asserted 30:25 Association 4:22 10:16 assume 44:7 48:13 66:2 95:3,9 149:19,24 assumed 65:25 95:3 assuming 23:2,5 82:20 assumption 95:12 assumptions 150:3 assurance 64:3 assure 63:14 attach 82:20 116:4 attached 13:2 131:13 attaching 116:13 131:18 attended 59:1 attention 93:17 attorney 15:25 163:21 audience 86:1 88:14,15 89:20 augmented 154:20 author 83:16 89:4,6,9,14 authorities 123:9 authority 59:17,21 authorized 83:9 automobile 155:25 156:8 auxiliary 151:3 average 44:25 avoid 123:5 126:20 aware 10:21 11:5 15:21,23 16:5,9,11 17:2 33:14,16 34:5,8 35:15,16 69:19 73:2 116:18 124:14 139:21 140:12 AWM 5:20,21 15:2,9,16 30:15,17,25 34:13,14,15 35:3,6 37:4,19 117:6	AWM's 31:4 axis 26:20,21 95:24 123:25 B B-E-I-K 14:24 b-r-a-i-d-s 158:21 back 12:19 36:20 39:11 41:21 50:3 65:14 68:21 75:11 90:8 115:2 118:21 125:19 163:18 background 11:19 89:16 balance 124:4 bar 24:10 27:2 87:4 bar-type 24:18 bare 141:3,4,6,12 142:13 based 7:21 27:24 28:18,22,25 29:17 67:9 68:5,19 91:7 103:18,25 111:4 114:22,25 115:6 116:19 133:13 145:24 162:10 basically 49:16 121:24 163:14 basis 29:5 bathroom 155:1 beam 106:25 beam-like 106:24 beams 106:21 beginning 6:25 79:17 81:20 84:1 begins 11:4 behalf 4:11 5:19,21 15:2,9,22 16:7 31:19,23 33:5 35:10,12,25 37:4,19 Beik 14:21,24 15:1,8,12 belts 161:1 bench 102:22 bend 106:1 142:6 bends 105:25 beneficial 127:16 big 12:17 141:11 159:19 160:25 161:15 biggest 80:20 bill 47:16 66:13 69:24 89:8 154:15 billing 41:2
--	---	---

birds 85:9 bit 20:12 36:22 79:6 92:22 142:18 black 147:21 blame 41:21 blanketed 77:25 Blind 4:23 10:16 block 39:11 blue 132:10,14 blueprints 47:13 board 6:19 77:20 Bob 100:20 body 105:14 bond 151:6 156:2,10 158:1,3 bonded 158:11,13 159:11 bonding 149:8 151:6,10,12 BOS 52:17,19 53:3 55:11 56:3 bottom 43:1 80:22 83:22 90:11 95:22 113:14 114:3 124:12,13 Bowman 12:23 64:15,22 65:1 67:5 69:3,9 box 32:14 132:12 braids 158:17,21 159:5,8 break 7:1,6,11 20:12 57:23 155:1 breaks 6:24 7:1 83:13 briefly 32:11 bring 23:20 42:11 bringing 41:21 broad 54:11 55:2 77:24 80:6 broadly 33:8 41:10 54:13 56:6 61:25 105:15 Brooks 12:24 13:1,6 58:14,21 59:8, 14 62:23,25 64:2,14 67:5 69:4,10,17 70:2,22 71:5 83:22 141:12 154:15 Brooks' 58:7 60:8,16 61:3,23 62:10, 13,18 66:13,19,23 70:17 71:23 89:8 Brooks's 12:14 60:3 89:23 brought 12:19 113:17 browsing 126:10 bubble 76:3	build 119:24 builder 160:24 building 52:21,23 121:19 built 100:17 bulk 139:4 bullet 12:1,18,20 bundle 138:6 burgeoning 53:24 burly 161:1	144:24 145:9 158:6 161:14 162:16 called 4:11 26:3 47:10 105:8,23 145:6 149:8,9,10 151:3 160:18 calling 96:11 130:2 141:6,11 144:21, 23 145:7,10,11 calls 117:18 162:19 Cambria 4:22 10:16 camera 98:11,15 capacity 7:18 25:21 26:18 35:24 37:23 44:12 70:24 caption 14:10 43:1 76:3 captioned 4:21 car 8:14 156:18 care 41:8 76:24 93:17 career 42:13 44:18 careful 23:20,21 41:8 57:14 carefully 60:4 carrying 87:6,17,25 case 16:10 19:4 32:16,20 36:18,19 37:20,21 40:6,12,24 45:20 50:10 54:12,14 58:19 60:5 64:16,19 111:21 cases 6:1 40:5,13,14,15 catalog 119:7 catalogs 108:1 119:4 categorically 67:6,8,10 category 103:24 caught 94:6 caveat 9:3 CCABH 10:17 13:17 15:22 16:7 18:10 21:16 29:21 33:14,16 34:6,9 36:3,15,17,23 37:5 60:23 62:2,4,5,9, 24 63:3,10,20 64:1,3 66:22 68:2,3,8,9 153:14,24 159:14 CCABH's 10:19,22 11:1,4,6 17:10, 13,21,25 18:2,17,21,22 19:8,14,21 20:11,17 24:25 25:2,5,8,14,17 28:1,2, 21 29:6,19 30:6,12,18 58:8 61:22 62:16 63:1,15 64:10 65:2 66:25 67:2 68:6,11,13,18 69:5,11 139:15,18,25 145:25 146:13 151:16,25 152:9,10 153:7,8 ceiling 105:20 center 111:16
---	---	--

centered 123:19 certification 59:3,5 certified 4:4 99:8 cetera 56:25 chain 47:18 102:24 challenge 85:25 86:10,11,12,18,21 challenged 32:1 challenges 76:11 77:5 85:15,22 89:3 122:3,6 challenging 86:4 change 40:11 53:16,19 changing 54:2 characterize 42:4 135:3 characterized 46:14 86:4 charge 71:18 check 40:17 97:4 checked 83:17 CHRISTA 4:4 circular 22:11,12 108:3,6,8,12,13 cite 58:11 cited 13:3 31:4 73:21 civil 40:14 46:15,19,22 claim 18:12 64:12 68:8 claimed 27:8,16 clamp 94:17,18 95:1,4,9,11,16,19 clamped 95:11 clamps 94:12 class 59:7 classification 84:7 clear 20:5 25:7 57:16 client 45:5 119:23 clients 41:3,11,16 49:17,18 clip 82:19 clips 79:14,23,25 81:16,17 82:6,13 close 68:12 110:10 137:1 139:8 closely 13:8,11 81:19 code 4:8 59:21,25 60:1,17,19,20,22, 23 61:1,4,8 62:3 63:11,12,15,21 64:4 65:21 77:11,21 78:1,24 80:10,15	83:17 105:5 107:24 118:2 119:17 121:8 122:16 123:8 124:14 126:25 128:12,16 136:6,19 137:2 141:18,24 151:2 codes 23:13,14 cognizant 36:5 cold 56:24 57:7 colleague 100:16 colleagues 66:4 68:14,15,23 86:1,7 97:3 99:12 112:13 color 147:23 148:7 colored 149:19 column 83:22 84:1 combination 46:14 combine 30:24 31:5,7 combiner 32:14 combining 128:15 commensurate 53:23 comment 71:21 89:23 94:24 commercial 42:8 43:8,17,22 44:6, 19,23 45:12 51:6,7 100:14 102:8,23 commercial/industry 42:1 commercialized 99:8 102:6,14,15, 17 commercially 100:14 commissioned 64:1 common 148:1 commonly 47:13 79:15 115:13 116:25 community 126:25 companies 50:7,11,15 51:1 company 26:3 100:9 comparable 159:13 compared 39:25 71:23 comparing 128:25 compensated 38:1,4 39:20 complete 14:18 completed 162:18 completely 55:4 compliance 63:11,21 119:16 136:6	compliant 63:16 64:4 77:11,22 78:1, 24 123:8 124:15 complications 122:21 complies 128:4 comply 62:2 129:4 component 22:19 96:12 99:13 102:16 115:13 128:4 153:24 154:3,19 components 20:24 47:17 52:14,17 53:3 55:9,23 56:1,3 78:7,10,19,23 79:3,13 93:9 103:2 122:23 124:5,15 127:2,3 156:2,10,19,23 157:1,2,25 158:2,11,12 concept 91:15 114:19,20 concerned 57:6 122:2 concerns 73:3,6 122:18 163:6,14,15 conclude 135:19 concluded 135:21 136:5 conclusions 69:15 condition 8:13 conditions 41:13 54:22 55:10 56:2, 8,9,23 81:3 83:5 84:11,20 85:14,20 conductor 25:13,24 26:11 80:11,14 105:3 106:2 114:8,10 116:21,22 117:9 129:8 134:19,20 138:14 140:24 141:2,7 146:3,16,21,24 149:4,12,13, 21,22,25 150:1,5,11,25 151:7,20 152:20,21 153:3,6 155:11 157:6,9,16 conductors 18:25 19:7,11,17,25 20:19 22:1,15 24:3,6,9,17 25:12,22 47:23 48:3,5,8,12,13,16,17,21,23,24 49:4,5,9 55:16,24 56:7,10 76:11 77:6, 12,23 78:2,5,17,21 79:2,10,12 80:12, 19 81:2,3,15 82:14,25 83:6 84:12,15 86:19,23 87:7,18 88:1 92:1,15 101:23 102:2,9 105:3,24 116:14 117:3 129:11 132:25 138:8,9 139:24 140:9 145:1 146:5,18 149:21 151:19 155:10 157:5 conduit 105:9 133:6 conference 63:2 confess 104:12 confirm 16:23 39:7 63:14 97:12 120:7 confirms 97:24 conform 116:17 129:4
---	---	--

conformance 60:25 119:17 conformed 137:2 confused 81:17 conjunction 118:23 connect 95:10,17 152:4 connected 95:20 102:3 131:24 138:10 145:1 connection 47:15 49:2 73:11,12 104:14 156:3,11 consideration 6:20 54:3 considerations 53:6,10 54:19 considered 11:16,18,21,22 12:1,21 13:23 14:5,9,11,19 15:24 16:24 17:3 28:19 29:1,4 66:17 67:24 68:19 74:17,22 90:23 96:20 113:10 114:21 142:10 consist 79:1 98:5 consisted 19:24 consistent 13:24 19:13 22:4 25:16 62:8,12 80:25 81:12 82:24 87:21,22 110:14 114:11 129:1 consists 114:7 consolidated 155:17 156:19 construction 40:13 47:14 115:9 constructive 163:10 consult 7:12 consultancies 47:1 consultation 46:24 47:1 consulted 35:23 37:22 83:23 88:23 consulting 35:18 37:18 49:24 content 74:25 context 16:21 21:23 22:7 23:3,4,9, 10,11,13,16,24,25 24:1,3,14 34:9 37:21 54:20 57:9,13,15,16 59:4 73:18,19 76:18,25 77:24 79:6 80:1,3, 9,15,16 82:17 96:17,18,19,25 99:9 107:9 116:22 157:23 continues 81:6 83:3 98:11 continuing 59:2 continuous 98:22 contract 41:3,7 contractor 162:8,9	contracts 41:4,11,12,14,16 49:11, 14,18 50:3 control 154:21 convenience 7:7 9:7 10:4 convenient 57:22 conventional 112:4,15,18 113:3 118:7 conversation 38:12 119:14 conversations 117:23 120:3 121:7 convert 155:16 156:17 cool 162:13 coordinated 71:20 copper 114:8 141:3,4,6,9,12,13,16 142:13 148:16 149:11,12,19,21,25 150:10,25 copy 38:25 42:22 correct 5:5,22 6:20 8:9 9:2 10:18 11:2,17 14:1 15:13 17:1,16 18:12 19:18 24:25 25:5 26:12 31:20 32:1 33:1,12,13 34:17,18 35:20 37:14,24 38:6 39:21 40:21 41:19 42:12,23 43:10,14 49:11 50:14 52:5,10,15,21 53:8 54:17 57:4 60:5,8 62:7 66:11 67:6,19 68:25 69:6,12,19 72:8,18 77:7,8 78:15 79:23 81:24 84:21 88:8 89:21,22 90:20 91:12 92:8,17 93:7 94:2,22 95:5,7,11 96:1 97:25 99:18 100:1,4 101:5 102:12 104:1 106:18, 25 107:7 108:24 109:10 110:18,21 111:23 113:5,25 114:9 115:17 118:4, 18 120:19 123:10,20 124:16,23 125:21,24 126:14 129:11,21,25 130:22 131:15,21 136:15 137:7 138:7 142:25 153:4,22 156:3,14,20,24 158:14 159:14 160:2,6 161:18 correctly 21:21 31:15 44:7 61:12 67:10 68:22 72:1,17 93:10 97:13 115:1 cost 13:18 124:14 costing 47:15 costs 131:4 162:11 counsel 7:2,13 27:24 33:17,25 34:14,16,20 38:21 69:25 County 4:22 10:16 couple 36:4 101:12 Coupled 81:2	courses 86:15 cover 89:12 109:8 110:2,5,6,17 covered 21:18 covers 110:5,8 153:23 cradles 24:7 cranes 160:25 creatures 85:8 credits 59:2 criticism 163:10 cross 111:14 161:13 cumbersome 30:8 119:16 127:1,7 current 17:15,24 18:19,24 19:1,2,6 25:11 48:19,23 144:4 146:5,9,19 customer 128:11 cutting 50:3 CV 42:22 70:25 71:12,16,22 cycling 56:24 57:8
D		
dam 52:20,23 Dan 34:25 date 33:20,24 41:4,14,15 153:9 154:5 dated 40:20 dates 9:6 41:1 154:22 day 4:1,2 30:7 86:5,23 89:24 161:6 days 46:5 128:9 DC 48:13,15,17 49:8 124:5 125:3,4,6 deal 73:11 dealing 128:10 deals 55:14 debris 81:5 decades 53:22 December 31:14 declarants 15:23 16:6,9 18:11 29:8, 18 63:25 64:8 65:19 68:2 73:21 declaration 4:25 5:8,11 6:23 8:21 9:9,18,21 10:5,18 11:1,15 12:23 13:24 14:5,10,17 17:12 18:7 24:24 26:5,7 29:16 31:5 33:5,10,11,17 38:1,		

25 39:8,17 40:9,19,24 41:14 42:23 45:17,19 50:21 51:20 54:10,12,20 56:13 57:19 58:4,8 60:3,9,17 61:5 62:14 63:4,25 64:7,16,19 65:15 67:3 73:22 75:18 88:10 90:11 91:11 92:2, 7,16,20 94:1,11 99:14,24 103:1,3,9 106:5,17 109:9 112:5,10,11 113:5,11 117:21 118:8 120:13,19 121:6 123:17,23 125:22 126:15 128:23,25 129:15,25 130:10,20 131:18,23 132:7,23 134:8 135:1,4 137:4,6,23 140:7 142:10,24 143:9 153:17 155:13,24 156:6,14 157:21,23 158:8, 17 declarations 5:5,13 8:1,18,24 9:1,5 10:2,13 11:25 12:2,11,19,23,25 13:3 16:3,24 17:2 29:10,13 34:1,3,10,21 36:1 37:4,17 60:11 62:20,22,25 63:24 64:6,12 65:5,10 66:1,16 67:23 68:1 74:2,21 143:3 154:11 declare 65:15 dedicated 152:19 deep 20:10 define 44:21 162:4 defined 109:1 112:23 defines 110:11 141:18,24 definition 43:20 80:7 109:3,7,13 110:14 129:7,9 134:9,15,17,22,25 135:24 136:21 definitions 109:13 111:4 deflecting 142:17 degree 30:9 39:7 degrees 142:6 delineated 41:13 delivers 46:16 demand 119:25 120:1 department 161:3 depending 48:25 49:1 73:19 96:16 depends 12:5 43:19 45:4 55:5,12 73:18 107:8 depicted 92:6 130:11 146:2 depicting 131:8 145:21 depicts 106:20 deployed 162:14	deployment 130:13 deposed 31:16 33:11 deposition 6:7,11,17 7:10,12 31:13 38:17 67:19 143:13 158:16 160:12 depositions 5:24 6:1,4 describe 104:21 105:6,11 106:6 112:23 136:17 describes 104:22 describing 9:25 106:3 115:22 description 18:24 68:11 106:7 107:25 114:12 117:11 150:6 design 45:3 46:9,11,22 47:7,10,11, 22 48:2 49:6 66:15 71:5,9,11,19,21 86:12,18,21 87:3,14 88:3 124:3,15 128:10 130:21,24 131:17 designed 24:15 35:14 43:4,9,13 44:12 45:19,22 46:11,20 47:4,19 48:10 71:2,16 72:2,5 86:24 87:23 designer 71:17 72:4,17 designers 76:10 77:4 designing 21:17,22 22:7 24:14 25:20 28:16,23 47:22 66:10 67:21 71:11,13 148:3 designs 122:12 detail 22:20 24:21 163:11 details 12:16 41:7 117:17 determine 63:11 determined 136:13 developed 102:14,15,17,18 103:2 136:1 162:11 developer 51:10 160:24 development 47:10,16 50:16 51:1,8 99:10 123:25 136:2 161:3,10 device 32:8,13,25 33:5 102:5,7,25 103:21,22 131:24 132:16 135:23 140:16 devices 56:17,22 57:5,7 79:14 91:3 100:15 103:16 116:3 145:8 devoid 77:24 dictate 41:2 dictated 41:3 die 163:12	differ 106:5 difference 5:13 9:8,10 10:1 23:3 47:6 80:20 106:9,13 142:7 148:7 differences 122:24 148:9 159:22 differentiating 46:21 difficult 21:19 84:16 digit 46:7 72:7 direct 48:19 75:9 76:21 directed 61:24 89:2 directly 35:13,23 115:4 disadvantages 136:7,8 disagree 61:19 65:8 67:11 68:6 69:2, 8,14,15 73:19 77:3,9,17,25 81:10 disagreed 61:2 disagreeing 61:8 discipline 46:14 disciplines 46:22 disclosure 9:7 disconnect 152:7,8 discover 103:22 discovered 93:8 103:17 discuss 84:10 126:8 discussed 60:25 85:21 88:10 118:2, 15,20 119:1 120:8 121:8 125:22 136:9 157:20 discussing 61:21 66:24 89:1 160:11 discussion 30:3,5 36:3,15 54:18 85:10 120:10 discussions 36:13 135:17,19 distinctions 53:7,11 distinguish 27:21 distinguished 140:6 distinguishing 130:17 distribution 47:20 124:6 diversity 70:9,11 DIXON 13:5,20 15:18 17:17 18:1 20:2 22:3 24:20 27:11 28:6 32:15 38:14,16 51:16 54:25 55:17,20 56:5 60:15 69:20 85:17 87:9 98:7 111:1 123:11 140:11 149:16 150:12 151:23 157:10 163:25
---	---	--

doable 98:25 99:1
document 114:12 117:10 154:22
documented 120:20
documents 162:11
doubt 64:21,25 65:4,6 69:13
drag 163:23
draw 69:16
drawing 130:21,25 131:17 132:7,10,15
drawings 162:12
Drive 4:3
driveline 131:21,24,25 132:4,6
driven 83:12
dropped 8:15
dry 56:25
dual 25:21 26:18
due 83:4 118:12 120:23 121:2,13
duly 4:12
dynamic 119:18

E

E-B-O-S 52:15
earlier 31:12 33:20 66:9 67:18
early 31:14
earth 46:19
easier 123:8 127:5
easily 51:14
east 161:11
easy 77:12,21 78:3
easy-ish 128:6
EBOS 52:14,17 53:3 55:8,9,14,23 86:25 124:15
economic 13:18
Ed 4:19
edition 74:12
education 59:2
Edward 16:12
effective 82:4 124:14 146:5,8,18

efficiency 131:5
efficient 124:14
effort 62:14
EGC 153:6
electric 49:3
electrical 19:7,11,17,25 20:18 22:1 24:3,16 25:12,22 46:11,15,16,20,21 47:4,8,19,22,23 48:3,4,8,10,12 49:5,6 51:13 55:15,24 59:21,23 60:19,22 61:1,4 62:2 63:12 80:9,15 87:7,18 88:1 91:16 92:1,15 101:22 102:2 105:5 107:24 110:21,25 111:9,22 112:2 116:14 122:16 124:4 132:25 136:18 139:24 140:9 146:4,18 147:11 149:21 151:2,19 155:9 157:5
electrically 156:2,10 158:1,3
electricity 46:16
eliminated 49:16
embodiment 99:13 112:7
embodiments 91:15 92:25 93:2,3
emphasize 130:14
employ 24:18 26:21
employed 19:23 20:17 21:24 25:21 26:10 87:15 155:8
employee 101:6
employs 19:9,15
enclosed 110:1,2 111:10
enclosure 111:11
encountering 69:4,10
end 6:25 81:20 105:20 161:23 162:10
ended 160:1
energy 83:7 86:13
engaged 27:24 35:4 36:24 37:3 123:24 160:6 162:7
engagement 41:11 45:4 124:10 160:5
engineer 86:22 124:4
engineering 45:3 46:13,17,19,22 49:10,14,16,19 128:10
enhance 123:6,13
enhanced 154:20
enjoy 120:4 136:18

entire 82:6 98:10 152:18
entirety 117:6
entities 160:23
entity 161:4
environment 84:2,12,15
environmental 52:19 53:2 55:10 56:2,8,9,23 81:3 83:5 84:11
environments 51:14,15 52:4,9,10,12 54:6 56:24,25 57:8 86:23
envision 107:5
envisioning 159:17
envisualize 104:12
equation 120:1,2
equipment 25:13,23 26:11 140:23 141:1,2,3,7 146:3,16,21,23 148:16 149:13,22,25 150:4,10,25 151:4,6,9,20 152:16,19 153:3,6 155:10 157:5,8,16
equivalent 156:18
erect 95:14
essence 29:23
essentially 29:18
estimate 160:9
estimating 131:4
evaluating 52:11,25
evaluation 61:3
event 63:1,4
evolution 53:20 54:3
exact 147:20
EXAMINATION 4:14
examined 4:6
exceed 85:1
exception 5:9
excuse 17:4 92:4 103:23 108:18 130:25
exhibit 8:19 9:12,17 38:10,13,24 39:2 42:19,21 51:21 53:5 56:13 58:11 71:1 74:1,7,8,11 76:1 108:16,18 113:18,21,23 114:3 117:5,6 137:7,13,14,19 138:1,4 143:11,17,22
exhibits 8:13 12:2,3,4,7,10,16,25 13:2,8,12 38:17 73:20 74:16,21

143:13 exist 49:22 existence 90:13 expand 92:22 expectancy 76:8 expected 76:4 expensive 30:8 119:15 experience 7:22 18:4 26:16 27:25 28:1 35:19 43:24 56:19,21 66:4,15 67:4,14,16 68:5,16 69:4,10 70:3,4,5, 17,18,22 71:23 78:23 86:6,7 96:16 121:18 128:2 experienced 68:9,10 experiences 39:15 70:9,11,12,13,21 expert 5:21 7:18 14:12 15:2,9,16,17, 25 16:7 31:9 32:23 45:2 59:14,20 84:8 expertise 89:17 experts 15:21 83:17,23 explain 48:1 explaining 47:5 explicitly 14:6 exploration 103:16 expose 84:15 exposed 77:12,22 78:2 81:4 83:6 84:12 86:19 129:10 exposure 52:19 53:2 express 15:16 expressed 163:5 extend 97:17 extending 19:11,17,25 20:19 22:1 47:24 55:16,25 87:7,18 140:10 147:11 extends 98:14 extra 122:23 128:4 extreme 55:10 56:2 81:4 extrusions 104:16,17	face 9:5 76:11 facilitate 146:22 156:2,10 facing 77:5 fact 16:1 18:6 51:24 84:14 104:7 115:10 factors 53:1 57:3 Fahrenheit 84:24 86:19 fair 20:8 42:15 70:7 77:19 90:3 fall 119:16 falling 128:5 false 65:16 67:6,8,10 familiar 6:16 16:12,17 34:12 35:2 39:10,13 64:18 88:19 102:21 fashion 37:5 61:1 fast 141:21 fasten 109:6 fatal 100:18,19 137:3 fault 146:5,9,19,22 favorable 136:14,17,21 February 74:12 February/march 74:12 76:16 77:5 78:21 feedback 100:24,25 101:14,15,16, 17,18 127:25 161:11 163:3,5,9,12,13 feel 7:1 10:7 75:5 76:22 85:25 111:20 feeling 128:3,7 felt 123:14 fence 51:9 field 100:9,19,21 101:20,22 102:1,7, 23 103:4 132:19 155:7 163:2,17 filed 30:17 filings 30:15,17,19 find 122:8 136:24 139:7 159:12 fine 17:9 57:24 80:1 140:13 141:25 142:12,20 fines 65:21,23 finish 7:5 finished 99:7 firms 49:19	fit 136:24 139:3,7 fits 129:6 fitting 79:14 fittings 109:5,14 fixed 79:12 fizzle 162:17 fizzled 162:22 flat 105:19 108:4,7 111:19 flaw 100:19 flaws 100:19 137:3 flex 142:15,16,19 flexibility 142:8 flexible 142:6,11,12,13,14 flimsier 159:21 flimsy 159:20 floor 161:12 Flynn 4:15,19 5:16,18 7:25 8:4,6,8, 10,11 13:10,22 15:6,7,20 17:19 18:5 20:7 22:5 24:22 27:12 28:9 32:19 38:9,15,19 42:3,10 48:17,20 51:18 55:7,18,21,22 56:11 58:2 59:25 60:2, 18 69:21 74:5,7,9 78:11,14 85:18 87:12 90:7 98:13 109:20 111:7 123:16 125:10,12,16,18 139:10,15,17 140:19 141:14 142:3 143:16 146:9,12 148:19,23 149:17 150:15,22 152:2 155:2,4,6 157:8,11 158:21,24 focus 124:11 focused 124:9 focusing 94:25 foggy 91:5 folks 135:21 follow 39:4,5 152:17 forget 85:12 153:24 forgive 8:12 37:15 forgot 85:11,12 form 13:5,20 15:18 17:17 18:1 20:2 21:10 22:3 24:20 27:11 28:6 30:4 33:10 51:16 54:25 55:17 56:5 60:15 61:1 69:20 85:17 87:9 98:7 111:1 123:11 133:4,9 140:11 149:16 151:23 156:24 157:10
F		
f-i-n-e 141:25		

format 4:7
forming 109:5,15,17,18 157:24 159:11
forms 156:1,9
found 93:21
foundation 156:1,9 157:25
frame 20:4,14 21:3,12,24 25:19 28:24 66:6 72:24,25 73:3,8,10 77:15 78:20 79:10 81:11 85:23 89:21 91:12 98:11,14 101:3 117:24 121:8 123:19 133:7,23,24 134:3,5 155:25 156:8,17, 18,23 157:1,2,14,24
frames 78:6,18,22 79:2,11,12 82:15, 20 154:13
Frank 100:20
free 7:2 10:7 75:5 76:11,22 77:6 81:1, 14 82:24
front 8:13,18 50:22
frustrated 126:24
full 9:7 80:21
fully 102:5,14,15,17,18
function 104:24 115:10 159:13,16, 25
functionally 105:12 156:18
funded 99:8
fuzzy 154:7

G

gained 63:4
Garrett 12:24
gas 21:19
general 36:14 63:14 77:2,20
generally 6:16 33:8 34:1,2 39:10,12 41:10 52:18 54:16 77:14 89:19
generation 51:14
give 21:4,5,6,8,10 64:2 79:6
glad 113:17
glance 12:4
glanced 12:7 74:2,22
glossed 11:13

good 4:16,17 107:24 126:21 128:2 154:25
governments 83:10
gray 147:21
great 17:9 161:9 162:15
greater 44:17 52:18 70:6,17
grid 49:3 102:3
ground 141:3,5,6 142:14 146:5,9,18, 22,25 148:4 161:12
grounded 139:25 145:22,24 146:2, 15 148:11,12 153:9
grounding 11:2,4,6 24:25 25:3,5,9, 13,15,18,20,24 26:9,11 30:10 114:8 118:14 122:13,15,16,19,20,22 139:15,25 140:24 141:2,7 146:1,3,14, 16,21,24 148:14,16 149:4,10,13,22 150:1,5,10,25 151:4,7,9,16,20,25 152:9,10,16,20,21 153:3,6,23 154:2, 17,18 155:11,17,24 156:1,3,7,9,10, 20,24 157:5,8,16,25 158:14,17,19 159:4,8,12,14,15,17,23,24
grounds 141:12
group 160:11 161:14,18
Guard 113:15,24 114:2 116:12,22 117:9 127:20
guess 36:20 40:2 75:20 103:13 104:9 114:6 115:3 130:8 136:16,21 162:22

gurus 83:18
gusts 85:2 86:21
gutter 109:25 110:1
guys 160:25 161:1

H

hail 85:6
half 73:1
hand 38:21 42:18 108:20
handed 38:23 74:10
Handicapped 4:23 10:17
handing 108:15
hanger 96:12 97:16 144:13,19
hangers 17:15,23 18:19 19:10,16,24 20:18 21:25 22:11,12 24:15 25:11,22

58:10 62:6 87:6,16,24 98:3,6,21,24 99:17,24 106:16 116:13 117:8 130:13 132:24 134:1 139:23 140:9 144:4,22, 23,24 145:6,7 147:23 148:7 151:18 155:9 157:4,15

hangs 96:12
happen 128:19
happened 35:16 61:9 72:22 100:23 128:18,19
happening 127:19 128:17
hard 121:21
hardware 122:23 155:17,20 156:17 157:2,13,24 159:16
harsh 81:2 83:5 84:2
head 20:10 65:22 107:11,13,15,22 110:7 112:8 126:9

heads 107:15
health 23:13
hear 61:12 69:18 107:17 139:13 141:4 146:7 150:18
heard 14:21 15:12,13 16:15,20 34:15,19,22,23 35:2 36:23 37:5,20 38:11 64:15,18 84:4,5 89:15 97:12

hearing 31:17
heat 56:24 57:7
heel 73:17 81:6 83:4,8,11,15

helped 30:7
hesitating 133:11 145:5

hesitation 61:6
hey 97:4 100:20 119:6

high 81:4 104:11
higher 103:1

highest 40:15
Highly 83:12

hindsight 128:8
hinged 110:17
hired 34:14,16,20 46:23 63:6 161:5

hold 100:12
honest 65:7
honestly 66:2 93:17
honesty 65:18 69:14

hooked 132:16 136:23 hooks 116:20 hor- 105:15 horizontal 94:15 104:17 130:1 horizontally 96:13 132:11 hour 4:2 38:2 39:21,25 40:3,8,20,25 85:3 86:20 hourly 39:20 162:10 hours 45:3,6 85:2 86:19 house 110:20 housed 52:20,22 111:16,20 houses 111:9 housing 110:17,24 111:2,5,11 humid 56:25 hundreds 119:5 hypothetical 54:13 I I-BEAM 95:25 132:15 ice 81:5 idea 107:11 130:21 152:20 identical 5:7 9:1 identification 38:18 143:15 identified 14:4,10 63:24 72:11 73:22 112:13 113:1 142:23 identify 11:16 21:1 72:14 126:14 136:12 137:6 149:7 153:21 identifying 21:10 22:8 46:1 illustrate 99:3,4 image 79:5 92:2,15 94:13,17 96:11, 13 97:5,19 98:9 103:11 106:19 114:4, 6 128:24 129:6 142:17 145:24 146:23 images 75:3 93:13 98:8 103:19,20 113:9 116:9 118:10 157:22 imagine 104:15,16 immediately 112:8 implement 77:21 100:6 implemented 102:1 implementing 77:11 78:1	important 82:4 83:14 imprisonment 65:23 imprisonments 65:22 improvement 136:3 incentives 83:8 include 47:22 66:13 79:24 80:19 92:7 93:10 113:11 131:17 132:7 157:3 158:9 included 14:16 42:23 48:13 72:10 87:4 91:25 92:1,13,14 120:18 131:9 137:23 includes 6:13 99:16 104:9 134:25 137:22 154:2 including 27:1 42:6 56:23 64:1 90:15 93:9 94:6 110:17 118:17 125:20 126:1,5 130:15 133:5 incorporated 137:5 incorporating 163:11 incorporation 160:21 incorrectly 95:4 increased 40:25 indicating 5:17 38:22 64:9 137:15 149:1 indiscernible 15:3 109:16 139:12 141:19 146:6 150:17 individual 35:3 indoor 54:24 55:3,4,11 56:3 57:4,6,7, 11 121:22 indoors 56:10 industrial 43:8 industry 30:7,12 41:19,24 54:3 58:10 59:9,12,15,18 62:15 63:14,18 64:3,9,12,23 65:2 68:14,16 69:4,10 70:3,4,6 73:8,11,17 80:25 82:23 83:12,13,17,23 84:8 91:16 155:16 industry's 83:11 informally 4:18 information 21:11,14 22:8 46:1 115:19 161:21 inquiries 148:12 inside 22:15 insight 126:11	insists 70:1 inspect 82:6 inspection 81:23 82:3 inspector 121:20 122:1,10 inspectors 83:18 121:18 122:24 install 100:13 162:25 installation 32:14 56:1 72:8 85:23 87:1,15 102:1 139:19 144:5 147:5 155:8 163:7 installations 53:8,11,22 54:17,23,24 55:9 70:16,19,23 73:5,13,16 81:7 83:4,8 85:16 132:21 133:3,19 installed 100:8 101:19,20 102:4,6 103:4,6 139:19 installer 160:24 installers 76:10 77:4 161:12 instance 90:14 instances 24:13,17 instruction 116:17 insulated 56:6,10 129:11 insulation 114:13 139:6,9 integral 134:18 integrated 11:1,4,6 24:25 25:2,5,9, 15,18 139:15,25 145:25 146:13 151:16,25 152:9,10,21 154:17 156:24 158:14 159:12,14,15,17 integration 30:9 intended 89:20 intending 89:5,17 intense 75:3 inter 6:5 interact 161:21 interconnected 100:9 interest 63:5 94:6 interested 36:10 91:6 118:11 interfere 8:16 internally 135:22 International 63:2 interpretation 61:8 118:12 120:23 121:2,4,13,17 123:7 126:25
--	---	---

interpretations 118:3 121:9	John 84:4	laying 105:22 138:18,20
intervals 104:18	Joseph 12:24	laymen 88:16
introduction 153:17,19	Josh 119:9 160:7	layouts 130:25
introductory 80:6	Joshua 4:5,10 16:17	laypeople 89:2
invented 89:23	July 33:22 40:20,23	layperson 86:2 107:10
invention 30:24	jumped 151:8	lazy 123:3
inventions 27:8,10,16,18	jumper 148:16 149:3,8,9,10 150:4, 10,24 151:10,11	lead 32:7,13 47:17
inverter 48:25 49:1,2	jumpers 149:25 151:6	leading 82:22 97:7
investigate 148:14	jumps 63:9 107:18	learn 86:15
investigating 115:5 121:25		learned 58:25 59:4 63:1,3 103:15
investigation 93:20	K	learning 115:2
invoke 39:15		leaving 19:4
invokes 23:15	K-E-R-N 16:13	led 117:16
involved 14:1,3 26:9 28:4,12,16,23 45:10 48:9,21 49:6 66:10 67:20 71:5, 8,9,11,13,16 122:23	Kern 16:12,15,25	left 114:3 132:14
involving 6:5	kind 6:11 10:11 13:14,17 16:6 18:11 19:18,20 20:10 21:11 22:25 26:17 29:20 55:1 62:15 66:8 79:4,20 82:19 83:8 86:3 93:14 94:16 98:20 110:1 116:4,12 127:19 128:9 133:25 138:14 142:17 144:18 145:4 151:21 157:3 158:6 162:17 163:6	left-hand 83:22 84:1
IPR 4:21,25 5:2,8 6:5,19 7:10,11 8:19,20,21,22 11:9 14:3 15:2,9,22 18:15 27:14 30:16,19 33:7,12 34:9 35:11 36:25 38:15,24 40:24 42:20,21 74:7,8 108:16,18 113:21,23 142:24 143:1,8 153:13,25	kinds 28:4 48:8 57:3 66:5,7 105:13	legal 160:20
IPRS 4:20,24 5:5,22 6:6,8,24 8:8 9:2 11:17 14:1	knew 88:20 115:5 121:25 123:1	length 84:10
irradiance 85:1 86:20	knowing 86:14	lens 63:21
issue 32:6 61:3	knowledge 11:19 65:16 90:13	level 24:21 36:14 64:3 70:5 84:6 100:18 102:25 103:1 104:11
issues 31:25 73:3,10,14 86:8 100:22 118:13 120:23 121:2,5,14 123:7,8	L	levels 102:22
ITC 31:10,16 32:7,20 35:10 36:18 142:22		life 49:21 76:5 82:7
itemized 67:23	label 21:5	light 61:22
items 12:19	labor 131:4	lightning 150:17,21 151:3
J	lacks 80:25 82:23	likes 163:23
	ladder 104:7,10,11,12,14,19,22 105:11,14,23 106:7,8,11,20 107:6,19, 20 108:3,6,11,13 109:24 111:19	limit 39:14
	ladder-like 111:19 112:5,19	limitation 99:12
	ladder-type 104:8 105:19 107:13 108:14 112:9	limited 82:5,14 118:17 125:21 126:1, 5
Jacoby 89:14	ladders 104:13	lines 18:8 30:9 64:13 116:25 118:4,6 119:5
January 31:14	latched 117:2,3	list 11:18 14:18
Jefferson 4:3	late 31:14	listed 14:6 17:2 115:19 116:16,17
job 124:13	law 40:12	literally 23:7
jog 36:21		litigation 35:19 37:22 38:5 58:22
		live 163:12
		living 85:8
		LLC 4:22

loaded 23:12
local 49:3 100:9 121:19
location 101:10
locations 101:12
locomotive 115:11,13 117:17
logistical 122:2
logistics 47:18
long 7:3 47:17 69:17,19 98:17 159:20 163:23
longer 162:7
longstanding 70:2,4
looked 12:2 35:24 63:20 75:13 127:11 133:21 137:1
lose 141:22
lot 8:15 12:20 30:3 35:14 46:5 50:18 79:11 90:3 91:8 93:9 94:6 101:17 104:8,13 105:16 108:2 117:16 119:3 120:15 122:17 127:2,6,9,14 129:3 133:16,23 134:4 138:8,18,20,22 141:8 147:7 150:13 151:14 161:12
lots 160:25
love 69:18 89:22 163:12
low 148:1,4
lower 102:25
lying 65:19 105:19

M

made 12:2 29:8,12,15 30:16 34:1 61:8 65:7,16 66:1,2 69:14 73:15 76:19,22 89:1 124:18 127:6,7 130:14
main 60:20
maintenance 82:4 160:25
major 47:17
majority 49:10,13 50:2 72:13,20,22 81:7 83:4
make 20:5 32:11 37:16 56:18 57:15 68:21 97:12 114:24 115:16 123:8 130:12 136:2 140:17 148:12 159:7
makes 38:16 83:13 146:20
making 57:10 104:14 154:12
management 4:21 5:20 10:15,20,22 17:11,14,22 18:3,18,21,23 19:9,15,

22,23 20:16 21:11 24:2 28:21 29:6,19 30:5 34:16 56:4 58:8,9 62:5,16 65:3 66:21,24 67:2,15,17 68:7,24 69:5,11 73:4,12,15 74:13 75:2 76:7 77:12,22 78:2 81:1,6,14 82:24 83:3,14 85:16, 22 86:24 87:3,14 89:3 90:14 103:25 132:20 133:2,4,5,9,16 139:19,21 144:3,10 145:22 146:1,14 147:4,9 152:25

management's 83:14
managing 55:15 76:11 77:6
manner 58:15,17
manuals 116:17
manufacture 90:25
manufactured 18:10 90:15 113:15
manufacturer 20:23 22:20 115:3 119:20
manufacturers 22:19 119:4
March 31:15
mark 8:2
marked 8:4 38:18,23 39:2 42:19 74:5,11 108:16 113:20 143:7,11,14
market 42:5 128:12
marking 74:4
match 76:8
material 131:4
materials 11:16,18,21 12:1,21 13:23 14:4,8,9,11,15,19 15:24 17:3 28:19 29:1,4 47:16 48:6 66:17 67:24 68:19 74:17,22
matter 6:11 7:21 13:16 27:6 32:21 35:4 38:2 58:18
matters 6:14 7:17 14:13 27:6 28:11 68:2 139:5
meaning 21:18 23:15,23 24:4 27:1 96:14,18
means 20:6 49:15 76:19 79:2,10 82:11 86:10 109:15 115:19
meant 33:10 44:11 50:24 99:2,4 102:13
mechanical 24:6,9 47:6 92:1,14 134:19
meet 120:3
megawatt 43:4,8,13 44:9 72:7

megawatts 43:23 44:3,5,6,8,13 45:8 46:7
member 135:11
memories 12:20 39:15 75:4
memory 41:6,22 91:5
men's 57:23
Menlo 4:3
mention 15:24 126:15,16
mentioned 60:7 74:21 75:18 88:13 89:8 107:17 108:22 151:10 154:23
mentioning 45:18
messenger 17:14,22 18:9,18 19:9, 16,24 20:17 21:25 22:10,16,18,22,23, 24 23:1,4,6,23 24:4,9,11,15,16,19 25:10,21 26:10,18,22,23,25 27:2,3 58:10 62:6 87:4,5,16,24 90:14,23 91:7,15,25 92:14 93:21 96:13 97:4, 11,13 99:4,17,20,25 100:2,4 103:18, 22,25 104:9 112:13 113:1,8 114:18, 20,22,25 115:6,17,23,24,25 116:1,3, 4,11,13,19,21 117:2,8,11 126:3 129:7,9,11,16,20,21 130:12,14,15,18 132:22 133:12,21 134:1,10,15,17,23 135:24 139:22 140:2,4,5,7,8 144:3, 14,17,20 145:2,3 146:4,17,21,24 147:11 149:20 151:17 152:11,14,19, 21,22 153:1,2,5,6 155:8 157:3,15,17, 19 158:1,4,6 159:8,20,24 163:1
messenger-like 99:16,21 100:3 130:5
messengers 117:1 140:2,3
Messrs 64:22 65:1 69:3,9
met 4:18 135:24
metal 97:14,17,18 98:5,20,22 99:16, 21 100:3 106:10,11,15 110:11,20,23 111:3,15 129:15,20,22,24 130:2,3,5, 17 131:13,19 132:3,23 134:25 135:3, 8,9 140:7,21 142:9,15 148:17,18 156:22 158:12 159:10
metallic 94:15 96:12 124:22 127:3,6, 8,13
middle 7:5 58:6 92:24 120:3 132:11 144:7,12 145:19 148:15
miles 85:2
mind 20:4 80:10,13 104:7 107:18 111:15 130:2 142:2 145:7,10,11,13, 15 150:16 152:1,7

organizing 24:2 55:15**outdoor** 52:18 55:3,5 56:1,7,17,19,
21 57:11 70:18 73:4,12,16 79:7
84:11,15 85:16,23 86:25 87:15
121:22 122:5 138:16**outdoors** 54:23**overcome** 62:15**overhead** 116:24**owner** 4:11,19,23 10:16 20:22 30:18
31:20,23**owners** 51:10

P

p-i-l-e 148:19**pages** 75:7 92:7 93:25 94:10 96:9
103:8,24 113:4 120:13 132:5 135:1,4
137:11 143:17**paid** 39:24,25**painful** 32:11 39:15 41:22**painfully** 32:9**panels** 19:11,17 20:1,19 22:1 47:24
52:20,22 55:16,25 87:8,18 88:1
121:22 140:10 147:12**paper** 12:14 47:19 60:9,12,17,24
61:8,12,14,15,23 62:10,18,24 63:6,8,
22 64:2 66:14,20,24 154:16,20**papers** 13:1,7 60:8**paragraph** 9:10,11,13,17,20 10:6
13:24 14:7 16:10 18:7,8 24:23,24
26:4,6,13 37:25 39:17,19 50:22,23
51:4,20,22 52:3,7 53:5,9,16 54:10,16,
19 56:12,14 57:12 58:3,6,7,11 63:24
65:14 67:3,7 73:22 78:8 79:16 80:21
81:13,21 82:17 84:1 90:10 91:10,14
99:14 112:10,11 113:14 117:20,21,22
121:1 123:17,23 124:13,20 125:19
129:6,19 130:20,24 131:9,18 134:8,
12 135:16,17 152:18,19 153:21
155:13,23 158:16,23 159:1,2**paragraphs** 26:15 57:18**parallel** 104:16 106:12,21,24 146:4,
17,21,24 149:20 151:7**parentheses** 43:4 113:15**parentheticals** 44:4**Park** 4:3**parking** 8:15**part** 18:20 19:3 28:22,25 29:2,24
30:1 38:11 46:24 47:8 48:3 55:12,14
59:1,2 63:17 86:25 95:9 96:3,5
101:17 111:2 113:6,7 114:21,23
115:16 121:20 124:9 125:1 127:8
136:6 138:11,12 151:4 160:10 161:7**partes** 6:5**parties** 47:20**parts** 114:24 127:6,9,14 129:3
159:10**past** 16:21 27:25 35:22 53:22 66:15
68:18 80:6**patent** 4:11,19,23 5:1,2,12 6:1,13
7:17 9:4 10:16,23 11:7 27:7,16 30:18
31:19,23 32:1,4,6,21 39:2 40:5,6,13,
15 153:9,11,25 154:6**patents** 10:21 11:6,9 14:1,3,6 27:8,
15,17 153:22 154:9,10,12**path** 146:6,9,19,22**paving** 155:15**people** 86:7 141:18 160:10 161:6,17**people's** 107:15**percent** 91:2**performed** 47:3 48:6 103:1**performing** 49:24**period** 88:18 90:16,19,24**permanent** 81:23 82:9**permitted** 7:12**permitting** 47:15**perpendicular** 104:17 106:24**persistent** 76:11 77:5**person** 27:9,17 30:23 72:5 89:15
101:8**personal** 66:3 68:5 86:6 90:13**personally** 4:4,5 21:12 28:3,12,15,
23 66:9 67:20**perspective** 46:14 48:10 49:1 68:13
119:22**pertaining** 126:19**Peter** 34:23**petition** 30:17**petitioner** 4:22**PGR** 32:24 33:4,7,11 35:11 39:1,17
40:6,9,19 50:21 51:20 54:10 56:12
57:18 142:22 143:1**PGRS** 6:6,8**Phinney** 16:18,25**phone** 117:18**photo** 51:13 94:21,22,25 95:5,7
135:7,8,9,24 137:7**photograph** 97:22 99:15 106:4,10,
17 109:9 129:14,25 130:11 144:7,12
145:19 146:15 147:3 148:15 149:19
151:22 158:9**photographs** 92:6 113:4 120:12
128:23 131:13,15,20,25 132:4 135:1
137:5,10,22 142:9 143:18 144:15
146:2 157:20 158:7**photos** 99:9 131:9 137:12**phrase** 18:24 19:3 20:5 41:20 71:8,
10 141:4**phrased** 156:13**physical** 21:18 85:5 101:10**picking** 140:16**picture** 92:3,16 97:2 148:2**pictures** 116:9 152:1,7,8**pile** 148:17,19 149:3,14 150:1,5,11
151:1,12**place** 128:5 147:19**plans** 47:10,11**plant** 46:16 52:21,23**plastic** 79:17 81:22 82:9**playing** 119:19,20**plug** 102:8**plural** 125:9,10**point** 37:15 49:2 57:10,22 98:19,22,
23 119:6,8 148:24 155:1 162:22**pointed** 149:7**pointing** 129:24**points** 12:1,18,20 105:20**policy** 83:12**pop** 107:11,13,14

pops 112:7 popular 67:15 105:17 portion 82:2,8 95:23 111:8 121:5 125:21 131:14 149:2 portions 97:16 position 32:3 positive 86:18 127:25 possibilities 150:14 151:11 possibility 150:20 potential 136:8 power 46:15 50:16 52:20,23 63:2 100:10 116:24 125:5 powered 124:5 Powerpoint 13:13,15 practical 119:15 preceding 81:21 precursor 103:22 predominant 133:3,9,12 preference 126:20 prepared 4:7 present 85:15,22 132:20 presentation 13:13,14,15 presented 94:5 122:5 137:2 presenting 122:10 pressure 127:17 pretty 46:2 60:20 117:15 139:1 162:12 prevalent 155:21 prevalently 141:8 previous 81:13 previously 8:4 60:7 74:10 108:16 157:20 pricing 161:22 primarily 50:7,15,25 51:4 principal 72:5 prior 25:19 30:25 35:3,12 36:24 37:2, 8 57:10 64:15,19 67:9 131:8 priority 153:9 154:5 privilege 36:7 41:9	probable 101:12 problem 122:9,11 123:3 126:21 problems 126:22,23,24 proceeding 7:21 18:15 31:10,16,20 32:7,20,21,24 33:4 37:8 39:1,3,9,24 40:1 142:22,23,24 143:8,9,12 proceedings 6:5,20 11:10 14:4 15:3,10,17,22 16:8,25 27:14,15 28:14 30:16,20 31:1 33:12,17,19 34:9,17,21 35:10,11 36:25 37:5,18 40:1 42:19 60:14 74:19 117:7 processes 136:2 processing 47:20 procurement 47:16 producing 100:10 product 21:8 31:10 35:15 36:7 41:9 50:15 51:1,8 94:10 95:10 96:8 97:14, 19 98:4,20 99:10 102:6,14,17 103:4, 10 108:1 113:15,24 114:2,6,7,19,21 115:9,12,16,21 116:15 117:14 118:4, 6,15,21 119:2,4,9 120:10 124:1 125:23 129:4 135:18,20 136:1,20 161:3,10 production 50:16 products 35:14,24 91:9 93:9 94:2,3, 6 118:7,8,9,24 119:3 120:7,9 127:19 136:24,25 profession 97:7 professional 35:24 37:23 58:15,17 84:6 107:12 professionals 68:14 86:5 progression 93:14 project 20:23 21:6,20,23 22:7 24:14 26:17 43:3 44:14,22,24 45:1,4,14,16, 19,21,22,23,24,25 46:2,6,10 47:2 48:9,11 49:6 72:1,5 82:7 99:10 102:16,17 128:14 projects 21:17 24:18 26:8 43:1 44:8, 19 45:9,11,12 51:6 71:1,6 72:13,16, 18,21 103:2 properly 136:1 protect 110:21 protected 111:17,20 protecting 110:18,24 111:2,5,6 protection 105:7 150:17,21 151:3	proverbial 51:9 provide 22:8 33:17 34:20 37:3 46:1 134:19 146:5,8,18 provided 32:25 33:5,9 35:9 91:17 93:5,8,12,15,23 94:3,4,18 142:24 143:3,9 providers 83:18 providing 24:5 37:17 provisions 41:12 61:4,22 65:24 151:2 152:16 Prysmian 113:16 115:2,4 161:20 publication 74:25 75:1 88:16,22 publications 89:21 published 154:17 punishable 65:17,21 purpose 110:24 112:2 149:14 150:4, 23,24 purposes 47:14 111:22 127:16 131:4 136:14 151:12 put 8:18 26:2 86:22 92:2,15,16 99:12 100:15 132:12 138:10 163:18 putting 102:15,16 162:19 PV 51:15 52:4,10,12 53:1,7,11,21 54:6,16,23 55:9 73:13,16 76:4,12 77:6,12,22 78:2,4,13,16 80:25 81:3,7 82:23 83:4,5,17 84:12,15 85:16,23 86:25 87:15 132:21 133:3,19 144:5 Q qualifications 7:22 Quality 49:21 quantifying 44:4 quantities 43:21,22 48:5 140:14 quantity 139:4 question 11:5 14:2 17:18 20:3 23:17 27:13 28:7 36:8 37:1 50:9 51:17 52:6 54:11,13 55:1 59:13 62:1 63:17 64:24 69:25 80:11 85:19 87:10 97:7 99:22 107:8 111:24 120:25 121:9 125:13 126:21 130:23 134:13 137:9 146:10 148:5 149:18 156:5 158:25 160:13 questions 6:23 7:5,14 10:5 36:22 39:16 61:24 75:6 162:16 163:6,20,22
---	--	---

quick 50:22 155:1 160:15 quote 58:7 156:7 R R&d 99:10 102:16,19 103:4 128:1 136:1 160:11 161:14 rabbis 85:9 raccoons 85:11,12 raceway 105:9 raceways 105:4 109:6 racking 78:6,9,11,18,22 79:3,12,13 radiation 81:4 rails 78:6,18,22 79:3,13 rain 85:6 rainy 56:24 57:8 ramped 49:15 Rand 34:20 range 45:6 84:23 ranges 84:20 rate 38:2 39:20 40:4,8,13,15,20,25 41:12,13 rated 56:17,21 57:5,6 79:17 121:22 138:16 rates 40:11,12 41:2 rats 85:9 read 11:12,25 12:4,7,10,12,15 13:8, 12 16:24 29:1,10,16,18 30:15,18 61:11 62:20,22 63:23 67:22 69:24 76:20,25 80:4 81:9,19 88:20 154:9 156:6 readership 88:17 readiness 102:22 reading 12:19 13:1,6 30:12,21 61:7 62:25 64:19 66:16 67:23 68:19 111:4 114:10,12 real 100:6,8 160:15 161:12 realistic 119:21 realize 6:17 7:10 reask 27:13 157:12 reason 54:21 61:19 63:5 64:21,25 65:4,6,19 69:2,8,13 91:4 107:20	115:12 121:20 139:5 reasons 36:5 66:3 reassure 63:14,18,19 recall 12:9 13:1,6,12,21 14:19 16:19, 20 21:16 22:6,10 24:13,18,21 25:20, 25 26:9,19 28:12,15,22 30:14,21 31:15 32:6,10 33:20,22,24 34:5 35:17 36:17 39:7 41:15 45:18 48:11 49:8 60:8,12,16,22 61:6,7,16,21,23 62:8, 13,18 63:19,23 64:5,8 65:20,22 66:13 73:25 75:21,22,24 94:8 95:21 110:4 126:9 155:7,12 160:8 162:24 163:5 recent 133:21 recess 58:1 90:6 155:5 recipients 51:11 recognize 144:2 146:11 recollection 36:21,23 37:2,6,12 39:23 record 4:18 71:17 72:4,17 90:5 163:25 red 132:11 144:21,25 145:5,9,12,15 147:6,7,8,10,18,19,20 refer 8:20,21 10:5 23:6 52:14 90:11, 12 91:16 96:7 103:9 112:4,18,22 125:20 130:9 132:22 134:8,14 142:5 157:23 158:17 160:17,18 reference 9:12,16 12:2 57:10 99:20, 23 154:12 referenced 60:9,10,21 references 30:25 referencing 60:13 referred 41:18 67:5 73:23 163:1 referring 17:6 25:9 26:4,6 29:9,23,25 30:17 50:23 52:8 56:17 57:9 66:20 67:1 71:15 82:18 90:19 92:21 96:10, 15 97:13 99:21 100:3 102:11 112:12, 19,22 113:25 119:1 120:22 121:5 122:14 130:24 131:7 140:5 145:5 154:23 155:14 156:22 158:5 refers 12:14 79:17,22 82:12 83:16 129:16 130:20 refresh 39:23 regard 26:16 63:22 68:10 regular 82:3 regularly 88:22,24	regulated 83:12 Regulation 83:13 regulations 4:8 53:16,19 54:2 83:7, 9 regulatory 47:21 53:6,9 54:18 reinstalled 163:18 relate 11:10 27:15 55:23 56:3 related 6:14 7:17 26:3 32:7,21 35:10 36:18 56:19 159:18 relates 5:1,2,11,12 10:22 11:7,8 relating 6:23 10:15 11:1 32:24 33:4 39:1 73:4 74:13 75:1 relationship 41:15 relevant 12:21 26:16 reliable 77:11,21 78:1 relied 14:12,15 16:4 74:18 115:20 rely 60:4,13 remember 12:16 13:8,13,16 21:15, 22 22:11,17,18,20 29:16,22 30:2,3,5, 11,12 32:9 38:7 40:11 60:21 61:9,10 62:19,25 63:22 64:11,13 71:25 74:20, 24 75:12,13,15 79:11 91:3,4,9 93:10 94:12,18,20 100:24 115:1,2,4,10,17 116:6,8,9 117:14,17 119:3 120:4 121:18,21 122:20 126:10 127:12 136:10 137:14 138:16 147:20 154:11, 15,21 161:24,25 163:8,9,10,11,13,14, 15 remembered 4:1 162:23 remind 21:15 reminds 32:17 removable 110:17 render 10:14,25 15:16 27:24 34:16 36:24 rendered 7:20 15:1,8,21 16:6 27:22 rendering 11:17 14:12,16 27:5 30:22 60:5 74:18 renowned 59:17,20 repeat 15:5 50:9 51:17 52:6 64:24 130:23 156:4 rephrase 14:2 33:2 69:25 85:19 replace 112:14 113:2 123:12 replacement 81:23 82:3
---	--	--

replacing 15:15 reply 30:18 31:4 report 26:2 29:1 57:9,14 68:20 Reporter 4:5 8:2,5 15:4 42:2 48:15, 18 59:23 60:1 74:4,6 78:9,12 109:17, 19 125:7,11,14,17 138:20,23,25 139:13,16 140:25 141:20,23 146:7 148:18,20 150:18 154:25 155:3 157:7 158:19,22 reports 6:6 41:1 represent 4:19 44:11 69:15 representations 69:14 representing 119:25 120:1 reputation 59:9,12 require 81:23 82:3 96:19 116:19 128:8 requirement 122:15 requirements 115:18 118:14 119:13,22 122:13,16,19 128:11,12,13 requires 110:6 research 91:11 99:10 112:12 resembled 92:2,15 155:24 156:7 residential 41:25 42:8,16 43:4,17, 21,25 44:5,10,12,14,19,22 45:1,4,9 51:5,7 resistance 62:15,19 64:9,23 68:6,8 69:5,11 resolved 163:16 resolving 163:14 resort 10:11 resources 161:9 respect 25:17 28:4 44:3 46:9 47:7,23 70:15 respectful 17:8 respond 7:14 responded 163:13 response 30:18 responsible 71:18 rest 12:18,20 43:23 105:24 rests 105:14 retained 15:16 33:16,19,25	reveal 114:19 review 6:5 11:11 60:17,23 63:11 68:10 73:23 76:23 154:10 reviewed 11:9 16:3 17:3 73:21 74:17 85:21 reviewing 60:8 62:13 63:10 64:15 75:21 revised 154:18 rigid 24:10,18 87:4 105:14 106:11 129:15 rigid-type 27:2 rigorous 56:8 ring 117:12 145:14 rings 22:14,15,16,18 24:7 116:3,13, 19 117:8 129:7 145:8,9 risks 53:20 rod 94:15 97:14,17,18,25 98:2,5,6,20, 22,24 99:16,21 100:4 106:10 129:15, 20,22,24 130:2,3,6,12,18 131:13,19 132:23 134:25 135:3,8,9 140:7,21 141:6,11 142:9,15 role 47:3 119:19 124:3 135:14 roof 79:5 room 57:23 rope 36:11 routed 102:9 Ruby 34:23 rules 6:16,21 83:9 run 100:22 106:11 134:18 146:20 rung 106:20 rungs 104:19 105:23,24,25 106:7,8, 22,24 108:3,5,12,13 running 94:15 96:13 104:17 116:5 146:3,17,23 149:20 151:7 runs 132:11,14 résumé 42:22,24 70:25 72:11,14	safe 77:11,21 78:1 safety 23:13 128:12 sake 65:24 sand 85:6 sat 22:15 saved 30:6 scale 21:17,20,23 22:7 24:14 42:1,3, 9 43:13,18,22 44:7,20 45:14,19,21,23 46:18 47:2 48:9 50:8,11,16 51:2,8 54:23 55:8 56:1 70:15,18,23 71:2,6, 21 72:1 73:4,12,16 79:5,7 86:25 87:15 132:21 133:19 144:5 147:5 scary 86:3 SCHMIDT 5:17 8:7,9 scope 24:11 27:1,21 32:15 45:5 Scott 34:19 section 4:8 11:16,21 13:23 14:4,17 29:1 65:20 67:24 98:18,22 109:22 111:14 126:14 129:5 152:15 sections 98:4,16,17,23 99:11 109:4, 14 118:16 125:20,24 126:7 136:12 secured 78:5,17,21 securely 109:5 securing 79:2,10 segment 41:25 43:17 segments 41:17,24 42:5,12,16 43:18 selling 50:2 sense 38:16 146:20 sentence 52:2,7 53:15 77:10,18 78:1,4,16 79:17,22 82:2,21,22 83:16 84:19 92:24 121:1,13 159:1 separate 4:20,24 45:17 114:8 132:23 146:3,16 separating 24:2 Sepisolar 46:24 47:3 49:11,22,25 160:6,8 162:9 served 25:21 29:5 serves 151:19 service 160:24 services 39:21 45:2 49:16,24 servicing 49:17
---	--	--

S

saddle 96:10,11,14,17,21 97:1,9,16 145:14
saddles 24:6 94:16 96:7 97:5 98:3,6 99:16,24 116:3,20 129:7 145:8,9

serving 149:21 severe 56:22,23 57:7 shape 147:20,24 148:8 shapes 104:13 108:2 share 36:6 70:13 shared 161:9 sheer 139:4 sheet 9:5 111:15 115:20,23 shift 139:11,14 shifts 53:23 Shoal 143:18 Shoals 31:10,22,23 33:6 35:7,10,12, 13,18 36:2,9,16,18 38:5 39:1 58:18, 22 142:22,24 143:8,22 Shoals' 32:3,7,12,25 33:5 short 80:18 Shorthand 4:4 show 41:20 63:4 92:3 93:21 103:2 109:8 111:5,6 113:17,20 115:24 118:8 131:22,23 134:25 135:23 137:15,19 142:9 143:7 showed 97:2,8 116:7,9 128:22 showing 94:7 95:7 103:19,23 131:3 153:1 shown 16:10 93:25 94:10 96:8 103:8 106:17 113:4 114:2 118:9 120:12 131:15,20 132:4 137:11 146:15 147:3 151:22 157:20 158:7 shows 106:10 side 46:20 120:1,2 sides 51:9 111:17 sign 41:3 significant 71:18 73:3,10,14 85:15, 22,25 133:14 similar 20:11 21:16 28:2 70:13 147:16 159:13,16,25 simple 160:13,14 simpler 123:14 single 26:20,21 44:22,23 46:7 56:6,9 72:7 80:11,12 95:24 123:25 128:14 sir 5:6,14 18:16 44:15 93:24	sit 12:9 13:7 16:22 30:14 46:17 61:16 74:24 75:13 sitting 42:4 116:24 situation 101:21 size 46:6 sizes 108:2 140:14 skeptical 66:5 68:23 skepticism 30:11 64:10,12,23 65:2 68:16 skill 27:9,18 30:23 skilled 96:20,22,24 sleet 85:6 slight 8:14 smaller 44:23 Smith 12:24 34:25 64:1,6 69:3,9 Snake 35:21,23 90:15,18,25 91:4,17, 21,23,24 92:4,5,11,12,20 93:5,8,15, 16,20,23 94:1,3,5,10,19 95:10 96:8 100:15 102:6 103:9,15 117:24 118:3, 15,21,23 119:2,3 120:5,6,9,18 121:7 125:23 127:20 128:15 131:23 132:16 135:17,20,23 161:20 snippet 98:10 snow 81:5 85:6 solar 19:11,12,17,18 20:1,19 22:1,2 24:3,17 30:7 32:14 35:25 41:19,24 44:12 45:23 46:13 47:24 50:8,11,16 52:20,22 54:3 55:16,25 56:18,22 58:9 59:9,12,15,18 63:2 70:3,6,15,18 73:5, 8,10 79:4 82:5 83:8,11 86:13,22 87:8, 18,19 88:1,2 96:15,20 105:18 118:14 121:20,22 122:5,13,15,17,19 123:24 124:3,21 132:21,25 133:19 139:24 140:10 141:8 147:5,12 155:16 156:18 157:2,14,24 160:23 161:2,17,18 Solarpro 73:23,25 74:12 88:14,15, 17,19 89:1,21 sold 49:10 94:3,4 solid 130:12,17 140:12,20,21,22,23, 24 141:6,9,13 solution 82:13,24 solutions 76:7 81:1,14 124:4 someday 122:2 sort 127:25 162:17,18,22	sound 61:17 140:15 sounded 54:13 sounds 54:11 62:8 72:3 114:11 134:4 136:16 160:3 Southern 46:4 space 50:8,12,17 51:2 102:19 spaces 51:9 span 76:5 speak 89:5,18 107:15 speaker 141:19 speaking 54:14 56:6 61:25 107:9 115:8 141:21 spec 115:20,23 specific 13:12 26:6 29:9,14,22 36:12,13 48:11 54:12,14 55:5 57:10 80:7 82:19 96:19,25 117:11 119:13 140:16 specifically 6:4 30:1 31:25 33:25 52:8 61:23 116:15 118:15 126:15,16 136:12 140:4 150:24 159:23 specifics 49:8 spend 44:22,23,25 spent 44:17 45:9,11 SPG 26:3,8 35:25 87:20 88:7 91:11 95:24 101:6 112:12 118:23 121:25 123:19,21,24 124:3,10,21 132:10,14 160:1,5,6,10,23 161:5,7,15,17,23 162:7,9 163:17 SPG's 124:16 130:22 131:1 SPI 63:2 splice 148:16 150:24 spliced 149:12,13 splices 150:4 spoke 94:5 spreadsheets 162:12 square 111:15,16,17,19 squirrels 85:9 staff 94:5 stainless 79:22,24 82:12,19 standard 39:20 40:3,8,12,20,25 65:14 116:1 136:1
--	---	---

standardized 81:1,14 82:24 124:21 130:25 155:21 standards 81:18 stands 12:12 stars 127:18 136:22 start 10:19 23:20 25:3 28:12 34:2 55:19 56:19 72:15 119:11,14 128:2,3,5 started 162:17 starting 10:25 26:13 53:16 78:13 starts 80:21,22 92:25 143:18 state 4:5,12 17:18 18:6 53:5 56:21 69:7 83:10 118:12 124:13 130:11 155:23 statement 53:13 56:18 58:7 67:7 70:7,8 73:15 76:15 77:2,3,9,14,20,25 82:8 83:1 89:25 90:4 99:23 124:18 157:18 statement's 76:18 statements 29:8,9,12,14 30:5,11,13 62:14 63:25 65:7,8,15,16 66:1 67:4 69:3,9 76:21 80:6 88:25 stations 21:19 stay 121:23 122:7 steel 79:22,25 82:12,19 159:16,19 STENOGRAPHIC 8:2,5 15:4 42:2 48:15,18 59:23 60:1 74:4,6 78:9,12 109:17,19 125:7,11,14,17 138:20,23,25 139:13,16 140:25 141:20,23 146:7 148:18,20 150:18 154:25 155:3 157:7 158:19,22 stickers 38:12 stood 75:1 stop 144:14 stopped 49:17 162:19 stopping 57:22 155:1 strand 141:10 stranded 130:15,18 132:22 134:1 139:22 140:7,13 141:16,17,18,24,25 142:1,13,20 strands 140:14 strange 116:2 streamline 123:13	streamlined 123:14 127:16 strike 25:3,18 35:7 73:8 129:19 158:25 structural 46:15,17,22 47:6 109:5,15,18 155:16,20 156:17,23 157:1,13,24 structure 22:25 25:10 26:10 27:2 46:17 95:17,19,21,22,25 105:11 106:20 112:6,19 116:5 131:19 135:5,12 138:7 151:18 153:3 157:4 159:13,19,25 structures 24:19 46:18 106:11,16,24 struggle 117:16 studied 134:3 study 86:15 109:12 stuff 20:10 86:3 162:20 subcontracted 46:23 subcontractors 71:20 subject 7:21 13:16 65:20 127:22 subjected 55:10 56:2,7 57:7 subjects 65:23 submitted 4:25 5:4,7 6:6,19 9:1 16:25 29:10 38:25 39:8 40:19,23 47:14 117:6 submitting 34:10 subsequently 63:5 103:6,7 159:4,6 substance 7:13 36:13 substantive 5:11 substantively 11:13 suggestion 155:14 suit 120:11 suitable 78:24 summarize 68:21 summarizing 32:11 supplier 115:8 suppliers 115:5 161:19 supplies 125:5 supply 35:13 47:18 119:24,25 120:2 support 17:15,23 18:10,19 19:10,17,25 22:1 24:6,9,16 25:10 26:10 31:5 47:17 55:24 78:6,18,22 79:3,13 87:7,	18,25 90:24 99:16,24 101:22 109:6 110:21 114:22 116:3,5,12,14,21 117:9 123:25 124:22,25 125:2,8 129:8,10,11 130:12,21 131:3,8 132:24 134:19 135:5 138:6 139:23 140:9 144:4 145:7 151:18 153:2 157:4 supported 18:9 20:18 22:16 32:3 58:10 91:15 99:5 102:2 112:14 113:2,8 114:19,20,25 125:1 126:4 129:9 135:25 144:17 145:3 152:11,14,21,22 153:5 157:17,19 158:2,4,6 159:18,24 163:1 supporting 24:2,5 25:22 55:15 82:14 90:14 110:24 111:22 112:2 147:11 157:4 supports 25:11 92:1,14 105:1,12,22 145:1 151:18 155:9 157:15 suppose 24:12 43:19 107:8 150:20 supposed 9:24 155:15 surfaces 87:7,17,25 surprised 62:17 75:14 survive 84:12,15 suspended 17:15,23 18:19 19:10,16,25 20:18 21:25 24:16 87:6,17,25 105:19 117:8 132:24 134:2 139:23 140:9 144:4,13,19 147:10 switching 80:12,13 sworn 4:12 6:18 syncing 128:17 synonymous 129:20 system 10:15,20,22 11:2,4,6 13:17,19 17:11,14,22,25 18:3,10,11,18,21,23 19:9,15,22,23 20:22 21:11,24 24:25 25:3,5,9,15,18,25 26:1,9,23 28:21 29:7,19 30:6,12 35:15 43:4 44:11 46:11,21 47:8,19,21 48:4 55:5,12 58:8,9 60:24 61:22 62:2,4,5,9,16 63:1,10,15,20 64:3,10 65:3 66:25 67:2 68:2,3,7,11,13,24 69:5,11 77:12,22 78:2,6,9,18,22 79:4,6,13 82:5,6 86:24 87:3,14,23 88:3 91:1 93:21 97:4 98:16 99:5 100:7,8,15 102:2,7 109:3,5,15,18 110:1 114:22,25 115:17,25 116:1 124:6,22,25 125:2,8 129:10 130:13 133:3,8,10,25 135:25 136:3 139:15,19 140:1 144:3,9,10,18 145:3,23 146:1,14,25 147:9 148:3 150:20,21,23 151:9,16,21,25 152:9,11,12,22,23 153:1,24 154:18 155:17,
---	--	---

21,24 156:8,20,23,24 158:2,4,7,9,14 159:11,12,14,18,24 162:13 163:1,6,17 system's 145:22 systems 20:11,16,21 21:1,15,16 24:2 25:20 27:25 28:1,5 30:5 43:8,21,24 44:12 46:13,15,18 51:10,11 55:2,3,11 66:5,7,8,12,14,17,19,21 67:15,17,25 68:12,15,17,18 71:18 76:4 78:24 79:1,8 86:13,22 90:14,15,18,23,24 91:6,8 103:25 105:7 112:14 113:2,9 115:6,24 116:19 120:15 121:25 123:21 124:5,15 130:21 131:3,8 132:20 133:13,17,21,22 139:22,25 141:8 147:13 148:6,8,10,13,14 151:5 153:5 157:18,19 T taking 102:14,16 talk 25:8 35:25 75:17 79:4,7 119:14 161:13 talked 66:14 81:13 116:10 131:12 135:16 142:21,22 talking 8:25 12:11 23:7,14 25:8 26:25 42:8 44:13 52:3,8,17 55:5,13 57:12 62:4 66:8,9,18,22 68:1 79:5,20,23 81:15,16 91:11 94:21 106:21 107:3,9,12 113:3 116:8 117:23 129:22 140:4,8,18,21 142:16 154:5 157:13,14 158:5 talks 54:16 76:4 81:17,21 84:19 85:1,5 117:7,12 targeted 89:19 task 77:13,21 78:3 tattered 8:12 taught 59:6 technical 53:7,10 80:4,5 105:5 122:3 128:11 technically 123:2 technological 53:23 technology 51:13 52:4,9,12,25 53:1,20,23,24 54:5 102:21 temperature 56:24 57:8 84:20 temperatures 81:5 84:23 ten 46:8	tension 135:6,9,14 tensioned 87:5,16,24 135:5,11,12 tenure 160:1 161:23 term 23:14,23 96:14 151:10 terminal 98:19,22,23 terminals 117:12 terminate 162:4 terminated 161:25 162:1,4 termination 162:22 terminology 22:22 terms 5:10 11:22 23:12 41:12 65:18 105:5 terrible 59:13 terribly 122:21 test 102:25 tested 159:4 testified 4:13 5:24 6:1,4,7,10 7:10,16 28:5,16 31:9,17 32:22 58:19 testify 8:17 testifying 5:19,21 31:19,22,25 testimony 6:17,19,23 7:13 13:25 21:21 32:25 33:10 35:9 65:24 67:19 122:4 128:21 testing 102:22,23,24 162:15 tests 102:24 103:1 therewith 53:21 thick 159:19 thicknesses 139:7 thing 7:4 10:11 25:8 32:17 38:10 63:9 76:3 79:20 94:12 128:15,16 139:3,8 145:12,13,15,16,17 147:18,22 things 32:16 47:9 48:7 52:24 53:4 76:24 80:14 93:11,12,16 96:16 128:3,5 144:21,22,25 145:6,9,10,12 147:10,21 151:14 159:23 162:21 163:23 thinking 29:11,14,15 80:11 112:6 157:17 158:1 thought 12:21 92:10 123:5 135:13 160:15 throwing 147:6	thrown 138:12 ties 79:14,15,17 81:15,17,22 82:6,9 tight 36:11 time 20:4,14 21:2,12,24 25:12,19,23 26:11 27:10,18 28:8,24 30:23 34:12 35:3,12 36:24 37:1,3 44:18,21,22,23,25 45:8,11 47:3,17 48:22 52:6 64:24 66:6 69:7,17,19 72:24,25 73:2,7,9 76:15 77:15 78:20 79:10 81:10 82:15 85:23 86:8,23 87:11 88:18,21 89:20 90:16,19,24 91:1,12 97:3 99:17,25 101:2,3 110:22 111:24,25 117:24 120:4 121:8,18 123:19 127:21 132:20 133:7,23,24 134:3,5 136:3 141:8 151:14 154:12 155:10 162:6,19 times 6:10 71:13 title 11:21 17:5 65:21 titled 17:11 today 4:20 6:18,23 8:14 10:5 28:17 30:14 42:4 65:25 66:9,12 67:18 71:12 74:24 133:7,8,20,22 160:12 told 61:17 71:25 97:12 115:21 151:5 162:24 163:3,4 Tommy 89:14 tool 161:1 top 11:25 65:22 76:3 90:12 94:22,25 95:22 103:12 105:23 107:22 110:7 126:9 total 44:11 totally 17:8 touched 32:18 tracker 26:20,21,24 75:17 88:7 95:24 96:3,5 123:19,25 124:9,16 127:22 128:16 130:22 131:1,14,19 132:3 136:3 155:21 156:18,19,23 157:2,14,24 159:11,16,19,23 160:19 tracker's 124:21,25 125:2,8 trackers 123:22 124:5 125:9 trade 63:1,4 training 59:1 trains 115:14,16 transcript 4:7 transfer 54:5 transferability 52:3,9,11
---	---	---

transferrable 51:15 transferred 53:1 tray 35:21,23 90:15,18,25 91:3,4,17, 23,24 92:4,5,11,12,13,20 93:6,7,8,15, 16,20,23 94:2,3,10,19 95:10 96:8 100:15 102:6 103:10,15 104:6,10,14, 21,23,24 105:1,10,12,18,19,25 106:5, 7,23 107:4,5,10,14,18,25 108:14 109:1,3,7,24 111:18,21 112:1,8,9 117:24 118:3,23 119:3 120:5,9,19 121:7 122:9 123:2,15 127:20 128:15 131:24 132:16 133:22 134:5 135:20, 23 161:20 tray's 91:21 94:5 103:16 106:1 118:15,21,24 119:2 120:6 125:23 135:18 tray-like 91:17,20,23,25 92:5,12,13, 21 93:3,5,16,19 103:10,18,21 118:7,9 trays 90:19,25 91:21 93:10,11,14,18 104:8,9 105:4,16 106:16 107:19,21 108:23,25 110:20,23 111:3,6 112:5, 15,18 113:3 118:7,14 120:24 121:3, 15,16,19,22,24 122:5,7,12,18,20,22 126:19,23,24 133:5,19 134:2 treating 57:16 trench 21:19 trenches 30:8 trenching 30:6,7 133:5,15 trial 31:14 triggering 75:4 TRL 102:21 trouble 10:12 121:19 trough 109:23,25 111:12,13 trough-like 109:23 trucks 160:25 true 50:6 53:21 truth 4:12,13 6:18 90:3 truthful 65:7 truthfully 66:2 truthfulness 64:21,25 65:18 69:13 TTI 160:18,19,23 161:2,6,18 tubular 159:20 TUESDAY 4:1	turbine 52:19 turbines 52:19 turn 18:7 39:17 83:21 106:1 143:21 turned 49:17 turns 105:25 type 40:13 49:5 55:19 63:15 64:2 68:24 95:25 105:9 107:19,20,21 133:8 139:9 140:17 141:7 types 48:5 105:7 107:14,19 113:8 130:15 133:4 139:6 142:2,4 typically 46:13 105:15 141:17,23 U U.S. 5:1,2 39:1 UL 99:7 115:19 116:16,17 155:14,15 156:17 ultimately 163:2 umbrella 161:15 unaware 31:7 uncommon 85:3 undergone 53:23 underneath 43:7,12 106:2 understand 6:21 18:17,22 21:21 27:20 47:5 63:13 66:16 68:4,18 71:8 72:16 76:18 97:8 104:3 106:3 107:4 109:13 122:4 131:20 134:24 144:13 145:25 146:13 149:14 150:3 152:24 153:7,8 154:2 understanding 15:15,19 18:2,20 19:8,13,19 22:4 23:22 24:4,8,11 25:14,16 29:15,17 53:20 59:11 65:5, 10 66:23 67:1 71:4,7,22 88:15 104:5 110:15 111:8 145:21 147:23 150:9 151:16,21,24 152:4,6,9,10 160:22 understood 7:8,15 10:3 68:22 96:14 148:10 undertook 71:19 unintentional 9:9 unique 17:13,24 18:4,11 25:5 28:21 29:6 unit 109:4,14 units 109:4 Unlike 52:19	unpopular 67:16 unpopularity 30:4 untruthful 67:12 usability 57:11 USC-2 138:23 USE-2 138:18,19,24 139:1,2 utility 21:17,20,23 22:7 24:14 42:1,3, 8 43:13,18,22 44:6,19 45:14,18,21,23 46:18 47:2,15 48:9 50:8,11,16 51:2,8 54:23 55:8 56:1 70:15,18,23 71:2,6, 17,21 72:1 73:4,12,16 79:5,7 86:25 87:15 100:9 132:21 133:19 144:5 147:4 utilize 124:14 139:22 utilized 22:10 139:22 utilizing 35:15 utterance 15:3 109:16 139:12 141:19 146:6 150:17 UV 79:17 81:4,22 85:1 86:20 V vacuum 77:24,25 valid 32:1,4 variety 130:14 varying 142:6 vegetation 148:4 vehicle 156:1,8 verbally 119:11 verbatim 134:22 versatile 117:15 version 61:15 134:9,14 154:21 versions 12:15 61:11 154:16 versus 42:8 55:4 57:11 117:12,13 vertical 104:15,16 verticals 41:18 42:5 view 103:25 129:20 142:11 virtue 158:12 vis-à-vis 24:6 visualize 104:23
--	---	---

voltaic 51:13 volume 49:15 W wake 86:14 walk 36:11 161:11 wanted 94:9 108:20 121:23 122:7 123:4 warehouse 138:18 ways 82:7 83:13 105:4,6 110:5,8,11, 20,23 111:3,10 112:15,22,23 113:3 116:11 124:22 126:20,23 127:1,3,7, 10,13 133:5 136:4 webinars 117:19 weight 53:6,10 Weiner 4:6,10,16 10:14 17:4 27:5 37:25 38:20,23 41:17 51:12 54:22 58:3 74:10 90:8 108:15 113:20 128:21 155:7 160:7 weird 136:16 161:5 welded 97:17,20,24 98:3,6,21,24 99:17,25 west 161:10 white 12:14 13:1,7 60:8,9,12,17,24 61:7,12,14,15,23 62:10,18,23 63:6,8, 21 64:2 66:14,19,23 154:16,20 wide 21:18 widespread 53:24 Wiles 84:4,10 willful 65:16 William 12:13,23,24 13:6 wind 56:25 wind-driven 85:6 window 116:23 winds 81:4 85:2 86:20 wing 161:11 wire 4:21 5:20 17:14,23 18:18 19:10, 16,24 20:17 21:25 22:23,24 23:1,2,4, 6,7,8,12,14,21,23 24:4,11 25:10,21 26:10,18,22,23 27:1,2,3 34:15 58:10 62:6 74:13 75:1 76:7 77:11,22 78:2 79:17 81:1,5,14,22 82:9,24 83:3 85:15,22 87:4,5,16,24 105:4,7,22	109:21,23,25 110:5,8,11,15,20,23 111:3,9,10,11,13,14,16,21 112:1,14, 22,23 113:2 117:8 124:22 126:20,23 127:1,3,7,10,13 129:11,16,21 130:2, 12,15,18 132:22 133:5 134:1,6,10,15, 17,18,23,24 136:4 139:9,23 140:7,8, 18,22,23 141:9,13,16,19 142:1,11,14 144:3,14,20 145:2 146:4,17,22 147:11 149:20 151:17 153:1,2 155:8 157:3,15 159:8 wires 17:15,24 18:19 19:1,2,6 25:11 105:13,22 106:1 110:21,25 116:25 139:3,7 140:2,5,6,12,13,15,20 141:3 142:6,20 144:4 145:1 wiring 105:1,2,6,13 111:9,22 112:2, 14 113:2,9 126:4 129:10 135:25 144:18 145:3 152:11,15,22,23 153:5 157:17,19 158:2,4,6 159:18,24 162:13 163:1 withdraw 59:13 withstand 56:22 witnesses 16:1 word 9:8 10:10 50:25 51:3,4 53:16 64:7 80:1,2 99:25 104:7 107:10,17,18 123:12 134:24 142:1 words 23:20 29:22 94:2 96:17 98:4 109:12 work 26:3,8 35:7,11,18,21 36:2,7,16 37:16,18 38:5 39:19 41:8 45:3,5 50:10,14,18,25 51:7 68:12 71:19 87:20 99:9 101:18 108:8 115:22 122:21 123:2,18 127:21 128:5 136:25 162:7,11 163:4 worked 26:23 36:19 42:12,15 43:16, 22 58:17,20 66:15 68:14,17 86:7 161:6 working 25:25 27:25 28:1 34:2 44:18 50:7 51:5 68:23 91:8 102:8 115:4 128:3 135:22 workload 50:4 works 115:23 world 86:22 123:15 128:10 140:17 worried 123:1 wrapped 116:25 wrapping 117:12 write 63:6 156:21 written 65:6,10,12 83:9	wrong 41:7 wrote 63:21 Y YAN 4:4 year 31:12,15 33:20,23 34:6 40:11 61:14 85:2 154:8 years 61:16
--	---	--