

1 BEFORE THE ARIZONA POWER PLANT AND
 2 TRANSMISSION LINE SITING COMMITTEE

3
 4 IN THE MATTER OF THE) DOCKET NO.
 APPLICATION OF SALT RIVER) L-00000B-21-0322-00195
 5 PROJECT AGRICULTURAL)
 IMPROVEMENT AND POWER) LS CASE NO. 195
 6 DISTRICT, IN CONFORMANCE WITH)
 THE REQUIREMENTS OF ARIZONA)
 7 REVISED STATUTES, SECTIONS)
 40-360, et. seq., FOR A)
 8 CERTIFICATE OF ENVIRONMENTAL)
 COMPATIBILITY AUTHORIZING THE)
 9 CONSTRUCTION OF AN OVERHEAD)
 DOUBLE-CIRCUIT 230 KV)
 10 TRANSMISSION LINE FROM THE)
 EXISTING HENSHAW SUBSTATION TO)
 11 INTEL'S OCOTILLO CAMPUS, A NEW)
 RS-28 SUBSTATION TO BE)
 12 CONSTRUCTED ON INTEL'S)
 OCOTILLO CAMPUS, AND AN)
 13 OVERHEAD TRANSITION CORRIDOR)
 AT THE EXISTING SCHRADER)
 14 SUBSTATION, ALL WITHIN THE)
 CITY OF CHANDLER, MARICOPA)
 15 COUNTY, ARIZONA.)
 _____)

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21 COASH & COASH, INC.
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 1802 N. 7th Street, Phoenix, AZ 85006
 23 602-258-1440 Staff@coashandcoash.com

24 By: Kathryn A. Blackwelder, RPR
 Certified Reporter
 25 Certificate No. 50666

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1 BE IT REMEMBERED that the above-entitled and
2 numbered matter came on regularly to be heard before
3 the Arizona Power Plant and Transmission Line Siting
4 Committee at Hilton Phoenix Chandler, 2929 West Frye
5 Road, Chandler, Arizona, commencing at 9:06 a.m. on the
6 9th of November, 2021.

7

8

BEFORE: PAUL A. KATZ, Chairman

9

JACK HAENICHEN, Public Member
10 MARY HAMWAY, Cities and Towns (Videoconference)
LEONARD DRAGO, Department of Environmental Quality
11 RICK GRINNELL, Counties
JIM PALMER, Agriculture
12 JOHN RIGGINS, Arizona Department of Water Resources
ZACHARY BRANUM, Arizona Corporation Commission
13 (Videoconference)
MARGARET "TOBY" LITTLE, Public Member
14 (Videoconference)

15

16

APPEARANCES:

17

For the Applicant:

18

Snell & Wilmer, L.L.P.
19 Mr. J. Matthew Derstine
One Arizona Center
20 400 East Van Buren Street, Suite 1900
Phoenix, Arizona 85004

21

and

22

SALT RIVER PROJECT
23 Ms. Karilee S. Ramaley
In-House Counsel
24 Post Office Box 52025
Phoenix, Arizona 85072

25

1 APPEARANCES:

2 For Intervenor City of Chandler:

3 Crockett Law Group
4 Mr. Jeff Crockett
5 2198 East Camelback Road, Suite 305
6 Phoenix, Arizona 85016

7 and

8 City of Chandler
9 Ms. Kelly Schwab
10 175 South Arizona Avenue, 2nd Floor
11 Chandler, Arizona 85225

12 For Intervenor The Reserve at Fulton Ranch Homeowners
13 Association, Pine Lake Estates Homeowners Association,
14 and Southshore Village Homeowners Association:

15 Osborn Maledon
16 Ms. Meghan H. Grabel
17 Mr. Elias Ancharski
18 2929 North Central Avenue, 21st Floor
19 Phoenix, Arizona 85012

20

21

22

23

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1 CHMN. KATZ: We will go back on the record
2 and we can continue either with the witness that was
3 already on the stand or whoever it is that you are
4 intending to call this morning.

5 MR. DERSTINE: Good morning, Mr. Chairman,
6 Members of the Committee. We are going to continue
7 with Mr. Heim. And looking at the screens, it looks
8 like we're going to move into the most popular topic of
9 this case. I spent time telling the Committee that you
10 don't have jurisdiction over underground transmission
11 lines, but there's a lot of interest in underground
12 transmission lines, and I promised you we'd cover that
13 in terms of methods of construction, the aspects of
14 this case that will be placed underground.

15

16 ZACK HEIM,
17 recalled as a witness on behalf of the applicant,
18 having been previously affirmed by the Chairman to
19 speak the truth and nothing but the truth, was further
20 examined and testified as follows:

21

22 CONTINUED DIRECT EXAMINATION

23 BY MR. DERSTINE:

24 Q. And where do you want to start us off,
25 Mr. Heim?

1 A. I think we can probably just start off by
2 talking about cost.

3 Q. Okay.

4 A. That's usually the popular -- well, at least
5 the first topic that comes up any time you talk about
6 an underground transmission line is how much does it
7 cost. That's what creates all the focus and emphasis
8 on underground transmission lines. And so like we
9 talked about yesterday, independent of voltage, we find
10 that underground transmission lines cost on the order
11 of 10 to 15 times that of their equivalent overhead
12 line. And then specific to a 230 kV line where the
13 per-mile cost is in the 10 to -- or, 1- to
14 1-and-a-half-million-dollar range per mile, we find
15 that the per-circuit mile equivalent of an underground
16 230 line is in the 10 to \$15 million range.

17 So there's a number of cost drivers that
18 create that cost disparity, and I'll kind of put them
19 into two categories. The first just goes straight to
20 the cable configuration and the fact that we're dealing
21 with an insulated cable that's more expensive just by
22 virtue of the fact that the insulation is applied to
23 it, which increases the unit cost of the cable, but
24 then the add-on effect of that insulation and the fact
25 that the cable is within the ground surface, can't

1 radiate heat to the same degree, we wind up over sizing
2 our cable substantially just to manage the heat to an
3 acceptable level for the life cycle of that cable.

4 The other --

5 Q. I'm sorry to interrupt you. I was just
6 thinking about -- you were talking about the cost
7 drivers. You said something yesterday that I didn't
8 fully grasp, and that may just be me. But in terms of
9 a comparison between underground and aboveground
10 construction, you indicated that two circuits for
11 underground construction would just be double what you
12 have there in terms of 10 to 15 per circuit mile, but
13 as to an overhead construction you don't have that
14 necessarily. If I'm going to build a single circuit,
15 you know, say it's a million dollars a mile for over --
16 if I went from single to double-circuit, it's not
17 double. There's some economies of scale, I guess, with
18 overhead construction. Can you explain that?

19 A. Sure. So when we talk about adding a second
20 circuit capability to an overhead line, what that
21 really amounts to is that we use the same quantity of
22 structures, the span length is usually the same, but
23 what happens is the structures may be incrementally
24 taller. You know, just grabbing numbers out of the
25 air, if we were going to have a 120-foot-tall

1 single-circuit structure, the double-circuit equivalent
2 may increase by 15 feet or something like that. So
3 you've got that amount of additional steel that we're
4 applying at each structure location, certainly
5 additional insulators to add the second circuit, and
6 then the additional cost of the conductor.

7 But in terms of an overhead transmission
8 line, the main expense is foundations, the structures
9 themselves, and then the labor associated with
10 installing them. And so when we add the second circuit
11 and an incremental increase in height to the
12 structures, it's not a doubling of the cost of that
13 overhead line. It's an incremental increase. And I
14 think I said yesterday about a 30 percent increase is
15 pretty common.

16 Q. Okay. Thank you for that. I'm sorry I
17 interrupted you. You were talking about the cost
18 drivers. Why don't you continue with that.

19 A. Yeah, I lost my whole train of thought there.

20 Q. I apologize. That's not the first time I've
21 interrupted you; won't be the last probably.

22 A. Yep. Yep. So the other category of cost
23 drivers relate to the construction process. So like I
24 mentioned, with an overhead line if we have a span
25 length of 500, 600 feet, that means that we only touch

1 the ground surface to put in a foundation or something
2 like that every 5 to 600 feet, and then everything else
3 is up in the air and free from all of the challenges
4 that come along with excavating and dealing with
5 traffic and all the stuff that's on the ground surface.

6 In the case of an underground line, we
7 literally touch every inch of soil between the starting
8 and ending point of an underground circuit, and so that
9 introduces a lot of complexity, labor, and uncertainty
10 in the construction process.

11 So with those in mind, I'll step through
12 the -- a little bit more detail on all those factors
13 and how they generate additional costs for an
14 underground line.

15 So focusing on Slide R39 on the right screen,
16 if we think about the baseline functionality of a
17 transmission line is to transmit energy from one place
18 to another, keeping the electricity within the
19 energized conductors, isolated from the ground. And by
20 "the ground" I mean both the ground surface, but really
21 electrical ground. They happen to be basically the
22 same thing. And so when we talk about an overhead
23 line, we're accomplishing insulation by keeping those
24 conductors separated from the ground using air as the
25 insulating medium. And when we talk about an

1 underground transmission line, we're accomplishing that
2 same insulation using a layer of insulating basically
3 plastic between the energized conductor and the
4 surrounding ground surface.

5 And so for an overhead 230 kV line, that's
6 about 13 feet of air surrounding a conductor to
7 maintain that insulation. In the case of an
8 underground cable, like we're seeing here on the image,
9 that 13 feet of air comes down to about 1 inch of
10 insulation. And so the importance of that 1 inch of
11 insulation really increases compared to the air that
12 we're getting for free, and so there's a lot of quality
13 control and emphasis in the design of that insulation
14 system to make sure that it's reliable and going to
15 provide the right service life. So everything I'm
16 going to talk about from here really flows from the
17 difference in the insulating media that we use in an
18 overhead versus an underground line.

19 MEMBER HAENICHEN: Mr. Chairman.

20 CHMN. KATZ: Go ahead, Member Haenichen.

21 MEMBER HAENICHEN: Mr. Heim, are there more
22 losses associated with underground lines operating at a
23 full load because of these things you've just
24 discussed?

25 MR. HEIM: Generally not, and that's because

1 we over size the cable so much that -- to deal with
2 heat that, from an efficiency standpoint, there's
3 actually very little resistence during a normal
4 operating condition within an underground cable system.

5 CHMN. KATZ: And I'm just wondering, what's
6 the approximate diameter of the cable that would be
7 used?

8 MR. HEIM: So this cable -- this is an
9 underground 230 kV cable. It's about 6 inches in
10 cross-section. The overhead cable that we see on an
11 overhead 230 line is about an inch and a half or so.

12 CHMN. KATZ: Thank you.

13 MEMBER HAENICHEN: Back to my question,
14 though. I was thinking there might be some losses
15 associated with the close proximity of the live wire to
16 ground, electrical effects.

17 MR. HEIM: Actually, not. We don't find that
18 to be -- most of the losses that come from a
19 transmission line have to do with the loss due to
20 actual electrical resistence, which then generates heat
21 within the conductor, gets radiated out into the --

22 MEMBER HAENICHEN: Either way.

23 MR. HEIM: Yeah.

24 MEMBER HAENICHEN: Thank you.

25 MR. HEIM: So let's talk a little bit about

1 underground insulated cables and the different types of
2 cable that exist within the industry. For simplicity,
3 I'm going to talk about the two broad categories of
4 insulated cable systems. So what we're seeing on the
5 left-hand side here is a cross-section of what I'll
6 call a dry-type cable. And what that means is that the
7 insulating media, this kind of cream-colored ring that
8 you see around the copper conductor, is a solid state
9 insulating material. And the most common version of
10 that is something called cross-linked polyethylene, or
11 XLPE for short.

12 The advantage to XLPE is that it's kind of a
13 set it and forget it sort of a cable system. It
14 doesn't require maintenance over time. Once it's
15 spliced and energized, it generally stays in that state
16 for its entire service life. So we would expect that
17 the service life out of an XLPE cable is on the order
18 of about 40 years or so, depending on environmental
19 circumstances, how it gets operated through its life
20 cycle, all that kind of thing. But 40 years is a good
21 benchmark as far as a starting assessment of that.

22 The alternative and kind of the -- so I'll
23 say that dry-type cables are kind of the contemporary
24 design for underground systems at this point in time.
25 The predecessor to that is what I'm showing over on the

1 right, which is -- again, I'll use a broad category --
2 what we call a pipe-type cable system. And what we're
3 seeing in this image is this outer pipe casing encloses
4 one or multiple of the electrical phases that form a
5 circuit. So in the example we're showing here, all
6 three phases are within that pipe-type configuration.

7 And the cables themselves are, in fact,
8 insulated, but in the annulus between the cables here
9 and then the pipe, in these types of systems you'll see
10 either an oil or a gas that serves either a cooling
11 function, in some cases it can be used as an insulating
12 function, but the main takeaway from all of these types
13 of systems is that there's an additional fluid or gas
14 that's involved within that cable system that
15 supplements the function of the cable in some way. The
16 most popular version of that is to provide some active
17 cooling for the cable itself. The disadvantage,
18 though, is that you now have some kind of a mechanical
19 system that needs to be maintained over time and you
20 also have, you know, potentially an oil or a gas that
21 would be -- the potential for leaks into the ground
22 surface, which could be an environmental concern.

23 So SRP, we do not own any of these pipe-type
24 systems, but they've been in service around really the
25 world since -- I think the first installation was in

1 the mid-1900s or so, so they've been around for a
2 while. Submarine cables are also a version of this.
3 Looks a little bit different, but the concept is the
4 same.

5 So let's talk a little bit more about the
6 dry-type cables, and specifically an XLPE cable, which
7 is SRP's standard. Probably four main layers involved
8 with an XLPE cable. The first is the inner conducting
9 layer, so that's the copper core that I'm highlighting
10 here on R41 with a -- generally there's like a steel
11 cable in the middle which provides some structural
12 support as we pull the cable through. But this is the
13 part of the cable that actually conducts electricity.

14 The next layer out, just shown in white here,
15 is the XLPE component, so that's the insulating layer.
16 In the case of a 230 kV cable, that's about an inch
17 thick or so. And this is really where kind of the
18 secret sauce for an underground transmission cable is.
19 There's a very high emphasis placed on the purity and
20 quality of that insulating layer to make sure that it's
21 able to sustain that amount of electrical stress over a
22 40-year life cycle.

23 The next layer out you'll note kind of these
24 concentric circles in the cable. So that's a network
25 of concentric copper cables that form the neutral or

1 concentric ground for the cable, so that's where we
2 bleed off any induced voltage along the cable and acts
3 as basically the ground for the electrical system.

4 And then the last piece, this black outer
5 ring, is the -- what we just call the jacket, and
6 that's an abrasion-resistance encasement that allows us
7 to pull the cable through a conduit and prevents it
8 from being damaged as it's handled.

9 On the right side of the screen is an image
10 of the extrusion process, which is how the cable is
11 manufactured. So these cables are developed in a
12 production run type of an approach where generally we
13 can only make about 2,500 feet of cable with each
14 production run, and that's for a couple reasons. One
15 is, this cable is so massive we can't get more than
16 2,500 feet down a roadway to install it on the reels
17 that it would occupy.

18 The other is that just through the
19 fabrication process you need to have sort of a fixed
20 distance of cable. And as they feed the -- what we're
21 seeing here is they're feeding the copper core through
22 the extruder. And what happens at this location is
23 they're, in essence, forming this insulating layer
24 around the copper core and there's, like I mentioned
25 before, a lot of emphasis on maintaining the purity of

1 that insulating layer so that it doesn't create a
2 quality control issue once the cable is energized.

3 MEMBER GRINNELL: Mr. Chairman.

4 CHMN. KATZ: Yes, go ahead.

5 MEMBER GRINNELL: Mr. Heim, did I hear you
6 correctly saying the life expectancy of the underground
7 cable is 40 years?

8 MR. HEIM: Uh-huh.

9 MEMBER GRINNELL: So you have this oversized
10 insulated pipe, cement, whatever you're using. So in
11 order to replace that, do you just sort of like feed it
12 through back and forth, take out the old and pull in
13 the new? Is that how that process is accommodated?

14 MR. HEIM: Yep. Yep. It generally doesn't
15 go as smooth as you described, but that's the --

16 MEMBER GRINNELL: That's the concept behind
17 it?

18 MR. HEIM: Yeah.

19 MEMBER GRINNELL: And then you said
20 earlier -- yesterday you were talking about potentially
21 having to add a second 230 kV line in that tunnel, for
22 lack of a better word.

23 MR. HEIM: Uh-huh.

24 MEMBER GRINNELL: So you just feed it somehow
25 without -- you don't have to -- I guess my point, you

1 don't have to disrupt the area of the digging, you
2 don't have to do that, is that correct?

3 MR. HEIM: Yeah. Now, just to clarify, when
4 I talked about adding a second circuit yesterday, that
5 would be a whole separate duct bank compared to the
6 first one that we're going to install here.

7 MEMBER GRINNELL: Oh, you can't use the same
8 duct bank?

9 MR. HEIM: No.

10 MEMBER GRINNELL: Is that because of heat?

11 MR. HEIM: That's exactly right.

12 MEMBER GRINNELL: By the way -- that is pure
13 copper, by the way.

14 So theoretically, you would have to go back
15 into those same neighborhoods to run a parallel power
16 line?

17 MR. HEIM: So within the residential areas
18 along Chaparral and Lake, the intent is to actually
19 construct the second duct bank so that we don't have to
20 do that. But for the remainder of the underground
21 route on Intel's campus, Alma School, Chandler Heights,
22 and the Union Pacific Railroad, we would add a second
23 trench and second duct bank in the future when that
24 second circuit is required.

25 MEMBER GRINNELL: Thank you.

1 CHMN. KATZ: And just for the record, that
2 was Member Grinnell.

3 You may proceed.

4 MR. DERSTINE: And Mr. Heim, just for the
5 record, Ms. Blackwelder is the best court reporter in
6 the business. There were a couple times when you were
7 saying "uh-huh" or "yep," and that might be hard for
8 her to make clear on the transcript. So if I can get
9 you to do a "yes" or a "no," that will be helpful for
10 the transcript.

11 MR. HEIM: Yes, sir.

12 CHMN. KATZ: And she is free to yell at
13 anybody that says "yep" or "uh-huh."

14 And you don't need to put that necessarily in
15 the record, but that's up to you.

16 Thanks. Go ahead.

17 MR. HEIM: All right. So I'd like to spend a
18 little bit of time talking about how we manage heat in
19 both an overhead and an underground application. So
20 the cartoon drawing here on R42 represents the heat
21 balancing that occurs in a typical overhead conductor
22 scenario. So my cartoon section of conductor is shown
23 in the gray cylinder here, and these orange arrows
24 represent the heat inputs to the cable.

25 So there's the electrical current flowing

1 through the cable experiences electrical resistance,
2 and therefore, that causes the cable to heat up. And
3 similarly, it's exposed to the sun. So as the sun
4 shines down and radiates onto the cable, that can
5 increase its temperature also. And so we account for
6 both of those factors when we design an overhead cable
7 system.

8 And then it has two ways of eliminating heat.
9 The first is just through radiative cooling, same as
10 the coils in your oven, and then there's convective
11 cooling. As the wind blows across the conductor, it
12 then carries away that heat and allows the cable to be
13 cooled off. That's probably the main source of cooling
14 for an overhead conductor is air flowing across that
15 conductor allows it to be cooled off.

16 As we transition to an underground cable
17 system, what we're seeing in this image is the output
18 of a computer software program that simulates the duct
19 bank that we're showing here. And what we do is we
20 evaluate the heat inputs, which are, in this case, just
21 the electrical current flowing through the cable. It's
22 not subjected to sunshine, so no solar heating. But
23 just the same way that we eliminated one heat input,
24 we've also eliminated one heat output, which is we
25 don't have air flowing across that cable, and

1 therefore, the only way for the cables to eliminate
2 heat is to radiate it out through the ground surface up
3 to the atmosphere. So what this image represents is
4 sort of the topology of how heat moves through the
5 ground surface to ultimately get up to the ground
6 surface. And that's where we, in essence, calculate
7 the steady state temperature of the underground duct
8 bank system.

9 So the net outcome of that, I kind of like to
10 think of this more in terms of a metaphor, is that
11 we've got these two cables, an overhead cable and an
12 underground cable, and think of them in terms of two
13 marathon runners. The overhead cable is a marathon
14 runner that's wearing normal running clothes, running a
15 marathon in January. The underground cable is a
16 marathon runner wearing a parka, running the marathon
17 in July. And the net result is that the overhead cable
18 is going to be able to work a lot harder, carry a lot
19 more electrical current without becoming overheated,
20 whereas the underground cable, with all of that
21 insulation and no way to eliminate heat, is going to
22 have to, in essence, run a lot easier to maintain the
23 same temperature allowance over its life cycle.

24 MEMBER HAENICHEN: Mr. Chairman. Along the
25 line of what you just said, how much do you have to

1 derate the cable, the underground cable, to accommodate
2 this effect?

3 MR. HEIM: Well, I have a visual that I think
4 tells that story really well, so that's a perfect
5 segue.

6 So best comparison I can make -- so what I've
7 got here in my hands are a sample of our 230 kV cable.
8 And in order to maintain -- so basically, this is two
9 cables per phase. These are the exact same cables that
10 I had up in the slide, so 6 inches of cross-section.
11 These two cables have the same electrical capacity as
12 this one overhead cable.

13 And to kind of bring the whole thing back to
14 the cost conversation, this overhead cable costs about
15 \$2.50 per linear foot, whereas the combined two cables
16 per phase for the underground system costs anywhere
17 from 150 to \$160 per linear foot. So it's a very
18 substantial per-unit cost increase to get the same
19 electrical capacity out of an underground system versus
20 an overhead one.

21 MEMBER HAENICHEN: Thank you.

22 MEMBER PALMER: Mr. Chairman.

23 CHMN. KATZ: Yes, go ahead.

24 MEMBER PALMER: I think I saw in a prior
25 slide, I wanted to confirm, that that underground cable

1 weighs 23 pounds per foot, is that correct?

2 MR. HEIM: That would be about right. So
3 we're going to pass these around, so you'll get a sense
4 for --

5 MEMBER PALMER: That was in one of those
6 previous slides. That seems -- the 2,500-foot roll is
7 a pretty substantial thing then?

8 MR. HEIM: Yeah. And I've got a picture of
9 one of those rolls, so you're going to get the full
10 show.

11 BY MR. DERSTINE:

12 Q. And Mr. Heim, I want to make sure I'm getting
13 that comparison. So the overhead cable, it would
14 require for -- you would use three of those for the
15 three electrical phases for a single-circuit
16 aboveground overhead transmission line. The equivalent
17 of that is you're going to need two of those
18 underground cables, is that per phase?

19 A. Correct.

20 Q. So it would take six of those in order to be
21 the equivalent of an aboveground construction?

22 A. That's correct.

23 Q. And those six large insulated cables then
24 would be located within the duct bank underground?

25 A. Yes, sir.

1 Q. And that's -- that's your single-circuit
2 construction, and then we'd have to have two of those
3 for double-circuit?

4 A. Correct.

5 Q. Okay. Looks like we're having some problems
6 with our projector on the right. It's coming back. I
7 noticed it blacked out at one point in time. Are the
8 Committee Members who are appearing virtually able to
9 see our feed? We're okay there?

10 CHMN. KATZ: Committee Member Little, can
11 you -- you're not able to see what's being projected?

12 MEMBER LITTLE: Yes, now I am.

13 CHMN. KATZ: Okay. If there's a problem with
14 any of the three virtual participants, please yell at
15 us and let us know.

16 You may proceed, Counselor.

17 MEMBER HAENICHEN: Mr. Chairman, one more
18 question, please.

19 CHMN. KATZ: Yes, Mr. Haenichen.

20 MEMBER HAENICHEN: I've just been given one
21 of these to look at. And it appears to me the copper
22 conductor is stranded, it's not a solid piece?

23 MR. HEIM: Correct. Yeah.

24 MEMBER HAENICHEN: Is that done for
25 flexibility reasons?

1 MR. HEIM: Yeah, same -- same approach we use
2 for an overhead conductor is by using strands as
3 opposed to a solid core. It makes it so that it's
4 flexible and able to go around bends and so forth.

5 MEMBER HAENICHEN: Thank you.

6 MEMBER GRINNELL: Mr. Chairman.

7 CHMN. KATZ: Go ahead.

8 MEMBER GRINNELL: Mr. Heim, what is this?

9 MR. HEIM: So that's what's called a -- I'm
10 going to go crazy with the acronyms here -- ACSS, so
11 that stands for aluminum conductor steel supported. So
12 within that cable you'll note that there's a few darker
13 strands at the center, so those are steel strands that
14 provide the structural support for the cable. Then the
15 outer strands are annealed aluminum, and those provide
16 the electrical capacity for the cable.

17 CHMN. KATZ: And just for the record, the
18 last question was in reference to the standard overhead
19 230 kV cable. I don't know if we, at some point in
20 time, can project the two different types of cables to
21 those who are appearing virtual.

22 MEMBER GRINNELL: But I guess my real
23 question is: But isn't copper a better conductor than
24 this?

25 MR. HEIM: Copper is a better conductor than

1 aluminum. And that goes back to the original point,
2 which is: Because the aluminum is open to the air and
3 cooled by the air, we can deal with the added
4 electrical resistance. It's just more economical to
5 use aluminum in that application. Whereas in the
6 underground application, where we're really trying to
7 squeeze every ounce of electrical capacity out of the
8 cable, that's why we transition to copper as the better
9 approach there.

10 MEMBER GRINNELL: And the outer ring on the
11 underground cable acts as sort of a ground, is that
12 correct?

13 MR. HEIM: Correct.

14 MR. DERSTINE: Mr. Chairman, we've got an
15 issue with the right screen. So Members who are
16 appearing virtually, it's dark because we're working on
17 a fix at the moment.

18 I don't know, Mr. Heim, if you want to
19 continue or you need to transition screens. I'm told
20 it will take maybe three to five minutes to work the
21 magic on the right screen here in the hearing room.

22 MR. HEIM: So I only have -- I'm using the
23 right screen for my slides for the next series, so we
24 could put those on the left and continue on if that
25 would work.

1 MR. DERSTINE: I'm told that it's just the
2 projector here in the hearing room. So the Committee
3 Members who are appearing virtually, I gather you can
4 still see that right screen on our feed, on our Zoom
5 feed, is that right?

6 CHMN. KATZ: They're all shaking their heads
7 yes, so I guess they can see both the left and right
8 screens virtually.

9 MR. DERSTINE: Yeah. And I guess here in the
10 hearing room, if the Committee Members can look on the
11 monitors in front, the right screen is still being
12 projected here.

13 BY MR. DERSTINE:

14 Q. So maybe we can still move forward while
15 we're efforting on the projector.

16 A. We can do that, so I'll transition the slide.
17 What I'd like to do now is -- we've talked about the
18 cable system, so that's kind of the technical drivers
19 for the cost increase that I touched on, and so now
20 I'll talk about the construction process.

21 And the first step in the construction
22 process is the construction of the trenching conduit
23 system, and so this is the duct bank that I've been
24 talking about throughout the hearing. So looking at
25 Slide R44 on the right screen, what we see here on the

1 left is a cross-section of a single-circuit underground
2 230 kV duct bank. And specifically within that, I'm
3 highlighting the outline of where the actual conduits
4 exist within that duct bank, and each conduit is
5 labeled with this A1, B1, B2. What those represent are
6 the individual phase positions of the cables within
7 that duct bank.

8 So like Mr. Derstine was referring to, A1
9 and A2, those represent the two phases that will form
10 the A phase of a circuit. So we've got two cables per
11 phase. And the reason that they're not directly
12 adjacent to each other is we position phases in such a
13 way so that the electromagnetic field associated with
14 those cables cancel each other out to the extent that
15 we can. So that's the benefit of the putting these
16 cables close together like that.

17 Now, we talked about how there's a total of
18 six cables per circuit, but there's eight conduits
19 here. The extra two conduits are there simply for the
20 purpose of having a standby spare conduit. If we were
21 to experience a cable failure or had an issue with one
22 of the individual conduits, then that allows us to pull
23 a spare cable through one of these spare duct bank
24 positions and have a speedier recovery to the --
25 whatever issue that we're experiencing.

1 The duct bank itself, generally we have 3 to
2 4 feet of cover beneath a roadway or whatever the
3 ground surface is, and then the duct bank itself is
4 about 2 feet in height and about 4 feet in width.

5 With that, I'll kind of transition over to
6 the photo on the right. And what we're seeing here is
7 the backfill operation. And the gray material that you
8 see going into the trench is a form of concrete, but
9 it's actually something we call thermal backfill, which
10 is a modification of a concrete that is able to radiate
11 heat more efficiently than a more standard concrete
12 can. And so the reason that we use that material is
13 back to the heat management thing, we're trying to
14 expedite all of the heat possible to the ground surface
15 to maintain the temperature of those conductors.

16 And here we get to the cable reel. So once
17 we have a duct bank in service and complete, then the
18 next phase in the construction process is to install
19 the cable. And what you're seeing here is one reel of
20 cable. And the magnitude of the trailer that's
21 required to move that cable reel around, it's like
22 something out of a cartoon to put it mildly. But for
23 this reason, just the physical size of it and then the
24 amount of resistance that occurs as we pull that cable
25 through a conduit that has turns and bends in it, the

1 maximum distance that we can pull is about 2,500 feet
2 between splicing locations. Often it's quite a bit
3 shorter than that if we have to go around some
4 90-degree bends or just have a more complex geometry.
5 And so for all those reasons, this is about as big of a
6 cable reel as we can install. And what you're seeing
7 in this image is, the cable is being fed off the back
8 of this trailer over a pully system here that then
9 feeds into an underground splice vault that's located
10 underneath the pavement surface here.

11 And that the gets me to splicing. So the
12 splice vault that I was referencing in the prior slide,
13 this is the image of that splice vault being installed.
14 So this is an underground concrete room that's about
15 almost 30 feet in length and about 8 feet in height and
16 is the location where we do all of our splicing
17 underneath the road surface. And so the image on the
18 right is an aerial image of a crane placing the walls
19 of the vault into the excavation where that vault would
20 ultimately exist.

21 As just an aside, I've been in the
22 construction business for a while now, and one thing
23 I've noticed is, and I don't want to paint with too
24 broad of a brush, but in general, construction crews
25 don't let on when they're impressed with something.

1 But in this image, if I were to zoom in, what you would
2 see is eight people all with their cell phones out
3 taking a picture of this vault being installed. So
4 whether you're impressed by this or not is up to you,
5 but I can tell you this is a picture of eight other
6 people that are very impressed with what's happening.
7 And that just gets to the size of the vault that's
8 being installed.

9 Q. So except for the splice vault, the rest of
10 the cable that you showed on the prior slide is in the
11 ground and surrounded by that particular type of fill,
12 is that right?

13 A. That's correct.

14 Q. Okay. So what we're seeing here is an image
15 within that vault after the cable has been pulled
16 through, and what Mr. Derstine was referencing is that
17 outside of this end of the vault is the duct bank. And
18 so these cables continue through the wall of the vault,
19 out into the conduits that then make their way
20 underneath the road surface to wherever our next
21 splicing location is.

22 So what's happening in the image on the left
23 on R47 is these gentlemen here are in the process of
24 splicing three phases of cable together using these
25 splice bodies, which are very, very significant pieces

1 of equipment. And the splicing process itself is very
2 time consuming, complex, and very carefully controlled
3 to make sure that we get good workmanship and don't
4 introduce a defect into the cable system as we go
5 through this splicing effort.

6 So in this particular vault we just have one
7 cable per phase, so a total of three cables, and the
8 splicing effort required to make these three
9 connections would have consumed a full week of time for
10 this crew of two individuals to complete. So every
11 time we splice the cable, we're adding about a week of
12 crew time to complete that effort.

13 MEMBER HAENICHEN: Mr. Chairman.

14 CHMN. KATZ: Yes.

15 MEMBER HAENICHEN: So let's get into a little
16 more detail on the splice. They start out with
17 something that looks like this on the end, right?

18 MR. HEIM: Correct.

19 MEMBER HAENICHEN: Do they fan all these
20 things out and make a splice?

21 MR. HEIM: Correct.

22 MEMBER HAENICHEN: So the splice has a bowl
23 around it, basically, then?

24 MR. HEIM: So what's happening within the
25 splicing operation is you have these two abutting

1 sections of plain cable, just like the section that you
2 have on the table there. And as they go through that
3 splicing operation, they bring those cables as close
4 together as they can get them, and then they begin to
5 strip away the outer jacket first. And then they then
6 peel back all of those concentric ground cables, the
7 individual copper strands that are inside of the jacket
8 but outside of the insulating layer, those then get
9 kind of fileted back. And then from there, they strip
10 down the insulating layer down to the bare copper, and
11 that's where the actual electrical connection happens.
12 And then they start to build that back up as part of
13 the splice body, where they reunify all of those
14 concentric grounds and make sure that that's a single
15 cohesive connection throughout each layer.

16 MEMBER HAENICHEN: Okay. Well, you didn't
17 mention one, I'll call it layer, which is the very
18 center steel cable. That's the first thing they have
19 to do, I would imagine. Is that welded together so
20 that it's strong enough to yank on it?

21 MR. HEIM: So the splice is not a structural
22 connection, it's just an electrical connection, but
23 you're correct. Basically, each layer of that cable
24 gets bonded in some way within that splice body. So
25 the core, the copper cable, and all of the jacketing

1 and insulating layers between the interior and exterior
2 get joined together as part of that splice.

3 MEMBER HAENICHEN: Wow. That's a
4 sophisticated process.

5 MR. HEIM: It is incredibly sophisticated.

6 MEMBER HAENICHEN: Thank you.

7 MEMBER GRINNELL: Mr. Chairman, how many of
8 these bunkers or these splicing facilities are needed
9 for this project?

10 MR. HEIM: So on this project, we're
11 undergrounding approximately 5 miles of underground,
12 and we can expect to see a vault every thousand to
13 2,500 feet. So we haven't designed it yet, we don't
14 necessarily know the total number of vaults, but it
15 will be in the tens of vaults probably.

16 MEMBER HAENICHEN: You might explain to the
17 Committee on overhead lines how the splices are made.

18 MR. HEIM: So in the case of an overhead
19 line, a splice is a fairly straightforward thing to
20 accomplish. It's, in essence, an aluminum tube.
21 They're pretty substantial in length. A splice for the
22 overhead cable I passed around would probably be 3 to
23 4 feet long. And what happens is, in essence, we use a
24 hydraulic press to crimp that aluminum body on top of
25 the overhead cable. There's a little bit of complexity

1 in that in terms of how we deal with the steel core
2 versus the outer aluminum, but that's kind of the
3 overlay of how that works.

4 MEMBER HAENICHEN: Well, doesn't that crimp
5 eventually fade or weaken?

6 MR. HEIM: It can, particularly in
7 environments where there's a lot of moisture or
8 humidity that can cause corrosion. We do use an
9 inhibitor grease within those splices that prevents the
10 moisture and other contaminants from intruding to cause
11 corrosion. Here in Phoenix, absent, you know, salts
12 and other things in a more snow-bound environment, we
13 see very long service life out of splices.

14 MEMBER HAENICHEN: Thank you.

15 MR. HEIM: The last step in the construction
16 process of an underground line is the commissioning
17 process. So once all of the electrical connections
18 have been made, we do something that's called a --
19 it's a high pot test, which is short for a high
20 potential test. In other words, what's happening in
21 both of these images is that we make an electrical
22 connection to the cable using this test equipment
23 here, and what that does is it energizes the cable to
24 several times its operating voltage. So in the case
25 of a 230 kV line, that could be upwards of 500,000

1 volts.

2 And what we're doing there is that we're
3 inducing a much higher electrical stress on the cable
4 and then monitoring for a thing called partial
5 discharge. And in essence, what that is is a breakdown
6 in the insulating capability of the cable system in the
7 event that there's a defect. When that happens, it
8 will emit effectively a radio signal that we can
9 detect, and that alerts us to a defect in the cable
10 system that we need to go address.

11 So in the case of the high pot test,
12 hopefully it's the most boring test we ever do. We
13 energize it, we don't detect anything, and then we
14 commission the cable and then it's ready to go to work
15 for us. So that's the last step in the underground
16 installation process.

17 CHMN. KATZ: Let me just ask you, are those
18 high towers in the photograph on the left permanent
19 structures?

20 MR. HEIM: They are. So these are the riser
21 structures that were constructed near the Stellar Air
22 Park that we referenced in yesterday's testimony.
23 These are somewhat different from what we'll have on
24 this project, and we'll actually get into those here
25 pretty shortly. Primary difference between these and

1 what we have on HIP is, one, these are a single cable
2 per phase configuration, so you only see three cables
3 coming up and then terminating with the phases above.
4 We also had some unique geometry constraints at this
5 specific location related to both the airport and the
6 width of the right-of-way that led to this sort of
7 unusual configuration that we have here, and we have
8 more of a standard configuration proposed for this
9 project.

10 And then the last thing I wanted to touch on
11 with respect to underground systems is just the service
12 history or maintenance history that SRP has with
13 underground transmission lines. We installed our first
14 underground 69 kV line in 1994. It uses the exact same
15 technology that we're talking about here from a 230 kV
16 perspective in terms of the XLPE cable. There are
17 differences over time in terms of the way that we
18 terminate and splice those cables, but the baseline
19 cable technology is identical, in essence.

20 We have a total of 22 69 kV circuits that
21 have been placed in service between now and 1994. And
22 like I noted in my testimony yesterday, we installed
23 our first 230 kV system just last year as part of the
24 Price Road corridor project. And the cable sample I
25 passed around is a sample of the exact cable that we

1 used there, same cable that we will use on HIP. We
2 have two 230 kV circuits in service as a result of that
3 project.

4 In terms of our overall performance history
5 on those systems, the table on R49 summarizes the
6 quantity of terminations and splices that we have in
7 service. So on our 69 kV network, we have a total of
8 210 terminations and 90 splices in service. In that
9 operating history, we have experienced one termination
10 failure at 13 years of age. And on our 230 kV system,
11 like I noted yesterday, I think, in the life cycle of
12 underground cable systems you're going to likely have
13 your issues with those systems either right when
14 they're brand new, as a function of some type of
15 material defect or workmanship defect, or you'll have
16 an issue as they reach the end of their life cycle.
17 And so in the case of the 230 system we installed, we
18 did, in fact, have one issue with one termination that
19 we've since replaced, and so that lines up with that
20 operating experience that we've had on both of those
21 systems.

22 BY MR. DERSTINE:

23 Q. What's the difference between the termination
24 and the splice?

25 A. So a termination is where we transition from

1 an underground cable to an overhead cable, and so we're
2 effectively terminating the underground system.

3 Whereas in the case of a splice, we're joining two
4 underground cable segments together.

5 Q. So the failure you had on the 230 system was
6 with the terminations, not with the splice, which
7 sounds to be the more complicated part of the
8 construction of an underground line?

9 A. I would say they're equally complex. They
10 use a lot of the same approaches. It's just a
11 different configuration. So the same degree of
12 workmanship goes into both types of connections.

13 MEMBER HAENICHEN: Where physically does the
14 termination take place?

15 MR. HEIM: The termination takes place -- let
16 me go back one slide, I think. There we go. So the
17 termination takes place at the end of the underground
18 cable. So this is a termination here that's suspended
19 on the arm of this structure, and then that facilitates
20 the final connection to the overhead conductor that
21 would be here.

22 MEMBER HAENICHEN: Okay. So it's easy to
23 find?

24 MR. HEIM: Yeah, there's no mystery about
25 where the termination is located.

1 BY MR. DERSTINE:

2 Q. So you covered the cost, the construction
3 methods, the equipment required, and you just covered
4 the maintenance. I guess the piece that I didn't
5 realize is that in order to get the same capacity from
6 an aboveground 230 kV circuit, you need to essentially
7 double the cabling that's underground in order to carry
8 that same amount of energy, did I get that right?

9 A. I would say it's even more than a doubling.
10 If we were to compare the cross-section of conductor,
11 the copper within the underground system to the
12 aluminum in the overhead system, it's more of a -- I
13 didn't do the math on this, but it's at least
14 quadrupling the amount of actual surface area of wire.

15 Q. And what's happening -- you indicated the
16 cost difference. What's happening with costs given
17 that the underground cable utilizes so much copper?

18 A. So we're very sensitive to what the copper
19 commodity pricing is doing any time we talk about an
20 undergrounding project. And like everything else in
21 the market these days, we're watching that metric
22 fluctuate over time. So certainly the commodity price
23 of copper can drive the cost of undergrounding even
24 higher, and we're more sensitive to that on an
25 underground project given the magnitude of cost

1 associated with that cable versus an overhead cable
2 where it's a fairly insignificant cost compared to the
3 overall project.

4 MEMBER HAENICHEN: Is it conceivable that
5 eventually underground cables might use aluminum?

6 MR. HEIM: I would say it's unlikely, unless
7 we find a way, from a technical perspective, to deal
8 with a much higher heating level within the insulating
9 layer. So the main constraint on an underground cable
10 is the heat that the insulating layer can sustain. So
11 unless there's a new material developed that can deal
12 with a higher level of heat, that would not allow us to
13 do that.

14 MEMBER HAENICHEN: So even in the ones you're
15 using now, the heat control situation requires an
16 active pumping type of procedure either for gas or
17 fluid?

18 MR. HEIM: That's true in the pipe-type
19 installations that I referenced. In the XLPE
20 application that SRP uses, that's not true. We just
21 use passive cooling through the ground surface.

22 MEMBER HAENICHEN: Thank you.

23 MEMBER LITTLE: Mr. Chairman.

24 CHMN. KATZ: Yes, Member Little.

25 MEMBER LITTLE: I would like to compliment

1 Mr. Heim on his presentation. Even with degrees in
2 electrical engineering and many years in the business,
3 I learned something today. And I think it was very
4 clear and just a great presentation.

5 When you were talking about getting the heat
6 out from the ground, I'm remembering that in the
7 Trans-Alaska Pipeline they have these big radiators
8 that stick up out of the ground that radiate the heat
9 from underground from the oil going in the pipeline
10 underground. So maybe if we had underground
11 transmission lines across areas where we could put
12 radiators up in the air, we could use aluminum.

13 MR. HEIM: That would make the underground
14 part a little hard to defend at that point.

15 CHMN. KATZ: Also, I'd like to ask our
16 virtual participants whether you were able to see the
17 aboveground and underground cable. If not, we can
18 project. But were you able to get a view of those?

19 Okay. That sounds good. The answer to that
20 is yes with head nods.

21 You may proceed, Counsel.

22 BY MR. DERSTINE:

23 Q. Did we cover underground construction
24 methods, costs, comparisons?

25 A. I think we did.

1 Q. Okay. Well, let's go back to the components
2 of the project that we're asking the Committee to
3 consider and approve in granting a CEC for the hip.
4 Again, we're dealing with the aboveground components of
5 the project. And I know we've spent some time
6 describing those, but let's take the Committee back
7 through and give some more detail on what those
8 components are.

9 A. Sure. So this is a combination of slides
10 that we've probably become pretty familiar with at this
11 point. On the left we're describing the three main
12 elements of the overhead portions of the project that
13 are highlighted in green. On the slide on the right,
14 R51, so those are the new double-circuit overhead
15 transmission line extending south from Henshaw
16 substation along the Old Price Road alignment to where
17 we make our turn to the east on the Intel campus, the
18 RS-28 substation itself, and then the Schrader overhead
19 transition corridor. And I'm going to step through
20 those in more detail in that order, starting with
21 probably the most significant overhead portion of the
22 project, which is the line south from Henshaw down to
23 Intel.

24 So as we talk about the overhead line from
25 Henshaw down to the turn onto Intel's campus, that's

1 about 2.74 miles, to be precise, of overhead
2 double-circuit 230 kV line that will be co-located with
3 the existing overhead double-circuit 69 kV line that
4 also parallels the same alignment. SRP is requesting
5 that the Committee, within the CEC, approve a
6 200-foot-wide corridor within which SRP would obtain an
7 80-foot-wide easement, and we would locate that
8 easement on either the east or the west side of Old
9 Price Road.

10 So let me give a sense for what that will
11 look like. So what we're seeing on Slide R53 is two
12 versions of the alignment, one on the west side of Old
13 Price, one on the east. And I'll start off by just
14 highlighting the structure configuration here.

15 So what we're seeing with this structure
16 configuration is a structure layout that SRP uses where
17 we have a fairly constrained right-of-way in terms of
18 its width. 80 feet is not our typical overhead
19 right-of-way width. Normally, we strive for a hundred
20 in order to perform maintenance. With the 80-foot
21 easement we use this alternative configuration where we
22 stack the 230 kV circuits on top of each other on the
23 same side of the transmission structure, which then
24 allows us access to both as we perform maintenance
25 from, in this case, what would be the east side of the

1 structure on Old Price Road.

2 In the west alignment, that's -- that's the
3 alignment where the existing 69 kV line is located. So
4 in doing that, we would remove the existing 69 kV line
5 structures and construct a temporary 69 kV line on the
6 east side of Old Price Road, which allows us to
7 maintain service to Intel during the entire
8 construction effort. And then we would construct these
9 new 230 kV structures, along with new 69 kV circuits,
10 in order to reenergize the entire system between
11 Henshaw and the turn onto the Intel campus.

12 MEMBER HAENICHEN: How tall are those new
13 structures?

14 MR. HEIM: These range in height -- in
15 general, they're going to be in the 150- to
16 160-foot-tall range.

17 The alternative configuration, if we were to
18 construct on the east side of the Old Price Road
19 alignment, carries the one substantial advantage that,
20 as I noted, the existing 69 kV line is located along
21 the west side of Old Price Road, which would allow us
22 to construct the new line independent of that without
23 needing to construct a temporary line to maintain
24 service to Intel. And then we would simply remove the
25 69 kV line that's there today once we're prepared to

1 energize the new line.

2 And here is the rendering of the riser
3 structures that will be located on the Intel campus.
4 And like I noted before, the pictures I showed the
5 Committee of the existing riser structures on the Price
6 Road corridor installation are somewhat different from
7 these. And the primary difference here is that for
8 each phase position -- you can see I'm highlighting
9 that there are two cables that come up for each phase
10 position, have their own termination on either side of
11 the structure, and then these would have an overhead
12 jumper that transitions to the overhead line and makes
13 its way away from the structure in an overhead
14 position. So that's the primary difference between
15 these riser structures versus the ones that I showed
16 the pictures of earlier.

17 BY MR. DERSTINE:

18 Q. So wherever we're moving from an overhead
19 construction and then taking the line underground,
20 we're going to see one of these riser structures?

21 A. That's correct.

22 With that, I'll transition to RS-28
23 substation itself. Like I noted before, the purpose of
24 the RS-28 substation is two things. It's, one, to
25 enable the added fabs to be constructed at Intel's

1 campus. The other purpose is to reconnect -- reconnect
2 the existing factories on Intel's campus to this new
3 230 kV substation. So what will happen there is we'll
4 actually retire the existing 69 kV substations and
5 serve the existing fabs using RS-28 as the new source
6 of electric service for the entire campus.

7 So that creates a pretty unique-looking
8 substation, so I'll move forward one slide to this
9 rendering on R56, which is an isometric rendering of
10 the RS-28 substation if we were looking from the
11 southwest toward the northeast.

12 And so let me highlight some of the important
13 features of the substation. So first element that's
14 important is, the entire 23-acre site will be
15 surrounded by a new 12-foot-high masonry block wall.
16 And within the substation itself, we tend to think of
17 the RS-28 side as divided between the east and west
18 components.

19 And the reason for that is, the western
20 component that I'm highlighting here, that is the
21 component of the substation that will serve the new
22 fabs that Intel is constructing, as well as one of
23 their existing fabs that's the more modern of the fabs
24 they have on campus. And the reason that these are
25 grouped together like this is that the incoming voltage

1 to the transformers that I'm highlighting here is
2 230 kV, but the voltage that comes out on what we call
3 the secondary side of these transformers is 34.5 kV.
4 So that's the contemporary distribution voltage that
5 Intel is using for all of its new development on its
6 campus.

7 The west side of the substation is more of
8 kind of the legacy side of the substation. The older
9 fabs, the original fabs on the Intel campus are served
10 by a lower distribution voltage. So the 230 kV will
11 come into these transformers and then exit at a lower
12 distribution voltage of 12.47 kV, so that's the voltage
13 that the majority of the fabs on site today are served
14 by.

15 Last thing I'll note is that -- oops -- this
16 open area here is reserved for the additional capacity
17 that we've noted that would require the second circuit
18 from Schrader to RS-28, and that's to facilitate any
19 future growth that Intel might have on the campus
20 beyond what they're proposing today. So that's where
21 an additional three 230 to 34.5 kV transformers would
22 be located whenever they decide to undertake that
23 expansion.

24 The last overhead component is -- what we've
25 talked about is this purple shaded region on Slide R57,

1 which is the Schrader overhead transition corridor.
2 This is probably one of the more complex parts of the
3 project to describe, and the reason for that is because
4 there's a lot of scenarios that we're trying to
5 encapsulate within that transition corridor just to
6 provide the flexibility that is needed to adapt to the
7 system as it changes and adapt to uncertainty in how
8 the underground routing may develop over time. And so
9 we're hoping to present all of the options that are a
10 likely outcome of those efforts so that we can
11 encapsulate those within this one CEC and not need to
12 necessarily use the Committee's time with different
13 tweaks and twists in how that design comes to evolve.

14 So let me explain a little bit what I mean by
15 all that. As we noted in the virtual route tour, the
16 230 kV side of Schrader substation I'm highlighting
17 here on R57 is located on the east side of Schrader
18 substation. And our proposed underground routing would
19 enter Schrader from the west side as we make our way
20 north/south along the Union Pacific Railroad corridor.

21 Q. I'm sorry. Can we have the AV team -- can
22 you go back and retrace those areas and have the AV
23 team follow that with the cursor for the benefit of the
24 Committee Members online?

25 A. So let's focus on the east side of Schrader

1 substation we're highlighting here. That's where the
2 230 kV buswork in Schrader substation is located. And
3 then the underground route that we need to connect with
4 will come into Schrader from the west. And so the main
5 function of this transition corridor is allowing us to
6 transition from that underground route on the west side
7 of the station to what is ultimately an overhead
8 connection in the substation itself on the east side of
9 the station.

10 Last thing I'll note before I transition to
11 some more detail on that is that we know, from our
12 current system studies, that the first circuit that
13 we will construct needs to connect with the southern
14 230 kV bay in Schrader substation itself, so we need to
15 make a connection in the southeast quadrant of Schrader
16 substation. What we also know is, assuming that things
17 remain the same on our system in the future when the
18 second circuit is required, is that the second circuit,
19 when it's added, would need to connect with the north
20 bay in Schrader substation, therefore, the northeast
21 quadrant of Schrader.

22 And the ways in which we can connect with
23 those two locations in Schrader substation dictate how
24 we've communicated what we're requesting in the
25 overhead transition corridor.

1 Q. I want to pause you there and back up one
2 second, if you will. The northern route, the last
3 bullet on Slide L33, states, "Rebuild existing
4 Corbell-to-Schrader overhead to accommodate second
5 circuit." So that Corbell-to-Schrader is a previously
6 certificated 230 kV line that's built as a
7 single-circuit line, is that right?

8 A. That's correct.

9 Q. And the CEC or the decision approved for that
10 case, that's Line Siting Case 86, is included in our
11 exhibits as SRP-17. And then there's an amendment to
12 that, which -- that decision is Decision 59791 which
13 approved the CEC for Case 86. And then the amendment
14 came out in Decision 60099, and that's marked as
15 SRP-18. And that amendment essentially finalized the
16 route for a portion of the longer line, which, if I'm
17 reading the caption right, originated -- or, this line
18 went from San Tan receiving station --

19 And I think "receiving station" is SRP
20 terminology for substation?

21 A. Correct. It's terminology we use for 230 kV
22 substations that receive, in essence, energy from the
23 bulk electric system and then transition that to the
24 69 kV system, which is our sub-transmission voltage.

25 Q. So the project that was approved in Case

1 No. 86 went from the San Tan receiving station to the
2 proposed RS-16 receiving station. Is that the Schrader
3 substation, as we're calling it today?

4 A. That is Schrader.

5 Q. Okay. And then the line was approved to
6 continue on to -- or, extending to the Corbell
7 receiving station. So it's a longer transmission line
8 project single-circuit 230 kV.

9 The piece that we're looking to change and
10 amend through this CEC process is just this short
11 segment. If you'll use your laser pointer again and
12 point out to the Committee where the existing line is.
13 So that's that blue line within the shaded area.

14 And if I understand your testimony, the new
15 circuit will connect to this -- the bus on the north
16 end, on the 230 side of the substation, and will use,
17 what, one structure to get over to the existing
18 Corbell-to-Schrader line?

19 A. Correct. We believe that we would perhaps
20 place one additional structure in this location in
21 order to enable transitioning onto the existing
22 Corbell-to-Schrader circuit, and then we would
23 reconstruct that overhead alignment to accommodate two
24 circuits as opposed to the existing single circuit.

25 Q. And what does that require, reconfigure the

1 existing alignment?

2 A. What that would require is we would likely
3 replace the existing steel monopoles within this area
4 with new steel monopoles that would be in approximately
5 the same location. So there's three existing 230
6 structures located along this alignment. So we would
7 place a new steel structure fairly close to each one of
8 those. Maybe somewhat taller at particularly the
9 locations as we make our way to the east in order to
10 enable the second circuit to be located on those
11 structures, but we expect that the heights of those
12 structures would remain consistent with the structure
13 heights that are out there today, which range between
14 140 feet down to 100 feet.

15 Q. Okay. So the new double-circuit structures
16 that will replace the single-circuit structures today
17 will still be -- well, they won't be any taller than
18 approximately 140 feet?

19 A. That's correct.

20 Q. Okay. And it looks like all of that
21 construction in that segment of the San Tan-to-Schrader
22 line takes place within the substation itself and/or
23 this open lot that the Committee saw in the flyover
24 simulation that's to the west of the substation, which
25 is land owned by SRP. Do I have that right?

1 A. That's correct.

2 Q. And then when we reach the railroad, I think
3 that was the big green X that we saw in the flyover
4 simulation where you will install the riser structure
5 and that will be the termination of the -- of the new
6 circuit to serve Intel and where it will go underground
7 along the railroad?

8 A. Yes, sir.

9 Q. But that portion of the project will be
10 constructed at a later point in time when it's needed.
11 And do we have any sense of when that is? I guess the
12 capacity -- what we need to serve Intel in terms of the
13 new -- the two new fabs and the increased load that's
14 going to result from those two fabs can be served by
15 constructing the first circuit out of Schrader and the
16 double-circuits that are coming overhead from Henshaw
17 initially, is that right?

18 A. Correct. We can serve all of Intel's planned
19 growth associated with the expansion they've announced
20 with just the one circuit from Schrader and then two
21 circuits from Henshaw. So the timing for the second
22 circuit really comes down to if Intel were to announce
23 an expansion beyond what they're performing today, and
24 we don't have a sense for the timing of that.

25 Q. So if Intel doesn't build any more fabs or

1 doesn't, I guess, retool in a way that increases its
2 energy needs, its energy demand, then SRP would never
3 be required to build that second circuit?

4 A. That's a potential outcome. If -- you know,
5 when it comes to planning the transmission system,
6 stuff can change and loading on our system could change
7 in other ways that might drive that. But in general,
8 the purpose of that circuit is to serve future growth
9 at Intel's campus.

10 Q. And the reason we're including that within
11 the CEC that we're requesting from the Committee is to
12 allow for that growth in the future without having to
13 come back to the Committee, which is, I know, something
14 near and dear to Member Grinnell's part. He continues
15 to raise, and I think appropriately so, is what you're
16 asking us to approve enough. Does it cover the future,
17 or are you going to have to come back in a year or two
18 years from now. And we certainly take that to heart
19 and SRP plans for that and that's why we're including
20 that second circuit, correct?

21 A. The intent of this project is to encapsulate
22 all of the growth at Intel that they've identified as
23 their ultimate build-out.

24 Q. Thank you.

25 MEMBER GRINNELL: Mr. Chairman, to that

1 point, though, would the Schrader substation expand or
2 have a need to expand power lines to other areas other
3 than Intel?

4 MR. HEIM: We don't show a need for that
5 based on the studies at Intel's ultimate growth.

6 MEMBER GRINNELL: No. But I guess my
7 question is: I'm looking toward Chandler up north, I
8 would see, and I see the neighborhoods around there and
9 then -- so that substation is also servicing adjacent
10 properties and subdivisions and businesses already,
11 correct?

12 MR. HEIM: Correct.

13 MEMBER GRINNELL: Is there a need for that
14 substation to increase its -- from 69 to a 230 in the
15 future for other areas besides Intel?

16 MR. HEIM: I would say it's doubtful in the
17 sense that with these two additional circuits that we
18 would -- that we're proposing as part of HIP, we will
19 effectively consume all of the available 230 kV line
20 terminations within the Schrader footprint. I'm always
21 careful not to use the term "never" in this business,
22 but there are some technical hurdles that come along
23 with adding any line terminations beyond what we're
24 proposing today that would make that a really
25 challenging outcome for us to implement. So I think we

1 would probably seek other alternatives if we ever
2 developed a circumstance on the system that might cause
3 us to look at that. So effectively I think the answer
4 is, probably not.

5 MEMBER GRINNELL: Well, I guess what I'm
6 really getting to ultimately here is the cost of all
7 this infrastructure being proposed, whether it's --
8 we're authorized to vote on it or not, are any of the
9 other consumers of power from these substations
10 absorbing the cost to -- for Intel?

11 MR. HEIM: No, not in the sense that --
12 anything that's related to Intel's specific load
13 serving capabilities -- so their substation is a cost
14 that Intel is funding in its entirety. The
15 undergrounding associated with this project is being
16 funded by a combination of Intel and the City of
17 Chandler.

18 SRP is funding the overhead transmission line
19 equivalent cost for the project, so the transmission
20 line elements absent the added undergrounding costs.
21 The reason that SRP is funding that component of the
22 project is because -- well, for two reasons. Like I
23 noted on the earlier slides last -- or, yesterday
24 afternoon, the project does provide transmission
25 capacity above and beyond what Intel's requirement is.

1 And then in addition to that, as we add this new loop
2 to our transmission system, that has a reliability
3 benefit that impacts all of the customers within this
4 part of our system and probably beyond that.

5 MEMBER GRINNELL: So they will help subsidize
6 that cost back to SRP, is that correct?

7 MR. HEIM: SRP will fund the transmission
8 line component absent the undergrounding costs and the
9 substation costs.

10 MEMBER GRINNELL: But that cost will be
11 passed on to the surrounding jurisdictions being --
12 utilizing that substation?

13 MR. HEIM: Correct.

14 CHMN. KATZ: And those last several questions
15 were by Member Grinnell.

16 MEMBER PALMER: Mr. Chairman.

17 CHMN. KATZ: Yes.

18 MEMBER PALMER: Question: As I'm looking at
19 this slide, the existing Schrader substation is denoted
20 in the purple hatched area. I'm assuming -- just to
21 make sure I see it clearly, I'm assuming that
22 substation actually ends prior -- because I see the
23 access road to that subdivision comes down through that
24 purple shaded area, I'm assuming the substation ends at
25 that point and the rest is just for transmission line

1 expansion, is that correct?

2 MR. HEIM: Correct. The substation perimeter
3 itself I'm highlighting on R57. And the western
4 boundary is this roadway here, which is Pine Lake Way.
5 The parcel to the west of Pine Lake Way is owned by
6 Salt River Project, and the only thing located on it is
7 the transmission lines that make their way in and out
8 of Schrader substation.

9 MEMBER PALMER: Okay. Thank you.

10 CHMN. KATZ: That was Member Palmer.

11 You may proceed.

12 BY MR. DERSTINE:

13 Q. I made you backtrack to cover the amendment
14 of the CEC for Case No. 86 and the Corbell-to-Schrader
15 line. So you were moving ahead after the -- I guess
16 moving on to discuss -- we talked about the two
17 preferred routes where you're taking the two circuits,
18 the initial circuit that will move along the southern
19 boundary of -- underground of the Schrader substation
20 over to the railroad, where it will be placed
21 underground, and then the second circuit that will be
22 co-located with the existing 230 line within the
23 substation that will be brought over to the railroad
24 and there it will go underground, if and when we build
25 that second circuit. So I think you were moving on to

1 discuss the possibility or what might happen if we're
2 not able to gain a permit for the railroad
3 construction, am I right?

4 A. Yes, sir.

5 CHMN. KATZ: Let me just ask. Now or in the
6 next five or 10 minutes we need to take a break. Would
7 this be a good time, or should we go another five or
8 six minutes?

9 MR. DERSTINE: Will it take you about five to
10 cover that east option?

11 MR. HEIM: Yeah.

12 CHMN. KATZ: After that, we'll break.

13 MR. DERSTINE: Thank you, Chairman.

14 CHMN. KATZ: Go ahead.

15 MR. HEIM: So what I'd like to do next is
16 just step through the graphics that represent the
17 scenarios that we proposed in our CEC application. So
18 I'll focus on the slides on the right side of the
19 screen, so starting with R58. This represents SRP's
20 preferred option. And what that option would be is to
21 construct our first circuit underground along the Union
22 Pacific Railroad, and then, like I noted, that circuit
23 needs to terminate in the southeast quadrant of
24 Schrader substation itself.

25 The way that will look in the field is that

1 this entire segment from the Union Pacific Railroad
2 alignment along the southern boundary of Schrader
3 substation will be located underground. And this will
4 be located actually outside of the Schrader substation
5 fence line in a 25-foot easement that SRP owns outside
6 of the fence line. Ms. Pollio will talk a little bit
7 more in detail when we go through the renderings, but
8 this will require some modifications of the existing
9 vegetation in that area to enable the construction of
10 that duct bank.

11 BY MR. DERSTINE:

12 Q. Does modification of the vegetation mean you
13 have to take out some trees?

14 A. Yeah, we'll have to take out the existing
15 trees, and then the intent is to replant new vegetation
16 that wouldn't interfere with the duct bank.

17 Q. Thank you.

18 A. At this point, we make a turn into the
19 substation footprint itself. And this plan is to
20 reduce the amount of trenching that actually occurs
21 within the active substation footprint. That's a
22 challenging way to get through an existing substation,
23 so we seek to minimize that where we can. And then
24 where I'm highlighting here is the approximate location
25 where we would locate a riser structure, which would be

1 the same configuration that I reviewed as part of the
2 Henshaw-to-RS-28 circuit. And then from there we would
3 have a single overhead span to connect with the 230 kV
4 bus that exists within Schrader substation itself.

5 The second circuit we would continue
6 underground north along the Union Pacific Railroad and
7 then locate a riser structure somewhere in close
8 proximity to the existing 90-degree turning structure
9 on the Corbell-to-Schrader line. And then the intent
10 would be to reconstruct this segment of
11 Corbell-to-Schrader to a new double-circuit overhead
12 230 line that would allow our new second circuit to
13 terminate within the northeast quadrant of Schrader
14 substation.

15 In all of the scenarios that we have, so
16 we've got three of them, they all have this kind of
17 orange hashed horseshoe here at the east end of
18 Schrader substation. The purpose of that is for system
19 flexibility. In the application we reference the need
20 to place up to three overhead structures for each of
21 these circuits within that area. And the reason we're
22 requesting that is, like I noted before, we understand,
23 based on system conditions today, that our first
24 circuit needs to terminate in the southeast corner of
25 the substation, second circuit needs to terminate in

1 the northeast corner of the station. In the event that
2 conditions on our system change over time, those
3 additional overhead structures provide us the
4 flexibility to reterminate either of those circuits at
5 a different bay position within Schrader if it's
6 needed. So that's the flexibility that we're seeking
7 as part of this application.

8 Q. And you're saying that if -- in the event
9 you'd have to reconfigure and terminate at a different
10 bay position, there maybe one or more overhead
11 structures that could be required for that
12 reconfiguration?

13 A. That's correct.

14 This is an alternative scenario to that. In
15 the event that our time -- you know, we determine we
16 need the second circuit between Schrader and RS-28, but
17 if conditions on our system are such that it's
18 technically better to connect in the southern portion
19 of Schrader substation, the intent would be to
20 construct the second circuit underground along the
21 south side of Schrader substation as well and then
22 terminate that within the 230 kV bus as we're showing
23 with a second riser structure situated somewhere within
24 this portion of the station, again, to enable that
25 overhead connection. We don't necessarily show within

1 our study work today that that's a likely outcome, but
2 we wanted to encapsulate that in the CEC just to
3 capture it as an option.

4 And then this last one is -- like
5 Mr. Derstine and I had noted yesterday, we are still
6 working with the Union Pacific Railroad to gain a
7 permit to locate our underground duct bank within their
8 corridor. In the event that they chose not to approve
9 that installation, we do need flexibility to then have
10 the underground circuits enter Schrader substation from
11 the east.

12 So the leading theory on how we would
13 accomplish that would be to follow the consolidated
14 canal to the south, likely using this linear part that
15 parallels the eastern side of the canal to accomplish
16 that. If that approach were to be required, we would
17 then enter Schrader substation from the east and then
18 place riser structures in the northeast and southeast
19 quadrants of the station, again, to enable that
20 overhead connection into the 230 kV bus. And the same
21 approach as far as flexibility is concerned. We would
22 still require the ability to place additional overhead
23 structures within this horseshoe shape for future
24 reconfigurations if they're required.

25 Q. And these are -- these three scenarios that

1 you just walked us through, those are options,
2 alternatives, and we've included language in the CEC to
3 cover those and we're asking the Committee to give us
4 approval to maintain those options for the future if
5 things change. For example, if we're not able to
6 obtain the permit to build along the railroad, then
7 we're alerting the Committee and the public that our
8 intent would be to take the project underground along
9 the canal?

10 A. That's correct.

11 Q. And to Member Grinnell's question from
12 yesterday, what sort of approvals do we ask if we had
13 to go along the east and follow the canal?

14 A. So that depends a little bit as to whether we
15 would use the canal or the linear park. In the case of
16 the linear park, that's owned by a combination of the
17 City of Chandler at certain locations and then the HOA
18 that's located to the east of this alignment. So we
19 would ultimately seek approval from the City of
20 Chandler and then would need to work with that HOA to
21 obtain that right-of-way.

22 MEMBER LITTLE: Mr. Chairman.

23 CHMN. KATZ: Yes, go ahead.

24 MEMBER LITTLE: Mr. Heim, would you go under
25 the canal, then, with your underground line from the

1 east to the west?

2 MR. HEIM: Correct. The intent would be to
3 go underneath the canal.

4 MEMBER LITTLE: Thank you.

5 MR. DERSTINE: All right. I think that
6 covers this chapter and this is probably a good time to
7 take a break.

8 CHMN. KATZ: Thank you. We'll take a break
9 and resume about, I guess, 10:55, and I'd like
10 everybody to be ready to go then. And we'll probably
11 go until 12:00 or 12:15 and then have our lunch break.
12 We stand in recess.

13 (Off the record from 10:37 a.m. to
14 10:57 a.m.)

15 CHMN. KATZ: We have a quorum. I don't know
16 whether Member Hamway is going to join us or not, but
17 we have enough folks here to keep going.

18 BY MR. DERSTINE:

19 Q. All right. Mr. Heim, you went through the
20 overhead components of the project that will be covered
21 by the -- well, are covered by the application and
22 we'll be asking the Committee to approve in our form of
23 CEC. We're going to take us down and go through the
24 structures that we're going to use to build the
25 overhead components here in this next section.

1 A. All right. Let's go it. So here is a chart
2 on the right screen, Slide R62, to give a sense for
3 the typical generally tangent structures that we'll see
4 on this project. So I'll make my way from left to
5 right here.

6 So starting at the very extreme left, this is
7 representative of a typical tangent double-circuit 69
8 kV line, so this is just to give a sense for the scale
9 to what exists in the areas where we've indicated that
10 there's existing 69 kV lines.

11 Moving up from that is a double-circuit,
12 we'll call this a side-by-side framing configuration
13 for a new 230 kV line. In general, we wouldn't expect
14 to see a lot of these structures given how narrow the
15 right-of-way in most places it is, but may see one of
16 these structures within the Schrader overhead
17 transition corridor, like we talked, and potentially as
18 we transition to underground on the Intel campus or in
19 Henshaw substation itself. But I would not expect to
20 see more than a handful of these structures.

21 From there, this is a rendition of the riser
22 structures that we talked about, representing two side
23 by side for a double-circuit capability. So each one
24 of these is a two-cable-per-phase single-circuit riser
25 structure. In general, we expect the height of those

1 to vary somewhat, but the working assumption for most
2 locations has been about 130 feet or so.

3 From there, next taller structure, this is
4 probably a fairly typical structure that we might see
5 within the Schrader overhead transition corridor area,
6 which would be a double-circuit-capable 230 kV line
7 with the two circuits side by side each other and then
8 under-build 69 kV. As we'd noted previously, we expect
9 that the structure heights within the transition
10 corridor will be within the same range of what's out
11 there today, which is between 100 to 140 feet. So we
12 would expect that those new structures would be in that
13 same height range.

14 The last two structures on the right, I'll
15 kind of cover these together. This is the vertical
16 stacked 230 kV configuration that we discussed that
17 will primarily occur along the Old Price Road
18 alignment. The difference between the two is that the
19 one furthest to the right includes an under-build 69 kV
20 position. So along the entire Old Price Road
21 alignment, this is what we would expect to see as the
22 predominant structure type for that entire distance.
23 Structures like this, without the under-build 69 kV,
24 would likely only occur at a transition near the --
25 either the Henshaw substation itself or as we

1 transition to underground on the Intel campus. And I
2 think I noted already that these structures along Old
3 Price Road, the structure heights will be in the 150-
4 to 160-foot range is going to be typical for there.

5 MEMBER HAENICHEN: Mr. Chairman, couple of
6 questions. Am I correct that the FAA has a limit of
7 200 feet on towers completely in the country?

8 MR. HEIM: 200 feet does put you into a
9 different realm of review with the FAA and may require
10 some marking or things along that.

11 MEMBER HAENICHEN: And the second question
12 is: My observation is that everything is converting to
13 monopoles, away from these more elaborate structures.
14 Is that an industry-wide trend?

15 MR. HEIM: I would say it's a trend in the
16 sense that, at least in terms of SRP, the projects that
17 we have been siting and building lately are more urban
18 in nature and therefore generally have a more
19 constrained right-of-way. So the lattice towers that
20 you're referencing generally require a wider
21 right-of-way that would be more typical in a rural
22 environment, but within urban environments we find that
23 steel poles --

24 MEMBER HAENICHEN: And they're worse visually
25 too?

1 MR. HEIM: That's a matter of personal
2 opinion. Nobody accepts my opinion on that matter, so
3 I won't...

4 MEMBER RIGGINS: Mr. Chair.

5 CHMN. KATZ: Yes, go ahead.

6 MEMBER RIGGINS: Mr. Heim, just a quick
7 question. This is probably just to appease my own
8 curiosity on this. But on the riser structures, when
9 the underground comes out of the ground, it looks
10 like -- and from the photos and the diagram -- that
11 there's like a protective shroud or something around
12 the base. Are there any special considerations or
13 anything as far as like for safety or even for
14 radiation as the line actually comes up?

15 MR. HEIM: Sure. So the shrouds are kind of
16 crudely represented on this figure here as just sort of
17 a wider part of the pole shaft here. The purpose of
18 those shrouds is really security and public safety. We
19 want to prevent somebody from being able to actually
20 lay hands on the conductor and damage the jacket or
21 something like that. No concerns in terms of somebody
22 standing next to it in terms of like EMF or something
23 like that. It's really just for security purposes and
24 copper theft and all those types of things, vandalism.

25 MEMBER RIGGINS: Okay. Thank you.

1 MEMBER LITTLE: Mr. Chairman.

2 CHMN. KATZ: Yes, go ahead.

3 MEMBER LITTLE: I have a question. I'm not
4 sure whether this is the appropriate place to ask it.
5 But when you talked about the two -- the east side and
6 the west side of Old Price Road, alternatives for that
7 section of overhead line, where would the riser
8 structures be located for each of those two
9 alternatives, on which side of the road?

10 MR. HEIM: So the riser structures on Intel's
11 campus will be located east of Old Price Road no matter
12 whether we use the east or west alignment. The
13 proposed approach would be that, as we get to the turn
14 onto Intel's campus, we would place a dead end or
15 turning structure and then have a single span to the
16 east that would connect to the riser structures located
17 on Intel's campus.

18 MEMBER LITTLE: Okay. So you'd go under the
19 road, then, if you're on the west side?

20 MR. HEIM: We would span over the road to the
21 riser structures located on the east side of Old Price.

22 MEMBER LITTLE: Okay. Thank you.

23 CHMN. KATZ: Thank you.

24 MR. HEIM: We do have some visual simulations
25 in Ms. Pollio's presentation that I think do a good job

1 of showing that visually.

2 BY MR. DERSTINE:

3 Q. Did we finish in terms of the last -- that
4 last structure there on the right on Slide R62, that's,
5 I guess, the likely configuration along Old Price Road
6 if you're going to build it on the west -- or, on the
7 east side of Old Price -- well, is it the west or the
8 east? I guess if you're building it on the west side
9 of Old Price Road, that would be the configuration with
10 the phases to the west, or is it the other way around?

11 A. So these structures are kind of agnostic to
12 -- these aren't taken from any north/south perspective
13 for the purpose of this figure. But as we talk about
14 an east or west alignment on Old Price Road, the way I
15 would say it is that the insulators will be suspended
16 on the road side of the structure. So if the structure
17 is located on the east side of Old Price, the
18 insulators would be suspended to the west side of the
19 structure. And then vice versa, if we were located on
20 the west side of the Old Price Road, the insulators
21 would be suspended to the east.

22 Q. Okay. And then the last structure profile
23 then shows the 69 kV under-build that would also be --
24 I guess it's double-circuit -- is it double-circuit
25 69 kV along Old Price today?

1 A. Correct.

2 Q. So you'll continue to carry those 69 kV
3 circuits underneath the two 230 circuits?

4 A. Yes, sir.

5 Q. So those are the structures. Another
6 important consideration for the Committee, and they're
7 required to look at under 40-360.06, are the costs of
8 the project. And I think you're going to cover those
9 costs right now?

10 A. Yes, sir. Okay. So we touched a little bit
11 on this already today, the idea that SRP is funding the
12 transmission line components of the project on the
13 basis that, one, this project adds transmission
14 capacity above and beyond what Intel requires to serve
15 their load growth, so that's a benefit to all of SRP's
16 customers in the area. And in addition to that, don't
17 have a handy map here, but as we looked at the 10-year
18 plan map yesterday, what we showed is that this project
19 will complete a new loop on our 230 kV system. And so
20 from a reliability standpoint, this project adds
21 additional transmission system reliability that all of
22 our customers in the area will benefit from.

23 So from that perspective, SRP is funding the
24 transmission line costs associated with this project.
25 Now, when I talk about transmission line costs, what

1 I'm saying is that we are funding the overhead
2 equivalent cost of transmission. So if we were to
3 build the project overhead, that's the cost that SRP is
4 funding.

5 As we talk about undergrounding, SRP's
6 standard and position on this project and any project
7 prior to this one has been that we are happy to
8 construct projects underground if the -- if a third
9 party will fund the cost difference for that
10 undergrounding. So that's what we see on this project
11 as well. So when I talk about transmission line costs,
12 it's absent the added cost of the undergrounding
13 component.

14 So with that as a baseline, SRP's investment
15 in the 230 kV lines associated with this project are
16 \$56 million, and then we'll have an additional
17 \$9 million in other system upgrade costs at the
18 adjacent substations and so forth to facilitate the
19 connection of the project.

20 The undergrounding costs are broken down in
21 the next bullets at the midway of Slide R64. Intel is
22 funding the cost difference for undergrounding the
23 lines on their campus, as well as the Union Pacific
24 Railroad corridor. That cost differential is
25 36 million.

1 The City of Chandler portion, so the portions
2 within the Chandler roadways, the combined contribution
3 from the City is \$31 million. I just want to highlight
4 that that includes a number of different contributions,
5 including the City's municipal aesthetics funding, as
6 well as in-kind services like relocating existing
7 underground utilities to clear a way for our
8 underground duct bank, and then also right-of-way
9 contributions. So all of those amount to that
10 \$31 million.

11 And I think I stated previously that the
12 substation itself, RS-28, that's the element of the
13 project that is, in fact, dedicated to serving Intel
14 and Intel alone. And so for that portion of the
15 project, Intel is funding the full cost of the
16 substation.

17 MEMBER GRINNELL: Mr. Chairman.

18 CHMN. KATZ: Yes.

19 MEMBER GRINNELL: I want to go back to
20 Mr. Heim. So SRP is putting the money up front for
21 these costs. You're going to recoup that investment
22 somewhere?

23 MR. HEIM: Correct. Yeah. So the capital
24 investment that SRP makes in our transmission system or
25 any of the assets that we use to provide energy to our

1 customers is spread across our rate structure.

2 MEMBER GRINNELL: Have you received prior
3 approval for rate increases from the Corporation
4 Commission already?

5 MR. HEIM: So we don't expect this project
6 would generate or result in a rate increase for SRP
7 customers.

8 MEMBER GRINNELL: Okay. Because I'm just
9 trying to get a better grasp. My understanding is the
10 developments that are already using your services,
11 you're increasing your capacity there, and then future
12 developments are going to absorb this cost. Are the
13 current customers going to -- how much of that cost is
14 going to be absorbed right now by the current
15 customers?

16 MR. HEIM: So the -- that's a little bit of a
17 challenging question to answer. I guess the way SRP
18 does and has developed our transmission system from a
19 cost perspective is that we develop infrastructure to
20 serve existing and future load growth through load
21 projections, and we plan and develop our system to be
22 able to meet whatever the forecasted load will be for
23 an area. And as we make those capital investments in
24 our transmission system, those capital costs then
25 are -- become part of our cost recovery for all of the

1 capital investments that SRP makes. In general, I've
2 not observed that the transmission projects that we
3 build to serve load growth have, to my knowledge,
4 contributed to a rate increase in the past, and we
5 wouldn't expect this one to either.

6 MEMBER GRINNELL: Okay. I'm just -- and I
7 understand you've got to recoup your costs. That's not
8 the issue. What my concern is, in reading all these
9 customer -- public comments, were the neighbors -- and
10 maybe I should wait for, I guess, Ms. Pollio to address
11 this later -- informed of these capital improvements
12 and everything else and potential costs?

13 Am I jumping ahead of myself, Mr. Derstine?

14 MR. DERSTINE: Well, can you restate your
15 question?

16 MEMBER GRINNELL: Yeah. I just want to make
17 sure that, you know -- at first, all this public
18 comments had to do with overhead versus underground.
19 And I'm looking at these jurisdictions or areas right
20 now that you're already servicing. In part of your
21 community outreach, was the cost of the infrastructure
22 discussed with these folks regarding the support of
23 Intel, but also how it's going to improve their areas
24 on the line?

25 CHMN. KATZ: That series of questions is from

1 Member Grinnell. Go ahead.

2 MEMBER GRINNELL: Oh, I'm sorry.

3 Is that -- Mr. Derstine, does that address
4 your --

5 MR. DERSTINE: Well, I think Mr. Heim
6 understands that question in terms of what are the
7 costs and the portion of the costs of the project
8 associated with general system improvements discussed
9 with the public during outreach. I think that's a
10 question that he can answer. And then I want to circle
11 back to your question about rates and approval at the
12 Commission.

13 MR. HEIM: Sure. So I would say, in terms of
14 the public comment that we received, cost was not
15 probably top of the list, as you noted. On our
16 public-facing website for the project we do discuss
17 costs and note that the costs are not something that we
18 would expect to impact rates, so that was communicated
19 to the public.

20 MEMBER GRINNELL: And again, I'm just -- this
21 is being designed to support the Intel campus
22 expansion, which is great, but there's going to be
23 additional costs to neighbors. And I just don't want
24 to have our neighbors here, say, go to the -- say we
25 approve this and then they go to the Corporation

1 Commission and say, well, wait a minute. They didn't
2 tell us that we were going to see these potential
3 increases.

4 MR. DERSTINE: Yeah, I appreciate your
5 question. And an important point that we should make
6 here is that Salt River Project Agricultural
7 Improvement District --

8 Did I say it right?

9 MS. RAMALEY: Power District.

10 MR. DERSTINE: -- and Power District, I'm
11 always missing a part of the name, is unlike APS and
12 TEP and some of the other Arizona utilities who have to
13 go to the Arizona Corporation Commission to obtain
14 approval of rates and for other things. SRP, as a
15 political subdivision of the state of Arizona, is
16 exempt from that process.

17 And so your questions are good ones in terms
18 of, you know, who is going to pay the costs, how much
19 of the costs associated with the project will go into
20 rates and make it into rate base as capital costs, but
21 that's not something that goes before the Corporation
22 Commission in terms of rates. SRP establishes its
23 rates with always an eye towards affordable and
24 maintaining reliable power and service to its
25 customers, but those rate decisions don't have to be

1 approved by the Corporation Commission.

2 So this -- the costs associated with the
3 project, they fall into those two buckets that Mr. Heim
4 spoke to. That is, that there are certain costs that
5 are directly attributable to Intel and serving Intel,
6 and Intel are paying those costs. But there are other
7 costs that benefit the system and SRP's ability to
8 serve customers more broadly within this area by virtue
9 of the fact that we're looping two substations, Henshaw
10 and Schrader, that were not previously connected, and
11 there are other system benefits provided by this
12 project that go beyond what's needed to serve Intel,
13 and those costs, paid for by SRP, will ultimately go
14 into rates through whatever process SRP uses to set its
15 rates.

16 MEMBER GRINNELL: Thank you.

17 MR. DERSTINE: And I should note that the
18 rates are approved by SRP's publicly elected board, so
19 that's the approval process that's used for SRP.

20 MEMBER GRINNELL: Forgive my ignorance here.

21 CHMN. KATZ: You may proceed.

22 BY MR. DERSTINE:

23 Q. I'm looking at your Slide R64. And so I'm
24 just -- I question a little bit in terms of the math.
25 You know, we spent some time on underground

1 construction, and the underground costs don't look to
2 be 10 to 15 times more than what the overhead
3 construction -- can you explain that for the Committee?

4 A. Sure. So the thing to know about the
5 65 million for the overhead component is that's
6 inclusive of things beyond just the undergrounding
7 component of the project. So that includes the
8 overhead portions, that includes the right-of-way for
9 the overhead portions, all of which add to that
10 65 million. So it's not a direct comparison between
11 the 65 million and the combined 67 million for the
12 undergrounding.

13 The reality is that, just in rough numbers,
14 we're talking about on the order of just short of 5
15 miles of undergrounding. And going to the comparison I
16 made where a typical overhead line costs between 1 to
17 1 and a half million a mile, so by that math, a direct
18 route of that same distance would be in the 5 to
19 \$10 million range, and that's the better comparison
20 that gets you to the approximately 67 million, so the
21 1-to-10 ratio that we talked about.

22 Q. And I guess the other important point to make
23 here is that when we're talking about the City of
24 Chandler agreeing to fund the undergrounding along
25 Chandler Heights and Intel picking up the cost to

1 underground along the railroad for that circuit, we're
2 not talking about the total cost. As you indicated,
3 your -- SRP, it's the cost differential that those
4 entities are paying for, and that's calculated based on
5 the math that you spoke to earlier in terms of what
6 would SRP be spending to build this as an entirely
7 aboveground or overhead project, then what's it going
8 to cost to build underground. And it's that cost
9 differential that the City and Intel are picking up and
10 utilizing in-kind and other dollars for that cost?

11 A. That's perfectly stated, Mr. Derstine.

12 Q. That's the first time ever.

13 A. Yeah, we're proud of you.

14 Q. Thank you. Anything else you want to note on
15 the subject of costs?

16 A. I think I've exhausted my knowledge on that
17 topic for today.

18 Q. Okay. Well, I think that -- well, two things
19 I want to cover with you, and then I'll turn you over
20 and make you available for further questions from the
21 Committee and for cross-examination by the other
22 parties.

23 You mentioned the 10-year plan. APS did --
24 SRP did file a 10-year plan amendment that included
25 this project, you mentioned that, I think you

1 referenced a map. But I just wanted to confirm for the
2 record that that was done?

3 A. We did. We amended our 10-year plan on
4 September 15th, 2021 to include this project.

5 Q. And then marked as SRP Exhibit 19 is a letter
6 from Arizona Corporation Commission Staff dated
7 November 2, 2021 to Chairman Paul Katz. In that
8 letter I guess Commission Staff had reviewed some of
9 the system studies and other studies that were
10 performed in connection with this project, and we also
11 responded to data requests from Commission Staff to
12 provide them with more detailed information. Do I have
13 that right?

14 A. You have that right.

15 Q. Okay. And reading from SRP-19, Staff's
16 letter, they conclude that, based on Staff's review of
17 the application, as well as the applicant's response to
18 a Staff-issued data request, Staff believes the
19 proposed project could improve the reliability and
20 safety of the grid and the delivery of power in
21 Arizona. Does that sound right?

22 A. That sounds right.

23 MR. DERSTINE: I think that's all the
24 questions I have for you, Mr. Heim.

25 And he is available for, as I mentioned,

1 further questions from the Committee or from the
2 parties.

3 CHMN. KATZ: And from a procedural
4 perspective, I'd like to see if either Chandler or the
5 neighborhood associations have any cross-examination.
6 And if there are any remaining questions, the Committee
7 should feel free to ask them.

8 MR. CROCKETT: Chairman Katz, the City of
9 Chandler doesn't have any more questions. Thank you.

10 CHMN. KATZ: Ms. Grabel.

11 MS. GRABEL: Thank you, Mr. Chairman. I do
12 have just a couple of questions.

13 CHMN. KATZ: That's fine.

14

15 CROSS-EXAMINATION

16 BY MS. GRABEL:

17 Q. Some of your testimony yesterday, Mr. Heim,
18 kind of caught our attention when you talked about the
19 second circuit that would eventually potentially be
20 constructed along the route that goes from Schrader
21 substation to Chandler Heights Road. And we're a
22 little concerned about the potential that the second
23 circuit would be built aboveground for a lack of
24 underground funding. Because I recall you saying that
25 Intel hasn't yet committed to funding that second route

1 underground, is that correct?

2 A. That's correct.

3 Q. So if Intel refuses to fund the
4 undergrounding of the second circuit in the future, has
5 SRP identified another source of funds that would
6 ensure the undergrounding of the second circuit in the
7 segment that runs from Schrader to Chandler Heights?

8 A. So I would start off by stating that SRP's
9 standard is to construct overhead lines, as we've
10 talked about previously. And in the case of
11 undergrounding, we're happy to indulge those requests
12 if a third party funds the cost differential to do so.

13 So in the context of either the agreement
14 with the City of Chandler or Intel, both of those
15 entities made the decision to fund undergrounding in
16 this case with the understanding that a second circuit
17 would be required in the future. But it is true to say
18 that if neither party wanted to fund the additional
19 undergrounding for the second circuit, that SRP's
20 standard would be to build it overhead. And so
21 there's, at this point, no agreement that binds either
22 of those entities to fund that.

23 Q. So there's no commitment from any of the
24 parties that the second circuit will also be
25 constructed belowground?

1 A. There is no contractual commitment.

2 Q. And were SRP to construct -- or, if it sought
3 to construct the second circuit aboveground, it would
4 need to appear again before this Committee to do so, is
5 that correct?

6 A. That's correct.

7 MS. GRABEL: Okay. Thank you.

8 CHMN. KATZ: Anything further?

9 MS. GRABEL: No, Chairman.

10 CHMN. KATZ: Anything from our Committee
11 Members for Mr. Heim?

12 (No response.)

13 CHMN. KATZ: Okay.

14 MR. DERSTINE: And I should note, Mr. Heim is
15 not going anywhere.

16 CHMN. KATZ: That's fine.

17 MR. DERSTINE: He'll be here.

18 CHMN. KATZ: We will let him step down, but
19 he will be available to be recalled by any of the
20 parties or the Committee if needed.

21 MR. DERSTINE: All right. Well, I'm going to
22 ask that he sit in his seat in the event that issues
23 come up that we'd like him to address through
24 Ms. Pollio's presentation.

25 But we're going to move on to all things

1 environmental, and Ms. Pollio is going to cover those
2 subjects for us.

3 CHMN. KATZ: And you may begin at any time.
4 The witness has previously been sworn.

5

6

KENDA POLLIO,

7 called as a witness on behalf of the applicant, having
8 been previously affirmed by the Chairman to speak the
9 truth and nothing but the truth, was examined and
10 testified as follows:

11

12

DIRECT EXAMINATION

13 BY MR. DERSTINE:

14 Q. So Ms. Pollio, you are the -- you indicated
15 in your introduction that you are the principal of KP
16 Environmental. "Principal" means that's your company,
17 right?

18 A. That is correct.

19 Q. And KP Environmental did all of the -- well,
20 most of the environmental analysis and study work
21 that's required by the statute and the rules to
22 supporting a CEC application, right?

23 A. Correct.

24 Q. Some of the analysis is done through --
25 in-house through SRP, but you review that commentary,

1 in particular, some of it having to do with cultural
2 issues and some wildlife issues, but that's reviewed by
3 your firm and that's incorporated into the CEC
4 application?

5 A. Yes, it is.

6 Q. Well, let's -- maybe we'll start with your
7 Slide R66 and just touch on the topics that you're
8 going to cover and that are included in the CEC
9 application.

10 A. Yes. So KP Environmental did, as you
11 mentioned, conduct the environmental studies or oversaw
12 incorporation of those environmental studies into the
13 CEC application. What I want to do is go over each one
14 of the environmental exhibits and identify the
15 information that's in there, as well as any potential
16 impacts associated with those resources.

17 So specifically, I will go over Exhibit A,
18 which includes land use, jurisdiction, and basically
19 the land ownership of the project.

20 Exhibit B includes other environmental
21 reports. We do not have any type of federal nexus or
22 NEPA requirements associated with the project, so there
23 were no additional studies that were included in
24 Exhibit B.

25 Exhibit C and D both cover biological

1 resources. C focuses on threatened, endangered,
2 special status species, whereas D covers more of
3 general biological resources.

4 Exhibit E covers both visual or aesthetics
5 and cultural or archeological resources, so we'll talk
6 about each one of those.

7 Exhibit F covers recreation; Exhibit H,
8 existing plans; and then noise is covered in Exhibit I.

9 Q. All right. Well, it looks like at the top of
10 the batting order is Exhibit A and land use, so let's
11 start there.

12 A. So I'll start talking about land use using
13 the Slide L39. And then the maps that have been
14 included in Exhibit A of the application are on the
15 right screen, and I'll go over most of those maps. And
16 again, they deal with ownership, jurisdiction, and land
17 use.

18 So the first thing that we'll cover is
19 jurisdiction or ownership. All the aspects of the
20 project are on private land, so there's no federal or
21 state land associated with the project.

22 The jurisdictions associated with the project
23 include the City of Chandler, which I'll note that all
24 project components are within the City of Chandler. So
25 you'll see on Exhibit R68 the green -- the light green

1 color on R68 is City of Chandler designation. The
2 white is Maricopa County. So you will see that
3 Maricopa County land is to the south -- predominantly
4 to the south, and that includes the Sun Lakes
5 community. Then you'll also notice that the Gila River
6 Indian Community is the brownish orange color on R68,
7 and that is to the west of the Henshaw-to-Intel
8 segment. And you'll see that that is included on
9 Exhibit R68.

10 So we've talked a lot about, in general, the
11 disturbed nature of the area and what is the different
12 components of the project. But just to kind of put an
13 explanation point on that and really focus on more of
14 the land use aspect of that, I do want to mention that
15 the existing Henshaw-to-Intel segment is in an existing
16 transmission line corridor. So the existing 69 kV line
17 would be rebuilt to the 230/69 under-build, but again,
18 inside of a disturbed corridor, inside the Price Road
19 corridor. So we'll talk about that in a minute, but
20 the Price Road corridor is a City of Chandler
21 designation. We focused on that in previous testimony,
22 but just want to make sure that -- to note that's --
23 you know, the predominant land use is that Price Road
24 corridor of that segment.

25 You will also see that the Intel campus is

1 where RS-28 is located. Again, we talked about active
2 construction, very disturbed area, just from an
3 environmental perspective, in terms of the building of
4 those new fab facilities and the associated
5 infrastructures with that campus.

6 And then the existing Schrader substation is
7 part of the overhead transition corridor that we've
8 spoken a lot about, especially in Mr. Heim's testimony,
9 and that is the existing Schrader substation, as well
10 as the vacant SRP-owned parcel. And if you recall,
11 that is a very disturbed parcel that is adjacent to or
12 to the west of that substation property.

13 So let's -- basically, that right there is
14 jurisdiction and ownership in a nutshell for each one
15 of those components, but let's focus on land use. And
16 in general, I'll get to the punchline, the land use
17 associated with these components are consistent with
18 the land use -- both existing land use and future land
19 use associated with the City of Chandler, Maricopa
20 County, and the Gila River Indian Community. So we'll
21 talk about that.

22 So first is -- R69 on the right screen is the
23 existing land use in the city of Chandler. It is also
24 in your Exhibit A document, and so that is A-3 in the
25 application. It's a little bit hard to read because

1 there's a lot of colors on there, but the gist of it is
2 the project components are all located from the
3 Henshaw-to-Intel segment inside that Price Road
4 corridor, which is, from an existing land use
5 perspective, employment, commercial, industrial land
6 uses.

7 The existing Schrader substation, the
8 existing land use is predominantly residential to the
9 south and directly to the north, but there are some
10 employment facilities that are located to the north and
11 the northwest of the existing Schrader substation.

12 The next slide is R70. This is the Maricopa
13 County existing land use. This is from the existing
14 land use plan for Maricopa County, and you can see the
15 land use designations. We've talked a lot about the
16 Gila River Indian Community land use, but again to
17 touch on those, again, they are on Gila River Indian
18 Community, but Maricopa County has overlays associated
19 with the existing land use in that area. You can see
20 the existing land use, there's a number of -- and to
21 the north the yellow is vacant. Large area of Gila
22 River Indian Community is active agriculture. And you
23 have the designation for the Gila River Municipal
24 Airport that is no longer in operation and is really
25 more of a vacant land use parcel.

1 To the south of the Intel campus you can see
2 the community, as I mentioned, is Sun Lakes community,
3 which is predominantly residential with some mixed open
4 space designations in that area.

5 Now, on to future land use associated with
6 the upcoming maps. So R71 designates future land use.
7 So first is -- you know, the previous maps were in a
8 much larger radius. This is kind of honing in on what
9 the future land use is within a thousand-foot buffer of
10 the project component. So you'll see that's the red
11 outline on this figure. And again, this is also a
12 figure in Exhibit A.

13 You'll see the predominant future land use
14 that's been designated associated with the Price Road
15 corridor, or the Henshaw-to-Intel segment, is that
16 employment category, and again, associated with the
17 designated City of Chandler's Price Road corridor. You
18 can see that in blue. Future land use follows really
19 the existing land use in the area, because
20 predominantly it's built out over by the Schrader
21 transition corridor. And you can see the yellow is
22 neighborhoods, residential, and the blue is also
23 employment. So again, kind of follows that existing
24 land use.

25 We also have R72, which is future land use

1 designations from Maricopa County. Again, very similar
2 to what the existing land use is in the area. You can
3 see this is again represented by the thousand-foot
4 buffer around the project components and you can see
5 again predominantly open space. There's public
6 employment.

7 I will point out -- we had pointed that
8 out -- the blue box that is north -- kind of in the
9 northern area closest to the Henshaw substation, that
10 is the Gila River medical facility, medical hospital,
11 so I wanted to point that out. So -- and that's -- the
12 Maricopa County portion is just associated with that
13 segment.

14 Q. Is the punchline on land use and your
15 analysis of existing and future land use that this
16 project, the overhead components of the project, are
17 consistent with current and planned land use?

18 A. That is correct. I hit the punchline first
19 and then explained it. But to, I guess, end the land
20 use summary, yes. You know, with the Price Road
21 corridor being the predominant land use in the area, as
22 well as the Schrader substation, the land use
23 associated with this project is consistent with the
24 goals of the City of Chandler's land use plans.

25 Q. Okay. Good. So Exhibit -- well, we are

1 required, in Exhibit C to the CEC application, to
2 discuss areas of biological wealth. You're going to
3 explain to the Committee what that means.

4 And then Exhibit D to the application, we are
5 required to discuss impacts to plant life and wildlife,
6 and I think those are the topics you're going to cover.

7 A. Yes. Let's go ahead and go into bio, or
8 biological resources. Okay. So I think it's important
9 to point out, as you mentioned, Exhibit C, as I
10 mentioned earlier in a couple previous slides ago,
11 biological wealth is really -- concentrates on
12 threatened and endangered species and special status
13 species, both plant and wildlife. So that's really the
14 focus of Exhibit C. Exhibit D is more general
15 biological resources. I'm going to cover them
16 together, because I think it makes, you know, more
17 sense in this application to discuss them jointly.

18 So the first thing I want to point out is
19 that we did coordinate with Arizona Game and Fish
20 Department and U.S. Fish and Wildlife Service by going
21 and conducting an online -- or, using the online tool
22 to obtain information from both those agencies as to
23 the special status species that are likely to occur in
24 the project area. So we do that first, because we feel
25 like that's the first step to understand what are the

1 potential impacts to special status species or what's
2 out there.

3 We then conducted a field survey of the
4 project components themselves, as well as the
5 surrounding area or the surrounding habitat. So as I
6 did before, I'm getting to the punchline early. But I
7 think the second bullet really summarizes the gist of
8 the biological resources.

9 This area is very developed. Obviously, from
10 a -- in the Price Road corridor developed from that
11 employment and industrial-type land use, and it's
12 getting close to being built out. And again, almost
13 the entire area is disturbed.

14 Focusing on the transmission line that's
15 adjacent to the Gila River Indian Community, that's
16 also a disturbed existing right-of-way. So I think
17 that's really important to note, that not only is the
18 surrounding Intel campus disturbed, as well as that
19 Price Road corridor, but the transmission line itself
20 is in a disturbed existing corridor.

21 We've talked about the Gila River Indian
22 Community land use, and to the west of that existing
23 corridor is the Gila River Indian Community. But
24 again, very disturbed land use, from a biological
25 perspective, due to the active agriculture that's

1 ongoing on the Gila River Indian Community.

2 Q. When you say "active agriculture," are we
3 looking at fields that are in various stages of crop
4 production?

5 A. Correct. Yes. And you can see that from the
6 aerial photographs as well. As you're looking through
7 the map series that are in the application, you can see
8 those different type of agricultural fields, as well as
9 the vacant land that we talked about, which is the
10 disturbed and closed airport, as well as the medical
11 facility, just to make sure I cover all those, you
12 know, parts of the adjacent Gila River Indian
13 Community.

14 The Schrader substation, or the overhead
15 transition corridor, is literally the existing Schrader
16 substation, which is clearly a disturbed, fenced
17 substation, as well as the disturbed SRP-owned parcel,
18 which is to the west of the Schrader substation. And
19 again, we talked about that. And that, in and of
20 itself, is a very disturbed area. So those are the
21 project components.

22 So with that, that disturbed habitat really
23 reduces the overall habitat quality of the underlying
24 biological resources associated with the project
25 components.

1 Q. Do you just mean that those areas aren't
2 great places for animals and plants to live, because
3 they've already been bladed and dug up and developed in
4 one way or another, and so you're not likely to find
5 any sort of listed or endangered or special status
6 species in those places?

7 A. We did not -- on our field survey did not see
8 any of those species in the areas of the project
9 components. And yes, you're correct, based on that
10 disturbed nature, you would not necessarily find any
11 species directly affected in those corridors. There's
12 some species that I'll touch on here in a minute that
13 are likely to -- that are likely to occur and have
14 occurred during or close to these areas, but nothing
15 directly in the direct impact area of those project
16 components.

17 So with that, let's go to that. Let's talk
18 about any of the species that are likely to occur or
19 are known to occur. So as identified, we did not see
20 any of -- any species that I'm going to talk about when
21 we were out in the field on our survey, as well as some
22 of the SRP biologists also went out there recently and
23 did not see the species that I'm going to talk about.

24 I guess the first one is, it's not listed on
25 the summary slide, but I do want to mention it, it's

1 the burrowing owl. I think most of the Committee
2 Members may be familiar with this species. It's a
3 pretty common species to occur in agricultural fields
4 or berms or that type of thing. And so with the Gila
5 River Indian Community being to the west of the
6 existing line, there is a potential for that species to
7 occur.

8 We did not see any active -- any active nests
9 or any burrowing owls, but again, we're not in nesting
10 season. So, you know, I don't want to discount that,
11 but I do want to mention that we've not seen those in
12 the survey or the recent review of the area.

13 But with SRP's proposed mitigation that was
14 included in Exhibit C, and specifically it's included
15 in Table C-2, those are the mitigation measures that
16 SRP proposes and would conduct in order to minimize any
17 potential impact to those species. So specifically,
18 there is one that addresses burrowing owls.

19 I do want to also mention, there is a known
20 bald eagle's nest that is located on the Gila River
21 Indian Community that is to the west of the existing
22 69 kV transmission line. This is a nest that has had
23 eagles' nests in it in previous years during nesting
24 season. We were out there, and have recently been out
25 there, not during nesting season. We did not see any

1 eagles, but again, this nest is known to be active.

2 It's considered an urban eagle basically
3 because it lives and thrives in a very urban
4 environment. It has been there and nested while Intel
5 has been under construction and other areas of the
6 Price Road corridor have been under construction, and
7 it has -- again, it has successfully nested and fledged
8 baby eagles in previous years.

9 It is a nest that is -- I do want to also
10 mention that the -- that SRP has monitored -- the Gila
11 River Indian Community has an active eagle watcher
12 watching this nest during nesting season, and SRP has
13 coordinated with Arizona Game and Fish Department and
14 U.S. Fish and Wildlife Service on this particular nest
15 in previous seasons. Again, it is very important to
16 note that this is one that the agencies, SRP and the
17 Gila River Indian Community, are very familiar with the
18 nest and are committed to make sure that the nests --
19 if nesting occurs during construction, that we have a
20 nest monitor out there and we are protecting the nest
21 from negative impacts.

22 Q. I think this is where I said, Kenda, I really
23 want to have a map of that nest and photos of the
24 nests, and you said no.

25 A. I absolutely suggested that we should not

1 identify where nests are located. It is, for obvious
2 reasons, similar to cultural resources. A bald eagle's
3 nest, we want to limit the public from going and
4 viewing it or disturbing the nest, and that can occur
5 if we identify where nest locations are. So we do not
6 identify those, but I can assure you that it is on the
7 Gila River Indian Community and to the west of the
8 transmission line.

9 Q. I guess the point is, as with cultural
10 resources, we're careful not to disclose the location
11 of bald eagle nests and archeological sites within the
12 project area, right?

13 A. That's correct.

14 I'll also mention, and I did mention it, but
15 the mitigation measures -- I'll just go back and make
16 sure that I've covered where everything is in the
17 application just for cleanup of this one. Table C-1 in
18 the application in Exhibit C includes that list of
19 species that I talked about that we obtained from
20 Arizona Game and Fish Department and the U.S. Fish and
21 Wildlife Service. Exhibit C-1 includes the actual
22 reports that were downloaded associated with those two
23 toolkits or downloaded information, so we went ahead
24 and included those in Exhibit C-1. And then Table C-2
25 includes those SRP mitigation measures that I

1 mentioned.

2 Q. Anything else on the biological resources?

3 A. I think that's -- that summarizes it.

4 Q. Okay. Let's start with visual resources.

5 This section, we've got a -- we've created -- there are
6 four simulations in the application, and then we've
7 added four more. So there's eight simulations to go
8 through, but we can start that process. But I think
9 you're going to start by telling us whether or not
10 there's any unique scenic areas within the project
11 area?

12 A. That is correct. So there are no designated
13 scenic areas in the project area. So we always
14 identify if there are existing or known designated
15 scenic areas. We don't have that here. But we do want
16 to include visual representation or simulations of the
17 structures in areas where the public or residences or
18 sensitive receptors, in this case that's predominantly
19 residents, would view the project component, so we did
20 that.

21 Q. Great. Why don't we start.

22 A. Okay. So on the screen, L42 and R76, we have
23 a map of where we took key -- or, where we identified
24 key observation points. So you'll hear me talk about
25 KOP. That is what is a key observation points, or

1 that's what that stands for.

2 We also have this map on your placemat, which
3 is in front of you. You may have looked at that and
4 wondered why that was the map included. It definitely
5 includes the project component map that you've seen
6 throughout the presentation, but it also includes the
7 key observation points. So as we go through
8 everything, we'll look at both the proposed view, and
9 then we'll simulate in the project components and look
10 at that. And I'll discuss each KOP and reference this
11 map. And this map is Exhibit -- it is SRP-20.

12 Q. So the map that we have on the screen that
13 shows the eight KOPs that you're going to cover which
14 will show an existing -- the existing photo and then
15 the simulated condition once the project is completed,
16 those are at SRP-20. I mentioned that there are
17 four -- that we originally prepared four simulations.
18 Those are contained in Exhibit E to the application.
19 And then the additional four, which make up the total
20 eight that are shown on the map for L42 and R76, those
21 are found at SRP Exhibit 21. Do I have that right?

22 A. That is correct. And I appreciate you
23 covering that. I was going to cover it as we went
24 through, but to your point, yes. So we will -- I'll
25 reference which ones were in the application and which

1 ones we have produced since filing our application and
2 included in SRP-21.

3 Q. Thank you.

4 A. Okay. So let's start with KOP 1. And again,
5 it is on the screen right now and I will -- okay. I'm
6 going to go back. So you can see where No. 1 is
7 located. And this is looking West Queen Creek Road and
8 88th Street. So it's looking southwest. Here we go.
9 So on R77 you will see the proposed view and on L43
10 you'll see the existing view, so I'll talk about each
11 one.

12 So again, on your KOP map you can see where
13 this was taken. You can see the City of Chandler sign
14 in the foreground of the existing view. You can see
15 the corridor or some vacant land in the middle ground
16 and the existing 69 kV line in the background.

17 On the proposed view, on R77, you can see the
18 simulated structures that Mr. Heim spoke about in his
19 previous testimony. You can see those structures right
20 here. Again, the 230 line with the 69 under-build.
21 Again, this is the Henshaw-to-Intel segment, and in the
22 far background would be the Gila River Indian
23 Community. So to the west of this line is the Gila
24 River Indian Community.

25 Q. So R77 shows the tangent structure that would

1 be located kind of in that -- kind of that midpoint on
2 Old Price Road, with R77 showing the new simulated
3 structure which carries the new 230 kV circuits and the
4 69 kV under-build. And it's taller, certainly, than
5 the existing 69. Do you know -- Ms. Pollio or
6 Mr. Heim, can you indicate what we've simulated the
7 height of that structure to be?

8 MR. HEIM: I believe those are simulated in
9 the 150- to 160-foot range that I mentioned previously.

10 MS. POLLIO: So as you mentioned -- I'll just
11 also note, as the structures are higher or taller with
12 the going from 69 to 230, they are spaced out a bit
13 farther apart, so there would be ultimately less poles
14 or structures. But yes, they are taller, and from a
15 visual perspective that would be the -- what the impact
16 of the viewshed would be is just a taller structure
17 here.

18 BY MR. DERSTINE:

19 Q. We probably have time for one more. Go on to
20 the next KOP before we break for lunch.

21 A. Okay. So the next KOP is KOP 2. So on the
22 left screen, L44, I'll point to KOP 2, and you can see
23 this is taken down south of that Henshaw segment. So
24 we'll go ahead and show you where this is taken from.
25 This is inside the Sun Lakes community. You can see

1 that we're located at East Copper Drive and South
2 Illinois Avenue. We're looking north. So again, this
3 is due north inside of the Sun Lakes subdivision.

4 The existing view is on L45. You can see the
5 wires in the background of the existing transmission
6 line. You can see them right here.

7 And then the proposed view, I'm going to go
8 ahead and look at R79, the proposed view shows the
9 proposed -- right here, the simulated structures here,
10 and you can see the turning structures in this
11 viewshed. You can also see the simulated structures in
12 the background as well.

13 So again, the existing view has the disturbed
14 corridor in it. It obviously -- these houses are
15 backing up -- so the wall between Intel property and
16 Sun Lakes subdivision is the wall in these homes'
17 backyard. So these homes back up to the Intel campus.
18 So you can see the existing -- I'm sorry -- the
19 proposed simulated structures in the viewshed, but
20 they're all on Intel's campus in that disturbed
21 corridor where there is an existing line, and obviously
22 there will be a lot of new construction and the two new
23 fab facilities in that area.

24 Q. So if I lived in Sun Lakes at that northwest
25 corner and my backyard backed up to the Intel campus,

1 that's going to be the change that's going to occur out
2 my back door?

3 A. That is correct. And you can notice from the
4 KOP map that's on the placemat, or the aerial
5 photograph on the maps that we've included, there are a
6 number of houses on that back -- or, what I would
7 consider where their backyard is or their back wall is
8 Intel's campus. And so this is one of them, and it's
9 the one -- this is really that corner, that northwest
10 corner of Sun Lakes. So you're kind of at that
11 farthest northwest corner of the Sun Lakes community.

12 Q. And so I gather that -- Mr. Heim spent some
13 time talking about the fact that once the overhead
14 route comes down Old Price Road and then turns onto the
15 Intel campus, it then transitions underground. And
16 looking at R79, are we looking at just a turning
17 structure or are we also looking at the riser structure
18 that takes the project underground?

19 A. So you're looking at -- you can see there's
20 -- I'm sorry. Going back. Okay. So you can see here
21 the tangent structures in the background, turning
22 structure, and a riser pole. And we have some other
23 simulations of riser poles.

24 MEMBER LITTLE: Mr. Chairman.

25 CHMN. KATZ: Yes, go ahead.

1 MEMBER LITTLE: We have an echo here.

2 Will that view differ depending on whether
3 the line ends up on the west side or the east side of
4 Old Price Road?

5 MR. HEIM: Not appreciably. Let's see if I
6 can keep from shooting my eye out here. So the
7 difference in this viewshed, if we were to use the east
8 or west side of Old Price Road -- so I'm going to
9 highlight on R79 here. The structure I'm circling
10 right now is the turning structure. And then these in
11 the distance, this one and this one, are the -- what
12 form the north and south alignment along Old Price. If
13 we select the east or the west side, we would see these
14 structures shift east and west in this viewshed, like
15 I'm showing here. But the riser structure here, and
16 there is another one that happens to fall behind this
17 tree in this simulation, those would remain in
18 essentially the same position.

19 BY MR. DERSTINE:

20 Q. So the two risers, you're only able to see
21 one. And I guess it's a side view, so we're not seeing
22 kind of those trident arms coming out to the side that
23 we've seen in the simulations, but that's the riser
24 there in the middle of R79. And you said the second
25 riser, which would carry the second circuit

1 underground, is behind the tree?

2 MR. HEIM: That's correct. And we do have a
3 future simulation that shows that a little more
4 clearly.

5 CHMN. KATZ: And that last question was by
6 Member Little and the answer by Mr. Heim.

7 MR. DERSTINE: And I'm sorry, Member Little,
8 did you have further questions on that? I jumped in.

9 MEMBER LITTLE: No, thank you.

10 BY MR. DERSTINE:

11 Q. The next KOP, does that talk -- does that
12 maybe give a better illustration of the risers?

13 A. It does. I'm giving a preview if we want to
14 cover it now, or if we want to take a break. But yes,
15 it does.

16 Q. We can cover it now, and then I think we'll
17 break. Let's do that.

18 A. Okay. So KOP 3, I'm kind of -- I'm pointing
19 this out. And I'll remind everyone that the ones that
20 I have reviewed are all part of the application in
21 Exhibit E.

22 Here is Exhibit 3 -- I'm sorry -- KOP 3. And
23 you can see that the view is not looking directly
24 north. The arrow is pointing to the northwest. But
25 again, it's basically -- you can see in a very similar

1 location, but at a different angle. But the angle is
2 such, and we'll go to this -- to our existing view and
3 our proposed view. This is a little bit closer to
4 where those are, so you can see the simulation and we
5 don't have the vegetation or things like that in the
6 way. So this is, again, looking northwest, and we're
7 on the southwest corner of the Intel property at Old
8 Price Road.

9 So the existing conditions are on L47. You
10 can see the existing 69 kV line, again, running
11 north/south from Intel up to Henshaw.

12 The proposed view, which is on R81, you can
13 see the structures that we just spoke of. So you can
14 see the tangent structures in the background that are,
15 again, running north/south to connect with a turning
16 structure, and then you can see the two riser poles
17 that are to the east of that turning structure. So
18 this gives you a little bit unobstructed and clear view
19 of what the simulated project would look like in this
20 area.

21 MR. DERSTINE: All right. We've made it as
22 far as KOP 3. Why don't we stop there and, with the
23 Committee's permission, we'll take our lunch break and
24 we'll move on to KOP 4 after lunch.

25 CHMN. KATZ: That sounds good. It's about

1 seven minutes or so after noon. We'll begin at about
2 1:15, if that works for everyone, and ask you to be
3 back here promptly, but enjoy your lunch or get a good
4 nap. We'll see you soon.

5 (Off the record from 12:06 p.m. to 1:20 p.m.)

6 CHMN. KATZ: We should go back on the record.
7 I think we have a quorum. I don't think we've lost any
8 participants since earlier today.

9 The one thing I do want to point out is that
10 Mr. Derstine made copies or his staff made copies for
11 us of the redrafted and proposed CEC. And rather than
12 waiting until the end of this hearing, I wanted to get
13 it distributed amongst the attorneys and the Committee
14 Members so that when we post them up, probably sometime
15 tomorrow, that we won't have to argue a lot. We'll
16 know where we agree or disagree.

17 But anyway, if we're ready to continue,
18 Counsel, feel free to do so.

19 MR. DERSTINE: All right. Let me fix my mic
20 here and get myself resituated. Looks like we have the
21 Committee virtually on the screen.

22 BY MR. DERSTINE:

23 Q. Okay. Well, Ms. Pollio, we ended, before the
24 lunch break, on KOP 3. I think we're ready to talk
25 about our Key Observation Point No. 4.

1 A. We are. So where KOP 4 is located -- again,
2 this is a KOP that was also in Exhibit E of the
3 application. You can see KOP 4 is from the Sun Lakes
4 subdivision looking due north right at RS-28. So on
5 the right screen we have the rendering that Mr. Heim
6 covered in his testimony that just identifies, you
7 know, how we would simulate the substation into the
8 existing conditions photo. This is, again, the
9 rendering of the substation. And then what we did is
10 we took the next photo and we simulated the substation
11 in.

12 Okay. So this is from the South Cactus
13 Flower Court inside of the Sun Lakes subdivision. You
14 can see that we're at a cul-de-sac at the end of that
15 court. And this is the wall, the wall that I've been
16 mentioning as the wall between the Intel property
17 campus and the Sun Lakes subdivision. So this is kind
18 of the closest you could get to the wall, because the
19 majority of the time you've got houses that back up to
20 this wall. So this is where there's actually a
21 cul-de-sac.

22 And you can see in the existing view, which
23 is L49, you can see, again, the wall in the foreground,
24 and in the background you can see the Intel campus. So
25 you can see those Intel buildings in the background.

1 In R84 we've simulated in the substation
2 based on the rendering that I just showed on R83. And
3 you can see, again, very similarly, the foreground is
4 the wall. The background, you can see the substation
5 has been simulated in. It is, you know, a little bit
6 difficult to see from this view, but you can see that
7 the RS-28 structures are, and those are structures
8 associated with the substation, are closer than the
9 actual fab facilities that are in the background, the
10 far background. So this is one view of the RS-28
11 substation, so you can kind of -- again, it is -- off
12 into the distance there is some vegetation there that
13 is blocking it a bit, but you can see how that would
14 look if you were standing on South Cactus Flower Court.

15 Q. So I guess the -- by the time we are standing
16 at KOP 4 in that cul-de-sac looking over the wall at
17 the Intel campus, the structures have gone
18 underground -- or, the line has gone underground. And
19 what we're seeing there kind of peaking above the wall
20 on R84 are A-frames and other parts of the substation
21 structures themselves, but we don't have 120-, 130-foot
22 structures up in the air. And therefore, there's not a
23 lot of visual impact from the new RS-28 substation?

24 A. That is correct.

25 Okay. We'll move on to KOP 5. And you can

1 see KOP 5 is located on the north side of the existing
2 Schrader substation and it's looking basically to the
3 kind of southwest, really closer to the west versus the
4 southwest, and I'll show you here in a minute how that
5 looks. But again, this is KOP 5.

6 So this is the existing view from South
7 Virginia Way looking southwest. This is, again, on the
8 northern side of the substation. You can see this is
9 the newly developed -- it's a condominium complex.
10 They have -- it's a two- or three-story multiunit in
11 each one of the buildings. But again, you can see what
12 the existing view is. You've got the -- these are the
13 structures that are coming out from the substation and
14 looking -- and that are traveling to the west, but
15 looking southwest.

16 And then in the proposed view, which is R86,
17 you can see that we have simulated in new structures.
18 So again, we've talked about this as being where there
19 would be new structures. Here is the new turning
20 structure and here is probably the most -- the visual
21 that you would see the most, see the most change into
22 this view. We've talked about this a lot. This is the
23 riser pole that was located, again, along the railroad
24 corridor. So the railroad corridor is here. In the
25 background going north to south here, this is the riser

1 pole. So again, on the north segment this is the riser
2 pole that would take this underground, and then the
3 underground route would proceed from that riser pole.

4 Q. So that riser structure is the green X that
5 we saw on the flyover simulation that sits to the west
6 of Schrader and is kind of the end of the line where
7 the new circuit pulls off of the existing
8 Corbell-to-Schrader line, and at that point the line is
9 going to go underground along the railroad when we get
10 to the point of constructing that circuit?

11 A. That's correct. So you're really at that
12 corner of the railroad. You know, so the railroad is
13 right there to the west of that structure.

14 Q. And the structure to the left of that is the
15 -- what's simulated to be the new turning structure
16 that gets us to the riser, is that right?

17 A. I may have Mr. Heim chime in here, but this
18 is the -- this is the new -- would be a new turning
19 structure that would replace the existing structure
20 here. So they look very similar in height and
21 dimensions. You can see there are some -- there are
22 some changes to the pole, but from a visual perspective
23 it's minimal with these new poles.

24 MR. HEIM: Yeah. So the thing I would add to
25 that is really the difference here, pointing at L51, in

1 this image we can see that the single
2 Corbell-to-Schrader circuit comes in from the north and
3 then makes the 90-degree turn to go kind of behind us
4 in this image to the east into the Schrader buswork.

5 The difference when we look at R86 is similar
6 structure height, but we've introduced these what are
7 called dead end arms. And what's happening there is
8 you see a slack span that goes from the riser structure
9 to the dead end arms that are located on what would be
10 the northeast quadrant of this structure. On the
11 opposite side of the structure, that same
12 Corbell-Schrader circuit comes in, makes the 90-degree
13 turn on the southwest quadrant of the structure, and
14 then goes again to the east, sort of behind us in this
15 image, as well as the new RS-28 circuit, which would go
16 from these arms also to the east into the Schrader
17 substation.

18 MR. DERSTINE: So the lines that we can see,
19 looking at R86, extending out from the dead end
20 structure, that's where the Corbell-to-Schrader line
21 continues to the north along the railroad on the east
22 side, is that right?

23 MR. HEIM: That's correct.

24 MR. DERSTINE: And the riser structure that's
25 there to the right of the -- of that dead end

1 structure, that turning structure, is where the new
2 circuit would go underground along the railroad and
3 head to the south?

4 MR. HEIM: Yes, sir.

5 MS. POLLIO: I will also point out that,
6 starting with KOP 5, as we've mentioned previously,
7 these are new simulations that were conducted or
8 developed and included in SRP Exhibit 15.

9 BY MR. DERSTINE:

10 Q. Or SRP-21?

11 A. I mean 21. I apologize.

12 Q. Thank you for that.

13 A. Okay. The next is KOP 6. And you can see,
14 again, very similar location, a little bit farther to
15 the east. We're going to be looking more due east down
16 kind of the line. But again, still on the north side
17 of Schrader, still similar context of what we're
18 simulating.

19 So you can see on KOP 6, L53, see the
20 existing Schrader substation. So you're able to see,
21 you know, parts of the substation as it comes into the
22 transmission line and then kind of the line that we've
23 been discussing that's on the north side. Here you go.
24 These are the existing structures.

25 And then in R88 you can see the simulation of

1 a couple things I want to point out. One is the
2 simulation of the new structure. So we just kind of
3 talked about it's the same simulation that we did
4 except, again, farther back. But you can see the
5 structures in this -- along this alignment have been
6 updated. Again, they are very similar in location,
7 similar in height, but you can see they have been --
8 they have been replaced. Again, you can see now the
9 double-circuit configuration.

10 I also want to point out, you can see -- I
11 will point out the riser pole that we just spoke of
12 close to the railroad is at the very end or the very
13 background of this simulation. I want to point out
14 I'll call it the other riser pole, or the riser pole
15 that is on the south side of the substation, is also in
16 this view. You can see this is what the riser pole
17 would look like from the north. As we move forward in
18 the next two simulations, we'll see a closer simulation
19 of this from the south, but this is -- I did want to
20 point out that this is the riser pole that was, again,
21 represented by a green X in the virtual route tour
22 that's on the south side of the Schrader substation.

23 Q. So what's off the frame, well, for both
24 images, is a built-out residential development,
25 correct?

1 A. That is -- yes, that is correct. The first
2 one was -- and I'll be talking about this in an
3 upcoming Exhibit H. But Inspiration at Pine Lake and
4 Enclave at Pine Lake are both subdivisions that have
5 been built out, and those are the subdivisions on the
6 north side of the -- of that road, East Zion Place.

7 Q. And I think when we were viewing the flyover
8 simulation we didn't have updated aerial photography to
9 show that subdivision. But it's completed now, it's
10 developed. I think folks have bought those homes. But
11 in any event, that development came up out of the
12 ground facing this existing substation. The only
13 change we're making to it is to double-circuit the
14 existing Corbell-to-Schrader line and adding the riser
15 structures that we've been showing the Committee in
16 these last few series of simulations, right?

17 A. Yeah, that is correct. I think it's an
18 important point that this view, the existing view, was,
19 you know, there when they bought the houses, and
20 they've bought, developed, and are living in these
21 houses. Because it is a fairly new development, so
22 this existing view was there. And again, the proposed
23 views, you can see there are some changes, but the
24 changes are very consistent with changes inside of a
25 substation or lines emanating from a substation and,

1 you know, we spoke about that. So overall, from this
2 viewshed, the impacts would be negligible.

3 Okay. Now, we're going to move to the south
4 part of the substation. And the first one is right
5 here, and that is KOP No. 7. And again, KOP No. 7 is
6 looking from the vacant lot, basically. You'll see the
7 road that we've talked about that goes between the
8 vacant lot and the SRP Schrader substation in the
9 foreground. I'll go ahead and flip to this.

10 So again, we'll look at the existing view.
11 What I was mentioning is, South Pine Lake Way, or that
12 road that travels between the Schrader substation and
13 the vacant SRP-owned lot, is in the foreground. Again,
14 you can see -- here is the wall for the Schrader
15 substation. You can see the chain link fence as well.
16 So basically the boundary of the -- you know, it bounds
17 the substation itself. Those are existing structures
18 inside of the substation. So again, you know, it is
19 definitely a built substation with many vertical
20 structures that are -- you know, that are large
21 structures associated with the substation or lines
22 emanating from the substation.

23 In the proposed view of R90, Mr. Heim spoke
24 about how we would transition inside the substation to
25 underground. Again, here is the riser pole that would

1 be put -- it's the riser pole I just spoke of that's on
2 the south side of the substation. And this is the
3 easement that's between the wall of the Pine Lake
4 community to the south and the chain link fence of the
5 Schrader substation.

6 So in the existing view of L55, you can see
7 some vegetation and some trees that are more mature and
8 larger. SRP would need to clear those trees in order
9 to underground the line from that riser pole to get to
10 the railroad, which, again, the railroad track is to
11 the west or behind. So if I'm taking the photo, the
12 railroad track is behind me. So the underground
13 segment would travel along or within this easement,
14 under this road, to the railroad tracks, and then
15 proceed south along the railroad tracks underground.

16 In the proposed view, you can see that we did
17 represent some vegetation that would be planted.
18 Again, we tried to represent it best we could, you
19 know, where we are today. It's going to be smaller, of
20 course, than the mature trues, have a little bit
21 smaller root structures. So this is the best
22 representation of what SRP has committed to do in terms
23 of replanting, you know, where we can inside of that
24 easement.

25 Q. So in looking at, well, both L55, in terms of

1 the existing view, and then R90, the proposed view, it
2 looks like there's some large trees that are inside,
3 which would be the backyard wall, the patio wall for
4 those homes, and then there's some vegetation that's
5 outside. It's the vegetation that's in the easement
6 that's going to have to come out in order to allow us
7 to build a duct bank and to put the new circuit along
8 there. And then the proposal is in the proposed view
9 to replant that area, but it's going to take some time
10 for those --

11 A. Correct.

12 Q. -- bushes or smaller trees to grow up, and
13 that's just part of the deal?

14 A. That is correct. And you can also see the --
15 what would be the backyard, so on the south side of the
16 wall or inside of the yards. So obviously, on the
17 north side of the wall, this is an area where the
18 underground would be. But I also want to point out
19 that most of the houses have a backyard that do have
20 some pretty mature vegetation that is blocking the
21 view.

22 However, I think it's important to note that,
23 again, this substation has been there, has, you know,
24 these type of structures and these type of facilities,
25 you know, have been there and are in, similarly to Sun

1 Lakes, are in the viewshed of the backyards of these
2 homes.

3 MEMBER GRINNELL: Mr. Chairman.

4 CHMN. KATZ: Yes, please.

5 MEMBER GRINNELL: We're talking about
6 vegetation on some of these. On the underground
7 sections that are going to be more of a -- not the
8 neighborhood, but on this particular corridor here, are
9 you being requested or required to reclaim the land
10 afterwards and replant and do all this other stuff, or
11 is that going to be just left barren?

12 MS. POLLIO: I'll let Mr. Heim, since that's
13 an SRP commitment.

14 MR. HEIM: Sure. So the reason that we're
15 removing the existing mature trees in that easement is
16 to avoid any type of an intrusion by the root system
17 into our duct bank. And we're planting back vegetation
18 at the extreme southern edge of that easement just to
19 do the best that we can to restore the existing
20 condition there for the neighbors. To Kenda's point,
21 we can only take that so far, as far as the size of
22 tree that goes back there, just because we can't do
23 anything that would compromise the duct bank, but we're
24 trying to reestablish what's there as best we can.

25 MEMBER GRINNELL: But that won't be an issue

1 for you down the road, will it?

2 MR. HEIM: No. The intent is to select
3 vegetation that won't grow to an extent that would to
4 compromise the duct bank.

5 MEMBER GRINNELL: Okay. Thanks.

6 BY MR. DERSTINE:

7 Q. Your last simulation?

8 A. Okay. So the last simulation is KOP 8, and
9 you can see where that is on your placemat. Again,
10 it's looking -- we're in the south side of the
11 substation, inside the subdivision. Again, kind of
12 similar where you can see the houses. But this is East
13 Alamosa Drive looking northeast.

14 So you can see the structures. It may be a
15 little hard on the screen, but you --

16 This laser pointer and I are not friends. I
17 keep advancing, so I apologize.

18 But you can see behind these homes the
19 existing structures that are associated with the
20 substation. You know, again, these are very large,
21 tall structures, and you can see them from the road.
22 So I do want to point those out because, again, we are
23 backing up to an existing substation.

24 The proposed view on R92, we took this view
25 because this is literally where the riser pole would be

1 seen probably most prominently because, again, you're
2 looking almost north at that riser pole from inside the
3 subdivision, so north, northeast. But you can see the
4 riser pole, so it does introduce, you know, one new
5 tall structure inside the substation. But, again, it's
6 needed. In order to get the line underground, we have
7 to have a riser pole or a transition structure. So it
8 is a structure that's needed. And again, it's in a --
9 inside of a substation that has very similar-type
10 structures, you know, from a vertical and height
11 perspective. So this is one that we just wanted to
12 point out from the closest place that you probably
13 would see that riser pole on the south side.

14 Q. I guess to that point, Ms. Pollio, I mean, in
15 terms of selecting our KOPs and these simulations,
16 there's a lot of areas where we could have simulated
17 views where there's not any sort of dramatic change.
18 What you've done here is tried to pick the places, the
19 observation points where there will be a significant
20 change, or at least a change in terms of a viewer --
21 well, an amount of traffic and such that people are
22 going to see it and that it's -- it's important for us
23 to note this is the kind of change that you're going to
24 see from the project, right?

25 A. Yes, that's correct. And, you know, when you

1 select KOPs, or key observation points, exactly what
2 you said, it is -- we are trying to make sure that we
3 represent where the visual change would occur the most
4 or have the most impact. And so, you know, again, many
5 of these other KOPs, the change is very slight to
6 minimal. This is one where you do see a change, you
7 see a vertical change; however, again -- and that's why
8 we selected it, to make sure that we were representing
9 that closest viewer or sensitive receptor. But, again,
10 there are -- it is inside the substation, so I think
11 it's important to note that, and obviously the existing
12 structures that are inside there as well.

13 Q. This question may be more for Mr. Heim. In
14 looking at the simulated view of the riser, do you know
15 what the -- what we've simulated the height of that
16 structure to be? It looks tall to me, but maybe it
17 needs to be that tall. I'm just asking.

18 MR. HEIM: Sure. So the simulation
19 represents a riser pole that's 135 feet tall. Based on
20 our early modeling for design, we suspect it may wind
21 up being a little shorter than that, maybe 130 feet,
22 but we can't necessarily commit to that at this point.
23 Depending on placement, it could very well vary from
24 120 up to 150 feet as kind of a design envelope.

25 MR. DERSTINE: What determines or drives the

1 height of the riser structure?

2 MR. HEIM: The main thing is overhead
3 obstacles that exist between the riser structure itself
4 and the overhead equipment and spans within the
5 substation bay. So we're varying the height and
6 placement of that riser structure to navigate over and
7 next to the energized buswork and equipment inside of
8 the substation.

9 MR. DERSTINE: And that's the circuit -- or,
10 we've identified in some cases the Circuit 1 that's
11 going to be moving along the southern end of the
12 Schrader substation, do I have that right?

13 MR. HEIM: That's correct.

14 MR. DERSTINE: And if we were to -- instead
15 of building that circuit underground, if we were simply
16 to use overhead construction coming out of the
17 substation, would the structure heights be the same?

18 MR. HEIM: They would be pretty close,
19 equivalent to what we see along the north side.

20 MEMBER HAENICHEN: Mr. Chairman.

21 CHMN. KATZ: Go ahead, Mr. Haenichen.

22 MEMBER HAENICHEN: Just looking at that riser
23 pole, I don't understand why -- look at the top set of
24 arms coming out. Why can't that vertical piece between
25 the arms be truncated by about 20 feet? I don't see

1 any value to having that sticking up like that.

2 MR. HEIM: So making sure I understand the
3 question correctly, Member Haenichen, you're talking
4 about --

5 MEMBER HAENICHEN: That piece, yes.

6 MR. HEIM: -- this piece right here?

7 So there's two things that are happening in
8 that vertical component of the structure. The first
9 is -- hopefully everybody can see them. I'm kind of
10 highlighting the top end of the terminations. That's
11 where the transition to the overhead conductor occurs.
12 So roughly at that same elevation, and perhaps a little
13 bit higher, is where the top phase of the energized
14 conductor will terminate on the pole.

15 The extent that it rises above that is where
16 we connect what we call our shield wire. So the shield
17 wire is a wire that's not energized at all. It's
18 suspended above the energized conductors, and what it
19 does is it provides lightning protection for the
20 conductor itself and then the equipment within the
21 substation that is electrically connected to that
22 equipment.

23 So the reason for that vertical extent is,
24 first, we have to provide vertical spacing from the top
25 energized phase position down to the middle one. And

1 then in addition to that, we need to provide an
2 electrical clearance between the top energized phase
3 position with the deenergized shield wire position. So
4 we're just separating those conductors out for
5 clearance purposes.

6 MEMBER HAENICHEN: Okay. Well, that's a good
7 explanation, but it's not shown in the simulation.

8 MR. HEIM: It is shown, but the challenge is
9 that those conductors in this simulation are making
10 their way kind of away from us as the viewer and down
11 into the substation. So it's just -- it's challenging
12 to make them out given the size of the wire. Yeah, if
13 we can zoom in just a -- on the TV it shows up pretty
14 well.

15 MS. POLLIO: I know. It does show up much
16 better on the television.

17 MR. HEIM: So Megan, I don't know if you can
18 maybe highlight those conductor positions on the TV
19 screen. Oh, once you zoom in, you can't point.

20 Member Haenichen, when you see it on the TV
21 screen from where you're sitting, can you see the --

22 MEMBER HAENICHEN: Yeah, I can see them.

23 MR. HEIM: -- conductors?

24 MEMBER HAENICHEN: Yes.

25 MR. HEIM: Does that address the question?

1 MEMBER HAENICHEN: Yes, it answers it.

2 BY MR. DERSTINE:

3 Q. All right. That's the last of our
4 simulations in terms of -- I think -- I think the
5 Committee can make its own conclusions about the visual
6 impacts of the project. I think the eight simulations
7 we've shown to the Committee do a good job of
8 indicating where there's going to be a change visually
9 as a result of the project.

10 Is there anything else you wanted to note in
11 terms of the visual aspects?

12 A. Nothing on visual. I will say that it's nice
13 having the engineer and project manager sitting up here
14 to explain the structures, much better than the visual
15 simulation person, but yes. So thank you, Zack.

16 MEMBER GRINNELL: Mr. Chairman, just real
17 quick.

18 CHMN. KATZ: Yes.

19 MEMBER GRINNELL: Mr. Heim, forgive my
20 ignorance here, but in the 230 kV lines that we've been
21 working on since I've been involved -- on the old 69s
22 you used to see the transformers. I've never seen a
23 transformer on this. Am I just not seeing the right
24 poles?

25 MR. HEIM: So by transformer on an overhead

1 line, I think you're probably talking about like a
2 distribution-size transformer, looks kind of like a
3 large trash can, I guess is the best way I can --

4 MEMBER GRINNELL: Yeah. How is that being
5 incorporated?

6 MR. HEIM: So by the time we get to the
7 230 kV voltage level, the transformers are so large
8 that I can't build a steel pole large enough to support
9 it, so those are inside of the substation on the ground
10 surface. And just to give you a sense for the scale of
11 a 230 transformer --

12 MEMBER GRINNELL: I would imagine it's huge.

13 MR. HEIM: -- it would consume this entire
14 square of the ceiling, floor to ceiling, would be the
15 size of that transformer. So it requires a very large,
16 60-axle semi tractor trailer to move it around.

17 MEMBER GRINNELL: All right. I was just
18 curious. I just thought, what am I missing here?
19 Okay. Thanks.

20 MR. HEIM: Yep.

21 BY MR. DERSTINE:

22 Q. Exhibit E deals with the scenic and visual
23 impacts, but it also requires that we discuss any sort
24 of historic or archeological sites that are within the
25 vicinity of the project. Why don't we turn to that

1 topic, please.

2 A. Yes, it does. So we'll go ahead and start
3 with cultural resources. Okay. So the first thing
4 that we do with cultural resources is conduct what's
5 considered a Class I records search. And that is
6 exactly what it implies, is that we look at the area
7 around the project components and do a records search.
8 So this is known records, known archeological or
9 cultural surveys that have been conducted in the area.
10 So we do that, and that -- the results of that record
11 search are included in Exhibit E-1 of your application.

12 We then consult with the tribes. So what we
13 do is we send a letter, as well as the Class I record
14 search, to the interested tribes. And so the
15 interested tribes are tribes that -- there's an online
16 toolkit that identifies all tribes that would have any
17 interest in our study area. So there's a number of
18 tribes, and we send letters to all of those tribes with
19 the Class I records search attached. Those letters are
20 included in Exhibit E-2.

21 I will note that we did receive one letter
22 back from the Hopi Tribe, and that letter is included
23 in Exhibit SRP-11. The crux of what that letter says
24 is that they, that tribe, would like to continue to be
25 consulted with and would like to receive the results of

1 the Class III pedestrian survey. So I'll get to that
2 in a minute, but the SRP archaeologist associated with
3 the project has responded and informed the Hopi Tribe
4 that absolutely SRP will continue to coordinate and
5 consult with the Tribe and provide that information.

6 But let me go back, before we get into the
7 Class III pedestrian survey, and talk about the results
8 of the Class I records search. So that Class I records
9 search resulted in there are no known previously
10 recorded cultural resources that are within the
11 project components. So while there have been some
12 other Class I and Class III surveys that have been
13 conducted in the area, there are no known cultural
14 resources that are directly impacted by the project
15 components. There are no historic resources directly
16 impacted by the project components as part of this
17 application.

18 However, I do want to point out that the
19 conveyance canal that we have spoken about that is east
20 of the substation, as well as the railroad corridor,
21 the railroad itself, are considered historic resources.
22 The project will not directly impact those resources.
23 Those resources will stay intact. And we, again, will
24 coordinate -- and that's for the underground portion,
25 of course. We will continue to coordinate with SHPO

1 and the tribes as we move through construction.

2 Specifically, SRP has committed to conduct a
3 Class III pedestrian survey. So the difference in the
4 Class I and the Class III is really the Class III is,
5 again, what it sounds like, it is a pedestrian survey
6 where archaeologists go, walk transects where the route
7 or the project components fall, and ensure that there
8 are no visible recorded sites. They prepare a report.
9 And then we coordinate with the State Historic
10 Preservation Office, or SHPO, and the interested tribes
11 with the results of that Class III pedestrian survey.
12 And then that, as well as other mitigations, would
13 ensure that there would be no direct or negative
14 impacts to cultural resources associated with the
15 project.

16 Q. The Hopi Tribe, because they sent in a
17 letter, are they the only tribe that gets the
18 additional consultation as you move forward with the
19 Class III surveys, or will you continue to consult with
20 all the tribes?

21 A. SRP continues to consult with all tribes that
22 were identified, as well as SHPO; however, we
23 definitely encourage the tribes to respond. And we see
24 that a lot, where the tribes definitely want to
25 ensure -- by responding, they ensure that they're

1 consulted with. But to your point, all tribes would be
2 provided that Class III pedestrian survey.

3 Q. Thank you. Recreation. One of the areas
4 that we're required to analyze is whether there's any
5 impacts to existing recreational areas or whether the
6 project itself creates recreational opportunities. I
7 think you're ready to cover that topic now?

8 A. Yes. We'll go ahead and start with -- L60
9 just kind of provides an outline of the recreational
10 aspects of the project in Exhibit F of your
11 application. R96 is a map that shows the recreational
12 resources in the area, as well as directly within that
13 thousand-foot buffer that's on Figure F-1 of your
14 application.

15 So in general, recreation uses in the project
16 area are mixed and, as you can imagine, typically
17 associated with more urban and active recreation
18 associated with residential areas, as well as city
19 facilities. So, you know, to be specific, active
20 recreational activities or designated recreational
21 activities like golf courses, parks, designated parks,
22 or active recreational complexes. There are none of
23 those active recreation or designated recreational
24 areas inside the thousand-foot buffer that we analyzed,
25 but I did want to mention, you know, kind of in general

1 what the recreational uses are in the region or in the
2 area.

3 The only designated or recreational -- and
4 I'm going to say, they're not designated recreational
5 areas, but they are considered passive recreational
6 areas inside the thousand-foot buffer and associated
7 with the project area are the green areas associated --
8 or, included on Exhibit R96. Those green areas are
9 mostly associated with homeowner association green
10 space or open space or really catchment basins. You
11 know, they provide those catchment basins and green
12 space inside of those residential areas.

13 Specifically, the Henshaw-to-Intel segment
14 has no designated active or passive recreational areas
15 within the thousand feet. The closest ones, you know,
16 associated with that segment, the Henshaw to Intel, are
17 south, outside of the thousand feet, but associated
18 with the Sun Lakes community. So you can see some of
19 these -- the green being those parks and the yellow
20 being golf courses.

21 With the Schrader overhead transition
22 corridor, you can see over here, again, there are
23 similar passive open space facilities or areas
24 associated with the HOAs or the residential
25 subdivisions to the south predominantly. And then you

1 have got the consolidated canal, which, again, we've
2 spoken about, which, again, is not a designated
3 recreational area, but it is a path that is used or a
4 space that's used for running, biking, hiking, walking
5 in the area. So we do want to point that out.

6 So as required by Exhibit F in the
7 application, we identified that the actual project or
8 facilities associated with the project are not
9 available for recreation. There are no direct impacts
10 to any designated or passive recreational areas. I
11 will say that there could be temporary impacts
12 associated with the consolidated canal if we do go with
13 the option where the underground would be along the
14 consolidated canal, and those impacts would be
15 temporary in nature and associated with construction.

16 So all in all, the project will not have any
17 direct, long-term impacts on any type of recreational
18 facilities, but we do want to point out the potential
19 temporary construction impacts if we do use the
20 consolidated canal for underground.

21 Q. Okay. The last chapter on environmental
22 impacts in the areas that we cover in terms of this
23 analyzing the impact of the project has to do with
24 existing plans of governmental or private entities.
25 You touched on, in the outset, under Exhibit A, some of

1 the land use plans of the City of Chandler and as to
2 the Price Road corridor, but this is a little more
3 expansive in terms of looking at private entities,
4 whatever they're -- if they recorded a plat or they
5 have plans for future development, does this project in
6 any way impact those plans and those projects, and
7 that's what you're going to cover in this section.

8 A. That is correct. So this is Exhibit H,
9 existing plans. And I think probably the largest plan
10 in the area is one that we have definitely spoken
11 about, and that is the Intel expansion. That is a plan
12 that is inside the Price Road corridor, is part of what
13 we've spoken about that really is one of the drivers of
14 the project and the development of RS-28. So that --
15 first and foremost, we want to point out that the Intel
16 expansion itself is a plan inside the city of Chandler.

17 There are additional plans that are kind of
18 on the books with the City of Chandler and Maricopa
19 County, and so what we want to do is go through those
20 right now. And so the first one is -- let's focus on
21 the Henshaw-to-Intel segment. And you'll see the
22 future planned area developments that are inside the
23 city of Chandler and associated inside that
24 thousand-foot are in the green hatched pattern. And
25 specifically to the Henshaw-Intel segment, there are

1 three.

2 Let me see if I can do this without flipping
3 the slide.

4 So the three are up here closer to the
5 existing Henshaw substation in the northern portion of
6 the segment. The three are: The Price Road Commerce
7 Center, which is Sunbelt Holdings; Innovation Square,
8 Price and Queen Creek, LLC; and Wells Fargo Chandler
9 Campus, which is part of Wells Fargo. All three of
10 these are, again, considered planned area developments
11 by the City of Chandler in various stages. Obviously,
12 some of them are built, proposed.

13 And I will mention, and Sam can also address
14 this as well, but all three of those planned area
15 development developers that I just mentioned, we met
16 with all of them to basically go over the project and
17 make sure that they were aware of the project and
18 address their concerns. So just wanted to point that
19 out.

20 Next, is the Schrader overhead transition
21 corridor. And we have spoken about this a couple
22 times. There are two planned area developments to the
23 north of that transition corridor, and they are the
24 Inspiration at Pine Lakes, which is the condominiums I
25 spoke of and that those were in the simulations. The

1 Enclave at Pine Lakes is also to the north. I'll go
2 ahead and just give you a little more detail on this
3 these.

4 As we spoke of, they're predominantly built
5 out or developed. The Inspiration at Pine Lakes, there
6 are 93 units, two-story, as you can see in the
7 simulation photos, about three units per building. It
8 looks like, at the time we addressed this, about
9 90 percent occupied. There's no longer a sales office
10 there, so it is on its way to being fully developed.

11 The Enclave at Pine Lakes is also on the
12 north. It's to the east of the condominiums. It was
13 in the second KOP, or KOP 8. We couldn't see that, but
14 that was also the vacant lot that was in the virtual
15 flyover. There are 57 units, and these are houses. 56
16 are sold -- sold, lived in, or in construction. There
17 is -- the sales office looks like that may not be sold.
18 So again, we're looking at one or two -- one or two
19 units in that one that's not developed. So again, both
20 of those areas are pretty much fully developed.

21 The other thing that we did in order to
22 ensure that this community was fully aware of the
23 project is we pulled the property owner mailing list at
24 the very beginning of the project, when we started the
25 project in June, and then we repulled the mailing list

1 with the assessor's office in October. So we wanted to
2 make sure that any sales, any new property owners from
3 the time of, you know, June to October, we were
4 capturing those and those received -- and those people
5 received a notice of this hearing. So I wanted to also
6 point that out.

7 The last is, you can see, it's in Maricopa
8 County. It is the Old Price Road expansion. And so
9 this is this -- it's represented by a purple line. And
10 there are plans to expand Old Price Road on the western
11 boundary of the Sun Lakes -- Sun Lakes subdivision
12 between Sun Lakes and the Gila River Indian Community
13 boundary. So that's the last plan that's in this area.

14 Q. So Old Price Road dead ends there at kind of
15 the edge of the Intel campus. And there's some plan,
16 then, to extend Old Price Road further to the south for
17 some sort of -- is it planned for commercial or
18 business development, do you know?

19 A. There's really not a -- I mean, if you can
20 see, it is really built up between it. It's just, I
21 think, to provide -- it's to expand this on the other
22 side of the wall that gets you down to like Riggs Road.
23 Riggs Road is on the -- it's not completely south.
24 It's the road that is the east/west road between the
25 Sun Lakes HOAs. So Sun Lakes basically runs from this

1 Intel campus right here and goes down to Hunt Highway,
2 which is also bordered by the Gila River Indian
3 Community. So the whole Sun Lakes community built out
4 takes up that space.

5 Q. So the Old Price Road expansion is really
6 just extending the road for access, it doesn't involve
7 any sort of land use plan surrounding that, to your
8 knowledge?

9 A. Not that I'm aware of, no.

10 Q. All right. Anything else on plans and what
11 is your -- what's your final bullet or takeaway in
12 terms of does the project impact or impair any of those
13 plans?

14 A. Well, with the two planned area developments
15 to the north of Schrader that are built out, obviously,
16 you know, the land use is consistent with the
17 substation, and the homes were sold there at the
18 existing substation. So I think the impacts, again,
19 are minimal to negligible to those plans. They're very
20 aware of the project.

21 The PADs or plans to the north inside the
22 Price Road corridor, obviously these facilities are
23 consistent with the existing transmission line that's
24 already there on the back side of the property. The
25 proposed transmission line is not -- again, stays on

1 the back side of the property and is consistent with
2 development inside the Price Road corridor. So again,
3 overall, the impacts would be minimal to negligible to
4 any of the planned area developments we spoke of.

5 Q. And I guess to the point you had made
6 earlier, we've had conversations with those businesses,
7 the Sunbelt Holdings, Innovation Square, which is owned
8 by the Price and Queen Creek, LLC, as well as Wells
9 Fargo about this project and what it means for their
10 business and their operations. And so they're aware of
11 the project and we're working with them to minimize the
12 impacts on the project -- of the project?

13 A. Correct.

14 Q. All right. Noise and communications.

15 CHMN. KATZ: Just a second. I think
16 Mr. Drago may have a question on a prior subject that
17 this witness has covered.

18 MEMBER DRAGO: Yeah. If I could, could I go
19 back to the tribal piece? I just have a general
20 question.

21 MS. POLLIO: Oh, sure.

22 MEMBER DRAGO: Based on my experience with
23 tribes, it's never very clear when you have formal
24 consultation or not. And I noticed in your letters
25 there was no offer to have formal consultation. Is

1 that -- was that a decision made up front, that this
2 line of work would not deem that necessary?

3 MS. POLLIO: So I think the best way to
4 address it is, SRP typically conducts informal
5 consultation with the tribes associated with these
6 projects. They do consult with SHPO, the State
7 Historic Preservation Office, as well. And that is --
8 again, the government-to-government consultation that
9 is on a number of projects usually is associated with
10 projects that are federal, you know, have a nexus or a
11 federal nexus or a state nexus that requires that
12 government-to-government consultation.

13 So SRP does conduct informal consultation
14 with the tribes by way of what we've done here. So
15 it's very similar in previous cases, by providing the
16 Class I, providing the Class III, and then working with
17 SHPO. So they also provide this to SHPO at the time of
18 the Class III, and then, you know, again, work more
19 informally with those tribes if they have an interest.

20 MEMBER DRAGO: Very good. Thank you for that
21 explanation.

22 CHMN. KATZ: Counsel, feel free to go ahead
23 with your next subject.

24 MR. DERSTINE: Well, I was going to
25 cross-examine Member Drago, just for my education, in

1 terms of the difference between informal consultation
2 and a formal consultation. I'm not aware in terms of
3 what's the distinction or what requires one over the
4 other.

5 MEMBER DRAGO: Well, formal is when you
6 offer, say, something you're going to do that could
7 potentially impact tribes and then you offer that to
8 the tribes. If they agree, then you meet before the
9 leadership and it's a one-on-one consultation, no other
10 tribe involved.

11 If it's something that's more general, but
12 you're going to make a change and it impacts tribes,
13 you can also do the alternate, which is listening
14 sessions.

15 MR. DERSTINE: I see. Thank you. And I
16 guess in this case we're not -- none of the project is
17 on any of the tribal lands, and so the --

18 MEMBER DRAGO: Right.

19 MR. DERSTINE: -- informal consultation that
20 SRP has utilized for this case is an appropriate
21 approach.

22 MEMBER DRAGO: Yeah. I think the explanation
23 made a lot of sense to me. It's just an area that
24 sometimes is very -- not as clear as sometimes we would
25 like it.

1 MR. DERSTINE: Got it. Thank you for that.

2 BY MR. DERSTINE:

3 Q. So noise and communication. Any impact from
4 the project relating to noise?

5 A. Yes. So this is the last section of the
6 application that I'll be covering. And again, this is
7 noise and communication, which is Exhibit I.

8 So, you know, again, lucky that I have the
9 engineer and the project manager here to help me
10 address noise. So I'll start. You know, noise impacts
11 are associated with -- from transmission lines and
12 substations, probably one of the -- one of the first
13 things that people would note are construction-related
14 noise impacts. So this is something that SRP will
15 address and try to minimize, but work with the City of
16 Chandler on construction timing, sequencing to minimize
17 impacts associated with the project. But again, it's
18 very typical construction-type noise that would be
19 expected.

20 In terms of operational noise, that's where
21 I'll turn to Mr. Heim to -- he probably does a better
22 job talking about the noise that emanates from
23 transmission lines and substations.

24 MR. HEIM: Sure. So the -- well, I guess one
25 element of noise is you guys have had to listen to me a

1 lot over the past few days. But with respect to
2 transmission lines in general, those don't emit a lot
3 of noise except in certain environmental conditions.
4 Particularly if we have high humidity or something like
5 that, you can develop a low kind of crackling noise at
6 times if you develop some corona on the conductor due
7 to -- generally due to high humidity-type conditions,
8 which we don't generally see here.

9 The main operational noise that we would
10 anticipate associated with this project is related to
11 RS-28. This project is a little bit unique in the
12 sense that when we talk about a substation as part of,
13 I would say, a more typical transmission project, that
14 substation is located kind of off by itself. But in
15 this particular case, the substation is embedded within
16 the Intel campus, which has its own sound emissions
17 associated with it.

18 So within the RS-28 substation the main
19 noise-emitting devices would be the transformers
20 themselves, and they generate noise in two ways. The
21 first is that they're outfitted with cooling fans. So
22 particularly in the summertime, when loading is high,
23 those cooling fans will turn on and there will be some
24 noise associated with those. Also, during periods of
25 high loading on a transformer you can get kind of a low

1 60-hertz kind of hum associated with the coils inside
2 of the substation.

3 In the case of RS-28, the entire site is
4 surrounded by a masonry block wall, so that does
5 provide some noise mitigation specific to the
6 substation. But adding on to that, the substation is
7 really just one component of the noise emissions that
8 will come from the Intel campus in general.

9 So as part of our work with Intel, we've
10 provided them with the anticipated noise levels that
11 would come from our transformers, and then they've
12 modeled that, as well as the block wall, into their
13 overall sound study for the campus. And they have
14 their own criteria specific to the neighborhoods that
15 surround the campus, where their objective is to have a
16 noise level of about 55 decibels at the property line
17 during the daytime and then 45 decibels during the
18 evenings, both of those at their -- the perimeter of
19 the campus. And so as they do their studies to make
20 sure that they meet that guideline, our substation is
21 modeled into that as a component of it.

22 MR. DERSTINE: So I guess my question would
23 be, then, will the -- whatever additional noise levels
24 are created by the fans and the substation, will that
25 increase or take the cumulative noise on the Intel

1 campus above the limits that they have set forth there
2 in terms of their internal policy of 55 decibels during
3 the day and 45 decibels at night?

4 MR. HEIM: It would not.

5 MR. DERSTINE: So the incremental noise level
6 from the substation will keep Intel within whatever its
7 internal guidelines of noise levels?

8 MR. HEIM: Correct.

9 MR. DERSTINE: And that 45 decibels, can you
10 compare that to something? Is that louder than me?

11 MR. HEIM: Not much. 45 decibels is not a
12 very high sound level, particularly for an industrial
13 site like Intel has.

14 BY MR. DERSTINE:

15 Q. So Ms. Pollio covered the construction noise,
16 you've dealt with the noise coming from the
17 transmission line, as well as the substation. Anything
18 else in Exhibit I that we need to cover?

19 A. I think we're good.

20 Q. Well, I think you have a wrap-up where you're
21 going to take us back through your various
22 environmental conclusions.

23 A. Yes. I definitely think that we want to go
24 over, just in general, that the project is compatible
25 with the total environment of the area. Really

1 speaking to the regulations and making sure that we hit
2 all of them, I want to note that we feel that there's
3 no significant or detrimental effects to land use or
4 jurisdictions. There's no significant or detrimental
5 effects to fish, wildlife, plant life, and associated
6 forms of life upon which they are dependent. No
7 significant or detrimental effects to existing scenic
8 areas, historic sites or structures, archeological
9 sites in the vicinity of the project.

10 Neither SRP nor jurisdictional agencies have
11 any plans for future development of recreational
12 facilities associated with the project. There's no
13 significant or detrimental effects to the area plans.
14 There's no significant or detrimental effects
15 associated with noise emission levels and interference
16 with communication signals. Project implementation
17 would be consistent with safety considerations and
18 regulations. And again, I'll note that we feel the
19 project is environmentally compatible with the total
20 environment of the project area.

21 Q. And that language comes from the statute in
22 terms of one of the findings that this Committee is
23 required to make, right?

24 A. That is correct.

25 MR. DERSTINE: So our next chapter, KP

1 Environmental handled a number of the statutory notice
2 requirements. We can cover that -- jump to that now,
3 Mr. Chairman, or if you'd prefer to take your break
4 here. Whatever you prefer.

5 CHMN. KATZ: Oh, I figure we probably don't
6 need a break until about 10 minutes to 3:00, unless our
7 court reporter needs an extra break. So we can
8 proceed. I'll let you know when we're getting close.

9 MR. DERSTINE: Very good.

10 MS. GRABEL: Mr. Chairman, may I be heard for
11 one moment?

12 CHMN. KATZ: Yes.

13 MS. GRABEL: Meghan Grabel. I'm over here.
14 I am going to have to leave at about 2:45. I have my
15 colleague, Mr. Ancharski here. But I wondered if the
16 Committee would indulge me and if the applicant would
17 indulge me to ask one last question of Mr. Heim before
18 I leave.

19 CHMN. KATZ: Certainly.

20 MS. GRABEL: Is that all right?

21 MR. DERSTINE: No objection.

22 MS. GRABEL: Thank you, Mr. Heim. Just to
23 follow up, one more question related to my earlier
24 dialogue with you on this subject.

25 We understand that SRP cannot state that any

1 entity would necessarily fund the second circuit to be
2 undergrounded in the future, fully understand that.
3 That said, is it true that all of the permitting and
4 planning and design work along -- that has been done
5 for the two duct banks along the railroad from the
6 Schrader substation to Chandler Heights Road has been
7 done in anticipation of a second circuit being
8 undergrounded?

9 MR. HEIM: That is true. Everything that
10 we're developing to date and will provide to the Union
11 Pacific Railroad will reflect both circuits.

12 MS. GRABEL: Thank you very much and thank
13 you for your indulgence.

14 CHMN. KATZ: Anything from the City?

15 MR. CROCKETT: No, Chairman Katz.

16 CHMN. KATZ: Thank you.

17 Feel free to proceed with your next subject
18 matter.

19 MR. DERSTINE: All right. Thank you.

20 BY MR. DERSTINE:

21 Q. So as I mentioned, KP Environmental handled
22 -- worked in coordination with SRP in terms of ensuring
23 that we satisfied all the various statutory notice
24 requirements either contained in A.R.S. 40-360 or the
25 line siting rules or the Chairman's procedural order.

1 Let's start with the publication of the notice of
2 hearing.

3 A. Yes. So we did want to identify the
4 publications and the dates of the notice of hearing.
5 You can see that there's the Arizona Republic on
6 October 2nd, East Valley Tribune on October 3rd, the
7 Arizona Republic again on October 6th, and the Gila
8 River Indian News on October 15th.

9 On Exhibit R104 is an example of what the
10 publication ad looked like in the East Valley Tribune
11 and the Arizona Republic. R105 is what the Gila River
12 Indian News hearing of publication looked like.

13 Q. And the affidavit of publication is also
14 contained in SRP Exhibit 8, is that right?

15 A. That is correct.

16 Q. All right. That's the publication of the
17 notice of hearing. We're also required to post signs.
18 The location of those signs we coordinate and discuss
19 with the Chairman in an early procedural conference,
20 and then we're required then to get signs in those
21 locations in advance of the hearing. Did we do that?

22 A. Yes, we did. So on L67 you can see the
23 locations of the four signs -- I'm sorry -- five signs
24 that were placed in the area. I'll just go ahead and
25 point them out. You've got one that was inside the

1 transition corridor on the vacant parcel. You've got
2 two that are located on the Intel campus along Dobson
3 Road, one closer to Old Price Road, and one up here
4 kind of on New Price Road so you can kind of see as
5 it's going into the existing Schrader substation area.
6 So those are the locations of the five signs that were
7 posted. A photograph of the sign is represented on
8 R106, and the photographs and the sign location map is
9 included in SRP-10.

10 Q. The statute requires that we also give notice
11 to affected jurisdictions. Why don't you identify the
12 affected jurisdictions, and then we can talk about
13 what's on R107 and the evidence that we indeed mailed
14 out notice to the affected jurisdictions.

15 A. Yes. So we did mail out notice to the
16 affected jurisdictions, as well as placed copies of the
17 hard copy CEC application, as well as a thumb drive
18 with the application, at the libraries included on L68.

19 So the affected jurisdictions that received
20 the mailings included the City of Chandler, Maricopa
21 County, Gila River Indian Community, and the Union
22 Pacific Railroad. The affected jurisdictions -- or,
23 the evidence of mailings are included in Exhibit SRP-9.
24 The libraries are included -- are listed on L68, and
25 that includes the Ed Robison Library, Hamilton High

1 School Library, and the City of Chandler Public
2 Library. Evidence associated with the libraries
3 receiving those applications is included in SRP-16.

4 Q. The requirement to notify our affected
5 jurisdictions is by -- is in the statute and the
6 rules -- or, the rules primarily. This practice and
7 the requirement to post copies of the application and
8 then the transcripts being delivered to libraries is
9 something that's developed over time and comes by way
10 of the procedural order and the practice before the
11 Committee. But we've satisfied all those requirements,
12 correct?

13 A. That is correct.

14 Q. What have we missed? We've covered the
15 environmental issues. We've covered the various notice
16 issues.

17 CHMN. KATZ: If I might interrupt, was there
18 any publication in digital media?

19 MR. DERSTINE: Publication in terms of --
20 you're talking about social media or outreach?

21 CHMN. KATZ: Yeah, social media is what I
22 mean, like Facebook, Instagram, or otherwise.

23 MR. DERSTINE: There certainly was, and we
24 were going to -- you're right, Mr. Chairman, your
25 procedural order does require that we use social media

1 to publicize not only the project, but this hearing,
2 more importantly. We did do that. And Ms. Horgen, who
3 I see on the screen here in the hearing room, is going
4 to cover that in terms of our discussion of public
5 outreach.

6 CHMN. KATZ: That's fine.

7 MR. DERSTINE: But you're right. Thank you
8 for reminding me about that, and we will certainly
9 cover that.

10 Ms. Pollio, I think we are done with
11 environment and notice and we're ready to move on with
12 Ms. Horgen.

13 MS. POLLIO: I think you're right. And I
14 will be clicking for her.

15 MR. DERSTINE: Okay. You'll be advancing her
16 slides?

17 MS. POLLIO: I will be. So I will continue
18 to participate, but I will not be speaking anymore
19 hopefully.

20 MR. HORGEN: Thank you, Kenda.

21 MR. DERSTINE: Can our Committee Members
22 appearing virtually hear Mr. Horgen? She's also
23 appearing virtually. Can you hear her okay?

24 CHMN. KATZ: I think we can.

25 MR. HORGEN: Can you hear me?

1 CHMN. KATZ: Yes.

2 MR. HORGEN: Okay.

3 MR. DERSTINE: Good. The wonders of
4 technology, all as a result of Intel.

5

6 SAMANTHA HORGEN,

7 called as a witness on behalf of the applicant, having
8 been previously affirmed by the Chairman to speak the
9 truth and nothing but the truth, was examined and
10 testified as follows:

11

12 DIRECT EXAMINATION

13 BY MR. DERSTINE:

14 Q. Well, Ms. Horgen, you introduced yourself to
15 the Committee, but remind us again your title and your
16 role for this project.

17 A. Sure. So my name is, again, Samantha Horgen.
18 I am the public involvement siting representative and
19 the lead for the public outreach on this project, along
20 with a really great team as well that helped assist me.
21 So I did a lot of the outreach and contacted customers.
22 We did all of the different -- worked on all the
23 different methods to reach out to customers to notify
24 and publicize this particular project and make sure
25 that we can try and get as much engagement as we could.

1 Q. You were sworn in on day one, you were here
2 in the room, and you're now appearing online, but we're
3 happy to have you.

4 Let's start with the first slide here. L70
5 shows the various types of outreach that SRP used and
6 you and your team utilized to publicize the project.
7 Why don't you give us that overview, and then we'll go
8 through each one with a little more detail.

9 A. Sure. Happy to. So, again, this slide is
10 identifying all the different outreach methods that we
11 used to publicize the HIP project. So we have
12 jurisdictional briefings. We have stakeholder
13 meetings. We mailed out a number of postcards. We had
14 open houses, and I'll go into those more in detail on
15 the different versions that we had. We have a project
16 dedicated website. We have a telephone information
17 line that had a live person on the other end to be able
18 to answer questions and discuss concerns. We also had
19 a comment form on our website.

20 And then we had e-mails that we sent out to
21 customers and stakeholders. And I'll go into more
22 details on those, because that was really the first
23 time that we've actually proactively pulled customer
24 e-mails in our notification area. We also did do
25 social media, again, for the first time on this project

1 and a news release.

2 So I'm really proud of how much we've done on
3 this particular project, far more than we have on
4 others. So really proud about that.

5 Q. The important first step in terms of our
6 outreach and public engagement is to decide on a
7 notification area, the boundaries, and where we're
8 going to pull addresses for and notify the
9 jurisdictions or stakeholders. On the right screen
10 here in the hearing room, marked as R109, we have the
11 map that shows the notification area. Can you talk
12 briefly about how we identified and established that
13 notification area?

14 A. Absolutely. So on the right screen, that is
15 the notification area that we used for this HIP
16 project. And really this notification area is kind of
17 a boundary that we've created to surround or buffer the
18 overhead and the underground segments of the line.
19 This is a really important step, we feel, as part of
20 the public process to make sure that we're capturing
21 those who are interested in the project, and so we do
22 carefully consider this.

23 And so I wanted just to start that generally
24 we start with a 1-mile notification area. And then we
25 also, as a second step, look at linear features in

1 order to kind of create this area, look at linear
2 features that would be a natural or appropriate cutoff
3 point. And then we also look at the HOAs that are in
4 the area and make sure that we are not cutting off or
5 bisecting a community, making sure to include it in
6 whole, so that not only part of a community would
7 receive a notification and the other part would wonder,
8 what are you talking about? We didn't get that.

9 So we carefully consider that in our project,
10 and while ensuring also that we don't over notify to
11 the point where we're inundating people with a mailer
12 that they may not care about or may be really far from.
13 But we really want to capture those who have an
14 interest in it or feel like they may be impacted. So
15 for this particular project that was the approach, and
16 typically that's the approach for most of our projects.

17 And so based on that, we did do a 1-mile
18 notification boundary or from the routes -- 1 mile from
19 the routes. And then in case, because we had Sun Lakes
20 right there, you can see -- I don't know if there's a
21 pointer, but to the south you can see that Sun Lakes
22 incorporates a very large area. And so if we had cut
23 it off at Riggs Road, that would have been only 1 mile.
24 So we opted to incorporate 2 miles when necessary to
25 avoid, again, cutting off or bisecting a community. So

1 we notified as far east to McQueen Road, as far south
2 to Hunt Highway, as far west along the -- 1 mile along
3 GRIC road -- or, GRIC property, excuse me, and then as
4 far north as -- about a mile north of Germann Road, so
5 you can see that's the northern half.

6 Q. There isn't a statutory provision or anything
7 in the rules or the Chairman's procedural order that
8 defines the notification area. And I gather, from what
9 you said, that SRP, as well as other applicants that
10 come before this Committee, kind of their first step is
11 to make some judgments about what they're going to
12 utilize as the notification area. And then we
13 typically then discuss that notification area with the
14 Chairman at an early stage of the project and just make
15 sure that we've got it right in terms of our judgments
16 about how far and wide we go with notification. And it
17 sounds like that's what was done here?

18 A. Yeah. We definitely looked at this in a
19 whole, as a team, making sure, again, that we weren't
20 over notifying to folks that shouldn't be concerned or
21 stir them up and feel like maybe they should be
22 concerned or involved. But really trying to narrow it
23 down to folks that have an interest and may participate
24 in the engagement for the project.

25 Q. Okay. Thank you for that. Let's start with

1 the first topic or the first form of outreach that we
2 used for this project, which were the jurisdictional
3 briefings.

4 A. Okay. Yes. So we started with -- we had
5 some meetings, and some of them were in-person, some of
6 them were conference calls, with the Arizona
7 Corporation Commission, City of Chandler, County
8 Supervisor, Arizona State Legislature, and also -- as
9 far as the Gila River Indian Community, they were aware
10 of the project. We didn't meet with them, but we did
11 have good coordination and contact with them through
12 e-mailing them, their leadership specifically. And we
13 also got permission from them to drop postcards to
14 their community boards, as well as posting, as you saw
15 in Kenda's information, posting the hearing information
16 in their newspaper.

17 Q. And then stakeholder meetings, the difference
18 between the jurisdictional briefings and the
19 stakeholder meetings is the stakeholders are private
20 entities, businesses that are located within some
21 vicinity of the project who we think may have a
22 particular interest, is that right?

23 A. Correct. Yes.

24 Q. So if you can summarize --

25 A. So here are the stakeholder --

1 Q. I apologize. Go ahead.

2 A. Sorry. So here are some of the stakeholder
3 meetings that we had. So we met with Intel, Wells
4 Fargo, Price and Queen Creek, LLC, and Sunbelt
5 Holdings. And I think it's worth noting that the Wells
6 Fargo and Price and Queen Creek and Sunbelt, I think
7 has been told, but those are along the segment of
8 Henshaw-to-RS-28 along the Old Price Road area.

9 So is there a map? Yeah, there we go.

10 So if I had a pointer with me, I'd show you
11 that they're along that segment there.

12 And then we also had meetings with the
13 Chandler Traditional Academy. We met with the
14 principal at that location in person. And they are
15 located --

16 If you could pull that curser over to like
17 Lake Drive. Yeah, there we go. So it's right over on
18 Lake Drive actually to the east a little bit more.

19 So we met with them in person. As far as the
20 school goes, he really only had issues with the traffic
21 and some of the impact when there was pickup or
22 dropoff. They evidently have a significant amount of
23 congestion already in that area, so his biggest concern
24 was that and then also just making sure that we're
25 communicating with the parents. And he was really

1 reassured and appreciated the fact that SRP was going
2 to go ahead and try and work most of this project
3 during their breaks and during their off times. So
4 that was really good, and we're going to make sure to
5 keep in contact with him on that.

6 We met with Pine Lake Estates, Southshore
7 Village, and Reserve at Fulton Ranch. We met with some
8 of the representatives, typically the board presidents
9 in those cases, and there was a meeting that involved,
10 I think, a couple residents. But those particular
11 meetings were as a result of our public outreach
12 process. And so as a result -- and early on we
13 obviously had a lot of overhead routes on segments, and
14 so that stimulated a little bit of opposition for the
15 overhead transmission lines being that the concerns
16 were avoiding overhead and making sure we bury it or
17 there was EMF, electromagnetic field concerns, property
18 value. And then so those meetings were as a result of
19 that, and I think we've gotten a very good relationship
20 with those communities as we've progressed through the
21 project.

22 And we also met with Sun Lakes HOA. They
23 invited us to a meeting with both Intel and SRP to
24 present project information on HIP, but also Intel went
25 ahead and reviewed some of their plans for their

1 project as well, so -- their expansion project.

2 Q. All right. So you've talked about kind of
3 the briefings with jurisdictions and with the
4 stakeholders. We also did a number of mailings. We
5 used postcards at the outset, announced the project,
6 and then a number of mailings. Why don't you give an
7 overview of the mailings that we use to publicize the
8 project.

9 A. Sure. Absolutely. So here we have our
10 postcard -- a sample of our postcard on the right
11 screen. But we mailed out four postcards; they all
12 were corresponding to the different outreach events
13 that we had. So in July we had mailed out a
14 notification postcard for the project announcement, and
15 also that postcard included publicizing that we also
16 posted a virtual open house to our website.

17 The second postcard was the four live virtual
18 open houses -- and I will go through those open houses
19 later -- but the four live virtual open houses, and
20 those occurred two on each day. We had one at noon and
21 one at 5:30 on two different days.

22 And then in September we had another postcard
23 publicizing another live and final virtual open house.

24 And then in October, of course, we had the
25 notice of hearing that we mailed the postcard out for.

1 I think it's worth noting too here that the
2 first three mailings we did have an average of 30,000
3 mailers that were mailed to the community that involved
4 customers and landowners. And then in October, when we
5 mailed out for the hearing, we did mail more mailers
6 out at that time to publicize the hearing, because it
7 just so happened we didn't actually de-dupe, which
8 means like removing the duplicates, we did not de-dupe
9 the addresses.

10 So, for example, when we mailed the customer
11 and landowners, if a customer had a different name than
12 the landowner address -- excuse me -- if the customer
13 had a different name and the landowner name was
14 different, but they had the same address, we mailed it
15 to both. So in some cases, in other words, they
16 actually received two mailers as opposed to one. So
17 the number of mailers was actually far more in this
18 case. I actually have more details on the numbers too
19 later in a later side.

20 Q. Okay. I want to make sure I understand. So
21 you had the map that showed the notification area.
22 You're saying that that notification area is comprised
23 of approximately over 30,000 addresses, somewhere in
24 the range. And I think you have the exact number a bit
25 later in your presentation, but roughly 30,000

1 addresses. And that was -- those 30,000 addresses got
2 each one of the four postcards. When it got around to
3 October, we just didn't take that extra step of pulling
4 out duplicates, so some of those mailboxes got two
5 postcards?

6 A. Correct. And we received calls that they had
7 received two. So, yes, lesson learned.

8 Q. Okay. So the postcard mailings were used to
9 publicize the project initially and then our open
10 houses and then this hearing. We also used the project
11 website to give folks information. Why don't you tell
12 the Committee what they would have found at the project
13 website if folks wanted to learn more about the
14 project.

15 A. Sure. So I noted a number of items here, but
16 we did have the benefit-need information. We had a
17 public process page that identified all of our
18 different outreach phases. We had, obviously, a map of
19 the project. There was a general map and then a scope
20 map and also the transition area was noted on there.
21 We had infrastructure depictions that showed the
22 transmission line profiles, that showed different
23 graphics, that showed the configurations of the line.
24 We had our comment form, trying to take in feedback
25 from the public as much as we could, and then the

1 telephone information line that we also used. We added
2 in the CEC application and all of the transcripts.

3 And so we tried to develop -- or, create the
4 final metrics here based on an October 14th date. And
5 so we noted that unique visitors to the site was 3,784
6 and the page views were 10,778. So pretty good
7 numbers, I would say, considering, yeah.

8 Q. Backing up, if we can scroll back on that
9 last slide on the left. So unique visitors, that's how
10 many people came to the page. And then page views, if
11 I visited the project website page and I wanted to look
12 at different things, some of the types of information
13 that are contained on the website, that's the 10,778
14 number?

15 A. Correct. Yes. Page views is the number of
16 hits to different pages that they might have looked at.
17 So really I feel like it's more the activity on the
18 website, and then the visitors is the number of people.
19 Correct.

20 Q. Okay. Thank you for that. Social media.
21 The Chairman was careful to remind us that his
22 procedural order does require that we use social media
23 to publicize the project, and we did that. And you're
24 going to tell us a bit how we did that, right?

25 A. Absolutely. So we did do a social media

1 campaign. We started the campaign in July. And we
2 initiated social media one week prior to any outreach
3 event both on Facebook and on Instagram. We targeted
4 the social media to the notification area. And you can
5 see in July the reach was 10,000, the link clicks were
6 379, and the comments were four. In August -- and that
7 would have been when we announced the project. And
8 then in August the reach was 7,210, link clicks were
9 218, and comments were 13. And then as we go into
10 September, reach was 7,478, link clicks were 162, and
11 comments were four.

12 One of the -- one of the points I wanted to
13 show is that you can see in July -- there's a
14 difference in July and in August, so the
15 number decreased pretty significantly in August. And
16 we believe that that decrease, without knowing for
17 sure, but we believe that decrease could likely be
18 associated with the fact that we changed ads.

19 So early on in the project we used two people
20 kind of talking, kind of like a collaboration-type feel
21 to the ad, and so -- and that was also the initial part
22 of the project, so we initiated the outreach and
23 announcing the project. So we had a pretty high rate
24 of reach.

25 And then in August we changed that ad and we

1 did a transmission pole. The idea behind that was
2 thinking that perhaps if we put a transmission line on
3 the ad, that it would create more engagement, that
4 people would know what the project was, that it's
5 showing what the project is. And, in fact, it maybe
6 had done the opposite, but we're not sure. So that's
7 one of the things that changed between July and August.

8 And then in August we also had more overhead
9 lines publicly. So, again, maybe that's why we had
10 more comments associated with it. We also had the
11 transmission ad there. These are just some assumptions
12 that we're making.

13 And then in September we continued with the
14 same transmission display ad, and -- but then in
15 September there was a decrease in overhead lines, so
16 some of the lines were -- Intel, by this point, had
17 funded the underground, so the comments appeared to be
18 decreasing. But these are just some of our likely
19 associated assumptions on these -- on this page. And
20 you can see the sample social media on R113.

21 Q. Let me make sure I understand what you're
22 saying in terms of the theories about why the reach
23 changed a bit. And I guess we're at different stages
24 of the project. And as Mr. Heim testified, the project
25 did change and kind of develop over the cycle from July

1 to September, and that is between -- in July and August
2 we still had -- the segment along the railroad was to
3 be overhead construction. And it was about that time
4 frame, then, that Intel announced that it was going to
5 cover the cost, or the cost differential, for
6 undergrounding along the railroad. So that may -- I
7 think what you indicated would drive maybe some of the
8 difference in terms of the reach and the clicks and
9 possibly the comments that we received in response to
10 our social media campaign.

11 A. Correct.

12 Q. Did I have that right?

13 A. Yeah.

14 Q. In terms of social media, it looks like we
15 used both Facebook and Instagram, is that right?

16 A. Correct.

17 Q. Anything else you wanted to -- in terms of
18 the social media, this was kind of our first real
19 social media effort. The social media ads went out, we
20 got some comments. I mean, it looked like we had a
21 fair amount of engagement as a result of social media,
22 and it's proved to be another productive tool that
23 we'll use not only for this project but for future
24 projects.

25 A. Absolutely. We plan to.

1 Q. News release: What is that and how did you
2 use it?

3 A. So we did do some news releases. These news
4 releases were issued via e-mail to news rooms at Valley
5 radio and TV stations, as well as all of the Chandler
6 news publications, including the Tribune and Arizona
7 Republic. So we did a news release for the project
8 announcement. We did one prior to the live August open
9 houses. We did one prior to our -- excuse me -- in
10 association with September open house. And then we
11 also did one in association to the hearing here today.

12 Q. And were some of the news releases picked up
13 by media outlets, do we know?

14 A. We do know they were picked up. I actually
15 was inquiring about that, and...

16 CHMN. KATZ: We just lost you.

17 MR. HORGEN: Sorry. I just accidentally
18 pressed mute.

19 CHMN. KATZ: Okay. We got you again.

20 MR. HORGEN: So, yes, our media group did
21 track a list of news articles by various publications,
22 so we know, in fact, they were picked up and used.
23 And, in fact, we also know they were for sure sent,
24 because our media also uses a platform to e-mail these
25 news releases, and those actually track whether or not

1 we had a success rate or an open rate.

2 CHMN. KATZ: We have a question.

3 Go ahead, Member Drago.

4 MEMBER DRAGO: Question on the news release.

5 Is it a subscription or do you have public at large

6 that can sign up and receive these, besides just

7 sending them to the media?

8 MR. HORGEN: Well, we do post it on our
9 website, so it's visible to anyone that does visit the
10 website, but I don't -- I'm not aware if the public can
11 sign up to receive our news releases or not.

12 MEMBER DRAGO: Okay. Thank you.

13 BY MR. DERSTINE:

14 Q. We talked about using the postcards, social
15 media, and the news releases to publicize the project,
16 but also our open houses, to cover the open houses,
17 what we used and how effective they were.

18 CHMN. KATZ: Let me just ask you where you're
19 at time-wise. It's probably about time for a break;
20 but if you're going to be done in a few minutes, that's
21 fine. If not, we'll take a short one.

22 MR. DERSTINE: Let's see here. We've got a
23 bit to cover. Why don't we take a break.

24 CHMN. KATZ: Okay. I'm showing that it's
25 about five minutes to 3:00. Let's make sure we're

1 ready to get started by 10 after 3:00, and we'll run
2 until about 4:30 or whatever time appears to be
3 appropriate for us to break.

4 (Off the record from 2:54 p.m. to 3:12 p.m.)

5 CHMN. KATZ: I think all the troops are
6 assembled. We can go back on the record.

7 And Mr. Derstine, you may continue with your
8 questioning of the current witness.

9 BY MR. DERSTINE:

10 Q. Okay. Well, Ms. Horgen, we're just getting
11 started on talking about the open houses that SRP used
12 to publicize the project and to gain feedback from area
13 residents. I think the first open house was a virtual
14 open house that was used to announce the project. Why
15 don't you -- let's talk about that a bit.

16 A. Sure. So just to start too, I wanted to
17 mention that we did have every intention of having an
18 in-person open house. We had them scheduled, we had
19 the location and venue. But due to COVID-19
20 restrictions and there was an uptick in numbers around
21 that time, we opted to go ahead and do the virtual open
22 house that started in -- I'm sorry -- and we posted
23 that to the website.

24 And so the virtual open house really was
25 created to be more like a prerecorded vignette. And so

1 we had a staff personnel actually announce the project,
2 provide the benefit and need in one vignette, and then
3 also the different project components, and then they
4 also reviewed the regulatory requirements as well.

5 We have a sample here, if you guys would like
6 to watch it. It's a sample of the benefit and need
7 vignette. And so that vignette, by the way -- these
8 vignettes were all posted at the website and they were
9 available 24 hours and seven days a week, so on demand.

10 But Megan, I'm not sure if you're going to
11 pull it for me, but if you could pull that benefit and
12 need example for them just to take a look at.

13 Q. And just before we press play, Megan.

14 So, Ms. Horgen, if I lived around this -- the
15 project or was within the notification area, I would
16 have received a postcard that said, SRP is announcing
17 this new project. The project is being planned or
18 developed to serve Intel. And if you want to learn
19 more about the project, come to our project website,
20 and that's where I would have found this virtual open
21 house. Did I get most of that right or all of it
22 right?

23 A. Yes, that's correct.

24 Q. Okay. And when you said these vignettes,
25 these were kind of different topics or subject matters

1 that were covered with each kind of a video that
2 someone could watch on that topic, on that subject that
3 related to the project?

4 A. Correct.

5 CHMN. KATZ: And I would think, if we're
6 going to play these, that we don't need to have the
7 reporter take down the audio.

8 MR. DERSTINE: No. I think Ms. Blackwelder
9 could take a break while this plays. And we've touched
10 on this before. Sometimes using these videos makes it
11 difficult to include in the record, but I think this is
12 something we could probably put on a thumb drive and
13 make a part of the record for the case.

14 CHMN. KATZ: I think it would be helpful, but
15 I'd rather not have the court reporter struggling to
16 listen to the audio that we'll be hearing along with
17 the video that's being played.

18 MR. DERSTINE: Agreed.

19 Let's press play and see what we see.

20 (Recording plays.)

21 MR. DERSTINE: Mr. Heim, Scott, I think it
22 was in the vignette there, mentioned power quality.
23 What does power quality mean?

24 MR. HEIM: So in the context of a
25 semiconductor fabricating facility like Intel, power

1 quality can mean two things. In general, it's how
2 close is the voltage on the system serving their campus
3 to the nominal voltage, and it can also be frequency.
4 So we serve a 60-hertz frequency to Intel. And in the
5 case that there might be a harmonic on the frequency,
6 that could disrupt some of their equipment. But
7 generally when we talk to Intel about power quality
8 issues, it's in relationship to the voltage into their
9 campus.

10 MR. DERSTINE: And so power quality is
11 different than reliability. That is, that Intel's
12 manufacturing operations, I think you testified to,
13 cannot suffer any sort of interruptions, that's the
14 reliability piece, and the power quality is the power
15 that we're delivering to them has to be at a certain
16 level or hertz?

17 MR. HEIM: That's correct.

18 BY MR. DERSTINE:

19 Q. So, Ms. Horgen, we had the virtual open house
20 that utilized these various vignettes to publicize the
21 project initially in June. Then there were some
22 outreach and various types of stakeholder briefings
23 that were conducted after that, and I think you've
24 touched on those. And then that brought us up into
25 August, and then we held a different type of open

1 house. Can you tell us about that?

2 A. Absolutely. I wanted to point out too, I did
3 have a metric on here for the virtual open house. So
4 it's kind of small, so I just was going to call out
5 some of the most frequently used -- yeah, there we
6 go -- most frequently visited, I should say, vignettes
7 on there. So it looks like the project routing process
8 was the most popular, and then the needs and benefits
9 and land and easement were in the top third as well.

10 So you'll notice on the bottom, though,
11 there's a HIP virtual open house. And the reason for
12 that is, as the project started having more underground
13 segments, we added this virtual open house presentation
14 that was from our September 23rd open house to replace,
15 in other words, replace the routing process vignette.
16 Because the routing had changed so much, that we wanted
17 to make sure that people knew that this is the newest
18 and latest development on the project. So just
19 pointing that out.

20 But to answer your question, yes. So we did
21 end up having and hosting five live virtual open houses
22 as well. These differ in the virtual -- the regular
23 virtual open house in that these were live being that
24 we had a presenter, we had a presentation that we gave.
25 We opened it up for questions to the public using our

1 chat function. We also had asked the public, when they
2 signed up to be on one of the virtual open houses, if
3 they had specific questions that they would like to
4 address, specifically because we wanted to make sure
5 that we were efficient with the time that we had and
6 could answer as many questions as possible. So
7 therefore, if someone had the same question, multiple
8 people had the same question, we could answer that one
9 question and not use up the time in the presentation.
10 But it seemed to work really well, and I think that we
11 got to a lot of questions for those open houses.

12 So then we had another open house on
13 September 23rd. That was our final open house.

14 And just to give you an idea of the numbers,
15 like our attendance and our participation in those open
16 houses, so the August 24th at noon open house had 86
17 attendees. Our August 24th at 5:30 had 57 attendees.
18 Our August 25th at noon had 61 attendees. August 25th
19 at 5:30 had 60. And our final open house on
20 September 23rd had 91, which was our highest. And so
21 this does exclude the consultant staff, as well as SRP
22 staff. So just wanted to make that point on that
23 slide.

24 Q. So on the virtual open houses that were held
25 in August, you had two days of two virtual live stream

1 open houses on each day, and you had them kind of
2 midday and in the evening. I assume the intent was to
3 try to make it convenient for people who may work,
4 maybe the 5:00 open house was better for them. And for
5 other folks, even if they had a job, they may be able
6 to watch the virtual open house on their lunch break.
7 So you made some calculations and made an attempt to
8 make this as available to as many people as possible?

9 A. Absolutely. Yes.

10 Q. And the virtual, if I was to -- if I logged
11 in and watched the virtual open house, say, at noon on
12 August the 24th, what would I see in terms of -- it was
13 Mr. Heim and Ms. Pollio describing the project? Can
14 you kind of describe what I would have seen during the
15 time if I had logged in to one of the live stream
16 events?

17 A. Sure. So, yes, we did start out with Zack --
18 I gave kind of an informational of how this was going
19 to work, and then Zack started in with a presentation,
20 reviewing the scope of the project. He reviewed the
21 different segments of the line. And then we did have a
22 formal kind of question-and-answer period where we had
23 a panel of experts. We had an engineer, Kenda was on
24 there as our environmentalist, and then Zack as well,
25 and they would go through the specific questions. And

1 if someone had a question that maybe they didn't
2 already ask prior to signing up, then we would
3 entertain answering that question, or any questions for
4 that matter, that they had.

5 So I felt like it was still -- even though we
6 didn't have formal people talking, it was still
7 engaging, and I think that people still felt like they
8 were involved in the process and were able to ask
9 questions if they were on their mind. So I thought it
10 was very productive and it was well done.

11 MEMBER GRINNELL: Mr. Chairman, just a quick
12 question. It's Pam, Ms. Horgen? What was your most --

13 MR. HORGEN: I'm sorry?

14 MEMBER GRINNELL: What was your most
15 effective community outreach?

16 MR. HORGEN: You know, I still think that our
17 post -- when our postcards are mailed out, that is when
18 we get the most feedback. I think it's because it goes
19 in mass numbers. I still think the postcard is --
20 getting and receiving and people are getting them --
21 especially if it's not paper, it's an actual postcard,
22 it's not a normal paper that you would just get in the
23 mail, I think that's still the most effective.

24 As far as the second in line, I think when we
25 used -- I don't know if people, you know, when they

1 received the e-mail, they called. But again, we sent
2 out a very large -- I think we're going to get to this,
3 but we sent out a very large amount of e-mails, which
4 is the first time we've ever proactively pulled
5 customers in a notification area.

6 Generally, in the past what we have done is
7 we have allowed people to provide us their e-mail
8 through the comment form; and then anybody that's had
9 an interest in the project, we would send them an
10 e-mail about project updates. But in this case, we did
11 it proactively. So we actually pulled the customer
12 e-mails initially, we also reached out and proactively
13 tried to find and receive the stakeholder e-mails,
14 and then we also pulled them when they went to the
15 virtual open house. Every single time someone went
16 to the virtual open house, we asked if they wanted
17 project updates, and then they would provide us their
18 e-mail. So all of those different methods we kind of
19 combined and then kind of had to de-dupe, make sure
20 we're not sending them multiple e-mails, they only get
21 one.

22 But I feel like it would be the postcard
23 still first and possibly the e-mails going second,
24 because I think -- in the world that we live in now, I
25 know me, I check my e-mails more often than I check my

1 mail, but that might just be me.

2 MEMBER GRINNELL: Thank you.

3 BY MR. DERSTINE:

4 Q. And I think you're going to cover the e-mail
5 campaign that we used, so let's touch on that.

6 A. Sure. So, again, this was the first time we
7 proactively pulled e-mails in the notification area.
8 You can see the numbers there, how many that were, in
9 fact, delivered based on our system and what it said.
10 Slowly, you know, those numbers could have changed over
11 time. I was informed that -- you know, we pulled these
12 numbers on a certain date. But at times, if they do
13 have like a kickback or it was undeliverable, we'll try
14 to resend, those numbers could have slightly been off.
15 So these are approximate numbers.

16 So July 16th there was 16,377 e-mails
17 delivered. And then August 17th, 16,443 e-mails
18 delivered. September 16th, 16,501 e-mails delivered.
19 And then in October for this hearing it was 15,779
20 e-mails delivered.

21 So, again, I think I've kind of covered this,
22 but we did accrue the e-mails in the notification area
23 by calling or e-mailing them at the early onset of the
24 project so we could gather as many as we could. And if
25 they bounced back, then we could call them again and

1 verify their information. We used the comment form, if
2 they did engage with us through the comment form. We,
3 again, proactively pulled the e-mails. And then when
4 there was project updates through the virtual open
5 house, we did use those e-mails as well.

6 As you can see, the sample e-mail on your
7 screen on, what is it, 116 is a sample of what the
8 e-mail would be, which typically was pulled from the
9 postcard. So we tried to be as consistent as we could
10 with the information that was being sent out, so it did
11 incorporate the postcard information.

12 CHMN. KATZ: This is Paul Katz. I'm just
13 wondering -- I understand how you would get addresses
14 of people within the study area, but how did you get
15 e-mail addresses?

16 MR. HORGEN: So e-mail addresses, in this
17 case we pulled the customer e-mails from our customer
18 mailing list. So any time we had a customer on our
19 mailing list, we then would see whether or not they had
20 an e-mail address. If that address was not opting out
21 for e-mails, then -- or, if it was like unsubscribed
22 from e-mails, of course we wouldn't pull it. But if
23 they allowed us to e-mail them on any other kind of
24 notification, then we could use those e-mails.

25 CHMN. KATZ: Thank you.

1 BY MR. DERSTINE:

2 Q. All right. So I think we've gone now through
3 the e-mails, we've covered the different channels and
4 types of outreach that we used. We had the stakeholder
5 briefings and jurisdictional briefings. We talked
6 about the mailings that we used. We had the project
7 website. We did a social media campaign. We had our
8 actual open houses that we conducted, including then we
9 used e-mails to publicize the project, as well as to
10 give folks information on the open houses and this
11 hearing.

12 I guess this last slide you're going to use
13 to wrap up some of the key metrics relating to the
14 outreach process and kind of go through some of those.

15 Before you do that, I want to just note, all
16 of the outreach materials, copies of our various ads,
17 et cetera, those are all found under Exhibit J of the
18 application, correct?

19 A. Correct.

20 Q. Okay. Take us through some of the metrics
21 that you have there on Slide L79.

22 A. Sure. So we had -- again, the public process
23 summary here is that we had briefings with public
24 officials, jurisdictional agencies. There was
25 briefings of approximately 40, stakeholder meetings was

1 12. We did phone or e-mail stakeholders in the
2 notification area.

3 In this case we did call and sometimes e-mail
4 and sometimes both homeowners associations, property
5 managers, day cares, schools, churches, again, trying
6 to get as many e-mails as they would allow us to get.
7 So in total, in this area, we had 44 HOAs, 16 day
8 cares, eight schools, and 17 churches, so a very highly
9 populated area.

10 The postcards that we mailed through the
11 United States Post Office, and each of those postcards
12 announced the different phases of the project. You can
13 see the numbers exactly here. And you can see that,
14 again, the first three, July, August, September, were
15 approximately the 30,000 that I mentioned previously in
16 an earlier slide, and then the hearing notice was
17 significantly larger.

18 Q. So that's everything we did. And really the
19 point of all that is to, one, give area residents
20 information about the project, but two, it's to
21 generate input and feedback, right, Ms. Horgen?

22 A. Yes. We definitely wanted to get as much
23 engagement as we could from the surrounding area.

24 Q. And all of the comments and feedback that we
25 received, those are collected in kind of a spreadsheet

1 table under Exhibit J of the application, which is SRP
2 Exhibit 1, is that right?

3 A. Correct.

4 Q. And then since we filed the application,
5 we've continued to receive comments. And those various
6 comments are found under SRP Exhibit 22, do I have that
7 right?

8 A. Yes.

9 Q. In terms of feedback, we received some
10 letters of support regarding the project. Those
11 letters are also found under Exhibit J in the
12 application. But you're going to touch on those
13 letters of support, who they're from, here on Slide L80
14 and R118?

15 A. Yes. So we did receive letters of support
16 for the 230 kV transmission project from Arizona
17 Chamber of Commerce, the Maricopa County -- Maricopa
18 County, and Arizona State University. And you can see
19 the sample of those letters -- or, a copy of those
20 letters on R118.

21 Q. Well, I think that covers everything for
22 public outreach and engagement. Did I miss anything or
23 is there anything else you wanted to cover?

24 A. No, I think we caught everything.

25 MR. DERSTINE: Well, thank you.

1 CHMN. KATZ: There is one thing I wanted to
2 call to your attention as well if it's beneficial.
3 Last Wednesday, October the 3rd, I got an invitation,
4 without a subpoena or summons, from the Corporation
5 Commission to address concerns they had about how this
6 Committee and those who participate in this process are
7 getting notice to the public. They were concerned as
8 to whether or not we were giving adequate notice.

9 And I basically explained, in fairly good
10 detail, the fact that postcards and letters were sent
11 out and that there were virtual open houses and there
12 was the use of digital media. I may not have covered
13 everything there, but I did agree to testify, and
14 didn't claim executive privilege, and provided them
15 with that requested information.

16 Sandra Kennedy then said, well, how do I know
17 that all the things that the applicant says they're
18 going to do or that they did do, how do we know that
19 they actually did those things that are in the
20 procedural order, et cetera?

21 And I said, well, I have lawyers appearing in
22 front of me whose licenses are at stake, and they're
23 making avowals that they've done -- that their clients
24 have done certain things. Plus, we take testimony at
25 this hearing.

1 It almost suggested to me that they're very
2 busy and never take the time to read our transcripts or
3 look at our exhibits unless something unusual occurs.
4 But it was a very friendly interaction, and I just
5 wanted to share that with you, because the sole focus
6 of their inquiry was on how we are notifying the
7 public.

8 MR. DERSTINE: Well, I appreciate that. And
9 I did hear that there was -- that you appeared before
10 the Commission at a Staff Meeting and made yourself
11 available to answer questions, and we appreciate that.

12 I would say that the record for this case
13 shows a considerable amount of outreach and engagement.
14 And I guess to Commissioner Kennedy's question, even
15 better than avowals from lawyers, you have witnesses
16 like Ms. Horgen who are sworn and under oath and who
17 are testifying about what the company did, and we're
18 providing evidence in the way of exhibits and samples
19 in the application and in the record before this
20 Committee that establishes the various forms of
21 outreach and engagement. And so I would say that when
22 we said we mailed out over 30,000 postcards, that we
23 did indeed do that.

24 CHMN. KATZ: And again, I wasn't near as
25 eloquent or well organized as Ms. Horgen is here today,

1 but I appreciate this testimony.

2 MR. DERSTINE: Thank you.

3 MEMBER GRINNELL: To that end, Mr. Chairman,
4 Ms. Horgen, did you coordinate any community outreach
5 with the City of Chandler, by any chance, Mr. Crockett
6 or Ms. Schwab?

7 MR. HORGEN: We did have meetings with City
8 of Chandler. Is that what you're -- I'm not sure if I
9 understand the question.

10 MEMBER GRINNELL: Well, given that this is
11 inside the city of Chandler, was there a coordinated
12 effort for community outreach between the City and SRP
13 on this?

14 MR. HORGEN: Yes. Yes. Matter of fact, I
15 think I had a biweekly meeting with City of Chandler at
16 one point, so they were definitely engaged in the
17 project. Is that what you're referring to, SRP meeting
18 specifically with the City of Chandler on the project?

19 MEMBER GRINNELL: No. I was wondering if
20 City of Chandler did community outreach in coordination
21 or collaboration with SRP on this? Maybe Mr. Crockett
22 can --

23 MR. HORGEN: Oh, okay.

24 MEMBER GRINNELL: -- can answer that.

25 MR. CROCKETT: Yeah, I would -- we did not

1 coordinate on the outreach specifically, but the City
2 certainly received feedback from residents within the
3 community and the City was involved in, as you are
4 aware, working out the undergrounding agreement with
5 Salt River Project.

6 And that agreement was approved by the City
7 Council, it was agendized on a Council meeting. There
8 were members of the public that showed up. I believe
9 Ms. Grabel, who had to leave earlier this afternoon,
10 was in attendance at that Council meeting. So
11 certainly there was notice to the public regarding the
12 undergrounding agreement. It was a topic of much
13 interest within the community and there was an
14 opportunity for members of the public to show up at
15 that meeting. But specifically coordinating an
16 outreach to residents living within the project area, I
17 don't believe that that specifically occurred.

18 MEMBER GRINNELL: Because usually the City --
19 in my experience with communities, when they're done
20 yelling at the applicant, they're coming at the City or
21 the County or whomever else is next in line. So thank
22 you.

23 MR. DERSTINE: Well, that concludes your
24 testimony, Ms. Horgen, and concludes our presentation
25 on outreach.

1 I think our next topic or the subject was
2 that we thought there would be some value in spending a
3 little bit of time on the draft CEC and having Mr. Heim
4 just speak to some of those provisions and some of the
5 language in the CEC that would go to the project. I
6 don't think that will take a lot of time, but we
7 thought there might be some value in that. So we have
8 the ability to put our proposed CEC and I think we can
9 put up the revised chairman's form and just to speak to
10 some of those provisions.

11 CHMN. KATZ: That's fine. I don't want to go
12 through any approval process. But if you want to do
13 that, that's fine. And we'll mark our edited
14 version -- and the edits are few and far between -- but
15 we can mark that as Chairman-1. And tomorrow we'll
16 display that on the left screen, and on the right
17 screen we will make our edits and corrections and label
18 that as Chairman Exhibit 2. But if you want to have a
19 little explanation as to why certain things were
20 included, while that might be a little bit out of the
21 ordinary, feel free to go forward.

22 MR. DERSTINE: Well, in some ways it may be
23 ordinary for me to be doing things out of the ordinary
24 here, but we thought there'd be a little bit of value
25 in just touching on some of those topics.

1 CHMN. KATZ: That's fine.

2 MR. DERSTINE: All right. Can we screen --
3 are we able to pull up Chairman's Exhibit 1, as opposed
4 to the SRP exhibit, our draft CEC? That may take a
5 second. Because I think we had printed Chairman's 1
6 and circulated that to Members of the Committee and to
7 the parties. Yeah, SRP's draft was SRP-13. And then,
8 Mr. Chairman, you then provided us with some edits and
9 comments to SRP-13. And I think if we're able to pull
10 that up; otherwise, we can just pull up SRP-13.

11 CHMN. KATZ: Also, you've distributed or
12 we've distributed it to all the Committee Members
13 present, and I had Tod e-mail it to all our virtual
14 participants. If you didn't check your e-mail, you
15 will have a copy of that draft CEC which Tod and I did
16 edit, and that will be formally discussed tomorrow
17 after closing arguments.

18 MR. DERSTINE: So it looks like we're working
19 here on the right side. Any screen, I think, is fine.

20 MS. POLLIO: I think we're getting that
21 e-mailed right now, so it's processing.

22 MR. DERSTINE: Yeah.

23

24 ZACK HEIM - RECALLED,

25 recalled as a witness on behalf of the applicant,

1 having been previously affirmed by the Chairman to
2 speak the truth and nothing but the truth, was further
3 examined and testified as follows:

4

5

DIRECT EXAMINATION

6 BY MR. HEIM:

7 Q. And let's start, Mr. Heim, in terms of some
8 of the key provisions of the CEC. I'll just have you
9 work from memory, or I think you have a copy of the
10 Chairman's exhibit, which is SRP-13 with edits from the
11 Chairman. But one of the things we talked about was
12 the description in terms of the CEC is focused on the
13 description of the overhead components of the project,
14 and so in the CEC that refers to the CEC components.

15 So if we look at, Under Section C,
16 Description of CEC Components, can you kind of take us
17 through those descriptions and just kind of explain why
18 we framed the language the way we have there and why --
19 what we're focusing on in those sections of the draft.

20 A. Sure. So the -- like Mr. Derstine said, the
21 components of the CEC are limited to the overhead
22 components of the project that we've been discussing
23 throughout the hearing, and then we've broken it into
24 the same three components that we discussed in my prior
25 testimony today.

1 The first component -- really we make our way
2 from west to east in this case, and so the first
3 segment is the Henshaw substation-to-RS-28 element,
4 which is the two and three quarter miles of
5 double-circuit overhead line that follows the Old Price
6 Road alignment and then connects with the transition to
7 underground on the Intel campus. And within that, we
8 discussed the 200-foot corridor and the 80-foot
9 easement on either the east or the west side of Old
10 Price Road.

11 Then we get into the RS-28 substation with a
12 brief description of the size of that substation and
13 the fact that it will be surrounded by a 12-foot
14 masonry wall.

15 And then probably the bulk of the description
16 within the CEC is related to the Schrader transition
17 corridor. Within that, we talk about Circuit 1, which
18 is the first circuit that we would construct. And the
19 intent is to construct that underground along the
20 southern edge of Schrader substation, as we talked
21 earlier today.

22 This section of the discussion talks about
23 entering Schrader substation from either the east or
24 the west, and that's reflected for Circuit 2 also, with
25 the goal that we would have the flexibility to

1 enter the substation from either direction, depending
2 on whether we gain full approval from Union Pacific
3 Railroad to use their corridor or if we have to seek a
4 route to the east of Schrader.

5 Circuit 2 would be the second future circuit
6 that we would construct and needs to terminate along
7 the northern edge of Schrader substation. So this is
8 the one where we're seeking an amendment to the CEC for
9 the San Tan-to-Corbell line, specifically the portion
10 of that line between Corbell and Schrader substation,
11 to modify that line to be a double-circuit overhead 230
12 kV line instead of the existing single-circuit. And
13 similarly, here we request the flexibility to come into
14 Schrader either from the west, which would be the one
15 that requires the change to the Corbell-to-Schrader
16 circuit, or from the east, in which case we would not
17 need to reconstruct the Corbell-to-Schrader circuit,
18 but would instead just place a riser structure within
19 the northeast quadrant of the substation in order to
20 take the termination from the east.

21 Q. So I noticed that the description of
22 Circuit 1 and Circuit 2 both include this language.
23 And from looking at what's on the right screen,
24 starting on Line 13, there's a description of 1, which
25 is kind of the preferred interconnection option, but

1 then both of those paragraphs carry this same language
2 that if SRP is unable to secure the necessary
3 right-of-way to follow the UPRR, Circuit 2 will exit to
4 the east where it will be constructed utilizing one
5 riser structure where it will transition to underground
6 construction within the Schrader substation. So that's
7 that -- when you showed the Committee the maps or the
8 option alternatives relating to the Schrader overhead
9 transition corridor, that Subparagraph 2 is that option
10 where you would head out to the east and travel along
11 the consolidated canal?

12 A. That's correct.

13 Q. So, again, what's described in the CEC are
14 the aboveground or overhead components, the Schrader
15 substation or the -- it would be the Henshaw substation
16 to RS-28 substation, it would be the Schrader
17 substation description as its own stand-alone project
18 component, and then we have the Schrader substation
19 sections that deal with -- to the underground
20 transitions that occur within Schrader. And those are
21 really the three components that we're covering in the
22 CEC, is that correct?

23 A. Yes, sir.

24 Q. And then there's this section in the draft
25 CEC that says, Additional Approvals. What are we

1 covering there?

2 A. So two things. The first is the amendment of
3 Decision 59791 and 60099, which would authorize us to
4 reconstruct the Corbell-to-Schrader line to a
5 double-circuit line.

6 And then the second piece touches on the
7 system flexibility component that I described earlier
8 where we need the ability to place up to three overhead
9 structures within the eastern portion of Schrader
10 substation in the case that we need to reterminate
11 either of these circuits to a different position within
12 Schrader substation itself.

13 Q. Okay. And that -- what you're describing is
14 if for some reason, based on changes on the system or
15 system needs, that we had to change the bay positions,
16 you might have to utilize one to three structures
17 within the substation in order to accomplish that
18 reconfiguration of the lines?

19 A. Yes, sir.

20 Q. Anything else? Well, talk about the timing
21 for the project. We've presented testimony to the
22 Committee in terms of the need to start construction on
23 the RS-28 substation as soon as -- assuming the
24 Committee approves a CEC for this case and assuming the
25 Commission approves the Committee's decision, there's

1 usually a provision that provides that we don't
2 commence construction until we provide 90 days' notice
3 to affected landowners. I think you have language here
4 in which, in order to meet Intel's in-service date and
5 commissioning timeline for its new fabs, that we're
6 asking to shorten that time frame. Can you direct us
7 to that condition?

8 A. Correct. So Condition 12, which should be on
9 Page 9, hopefully. There we go. One of the things
10 that makes this project unique, among all the other
11 things that we've already talked about, is the time
12 pressure associated with it. In general, the line
13 siting cases I've been involved with in the past, we're
14 planning a transmission line or a substation that may
15 not necessarily get built until many years into the
16 future after the time that we seek a CEC for it. And
17 so this condition has been in those CECs that requires
18 us to provide 90 days of notice prior to the start of
19 correction.

20 As I testified yesterday, relative to the
21 timeline, in order to meet Intel's energization date,
22 particularly as it relates to the RS-28 substation, and
23 our understanding of the next available opportunity to
24 have the ACC ultimately approve the CEC in their Open
25 Meeting, that would require us to start construction of

1 the substation essentially immediately following the
2 ACC's approval. And so the amendment -- or, the change
3 that we're requesting to this particular condition is
4 to allow us to begin construction immediately following
5 the ACC's approval.

6 Q. So I see that language. That's really on the
7 next page. Why don't we -- before we get to that, in
8 terms of the notice that we're asking to give, we're
9 essentially accelerating the notice and suggesting that
10 for this particular case we would give notice to the
11 jurisdictions and the entities that are identified in
12 Condition 12 within 5 miles of the project and to do
13 that upon approval of the Certificate by the Committee.
14 In concept, it may be that the Committee -- if the
15 Committee approves this, the Commission has the right
16 or the ability to say no. What's your -- conceptually,
17 what would the notice that you would intend to give
18 after the approval by the Committee say?

19 A. So effectively what we would do is I think
20 prepare that notice. And then upon approval from the
21 ACC, then we would distribute that notice, is my
22 understanding of the condition.

23 Q. Well, I think the language here says that
24 upon approval of the Certificate by the Committee, the
25 applicant shall provide cities and towns within 5 miles

1 of the project the notice that's included in this
2 written description of the project. So we would
3 provide that project description, and I imagine that
4 notice would indicate that the Commission has not yet
5 approved the project, but that upon approval, in the
6 event the Commission approves the project, here is a
7 description of the project, and the applicant would
8 intend to commence construction immediately following
9 the Commission's approval, if we were so lucky to
10 obtain that approval, something to that effect,
11 correct?

12 A. You are more correct than I was. That's a
13 better way of stating it.

14 Q. So that is different. But I mentioned at the
15 outset, the project is unique in some ways, and one of
16 those is that you're on an accelerated path to try to
17 get the substation constructed. And in order to meet
18 that timeline, you've indicated to me -- and we went
19 over that language, we spent a fair bit of time on it
20 trying to talk about why you needed that, do you really
21 need it, and is the timing that critical. And you
22 said, yes, it is. And so this is the solution we came
23 up with?

24 A. Yes, sir.

25 MEMBER HAENICHEN: Mr. Chairman.

1 CHMN. KATZ: Yes.

2 MEMBER HAENICHEN: Wouldn't it be wise
3 that -- assuming this Committee approves this project
4 right away, wouldn't it be wise for someone to give
5 them a heads-up over at the Corporation Commission that
6 we need an accelerated approval by them as well?

7 MR. DERSTINE: Mr. Chairman, Member
8 Haenichen, you are right. And I think the good folks
9 within the regulatory team at SRP will be communicating
10 and coordinating, to the best they can, with the
11 Arizona Corporation Commission to see if we can get
12 this on the Commission's Open Meeting agenda.

13 By statute, we can't have this heard any
14 sooner than 30 days. And so as soon as the -- however
15 the 30-day window runs, when that time clock ends, and
16 then how that fits into the next Open Meeting schedule,
17 SRP plans to do its best to get it on the Open Meeting
18 agenda.

19 MEMBER HAENICHEN: That's very important.

20 MR. DERSTINE: Yeah. Agreed.

21 BY MR. DERSTINE:

22 Q. There were some changes to -- having to deal
23 with avian -- the protection plan. I don't know if,
24 Ms. Pollio, it's better for you to speak to that. But
25 my understanding of the suggested changes we've made to

1 the Avian Power Line conditions is more intended to not
2 limit or to make any real changes, but to update that
3 language to bring it in line with what's happening in
4 terms of the current publications and guidelines that
5 are in place. Can someone speak to that?

6 MS. POLLIO: Yes, I can, and Mr. Heim may
7 want to add. But you're correct, it really is just a
8 slight modification to the existing language to bring
9 it in -- again, to bring it up to date. The APLIC, or
10 Avian Power Line Interaction Committee, are guidelines
11 that are set forth, and they are being updated now.

12 SRP's lead avian biologist is the vice chair
13 of the APLIC Committee, and so very knowledgeable on
14 these guidelines and really at the forefront of avian
15 protection. And so in consultation with her, I think
16 we wanted to make sure that we addressed the fact that
17 the manual or the guidelines are being updated and
18 anticipate being -- new guidelines being released here
19 next here. So really it is just to almost wordsmith
20 this and to get it in line with new guidelines that are
21 coming out.

22 MR. DERSTINE: Okay. Thank you.

23 CHMN. KATZ: And that was Paragraph 6 that we
24 were talking about?

25 MS. POLLIO: Correct. Yes.

1 MR. DERSTINE: Anything else you wanted to
2 touch on in the form of CEC, Mr. Heim or Ms. Pollio?

3 MR. HEIM: I think that probably sums up the
4 main components of it from my perspective.

5 Anything from you, Kenda?

6 MS. POLLIO: I'm good. Thank you.

7 CHMN. KATZ: And from my perspective, instead
8 of doing it twice, I'd prefer us to hear the closing
9 arguments of counsel and then go paragraph by
10 paragraph, as we normally do, through the CEC. And if
11 there are any questions of any of the witnesses or
12 counsel, we can discuss and argue, debate, and come to
13 a resolution at that time.

14 MR. DERSTINE: Understood. Well, I think
15 that is our case. We have a last chapter here that's
16 conclusions of the panel. I don't know if the panel
17 members have anything more that they want to add. We
18 may have said it all in terms of the topics and the
19 subjects that we thought were important to present to
20 the Committee and concerning the case.

21 I don't know, Mr. Heim, is there anything you
22 wanted to add?

23 MR. HEIM: No. Just thanks for the time and
24 your kind attention and questions, and we appreciate
25 the opportunity to be here.

1 MR. DERSTINE: Ms. Pollio.

2 MS. POLLIO: I will concur with Mr. Heim.
3 Thank you all very much.

4 MR. DERSTINE: And Ms. Horgen remotely from
5 wherever you are. You covered our public outreach and
6 engagement.

7 MR. HORGEN: I concur with what they said as
8 well. Just thank you for the opportunity, for
9 listening to us and allowing us to share the project
10 information with you.

11 MR. DERSTINE: Thank you for that.

12 Well, I am -- that is our case. The
13 witnesses are available for any additional questions
14 from Members of the panel -- or, the Committee and from
15 the parties if there are any.

16 CHMN. KATZ: Let me ask, does the City of
17 Chandler, Mr. Crockett, have any questions that you
18 wanted to ask of the panelists or any clarifications
19 that you'd like to make on behalf of the City?

20 MR. CROCKETT: Chairman Katz, I don't believe
21 so at this time. Thank you.

22 CHMN. KATZ: And anything from the homeowners
23 association, Counsel?

24 MR. ANCHARSKI: No additional questions or
25 comments. Thanks.

1 CHMN. KATZ: Do any of our Committee Members,
2 whether you're appearing virtually or in person, have
3 any questions that you wanted to direct to any of the
4 panelists that are currently present?

5 (No response.)

6 CHMN. KATZ: Hearing -- I keep saying
7 "hearing silence," but I guess I'm not hearing
8 anything. But that all being said, I think it makes
9 sense, then -- I don't think you want to do your
10 closing arguments right now.

11 MR. DERSTINE: Well, I would like to, if it's
12 appropriate and with your permission, move the
13 admission of our exhibits. And I can tick those off
14 for you.

15 CHMN. KATZ: Yeah, that would be fine. We'll
16 make sure that any and all of the exhibits that are
17 offered by the parties or the intervenors get admitted
18 into evidence and become part of our record.

19 When we're done with that, I think we'll just
20 break for the day and begin tomorrow at about 9:00 with
21 the closing arguments of counsel, and then we'll review
22 the CEC and approve or disapprove of it or modify it.

23 MR. DERSTINE: Whatever your pleasure is, I'm
24 happy to -- I've got a short closing. I don't know
25 that I have a lot to say in closing, but I'm happy to

1 do that now, this afternoon, and wrap it up that way,
2 or I'm happy to save it for tomorrow. Whatever the
3 Committee prefers.

4 CHMN. KATZ: Any Committee Member have any
5 motion they'd like to make, or even we can do it
6 informally?

7 MEMBER HAENICHEN: I move that we allow
8 Mr. Derstine to finish now with his closing argument.

9 CHMN. KATZ: Is there a second?

10 MEMBER PALMER: Sure.

11 MEMBER DRAGO: Second.

12 CHMN. KATZ: Okay. All those in favor of
13 hearing closing argument now, as opposed to first thing
14 tomorrow morning, please say aye.

15 (A chorus of ayes.)

16 CHMN. KATZ: Anybody opposed?

17 MEMBER GRINNELL: I'd rather do it tomorrow.
18 I'd rather just -- that's personal, because I would
19 like to go lay down. But other than that...

20 MR. DERSTINE: Oh, well, I don't have any
21 preference.

22 MEMBER GRINNELL: It doesn't matter.

23 CHMN. KATZ: I guess we could do it, unless
24 counsel would prefer --

25 MR. DERSTINE: I don't have any preference.

1 I understand Member Grinnell is struggling with a bad
2 back, and whatever chair we've given him isn't all that
3 comfortable.

4 CHMN. KATZ: And also, Member Little, I
5 think, indicated she'd rather wait until tomorrow. But
6 I don't know if there are any other descents.

7 MEMBER PALMER: I'm actually fine either way.
8 I'll leave it at your discretion, Mr. Chairman.

9 MEMBER RIGGINS: I'm fine either way as well.

10 MEMBER HAMWAY: Let's leave it until
11 tomorrow, Mr. Chairman. This is Mary Hamway.

12 CHMN. KATZ: I, candidly, think that that
13 makes sense so that we are thinking clearly.

14 Also, you have copies of the CEC. I know you
15 have better things to do this evening, but if you want
16 to at least briefly read through that so when we get to
17 approving, modifying, or rejecting the CEC we're better
18 prepared to do so. And counsel has indicated he will
19 be relatively short.

20 MR. DERSTINE: Yes.

21 CHMN. KATZ: And I don't know whether or not
22 the City or the homeowners associations would have much
23 to add.

24 MR. CROCKETT: We will be shorter than the
25 applicant, I guarantee you that.

1 MR. DERSTINE: And we'll dealing with moving
2 our SRP exhibits tomorrow.

3 CHMN. KATZ: Well, we can offer the exhibits
4 now.

5 MR. DERSTINE: Whatever you prefer.

6 CHMN. KATZ: Let's just do the exhibits now,
7 and then we'll do closing argument tomorrow morning.

8 MR. DERSTINE: Okay. So, Mr. Chairman, I
9 would move the admission of, and I'll just list these,
10 the following exhibits: SRP-1, which is the CEC
11 application; move the admission of SRP-6, SRP-7, that's
12 the left slide deck, as well as the right slide deck
13 that were used to support and guide the witnesses'
14 testimony here before the Committee.

15 We have the SRP-8, which is the affidavit of
16 publication, including the various notices of hearing
17 that were published in the various newspapers that
18 Ms. Pollio identified in her testimony. SRP-9, which
19 is the proof of service to the affected jurisdictions.
20 9 is the copies of the return receipts from the various
21 certified letters that went out to the affected
22 jurisdictions. SRP-10, which is the map of the sign
23 locations and the photographs of the signs that were
24 posted in those locations, as testified to by
25 Ms. Pollio.

1 We have SRP-11, which is the response from
2 the Hopi Tribe to our letter concerning cultural
3 resources and informal consultation. SRP-12 are the
4 additional comments that were received by SRP since the
5 filing of the CEC application.

6 We have SRP-15, which are the responses to
7 Staff's first set of data requests. Staff's letter,
8 which is marked as SRP-19, referred to the data
9 requests that were issued to SRP and the responses, so
10 the responses are contained at SRP-15.

11 We've included, and I don't know that we need
12 to move their admission, but by virtue of judicial
13 notice SRP-17, which is Decision No. 59791, which is
14 the San Tan-to-Corbell transmission line CEC for Case
15 86. SRP-18, which is Decision No. 60099, which amends
16 Decision 59791, that simply confirms the route that was
17 approved for the 230 kV transmission line project
18 approved in Decision No. 59791.

19 SRP-20 is the project overview map that we
20 used in presenting to the Committee. It was
21 incorporated the various slides, which were marked,
22 again, as SRP-6 and 7. SRP-21, which is the map of the
23 additional key observation points and those visual
24 simulations that Ms. Pollio testified to, primarily the
25 additional four simulations that were -- show the

1 visual impacts of the projects surrounding the Schrader
2 substation.

3 SRP-22, which are the additional
4 communications from stakeholders, again, not included
5 in the application.

6 So those are the exhibits that I would move
7 for admission, with the permission of you,
8 Mr. Chairman, and the Members of the Committee.

9 CHMN. KATZ: And do you want to also do a
10 thumb drive of that virtual meeting and we can make
11 that Exhibit 23?

12 MR. DERSTINE: Yes.

13 CHMN. KATZ: Okay. Just so I got it right,
14 we're talking about admitting Exhibits 1, 6, 7, 8, 9,
15 10, 11, 12, 15, and I will also include 17 and 18 for
16 the benefit of the Corporation Commission if they want
17 to look at the record, 19, 20, 21, 22, and the
18 soon-to-be-marked Exhibit 23. And these are SRP
19 exhibits, which will be admitted.

20 (Exhibits SRP-1, SRP-6, SRP-7, SRP-8, SRP-9,
21 SRP-10, SRP-11, SRP-12, SRP-15, SRP-17, SRP-18, SRP-19,
22 SRP-20, SRP-21, SRP-22, and SRP-23 were admitted into
23 evidence.)

24 CHMN. KATZ: I believe we already admitted
25 Chandler's, was it 1, 2, and 3?

1 MR. CROCKETT: That's correct.

2 CHMN. KATZ: And those will be part of our
3 record. And I don't know if we had any exhibits from
4 the homeowners associations. I don't believe so.

5 MR. ANCHARSKI: No, Chairman.

6 CHMN. KATZ: Is there any reason that we
7 shouldn't call it a day.

8 (No response.)

9 CHMN. KATZ: We do stand in recess. We'll
10 get started hopefully promptly at 9:00 a.m. tomorrow.
11 We'll hear closing arguments of counsel and then we
12 will go through the CEC. Thank you all for your kind
13 participation. Have a good night, get some good rest,
14 and we'll see you all tomorrow.

15 (The proceeding recessed at 4:10 p.m.)

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1 STATE OF ARIZONA)

2 COUNTY OF MARICOPA)

3

4 BE IT KNOWN that the foregoing proceedings
5 were taken before me; that the foregoing pages are a
6 full, true, and accurate record of the proceedings all
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8 proceedings were taken down by me in shorthand and
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10 ethical obligations set forth in ACJA 7-206(F)(3) and
11 ACJA 7-206 J(1)(g)(1) and (2). Dated at Phoenix,
12 Arizona, this 15th day of November, 2021.

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15

KATHRYN A. BLACKWELDER
Certified Reporter
Certificate No. 50666

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20 7-206(J)(1)(g)(1) through (6).

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