## BEFORE THE PUBLIC UTILITIES COMMISSION







ADMINISTRATIVE LAW JUDGES RAFAEL L. LIRAG and ELAINE LAU, co-presiding

	)	EVIDENTIARY HEARING
Application of Pacific Gas and Electric Company for Authority, Among Other Things, to Increase Rates and Charges for Electric and Gas Service Effective on January 1, 2020. (U39M)	)	Application 18-12-009

REPORTER'S TRANSCRIPT San Francisco, California October 18, 2019 Pages 2884 - 3080 Volume - 25

Reported by: Doris Huaman, CSR No. 10538 Shannon Ross, CSR No. 8916

1	INDEX	
2	LUTTNESSES .	DACE
3	WITNESSES:	PAGE
4	ERIC BORDEN Direct Examination By Mr.	2889
5	Hawiger	
6	Cross-Examination By Mr. Middlekauff	2905
7	Examination By ALJ Lau Redirect Examination By Mr.	2918 2941
8	Hawiger Recross-Examination By Mr.	2945
9	Middlekauff Cross-Examination By Mr.	2946
10	Buchsbaum Redirect Examination By Mr.	2955
11	Hawiger Recross-Examination By Mr.	2956
12	Buchsbaum	
13	JENNIFER DOWDELL  Direct Examination By Mr. Long	2965
14	Cross-Examination By Ms. Slocum Redirect Examination By Ms.	2980 3015
15	Goodson Cross-Examination By Mr. Ouborg	3024
16	Redirect Examination By Mr. Long Redirect Examination By	3043 3046
17	Mr. Ouborg	
18	MICHAEL KERANS  Cross-Examination By Mr. Long	
19	Redirect Examination By Mr. Ouborg	3070
20		
21		
22	Exhibits: Iden. Evid.	
23	288 2888 2957 289 2888 2957	
24	290 2888	
25	293       2916       2958         291       2958	
26	292       2958         294       2965       3025	
27	295 2965 3050 295-R 2965 3050	
28	296       2965       2973         297       2965       2974         298       2972       2997	

1	299 300	2980	2979 3022
2	301 302	2980 2980	3022 3022
3	303 304	2980 2980	3023
4	305 306	2980 2993	3024 3024
5	287		3071
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			

1	SAN FRANCISCO, CALIFORNIA
2	OCTOBER 18, 2019 - 9:30 A.M.
3	* * * *
4	ADMINISTRATIVE LAW JUDGE LIRAG: Let's
5	go on the record. Good morning, everyone.
6	This should be the last day of evidentiary
7	hearings, unless we have another one on
8	November 6th, which we shall discuss later
9	on. We'll also take care of pending matters
10	and matters that need to be addressed moving
11	forward at the end of the hearing today.
12	So let's take care of Mr. Borden.
13	ERIC BORDEN, called as a witness by TURN, having been sworn, testified as
14	follows:
15	ALJ LIRAG: Please state your name, spell your last name, and provide a business
16	address.
17	THE WITNESS: Eric Borden, B-o-r-d-e-n.
18	I'm with TURN, address 785 Market Street, San
19	Francisco, 94103.
20	ALJ LIRAG: Let's identify some
21	exhibits. First is Exhibit 288. This is the
22	Prepared Testimony of Eric Borden.
23	Next is Exhibit 289. These are
24	Attachments to the Testimony of Mr. Borden.
25	Exhibit 290, Mr. Hawiger, is this
26	the cross exhibit pertaining to Mr. Calvert?
27	MR. HAWIGER: Yes, your Honor.
28	ALJ LIRAG: Exhibit 290 is a

1	cross-examination exhibit. It does not
2	relate to Mr. Borden's testimony. It relates
3	to Mr. Calvert's testimony. And the document
4	includes PG&E Response to Turn Data Request
5	088-10, SCE's Response to TURN Data Request
6	015 in Application 18-09-002, and then
7	relevant to PG&E Rebuttal Testimony page 9 to
8	20, Answer 40. So that's Exhibit 290.
9	(Exhibit No. 288 was marked for identification.)
10	identification. )
11	(Exhibit No. 289 was marked for identification.)
12	identification. )
13	(Exhibit No. 290 was marked for identification.)
14	identification. )
15	ALJ LIRAG: Next, PG&E Response to
16	TURN's Data Request 003, Question 11, Exhibit
17	291.
18	And then Exhibit 292 is PG&E's
19	Response to TURN's Data Request 088, Question
20	6 with Attachment 1.
21	Let's do the Direct Examination
22	first for Mr. Borden. We'll tackle this
23	exhibit for Mr. Calvert at the end of
24	Mr. Borden's cross-examination.
25	MR. HAWIGER: Thank you, your Honor.
26	ALJ LIRAG: Please proceed,
27	Mr. Hawiger.
28	MR. HAWIGER: Thank you.

1	DIRECT EXAMINATION
2	BY MR. HAWIGER:
3	Q Mr. Borden, do you have with you
4	what has been identified as Exhibits 288 and
5	289, your Direct Testimony and attachments?
6	A Yes.
7	Q Were these prepared by you or under
8	your supervision?
9	A Yes.
10	Q Do you have any changes or
11	corrections to make at this time?
12	A No.
13	Q Are the facts contained in your
14	testimony true and correct, to the best of
15	your knowledge?
15 16	your knowledge?  A Yes.
16	A Yes.
16 17	A Yes. Q And do the opinions contained in
16 17 18	A Yes.  Q And do the opinions contained in your testimony represent your best
16 17 18 19	A Yes.  Q And do the opinions contained in your testimony represent your best professional judgment?
16 17 18 19 20	A Yes.  Q And do the opinions contained in your testimony represent your best professional judgment?  A Yes.
16 17 18 19 20 21	A Yes.  Q And do the opinions contained in your testimony represent your best professional judgment?  A Yes.  Q Do you adopt these as your sworn
16 17 18 19 20 21 22	A Yes.  Q And do the opinions contained in your testimony represent your best professional judgment?  A Yes.  Q Do you adopt these as your sworn testimony in this proceeding?
16 17 18 19 20 21 22 23	A Yes.  Q And do the opinions contained in your testimony represent your best professional judgment?  A Yes.  Q Do you adopt these as your sworn testimony in this proceeding?  A Yes.
16 17 18 19 20 21 22 23 24	A Yes.  Q And do the opinions contained in your testimony represent your best professional judgment?  A Yes.  Q Do you adopt these as your sworn testimony in this proceeding?  A Yes.  MR. HAWIGER: Your Honor, Mr. Borden is
16 17 18 19 20 21 22 23 24 25	A Yes.  Q And do the opinions contained in your testimony represent your best professional judgment?  A Yes.  Q Do you adopt these as your sworn testimony in this proceeding?  A Yes.  MR. HAWIGER: Your Honor, Mr. Borden is available for cross-examination.

management and grid hardening. 1 PG&E's Rebuttal Testimony on grid hardening 2 3 introduced very substantial changes. are not addressed in Mr. Borden's testimony. 4 5 If you would like Mr. Borden to take 6 two minutes to make a high-level observation, we'd be happy to do that. It's totally up to 7 8 you. 9 ALJ LIRAG: Let's do that, but first, there's also an Exhibit 287 that was 10 11 identified yesterday. I just want to make 12 sure Mr. Borden has a copy of that. 13 surrebuttal. 14 I guess this doesn't pertain to 15 Mr. Borden; is that correct, Ms. Gandesbery? 16 MS. GANDESBERY: Right. It does not. 17 ALJ LIRAG: All right. I'm sorry for 18 the error. 19 All right. Mr. Borden, let's have 20 the two-minute overview. 21 THE WITNESS: Sure. Thank you, your 22 Honor. 23 From the information PG&E has 24 presented, as well as the one round of discovery we were able to do regarding PG&E's 25 26 rebuttal testimony, we are very concerned 27 with the safety implications of reducing the 28 scope of the overhead program so

1	dramatically. It's effective by around 50
2	percent. It's unclear whether this is really
3	warranted given the expected increase that
4	the rebuttal testimony introduces, around one
5	billion dollars.
6	And it's unclear to us whether PG&E
7	really is unable to find the labor to do this
8	work, given the one-billion-dollar increase
9	in undergrounding work that they expect.
10	With regard to that 153 miles of
11	undergrounding, we do not believe PG&E has
12	substantiated the reasonableness of that
13	forecast.
14	ALJ LIRAG: All right. Thank you.
15	And TURN and all the parties are
16	free to address the PG&E rebuttal in briefs.
17	MR. HAWIGER: Thank you.
18	ALJ LIRAG: Let's proceed with the
19	Cross-Examination by Mr. Middlekauff.
20	MR. MIDDLEKAUFF: Your Honor, did you
21	want to go over the exhibit from TURN, the
22	cross exhibit, or do you want to wait until
23	after Mr. Borden?
24	ALJ LIRAG: Do you mean the opinion of
25	Mr. Calvert?
26	MR. MIDDLEKAUFF: Yes, Exhibit 290.
27	ALJ LIRAG: All right. Let's do that.
28	So is there a move to admit Exhibit 290 into

28

1 the record? MR. HAWIGER: Your Honor, I would move 2 3 for the admission of the Exhibit 290. It is somewhat slightly usual in 4 5 that it contains a Data Response from Edison that we received just yesterday, and I would 6 seek its admission without a witness to 7 authenticate it. 8 9 But based on my attestation because 10 this exhibit is extremely relevant to one of 11 the largest single cost issues in this case. 12 It contains data that is exactly comparable 13 to PG&E's data, also in this exhibit, and it 14 is basic inventory data that is not 15 reasonably subject to dispute. If you'd like, I'd be happy to take 16 17 two minutes to provide a little background 18 and additional explanation of why I believe 19 this exhibit should be moved into evidence. 20 ALJ LIRAG: Let's first determine whether PG&E is -- at least for the record, I 21 22 suppose PG&E is, but let's first hear PG&E's 23 response to the move to have this admitted 24 into the record. 25 Any objections to Exhibit 290? 26 MR. MIDDLEKAUFF: Yes, your Honor. Ι

be submitted into the record.

have four reasons why this exhibit should not

1 ALJ LIRAG: You are objecting to the portion regarding SCE's response? 2 3 MR. MIDDLEKAUFF: That's correct, your Honor. 4 5 ALJ LIRAG: You are not objecting to 6 PG&E's Data Response? 7 MR. MIDDLEKAUFF: That's correct. ALJ LIRAG: All right. Let's hear the 8 9 objection first. 10 MR. MIDDLEKAUFF: Reason No. 1 is that 11 the witness that this is directed towards is 12 Mr. Calvert, who is not here today. 13 has no opportunity to address any of the 14 issues in this data request. He's already 15 come, I believe, three times to this hearing. 16 TURN had every opportunity to ask 17 him about this data request in his 18 cross-examination and decided not to, and so now to wait until the very last date of 19 20 hearings to bring it, when Mr. Calvert isn't 21 here, is both prejudicial to PG&E -- or it is 22 prejudicial to PG&E; that's No. 1. 23 No. 2, there's no foundation for the document. Other than counsel's 24 25 representation, we have no foundation. We 26 have no witness from Edison, who is 27 sponsoring the document or can explain the 28 source of the document when we are unable at

1 this point to ask any questions because 2 there's no witness to lay foundation. 3 No. 3, we have no ability to ask any cross questions about this document of any 4 5 witness, beyond just an Edison witness, of the source of the information. 6 7 No. 4, I would note, your Honor, 8 that the document is incomplete. If you take a look at the document itself, the question 9 10 references a workpaper that Edison had. 11 workpaper is not included. The question asks 12 for workpapers and sources in Excel file. 13 If you look at the Response, Edison 14 says, "The source data can be found in an MS 15 Excel file." That's not provided either. 16 So I just feel like, your Honor, to have an incomplete, last-minute exhibit is 17 18 something that's clearly objectionable, 19 especially when there's no witness or no 20 opportunity for cross-examination. 21 ALJ LIRAG: All right. I believe 22 Mr. Hawiger has a response to that, but 23 pardon my ignorance, but I'm only seeing a 24 number. So what is A.18-09-002? 25 MR. HAWIGER: I'm sorry. What number 26 are you referring to, your Honor? 27 ALJ LIRAG: So the document is 28 entitled, at least a portion of it, "SCE

1 Response to TURN Data Request 15 in 2 Application 18-09-002." So I'm asking, what 3 application is that? MR. HAWIGER: Your Honor, that's 4 5 Edison's Grid Safety and Reliability Program 6 Application, which was Edison's application to do cover conductor installation and 7 8 enhanced vegetation management for the years 2018 and 2019. 9 10 ALJ LIRAG: All right. 11 MR. HAWIGER: And I just might add, it 12 is the application from which PG&E took 13 workpapers regarding pole loading studies and 14 included them in their Rebuttal Testimony and 15 Attachments. 16 ALJ LIRAG: What is the status of that 17 application? 18 MR. HAWIGER: That application there is a settlement that has been submitted and it 19 20 is pending. It is still open, that application, pending any decision on the 21 22 proposed settlement. 23 What is your response to ALJ LIRAG: 24 Mr. Middlekauff's argument? 25 MR. HAWIGER: Your Honor, I'd be glad 26 to respond to his points, and then I would 27 like to just add a little context, or maybe I 28 could do the context first?

1 ALJ LIRAG: All right.

MR. HAWIGER: One of the key disputes between TURN and PG&E in this case has been the cost for covered conductor. The grid hardening, the \$2.5 billion for grid harding is the largest single capital cost forecast increase in this rate case. About 1.5 billion of that is for covered conductor.

TURN has been trying to ascertain why PG&E's unit costs were about three times as high as Edison's.

In it's Rebuttal Testimony, PG&E provided various answers. It's key response was that its system is different than Edison's, and in the cited rebuttal page, page 9-20, in the Rebuttal, PG&E said:
"Edison already has much -- has a larger percentage of heavier wire and a much larger percentage of bigger poles, and that's why they do not have to replace as many poles."

TURN did obtain the data from PG&E on the distribution of its poles in Tier 3 based on the classification of poles, which is a size classification. We were able, after some effort, to obtain -- and PG&E showed the distribution of about 194,000 poles it has in Tier 3, and that is the data contained in the first part of this exhibit.

27

28

in.

We finally got exactly the same 1 2 comparable data from Edison showing the 3 distribution of its, approximately, 178,000 poles located in Tier 3. Edison also 4 5 provided Tier 2 data. And so this data in this exhibit is 6 7 exactly the same comparable data for poles by class of poles in Tier 3 and Tier 2 for 8 9 Edison. 10 Now, it is absolutely true Edison 11 provided us with an Excel spreadsheet with, 12 approximately, 300,000 lines showing data for 13 each pole Tier 2 and Tier 3 and what class is 14 that pole. 15 We would have loved it if PG&E would 16 have provided us with a similar spreadsheet, 17 but PG&E has not provided that, and PG&E has 18 been unable to provide a lot of data around 19 poles that we have requested. 20 I presumed your Honor did not wish to have about - you know, I don't know how 21 22 many pages - hundreds of pages of Excel 23 spreadsheets underlying this data response in 24 this exhibit. So I did not copy it, but if 25 PG&E would like it, I'd be happy to put it

With respect to the specific points made by Mr. Middlekauff, it is true;

Mr. Calvert is not here. Unfortunately, we did not obtain this response from Edison until yesterday.

We had repeatedly asked PG&E for data on its pole loading studies. We asked Mr. Calvert to provide data on why they had to replace poles in 2019 during its covered conductor program, and PG&E was unable to provide it, but in their rebuttal, they say that their understanding is that Edison has much smaller poles.

This is the only piece of evidence that goes to that very issue of what is the distribution and nature of the poles in Tier 3 or is between PG&E and Edison.

with respect to foundation, I can only say that the Data Request speaks for itself. It was produced yesterday. It is an exact printout of the response we obtained. It is not complex. It just lists the classifications of poles and the number of poles.

The only difference is PG&E -excuse me -- I mean Edison provided both
Tier 2 poles and provided a table showing
percentages; whereas, PG&E's Data Response
just has the pole count. Actually, it has
the percentages also just for Tier 3.

I don't think there's much to be disputed in this type of inventory data. So I would warrant that it is the most probative information we have regarding PG&E's assertion concerning the relative sizes of its poles versus Edison's poles, and I certainly would not object to Mr. Calvert coming back.

I have no authority to have an

I have no authority to have an Edison witness appear. That's certainly, I presume, within your Honor's prerogative to do that.

You know, I just say in final, we went this way because we could not obtain much probative data from PG&E, and it's been an ongoing question regarding the relative cost between these companies, and it really is the highest cost driver.

And, you know, the goal here, I presume, is to authorize a reasonable forecast for this work.

We understand from PG&E on rebuttal that their scope is very unclear. Their actual capital costs may be very different; and, if so, they get trued-up in the future rate case if there is cost overruns or not. The goal here is come up with a forecast that is reasonable, and we believe that this data

So

1 is extremely probative to one of the key 2 issues in order to determine that forecast 3 for grid hardening. 4 MR. MIDDLEKAUFF: Your Honor, may I 5 briefly respond one of the points made? ALJ LIRAG: I was going to ask if you 6 7 had anything to add to the four points you 8 enunciated. 9 I do, your Honor. MR. MIDDLEKAUFF: One of the comments that counsel for 10 11 TURN made was that in terms of they needed to 12 get this information about Edison to respond 13 to our rebuttal, and then he said, "We didn't 14 get it until yesterday." 15 But, of course, they've had our 16 rebuttal for two months, and if they had 17 believed in -- that rebuttal testimony did 18 describe the differences between PG&E and 19 Edison primarily because TURN had made that 20 an issue in its testimony, and because TURN 21 had raised that issue in its testimony, we 22 needed to respond to it. 23 Now, if they had wanted this 24 information from Edison, they certainly could have asked when they got our rebuttal 25 26 testimony, but instead, they waited until --27 if you look at the date the response was

sent, it wasn't sent until last Thursday.

briefly.

they've waited all this time until the last 1 2 minute to ask for this information, which we 3 have no chance to respond to. 4 ALJ LIRAG: Any response to the 5 statement regarding TURN trying to obtain 6 information about pole data that TURN -- that Mr. Hawiger stated PG&E was not very 7 8 forthcoming with information relating to the 9 data being asked. 10 MR. MIDDLEKAUFF: I completely disagree 11 with that characterization, your Honor. 12 We have provided TURN the 13 information we have. Now, at certain points, 14 TURN may have felt like we should have had 15 different information or more information, 16 but the information that we had, we responded 17 in a timely way. 18 I think the fact that TURN never bothered to file a motion to compel or even 19 20 raised any concerns about it until this 21 moment indicates that it really wasn't a 22 concern for them, and we gave them the 23 information we had. If they didn't like it, 24 they didn't like it, but it's not that we 25 were withholding information or that we 26 delayed in giving them information. 27 MR. HAWIGER: Let me just respond

I agree. PG&E has not withheld

information, that I know of. The problem was lack of information.

In our first attempt to address -the issue here was, really, what is the
overloading, potential for overloading,
irrespective -- whether -- and so our first
tack was to ask PG&E to provide the type of
analysis that Edison did that PG&E included
in their workpapers.

And that's, I think, in one of the previous Data Requests that may be in the record, and it's also subpart (d) of this request that's in this exhibit right here.

What happened is PG&E said they don't have any -- they have not done any pole-loading studies. They don't have any data like that, and all they could provide us is distribution of poles. It was only after that that we realized, okay, we need to get something similar from Edison because PG&E can't reproduce Edison's analysis.

I admit we had to do this twice.

The first time around, we asked the wrong question, and Edison gave us a much more thorough and detailed breakdown of their pole-loading analysis, which, again, doesn't help to compare with PG&E. So it is true that we only asked for this data last week as

1 | a last resort.

ALJ LIRAG: All right. I'm going to ask a question to both of you: So is this something that PG&E and TURN think they can work out at the risk of getting unfavorable ruling for your side?

So I can rule on it, but if you want to pursue further talks regarding this document or some other iteration of it or some other conditions concerning this document, then you're free to discuss; otherwise, ALJ Lau and I can rule on what was presented, but you run the risk of having a ruling that is against your interests.

So if you want to take that time, then I will set aside a decision, but if you think that will not progress into some sort of resolution, then I believe we are ready to rule on this exhibit.

MR. MIDDLEKAUFF: Your Honor, we can talk at the break. I'm more than happy to talk at the break and then if we are unable to reach a conclusion, we can let your Honor know and then ask for you to make a ruling.

Can I make just one brief comment based on something said?

ALJ LIRAG: All right.

MR. MIDDLEKAUFF: I'm really troubled

now because what TURN said is they got an initial data response from Edison; they didn't like it and they asked Edison to re-do it, and that's why it's late. And so that's really concerning because who knows what was in the first response.

So now we've got a data response that's the second iteration of it, which is even a more troubling issue for us.

ALJ LIRAG: I take it to mean that the data is either incomplete or -- I don't think it means what you are thinking, but I'll let Mr. Hawiger respond.

MR. HAWIGER: That's entirely false.

The first Data Response, we asked the wrong question. We asked about the pole-loading studies.

Edison gave us much more detail about the pole-loading study numbers that are in PG&E's Rebuttal Testimony. We could not use that to compare to PG&E because PG&E had no such pole-loading studies; so we asked them -- we asked for the classification after we reviewed PG&E's Data Response.

ALJ LIRAG: Yes. I think it relates to the accuracy or the usefulness of the data as opposed to the actual result.

So, anyway, take time to discuss it

1	with him today, and then we'll get back to
2	it.
3	MR. MIDDLEKAUFF: Thank you, your
4	Honor.
5	ALJ LIRAG: All right. Sorry for the
6	delay, Mr. Borden. Let's proceed with
7	cross-examination from Mr. Middlekauff.
8	MR. MIDDLEKAUFF: And I'll be doing
9	part of the cross-examination and my
10	co-counsel will do the other part.
11	ALJ LIRAG: All right. Mr. Buchsbaum
12	again. There's not too many numbers here,
13	though. Hopefully, you won't raise anymore
14	issues regarding the Sempra decision.
15	MR. BUCHSBAUM: No Sempra will be
16	discussed.
17	ALJ LIRAG: All right.
18	Mr. Middlekauff.
19	CROSS-EXAMINATION
20	BY MR. MIDDLEKAUFF:
21	Q Mr. Borden, I'm going to focus my
22	cross-examination on two areas of your
23	testimony: One is vegetation management; and
24	then the other one is the system hardening
25	part of your testimony.
26	Let me first start with, you would
27	agree with me that PG&E has a wildfire-prone
28	service territory.

1 Α Yes. 2 On page 9 of your testimony, if I Q 3 can ask you to turn there. And I'm going to point you to lines 7 and 8, and there you're 4 5 describing a risk reduction of 5 percent; do 6 you see that? 7 Α Yes. 8 And the 5 percent number -- and 0 9 this deals with overhang clearing, and the 5 10 percent number that is in your testimony is 11 based on TURN's Data Request, Set No. 3, 12 Question 11; is that right? 13 Α Yes. 14 Q And you state that you considered 15 5 percent to be a relatively, quote, "low risk reduction"; do you see that? 16 17 Α Yes. 18 And is the point that you're making 0 19 here, that a 5 percent reduction in risk is 20 very low compared to the cost? 21 Α I'm saying those -- that -- that should be considered, yes. 22 23 Would you consider a Q Okay. 24 reasonable percentage of risk reduction to 25 mitigate wildfires to be 25 percent? Would 26 that not be considered low in your mind? 27 Α I don't have an exact threshold in 28 mind.

Would you consider 30 percent to be 1 Q 2 not low anymore? 3 Again, I don't have an exact Α threshold. 4 5 Okay. Let me have you look at 6 Exhibit 291, which you should have before 7 you, and this is the Data Response that you 8 relied on - correct - TURN, Set No. 3, 9 Question 11? 10 Α Yes. 11 Mr. Middlekauff, you might ALJ LAU: 12 want to bring the mic closer to you. 13 BY MR. MIDDLEKAUFF: 14 Q If I can ask you to turn to page 26 15 of your testimony. I'm sorry, Mr. Borden. 16 Stay on page 26, but let me ask you a question about Exhibit 291. If you look at 17 18 the third page of the data response; do you 19 have that? 20 Α Yes. 21 If you look at part H-2 down at the 22 bottom of the table, that's the overhang 23 clear; is that correct? 24 Α Correct. 25 0 And that's -- the 5.1 percent is the 5 percent you referred to in your 26 27 testimony; is that right? 28 Α Yes.

And now we're on page 26 of 1 Q Okay. your testimony. Here, you're talking about 2 "nonexempt assets"; is that correct? 3 4 Α Correct. 5 0 And here on line 1, again, you cite 6 to a number that's 3 percent of a risk reduction here, and, again, you cite - if you 7 look at Footnote 62 - to the same Data 8 9 Response; is that correct? 10 Α Correct. And that would be consistent with 11 Q 12 Item J on this table - right - "nonexempt 13 equipment, replacement 2.9 percent"; the 3 percent number that is referenced? 14 15 Α Correct. 16 Q So you got -- so the 5 percent you 17 got from this table; the 3 percent you got 18 from this table; is that correct? 19 Α Right. The sentence reads: "PG&E 20 believes the replacement of non-exempt 21 equipment results in a 3 percent" --22 Q Now, your testimony addresses 23 different aspects of vegetation management 24 and system hardening of PG&E proposals; is 25 that correct? 26 Α Yes. 27 So we've looked at some of 0 Okav. 28 your testimony dealing with overhang

```
clearing. We've looked at some of your
 1
 2
     testimony about non-exempt equipment. Your
 3
     testimony also deals with tree removal; is
     that correct?
 4
 5
           Α
               Correct.
 6
               And, in fact, that would be pages
           0
     13 through 18 of your testimony.
 7
                                        That's the
     portion of your testimony that deals with
 8
 9
     tree removals; is that correct?
10
               As I understand it, tree removal is
           Α
     a part of PG&E's Enhanced Vegetation
11
12
     Management Program.
13
               I'm just asking you where it is in
           0
14
     your testimony; pages 13 through 18?
15
               That's where you deal with the
16
     issue of healthy tree removal; is that
17
     correct?
18
           Α
               Yes.
19
               And, Mr. Borden, in that section of
           Q
20
     your testimony, pages 13 through 18, there is
21
     no reference there to TURN, Set No. 3,
22
     Question 11, what we've marked as Exhibit
23
     291; is that correct?
24
           Α
               You mean, do I reference anywhere?
25
           0
               Yes.
                     In pages 13 through 18 of
26
     your testimony, do you reference TURN, Data
27
     Set 3, Question 11?
28
               I do not believe so.
           Α
                                        1
```

Q

1 Q Okay. And if I can direct your 2 attention back to Exhibit 291. Item, here, 3 H1 refers to high-risk species removal; is that correct? 4 5 Α Yes. 6 And that's generally the topic area 0 that you're addressing in lines 13 through 7 8 18; is that correct? 9 Α I think you mean pages. 10 Q Thank you. Pages. Pages 13 11 through 18. So, you know, Mr. Borden, I 12 notice here that the risk reduction for that 13 aspect of PG&E's program is 30 percent; is 14 that correct? That's PG&E's calculation, yes. 15 Α 16 Q Is there a reason why you decided 17 in your testimony not to bring up that point, that at least for PG&E's calculation it was a 18 19 30 percent risk reduction when you brought it 20 up for two other areas? 21 I think the purpose of much of my Α 22 testimony is to probe what is the actual 23 potential risk reduction from this program, 24 and what I find is that removal of living 25 healthy trees near power lines is unlikely to 26 have -- is likely to have a very low risk 27 mitigation potential.

Mr. Borden, you cited two of these

24

25

26

27

28

numbers in your testimony, but you ignored 1 2 that number. And I guess what I'm asking is 3 why you didn't include that number in your testimony -- at least stating that this is 4 5 what PG&E says is the risk reduction? 6 I don't have an exact answer. Ι think, again, the purpose of my testimony was 7 to probe what the risk mitigation is based on 8 9 My understanding is PG&E's actual data. 10 calculation is just based on any time a 11 certain species was involved in an emission 12 that was counted as -- removal of that 13 species would be counted as a risk 14 mitigation. And so I was probing that 15 question. 16 Q Did you do, for your own testimony, 17 a risk reduction analysis? 18 I effectively tried to get all the 19 data I could on the extent to which living 20 healthy trees are a major cause of wildfire risk in PG&E's territory, and that's what I 21 22 outlined in testimony. I found that 7

data I could on the extent to which living healthy trees are a major cause of wildfire risk in PG&E's territory, and that's what I outlined in testimony. I found that 7 percent of ignitions were due to living healthy trees, and I also found that 72 percent of the time that supposedly healthy trees fell on the lines they turned out to be unhealthy trees.

So while I do think there is some

your answer.

risk from living healthy trees, which is why 1 2 we support some funding for this program, we don't find that it reaches the scale that 3 PG&E has proposed. 4 5 Mr. Borden, my question is a little 6 simpler than that. Did you do a risk reduction analysis for your testimony? 7 I don't know what you mean by "risk 8 Α 9 reduction." 10 I talking about what PG&E gave you Q 11 in the data response. 12 MR. HAWIGER: Objection. Could you be 13 a little -- are you talking about risk 14 reduction analysis of a particular element or 15 of all of the elements or of -- it's a very 16 broad question. 17 BY MR. MIDDLEKAUFF: 18 I'm just talking about tree 0 19 removal. You talked about PG&E's response 20 and the data response of a risk reduction 21 It's a simple question. Did you analysis. 22 perform a risk reduction analysis on the tree removal issue? 23 24 ALJ LIRAG: For guidance, Mr. Borden, 25 if you did perform a risk reduction analysis 26 on a certain topic or of any sort or something analogous to that, you can clarify 27

THE WITNESS: To my mind, there's no exact definition of what a risk reduction analysis is. PG&E has done an analysis here. I've certainly looked at the risk posed by living healthy trees. So to the extent that that's a risk reduction analysis, then I have done a risk reduction analysis.

BY MR. MIDDLEKAUFF:

Q Do you have a percentage in mind,

Q Do you have a percentage in mind, based on your proposal, of how much it would reduce risk? I mean, PG&E put here percentages for each one of its programs as to how much it estimates the risk reduction would be. What is your percentage risk reduction based on your proposal?

A From the data that I've seen, our proposal would be sufficient to eliminate the risk from living healthy trees completely.

Q Do you have a percentage? So it's a hundred percent in your mind?

A Yes. Well, I don't know that I've calculated a percentage, but it kind of depends on how PG&E implements the program as well. A large part of this is can PG&E identify the riskiest trees for removal. So to the extent that it can, it would eliminate the risk from living healthy trees. To the extent that PG&E can't, then the risk

reduction would be less. 1 2 Do you have an expertise in Q 3 identifying trees that should be removed? 4 Α I am not an arborist. 5 0 You did propose -- TURN proposes a 6 study on page 18 of your testimony; is that 7 correct? 8 Α Correct. 9 Do you have an opinion about how Q 10 long this study would take? 11 Α No. 12 Do you have an opinion, as you sit 0 13 here today, about when this study would get 14 started? 15 Α So this is a proposal that we put 16 forward in Edison's GS&RP application as 17 well. And now I can't recall if the settlement included all the utilities or just 18 19 Edison. But certainly the Commission could 20 find in that proceeding to begin the study, 21 and that could happen technically any day. 22 Or it would start when the Commission decides 23 on this application, but it could start as 24 soon as the Commission resolves the Edison 25 application. 26 Mr. Borden, let's look at page 16 0 27 of your testimony. And here on page 16, 28 lines -- I may have the wrong page. Mr.

Borden, you recommend -- I'm just going -- I 1 2 think I -- with the errata, I got the wrong 3 page numbers for this. But you recommend generally the removal of 14,300 trees per 4 5 year; is that correct? Funding for that level of removal, Α 6 7 yes. Has TURN performed an independent 8 Q 9 analysis of the issue about the removal, how -- whether there would be a risk 10 reduction as a result of 14,300 trees? 11 12 That analysis is what I present in 13 testimony. What we find is that on average 14 we can say that around 10 living healthy 15 trees fall into power lines. Our proposal is 16 that PG&E can remove 14,000 -- up to 14,000 17 trees. And so we certainly -- we expect that 18 that would mitigate that risk. 19 MR. MIDDLEKAUFF: Your Honor, may I use 20 an exhibit to impeach the witness? 21 ALJ LIRAG: All right. Off the record. 22 (Off the record.) ALJ LIRAG: Let's go back on the 23 record. 24 25 And while we were off the record, an 26 exhibit was distributed, and we'll identify 27 it right now as Exhibit 293. This is TURN's 28 response to PG&E's Data Request, Set No. 2,

1	Question 14.
2	(Exhibit No. 293 was marked for
3	identification.)
4	ALJ LIRAG: Mr. Middlekauff.
5	MR. MIDDLEKAUFF: Thank you, your
6	Honor.
7	Q Mr. Borden, this is a data request
8	response that you sponsored; is that correct?
9	A Yes.
10	Q And the data request says, "How
11	much ignition risk reduction associated with
12	contact between a healthy tree and PG&E's
13	overhang equipment could result from a
14	program that would remove 14,300 trees
15	annually in PG&E's Tier 2 and Tier 3
16	high-fire threat district as proposed on page
17	16 of Exhibit TURN-1, line 15 of Mr. Borden's
18	testimony. Please state all facts and
19	provide all calculations that support your
20	response." And your response to that was,
21	"TURN has not conducted an independent
22	analysis for this issue."
23	Is that your response?
24	A Yes.
25	Q Thank you. Mr. Borden, let's talk
26	a little bit about vegetation management
27	costs. If I can have you turn to page 19 of
28	your testimony where table 5 is.

1 Α Okay. 2 MR. HAWIGER: Sorry. Could you repeat 3 that, please. MR. MIDDLEKAUFF: Page 19. And we're 4 5 going to look at table 5. 6 And table 5 provides PG&E's Q 7 proposal regarding various aspects of its veg management program to a particular overhang 8 9 clearing and maintenance and tree species 10 removal and then terms proposal. 11 Do you see that? 12 Α Yes. 13 0 And I notice for both lines, 14 actually, but for -- I'll focus on TURN here. 15 I notice for TURN that you use the exact same 16 numbers for 2020, 2021 and 2022; is that 17 correct? 18 Α You mean for tree species removal? For both. For both items that --19 Q 20 I'm sorry. You don't use -- yes, for -- hold 21 I'm sorry. I'm focusing on the lines on. 22 for -- you know, I will have to withdraw 23 that. It is different than what I taught. 24 So we will move on, Mr. Borden. 25 Let's talk a little bit about pole 26 replacement and system hardening. And if I 27 can direct you to page 26 of your testimony. 28 You can let me know when you're there.

1 ALJ LAU: Counsel, can I ask a couple 2 of questions --3 MR. MIDDLEKAUFF: Sure. ALJ LAU: -- since we're still on the 4 5 topic of removal of healthy trees. 6 **EXAMINATION** 7 BY ALJ LAU: 8 Mr. Borden, you said -- you Q 9 analyzed and concluded that 7 percent of 10 living healthy trees cause ignition. How did 11 you come up with that conclusion or analysis? 12 I think if you want to refer to testimony, I 13 see on page 15 that you said 4 percent on 14 line 7 -- 4 percent of 2000 ignitions. 15 then on line 9 you said 7 percent for Tier 2 16 and Tier 3. 17 Α Correct. 18 So how did you come up with those 0 19 figures? 20 Α So this was through data 21 requests -- a series of data requests where 22 we ascertained information on all ignitions 23 that are in PG&E's database that starts in 24 2014. Then we asked a series of questions on 25 was this due to a tree falling over? Was the 26 tree found to be healthy or not healthy, et 27 So the 7 percent is the subset of cetera? 28 trees that fell into lines that were found to

1 be healthy upon inspection as the numerator, 2 and then the denominator is just all 3 ignitions in the territory over that time 4 period. 5 So this is a number that you 0 6 extrapolated from the data, and it's not provided by PG&E; is that correct? 7 8 You mean the 7 percent 9 specifically? 10 Q The 4 percent and 7 percent. 11 Α Right. That's something that I 12 calculated from the data that PG&E provided. 13 0 All right. Can you provide a 14 little more context of the study that you're 15 proposing? What is the study that has been 16 proposed in Edison's grid hardening 17 proceeding and that TURN is proposing also in 18 this proceeding? It is to do -- conduct a healthy tree analysis removal? 19 20 Α It's to really get some Right. 21 independent information independent of 22 utilities on what is the risk from living 23 healthy trees and to what extent should they 24 be removed. I think it's really important 25 that unhealthy trees, so dead, dying, sick, 26 should be removed that pose a risk to 27 Those should be removed ianition lines.

under utility existing programs, so either

1 under routine vegetation management or CEMA. 2 And so if the focus really is living healthy 3 trees, how often should they be removed? What kind of risk do they actually pose? 5 That's something that we think we need more 6 independent information on independent of 7 utility claims about that. 8 So how would that independent 9 information come through? Like through an 10 arborist or --11 I would suspect. Α Yeah. For 12 example, there are research groups that -- at But certainly, I think 13 universities. 14 arborists would be involved in helping us and 15 the Commission asses this risk. 16 ALJ LAU: Okay. Judge Lirag. ALJ LIRAG: We'll let Mr. Middlekauff 17 18 continue. 19 BY MR. MIDDLEKAUFF: 20 I have refound my questioning on Q 21 table 5. 22 Α Okay. 23 Q So I appreciate the break because 24 it gave me a chance to look at it. So now --25 we'll go to system hardening in a minute. 26 But let's just finish up on veg management on 27 table 5 on page 19. And here, Mr. Borden --28 and I think you pointed this out earlier.

For TURN's recommendation 1 You're correct. 2 for tree species removal, that number is the same for all three years; is that right? 3 Α Correct. 4 5 0 In your mind, your testimony does 6 not address escalation; is that correct? 7 Α Correct. 8 And is it generally your Q 9 understanding that on a year-over-year basis costs will increase for labor and so forth? 10 11 My understanding is that escalation Α 12 is applied to calculate nominal dollars, and 13 as it says in the second line under table 5, 14 this is 2018 dollars. 15 So you would expect, when the 16 calculations are done of TURN's proposal, 17 that it should factor escalation; is that 18 correct? 19 Α Yeah. It would need to be 20 converted to nominal dollars. 21 Now let's talk a little bit about 0 22 system hardening. If you could go to page 23 26. And this is the -- let me ask you first. 24 TURN would support the replacement of wood 25 poles if replacement is needed as a part of 26 the System Hardening program to support the 27 covered conductor; is that correct? 28 Α Correct.

1 Q Does TURN oppose replacing the wood 2 poles with non-wood poles as a part of system 3 hardening when pole replacement is needed to support the additional weight of the covered 4 5 conductor? 6 Honestly, I have not looked at the 7 cost differential between replacing with 8 other wood poles versus non-wood poles. To 9 the extent that the costs are similar, it may 10 make sense to use non-wood poles. 11 Q Let me direct your attention back 12 to -- I'm sorry. We're going to go back a 13 page or two -- to page 24. And here you have 14 a figure 4, which assumes the actual costs 15 for -- this is just covered conductor -- is 16 that correct -- this table? 17 This is covered conductor. It does 18 include the cost of any necessary pole 19 replacements. 20 And how did you determine that for 0 21 PG&E, that it includes the cost of any 22 necessary pole replacements? 23 Α So that's what I cover in my 24 testimony. I expect this -- PG&E's costs 25 shown here is compared to actual and forecast 26 Edison costs, both of which include any 27 necessary pole replacements. And so I'm 28 showing -- that chart shows those two

1 figures. 2 So because the PG&E number is Q 3 higher, you're just assuming that it includes pole replacement costs? Is that how I 4 5 understand your testimony? 6 I'm sorry. I think I have a sentence that explains this somewhere. 7 Can you ask your question again. 8 9 I'm just trying to get to --Q Sure. 10 PG&E gave you a forecast of covered 11 conductor. Their forecast didn't include 12 poles, but you've assumed that pole costs 13 would be included in that. And I'm trying to 14 understand is the reason for your 15 assumption -- the basis for your assumption 16 simply because PG&E's forecast is higher than 17 the forecast of Edison? 18 MR. HAWIGER: I think -- if I may 19 point, Mr. Borden, I think it's the previous 20 page 23, the paragraph at lines 1 through 7 21 that addresses this issue. 22 THE WITNESS: Thank you. 23 ALJ LIRAG: All right. I won't 24 consider that as coaching. 25 All right. Please provide an 26 answer, Mr. Borden. 27 THE WITNESS: So what that says is that 28 PG&E's unit forecast for covered conductor is

1 5 percent higher than Edison forecast, and 2 SCE's forecast was already higher than its 3 actual cost. And so what I conclude in lines 8 to 10 is that TURN therefore adopts PG&E's 4 5 estimate for covered conductor installation as sufficient to fund both covered conductor 6 7 and any pole replacements required due to the additional weight posed by covered conductor. 8 9 BY MR. MIDDLEKAUFF: 10 Q And that's the point I'm trying to 11 get to. You make this assumption on lines 8 12 and 9. You say, "Because of these 13 differences in costs." I'm just going to 14 assume that that would cover pole 15 replacements as well even though the forecast 16 was only for the covered conductor. That's 17 all I'm trying to ask you is is that solely 18 because of the difference in cost? 19 MR. HAWIGER: I would just object to 20 the word "assume." That misstates the 21 evidence -- the testimony. Excuse me. 22 ALJ LIRAG: I'm going to sustain. You 23 can rephrase or substitute another word. 24 BY MR. MIDDLEKAUFF: 25 0 Okay. Is it my understanding, Mr. 26 Borden, that the reason you adopted, as you 27 say, on line 8 the concept that PG&E's

covered conductor includes both poles and

2

3

4

5

6

7

8

9

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

October 18, 2019 covered conductors solely based on the fact that there's a difference in the cost? I think it's fairly clear here. Α I'm comparing PG&E's forecasted costs for covered conductor to actual costs incurred by This issue about what -- PG&E's position here is that it needs to replace every single pole in a 7,100 mile circuit area to support covered conductor. And what this shows is that Edison's actual cost based

10 11 on its poles that they clearly have not had 12 to do that and their costs, which assumed 13 that one-third of poles would need to be

> And I'll add that their GRC proposal is for \$420,000 per circuit mile, even lower than their GS&RP proposal. I have now had a chance to look at some of the pole data comparing Edison poles versus PG&E PG&E made the claim our poles are poles. much smaller than Edison's. And looking that distribution from a data request we received yesterday, it's clear to me that that statement is just not true.

> replaced, have actually come in lower so far.

MR. MIDDLEKAUFF: Your Honor, I would move to strike. The witness has just been completely nonresponsive. I just asked him for the difference. He just put into the

record the information that counsel have been 1 2 trying to get in through a data response 3 before with no basis for it. So your Honor, I would just move to strike. 4 I have a verv 5 simple question for Mr. Borden. 6 ALJ LIRAG: Mr. Hawiger. 7 MR. HAWIGER: You know, Counsel is 8 trying to ask why Mr. Borden made this 9 assumption that the amount for covered conductor is sufficient to cover all the work 10 11 including the poles, and that is the exact 12 issue that he just addressed. 13 ALJ LIRAG: All right. I'll allow the 14 answer. If the witness explained something 15 relating to Edison, then if it has no substantiation, then we are able to apply the 16 17 proper weight to the answer. 18 BY MR. MIDDLEKAUFF: Mr. Borden, just to be clear, the 19 20 forecast that you asked PG&E for here was 21 just for covered conductor, and that's the 22 \$475,200 that's in figure 4; is that correct? 23 Α That's from a PG&E workpaper. Yes. 24 Right. And you also separately Q 25 asked PG&E information for the cost of poles; is that correct? 26 I believe that's right. Most of 27 Α

PG&E's costs for its program were contained

in one workpaper, which included its estimate 1 2 for pole replacement. Mr. Borden, is it your 3 Q understanding that as a part of PG&E's 4 5 overhead system hardening it will be 6 relocating portions of its circuits to 7 address vehicular exposure issues, in other words, the risk of cars hitting poles? 8 9 Α That's in PG&E's testimony. 10 Q I'm just asking for your 11 understanding one way or the other. 12 PG&E has stated that it may move 13 poles also due to egress issues, but exactly 14 what PG&E will do has been somewhat of a 15 moving target. 16 Q Does TURN oppose the relocation of 17 facilities and poles as a part of the System 18 Hardening program to address the risks of a car hitting the power pole? 19 20 I have not analyzed that specific Α 21 issue. 22 So you don't have an opinion one 0 23 way or the other? 24 Α Not at this time. 25 0 Do you believe that whether a pole 26 needs to be replaced to support covered 27 conductor is a determination that needs to be

made through engineering calculations?

1	A My general understanding is that a
2	pole loading study would need to be performed
3	as covered conductor is being deployed to
4	ensure that the pole can support the
5	additional weight.
6	Q You are not an expert in pole
7	loading studies; is that correct?
8	A No.
9	Q You did not do pole loading studies
10	as a part of preparing your testimony; is
11	that correct?
12	A I asked PG&E multiple times to
13	provide information on its poles, and it was
14	very difficult to get anything useful.
15	Q Mr. Borden, the question is simple.
16	You did not do a pole loading study as a part
17	of your testimony; is that correct?
18	A That is something I would expect
19	PG&E to do.
20	Q You did not?
21	A I did not do a pole loading study.
22	Q Mr. Borden, while we're still on
23	page 24, you reference here on lines 8
24	through 9 PG&E's estimated pole replacement
25	costs of \$600,000 per circuit mile.
26	Do you see that?
27	A Yes.
28	Q And you also state here that PG&E's

forecast includes replacing 30 miles -- or 30 1 2 poles per mile; is that correct? 3 Α Yes. And do you understand -- to kind of 4 0 5 do simple math here, do you understand that 6 that would be approximately \$20,000 a pole? That was PG&E's estimate, yes. 7 Α As you sit here today, do you have 8 0 9 any reason to disagree with the estimate of 10 approximately \$20,000 per pole? 11 I have seen information that PG&E 12 replaces poles for a much lower cost than 13 rural areas, but it's not something that I 14 specifically address in testimony. 15 Mr. Borden, can I have you take a Q 16 look at what we've marked as Exhibit 292, and 17 this is a data request propounded by TURN, 18 correct? 19 Α Yes. 20 0 And part of this request asks for information about pole replacements and so 21 22 forth. 23 Do you see that? 24 Α Yes. 25 0 Did your counsel give you a copy of this data request before you took the stand 26 27 today? 28 I believe you did. So I have a Α

1 copy. 2 Q And if I can direct you to the very last page of it, this has unit costs, and I 3 will represent to you that this is with 4 5 regards to poles. This has actual unit costs for 2018 and unit costs through August of 6 7 2019 year-to-date. 8 Do you see that? 9 Α Yes. 10 As you look at the bottom line here Q 11 on pole replacements, for 2018, the unit cost 12 was approximately \$17,557, and for 13 year-to-date 2019, it was \$26,408. 14 Do you see that? 15 Α I haven't checked the math on that, 16 but that appears to be the weighted average 17 of the pole replacement costs across 18 different areas. 19 I wanted to talk to you a little 20 bit about the non-exempt assets as a part of 21 system hardening. And Mr. Borden, if you can 22 go to page 26 of your testimony. 23 Α Okay. And let me direct you. Let's start 24 Q It says, "While certainly 25 on line 7. 26 transformers and other types of non-exempt 27 equipment should be replaced as they fail,

preemptive replacement is incompatible with

1 cost effective risk mitigation and results in 2 stranded or preemptive replacement costs 3 whereby ratepayers may be forced to pay for two assets despite one being operational." 4 5 Do you see that testimony? 6 Α Yes. 7 0 Let me ask you a couple questions, 8 though, to set a framework for our discussion 9 What is the difference in your mind on this. 10 between exempt and nonexempt equipment? 11 Α This is a designation that Cal Fire 12 makes for various types of equipment. 13 understanding is that for non-exempt 14 equipment vegetation clearance pursuant to 15 the Public Resources Code needs to be done --16 I think -- I believe it's a 10-foot radius 17 around each pole where that equipment is 18 deployed. 1 19 Okay. Mr. Borden, now let me 20 In line direct you back to your testimony. 21 8, I notice you say, "replace as they fail." 22 Is it TURN's position that equipment should 23 be run to failure and only replaced when it 24 fails? 25 Α Certainly if there are indications 26 that a piece of equipment will fail or that it's damaged in some way, then we would 27

expect that equipment to also be replaced.

If PG&E is performing its system 1 Q 2 hardening work on a specific circuit mile and 3 the existing equipment is deteriorated, but has not vet failed, is it TURN's position 4 5 that the existing equipment should continue 6 to be used on that rebuilt circuit mile? 7 MR. HAWIGER: Can counsel qualify the word "deteriorated"? 8 9 MR. MIDDLEKAUFF: Not failed vet. As 10 in poor condition. 11 You said "damaged" a minute ago. 12 So I'm going to use your terminology of 13 "damaged" and then your terminology of If the equipment is damaged or 14 "fail." 15 somehow deteriorated, is it your position 16 that that equipment should somehow be put 17 back up? 18 To the extent that equipment is Α extremely damaged and it's clear that it will 19 20 fail, then I would expect it to be replaced, 21 and I believe that would occur under 22 traditional O&M programs by the utility 23 pursuant to other regulations independent of 24 the Grid Hardening program. 25 0 Okay. Your statement was that if it's clearly damaged. What if it is 26 27 partially damaged? 28 I don't have an opinion on Α

exactly -- again, I think this is relevant to 1 2 other programs that the utility traditionally 3 does to adhere to Public Resources Code. What if it is 30 years old, the 4 0 piece of equipment? 5 Can you be more specific? 6 MR. HAWIGER: 7 Are you talking about any equipment that's 30 years old that --8 9 MR. MIDDLEKAUFF: The non-exempt 10 assets, which are exactly right here in his 11 testimony. That's what we're talking about. 12 MR. HAWIGER: There are also various 13 different categories of non-exempt assets and 14 so I'd just like you to clarify. 15 MR. MIDDLEKAUFF: The non-exempt assets 16 that you are referring to in your testimony. 17 0 I'm focused on this concept of 18 failure. And so what I'm trying to get from you, Mr. Borden, is if the equipment, the 19 20 non-exempt assets, as PG&E is doing its 21 system hardening, is a piece of equipment 22 that's 30 years old, would your proposal be 23 that should be put back up because it hasn't 24 failed yet? 25 I don't have a specific proposal 26 for what age of equipment requires replacement. Again, this is not relevant in 27 28

my mind to the Grid Hardening program.

program?

1 Q Okay. Would you agree with me, as 2 PG&E is doing its System Hardening program, that it should use its best professional 3 judgment to decide what equipment gets --4 5 what existing equipment gets reused and what 6 existing equipment is no longer used? 7 So my general understanding is that 8 that that type of maintenance would be 9 included under other programs. To the extent that PG&E hasn't been 10 11 inspecting assets and just finding problems 12 on its system, of course, those should be 13 But, again, hopefully, PG&E is addressed. 14 adhering to the law, to the regulations, 15 around maintaining its equipment. 16 Q I'm not focused on that, 17 Mr. Borden. I'm saying imagine for yourself 18 a PG&E crew has gone out to do a specific circuit mile of system hardening. As they're 19 20 going along that circuit mile, there's a 21 piece of non-exempt equipment that, in PG&E's 22 professional judgment, should not be 23 replaced; in other words, a new piece of 24 equipment should be put up. 25 Is it your position that that is 26 acceptable for PG&E to make that decision as 27 it goes along in its System Hardening

I guess the difficulty I'm having 1 Α 2 is that you seem to be discussing a 3 traditional maintenance program that happens to be - now you're saying - a portion of grid 4 5 hardening. Grid hardening is really -- the 6 point of it is to address wildfire risk. 7 Again, if PG&E is finding equipment that is unsafe or will likely fail in the 8 9 near term, that's something that it should 10 already be maintaining and replacing. 11 So I'm just trying to get to your Q 12 point here of the System Hardening program. 13 When that work is being done, is it 14 acceptable in TURN's mind that there will be 15 some equipment which will be replaced with 16 new equipment? Some existing equipment, when 17 the system is hardened, will be replaced with 18 new equipment; is that acceptable in your 19 mind? 20 I think I've answered. Α 21 ALJ LIRAG: Let's move on from that 22 line of questioning. 23 Okay. MR. MIDDLEKAUFF: Thank you, 24 your Honor. 25 0 Mr. Borden, keep the same scenario in mind, but we'll change the facts slightly. 26 27 If PG&E is going out and doing 28 system hardening and it finds a piece of

equipment that does not meet PG&E's current 1 2 construction standards - it wouldn't have 3 been required to remove it - but, let's say, the standards have changed, and it doesn't 4 5 meet the current construction standards, 6 would it be TURN's position that that 7 existing piece of equipment should continue to be used even though it doesn't meet 8 9 current standards? I've not analyzed that issue. 10 11 Q Okay. Mr. Borden, is it your 12 understanding that as a part of PG&E's 13 Overhead System Hardening program that PG&E is proposing to replace existing 14 15 transformers, as needed, with new 16 transformers, which have a fire-resistant fluid in them? 17 18 Α Yes. Does TURN oppose the use of new 19 Q 20 transformers with fire-resistance fluid? 21 Α TURN opposes replacement of 22 non-exempt equipment as part of this program. 23 So would TURN expect then, if PG&E Q had a transformer which did not have 24 25 fire-resistant fluid in it, then should it, 26 in part of its System Hardening program, put 27 that transformer back up? 28 Whether or not transformer has Α

fire-resistance fluid doesn't reflect on the 1 2 ignition risk of that asset. So to the 3 extent that's the existing asset, and it 4 appears to be in good shape, then, yes, it 5 would go back up. 6 So let me have you -- we're still Q 7 on page 26, up on lines 3 through 4, and you 8 see here that the ignition data that you 9 cited indicated that there were 3 percent of 10 the ignitions were from transformers; is that 11 correct? 12 Α Yes. 13 Is it also your testimony that the 0 14 new transformers are more fire resistant than 15 existing transformers? 16 Α I don't think I stated that. 17 0 So can I direct your attention back 18 to page 25? 19 Α Yes. 20 0 And here you state -- on lines 24 21 and 25 that you're talking about the 22 description of non-exempt equipment, you say, 23 "If accomplished according to these regulations" - and that's Public Resources 24 25 Code - "the operation of non-exempt equipment 26 poses a low likelihood of ignitions or catastrophic wildfire"; do you understand 27 28 that?

A Yes.

Q So is it your -- generally your understanding that non-exempt equipment poses a low likelihood of ignitions or catastrophic wildfire?

A Yes. Particularly given the preceding sentence: "Vegetation near non-exempt equipment is required to be cleared."

Q Okay. Mr. Borden, you mentioned earlier a statement about PG&E's rebuttal testimony and changes in system hardening. Let me just ask you generally, do you oppose undergrounding as a means of mitigating the wildfire risk?

A To the extent that undergrounding is necessary, then I don't think we would oppose it, but a lot of our concern goes to the fact that there are both financial, as well as labor constraints, or at least PG&E's stated that, and we want to be doing the most amount of risk mitigation possible at least cost over this next year C cycle.

Q I just want to be clear. TURN doesn't, per se, oppose undergrounding. I recognize you gave some caveats, but you don't have, per se, objection to undergrounding?

1 Α No. 2 Let me go back for a few more Q 3 questions about vegetation management. Α 4 Okav. 5 0 Would you agree that an arborist's 6 recommendation would be -- and this is - I'm I'll give you context here - this is 7 sorry. on the issue of healthy tree removal. 8 9 Α Okay. 10 Would you agree that an arborist's 11 recommendation would be a sufficient basis to 12 remove a healthy tree? 13 I don't know that I have an exact Α I think if arborists are finding 14 criteria. 15 that a tree has a high likelihood of falling 16 into lines and sparking a fire, then that 17 tree should be removed, generally speaking. 18 0 Yeah. I'm just trying to get to --19 you're not arborist. I'm not an arborist. 20 If an arborist goes out and says: 21 "This tree looks healthy, but I think it 22 should be removed," you wouldn't oppose that 23 tree being removed; is that correct? 24 Α It might depend on the circumstances. I don't want to answer, you 25 26 know, in a blanket fashion. 27 But you personally wouldn't have Q 28 any bases for making that decision because

you're not an arborist; right? 1 2 I'm not an arborist. Α 3 Is it your understanding that PG&E Q does have arborists in the field who are 4 5 approving the removal of each healthy tree? 6 Α I'm not sure about that. 7 Q So when you say you're not sure, 8 you mean you don't know one way or the other? 9 Α Correct. 10 MR. MIDDLEKAUFF: Your Honors, I 11 believe that's all the questions I have, but 12 Mr. Buchsbaum has got some questions as well. 13 ALJ LAU: I just have a quick 14 clarifying question. This is in relation to the numbers that Mr. Middlekauff was 15 16 referring to, which was in your testimony on 17 page 26, the 3 percent of risk -- or 3 18 percent of emissions can be avoided with 19 replacement of these equipment, again, and 20 also 2 percent of incidences can be 21 attributed to fuses and 3 percent attributed 22 to transformers. Were these numbers also 23 something that TURN extrapolated from PG&E's data or were these data that PG&E provided? 24 25 THE WITNESS: Yes. Correct. It's from 26 an ignition database that PG&E provided. 27 ALJ LAU: So TURN extrapolated it? 28 THE WITNESS: Yes.

1	ALJ LAU: Thank you.
2	ALJ LIRAG: Mr. Buchsbaum's cross is on
3	a different topic.
4	MR. MIDDLEKAUFF: That's correct, your
5	Honor.
6	ALJ LIRAG: I'll have Mr. Hawiger to do
7	redirect regarding your topic.
8	Let's go off the record.
9	(Recess taken.)
10	ALJ LIRAG: Let's go back on the
11	record. Any redirect off the questions by
12	Mr. Middlekauff?
13	MR. HAWIGER: Yes, your Honor. But if
14	I also could clarify, there was also a
15	question from Judge Lau.
16	ALJ LIRAG: That's fine.
17	MR. HAWIGER: Thank you.
18	REDIRECT EXAMINATION
19	BY MR. HAWIGER:
20	Q Mr. Borden, first, let me ask you
21	to turn to your exhibit, Exhibit 288, your
22	testimony, page 26, and Judge Lau asked you
23	whether some of the percentage figures, shown
24	at lines 1 through 3, you calculated from
25	PG&E's database or you took directly from
26	PG&E.
27	So let me ask you first, the
	oo ice me ask you ring, the

percent of ignitions can be avoided," was 1 that based on PG&E's data as shown in 2 3 Exhibit 291? Α 4 Yes. 5 And then, subsequently, you have 0 6 figures of 2 percent and 3 percent in lines 2 and 3. And were those from PG&E's --7 directed from PG&E or did you calculate 8 9 those? I calculated those numbers. 10 Α 11 Can you clarify, were those based Q 12 on the same database that is used in 13 Exhibit 291 or were those a different 14 database? I believe they are different time 15 Α 16 periods. 17 Can you say -- do you know offhand 0 which time period is used in the PG&E exhibit 18 that is based on the 414 ignitions? 19 20 Α Yes. PG&E's data 2015 to 2017, and 21 I have data from June 2014 to June 2018. 22 Q Thank you. 23 You were also asked some questions, 24 I think, by Judge Lau regarding the 25 independent study, and you testified that you thought that Edison's settlement was -- you 26 27 weren't sure if it was for Edison only or for 28 all utilities.

Did you refresh your memory about 1 2 that, about that settlement? 3 Α Yes. The settlement is just for Edison. 4 5 And then regarding the cross by 0 6 PG&E, PG&E asked you whether you conducted pole-loading studies, and you said, no. 7 Did you ask PG&E for pole-loading 8 9 studies as part of discovery? 10 Α Yes. 11 And did PG&E provide any such Q 12 studies? 13 Α No. 14 Q PG&E asked you whether you would 15 support replacing wood poles with non-wood 16 poles in certain situations. 17 Do you have anything to add to your 18 response regarding the use of non-wood poles? PG&E's primary contention for 19 Yes. 20 the use of non-wood poles was for what they term "fire resiliency," and my understanding 21 22 is that with wood poles PG&E currently uses, 23 that's commonly used, they use a fire-retardant material that can be put on 24 25 wood poles to inhibit them from burning and 26 contributing to a wildfire. 27 Lastly, some questions about the Q 28 healthy tree removal analysis that you did.

And PG&E asked why did you not use 1 2 the 29.5 percent risk reduction figure in 3 Exhibit 291. If you could turn to page 15 of Exhibit 288. 4 5 Α Okav. Is it correct that you calculated 6 0 7 the 4 percent and 7 percent figures by using a PG&E database of ignitions and 8 9 disaggregating vegetation-caused ignitions 10 between what you consider to be healthy trees 11 versus other trees that might be unhealthy? 12 Α Yes. 13 And so this was looking, using 0 14 historical PG&E data, to analyze the cause of 15 historical ignitions; is that correct? 16 Α Yes. 17 And then if you look at what has 0 been identified as -- I don't know the 18 19 Exhibit numbers for this exhibit. Oh, this 20 was the impeachment exhibit. 21 Exhibit 293, when you stated you 22 had not conducted an independent analysis of 23 risk reduction associated with your proposal 24 to remove 14,300 trees annually, can you 25 explain what you had in mind in making that 26 response? 27 I had not conducted a Α Yes.

forward-looking assessment of risk reduction.

1	The testimony is really backward, or
2	historical looking.
3	Q And the testimony is based entirely
4	on PG&E numbers; correct?
5	A Yes, on PG&E data.
6	MR. HAWIGER: Thank you.
7	May I have a moment off the record,
8	your Honor?
9	ALJ LIRAG: Yes. Off the record.
10	(Off the record.)
11	ALJ LIRAG: Let's go back on the
12	record.
13	MR. HAWIGER: Thank you, your Honor. I
14	have no further redirect.
15	ALJ LIRAG: Mr. Middlekauff, any
16	recross?
17	MR. MIDDLEKAUFF: Just one question,
18	your Honor.
19	RECROSS-EXAMINATION
20	BY MR. MIDDLEKAUFF:
21	Q Mr. Borden, you said that you'd
22	asked PG&E to provide these pole-loading
23	studies and they hadn't. Which data request
24	was that?
25	ALJ LIRAG: Let's go off the record so
26	that Mr. Borden can search.
27	(Off the record.)
28	ALJ LIRAG: Let us go back on the

1 record then. 2 So Mr. Middlekauff's last question 3 will be a pending question, and Mr. Borden 4 will attempt to provide an answer after a 5 break to be able to search for a hard-to-find data request. 6 Let's proceed directly to 7 Mr. Buchsbaum. 8 9 CROSS-EXAMINATION 10 BY MR. BUCHSBAUM: 11 Mr. Borden, can you turn to page 30 Q 12 of your testimony? That's Exhibit 288 and on 13 lines 14 to 16, you discuss several of PG&E's 14 proposed investments will replace existing 15 assets, which are still operational, and do 16 not otherwise face any near risk of failure, 17 thus creating premature replaced-asset cost. 18 Do you see that sentence? 19 Α Yes. 20 0 And then on lines 24 to 25, you 21 discuss your primary recommendation, and it 22 is to remove the net recorded amount for 23 assets installed less than five years ago 24 from rate base; do you see that? 25 Α Yes. And I want to focus on the words 26 0 "net recorded plan." What is your definition 27 of "net recorded plan"? 28

1 Α At page 31, lines 14 to 15, I 2 discuss a possible calculation for that, 3 which would be the average cost of replacement less the average amount 4 5 depreciated. 6 So it's the undepreciated portion of that plant. 7 8 So which plant are we talking 0 9 about? Are we talking about the originally 10 installed? So you got a pole, and then 11 you're going to replace a pole; right? 12 Α So a pole --13 It's -- so which -- so Pole No. 1, 0 14 is the one, I think, you're targeting? 15 MR. HAWIGER: Objection. I think 16 you're making certain assumptions and 17 misstates the testimony. His testimony 18 specifies what assets of specific gauge. So as long as you clarify that's what you're 19 20 talking about. 21 BY MR. BUCHSBAUM: 22 That's fine, but -- well, let's go Q 23 on the record. First, we really disagree 24 with your proposal, but I want to understand 25 it, and that's all I'm trying to do. 26 The net recorded plan, when you're 27 talking about that, and let's assume for 28 purposes of a hypothetical, you've installed

1 a plant in 2015, and now it gets replaced in 2 Which net recorded plant are you 2020. 3 talking about; the 2015 plant or the 2020 plant? Do you understand the question? 4 5 Α The pole has aged. So let's take a pole. 6 7 Q Yeah. It's aged five years. That means 8 Α 9 it's depreciated five years, whatever that's 10 worth, say 10 percent of its depreciation 11 So you would take the original cost of life. 12 replacement minus that depreciation that's 13 already occurred. 14 So as an example, maybe that's now 15 worth \$17,000 now that it's depreciated a little bit, and that will be taken out at 16 17 least. 18 Well, I didn't understand the 0 Were you taking the depreciation on 19 answer. 20 the 2015 cost or the 2020 cost? 21 Α I thought I answered pretty 22 clearly. The pole has depreciated five 23 Say, it's depreciated \$1,000 per years. 24 year. 25 0 What was the cost of the -- for 26 purpose of this hypothetical, let's assume 27 the initial cost was \$20,000. 28 Α Right.

```
1
           Q
               And that was in 2015. And now
     you're assuming there's $1,000 a year of
 2
 3
     depreciation --
           Α
 4
               Right.
 5
           Q
               -- which would be $5,000.
 6
           Α
               Right.
 7
           Q
               How much do you remove from rate
 8
     base under your proposal?
 9
           Α
               15,000.
10
               And so if the new replacement was
           Q
11
     25,000, you're not touching that?
12
           Α
               Correct. That would be treated
13
     formally.
14
           Q
               Because when I read your testimony
15
     on lines 13 to 15, you talked about the
16
     average cost of replacement less the amount
17
     depreciated, and I wanted to make sure, then,
18
     that you were talking about the initial cost
19
     in 2015; not the replacement cost in 2020.
20
           Α
               That's correct.
21
               Now, later on, on page 31, you
           Q
22
     complain the ratepayers are paying for two
23
     poles when there's -- when there's only one
24
     pole in service; is that correct?
25
           MR. HAWIGER:
                         Objection; argumentative.
           MR. MIDDLEKAUFF: Well, I'll cite
26
27
     the --
28
           ALJ LIRAG: Let's replace the word
```

```
"complain." He's not complaining about
 1
 2
     anvthing.
                Maybe he's stating.
 3
     BY MR. BUCHSBAUM:
               So you're stating. You're stating.
 4
           0
 5
     Is that okay?
 6
           Α
               Yeah.
               So you're stating that ratepayers
 7
           0
 8
     are paying for two poles when only one pole
 9
     is in service; correct?
10
               Can you point me to the lines?
           Α
11
           Q
               Yes.
                     It's on the bottom of page
12
     30, going to the top of page 31.
13
           Α
               It states --
14
           Q
               It says that your primary proposal
     is base; so the ratepayers do not, for
15
16
     example, pay for two poles, where only one
17
     pole is in service. Do you see that
18
     statement?
19
           Α
               Yes.
20
           0
               And in making this assumption, are
21
     you familiar with Commission Standard
22
     Practice for cost recovery and depreciation
23
     of mass assets like poles?
24
           Α
               I have a general awareness about
25
     it.
          I certainly spoke with TURN's experts on
26
     depreciation when making this recommendation,
27
     but I'm not an expert on depreciation.
28
               Has our reference exhibit on
           Q
```

1	Standard Practice U-4 been handed out?
2	ALJ LIRAG: No.
3	Let's go off the record.
4	(Off the record.)
5	ALJ LIRAG: Back on the record.
6	BY MR. BUCHSBAUM:
7	Q Can you turn to page 5 of
8	Commission Standard Practice, and you'll
9	notice that there's a table at the bottom,
10	and when you see the table, let me know.
11	A Okay.
12	Q And you can see that there's a
13	transaction for historical cost from
14	retirement from service; do you see that?
15	A Yes.
16	Q Do you see where credit entry is
17	made in the case of retirement?
18	A Yes.
19	Q And can you read that: "In the
20	case of historical cost on retirement from
21	service." Where is the credit entry made?
22	A "Plant account reduces the asset
23	balance."
24	Q So if it reduces the asset balance
25	in terms of that pole that was installed in
26	2015, why do you say the ratepayers are
27	paying for two sets of poles?
28	A So my recommendation is not based

on this document per se. It's based on my concern that this is a large program that may replace very newly installed assets, and in discussion with TURN's depreciation experts or expert, we -- I understand that different treatment of depreciation has been authorized by the Commission in certain circumstances.

Q Do you know of any such circumstance that involved a fractional retirement like is involved here as opposed to a retirement of an entire account?

A Yes. I believe Edison's -- I believe it's called their pole loading program as well as an aged pole program had to do with fractional retirements of poles that were treated differently from standard depreciation accounting.

Q You know, can you give me the cite on that case, because my recollection of that case that it was a finding that Edison had installed new poles -- had installed poles earlier than necessary and that the new costs were not allowed in the rate base. There was no impact to the old plant.

A I'm not totally sure.

Q We can discuss this in the brief.

A I'm just saying -- well, what I understood from our experts is that different

1	depreciation, treatments aside from this
2	strict manual, have been adopted by the
3	Commission. Frankly, it's a pretty
4	conservative treatment to only look at very
5	newly installed assets within the last five
6	years.
7	Q So you're saying that a deviation
8	from standard practice is warranted in this
9	case?
10	A Yes.
11	Q Can you turn now to page 20 of the
12	standard practice. And when you're there,
13	let me know.
14	A Okay.
15	Q Do you see the survivor curve?
16	A Yes.
17	Q Have you ever seen one of these
18	before?
19	A No.
20	Q Well, can you see that the Y axis
21	is a listing of survivors and the X axis has
22	the statement years under it?
23	A Yes.
24	Q So if you drew the survivor curve
25	and you had 100 poles, for example, some
26	would be retired early and some would be
27	retired late, correct? In other words, some
28	would be retired earlier than the average,

and some would be retired later than the 1 2 average? 3 Α Yes. Sure. 4 0 And have you ever seen a situation 5 where someone comes into the Commission and says because some of the assets are retired 6 7 early that they should go out of rate base in the case of a mass asset account? 8 9 Again, I'm asking for different Α 10 treatment for this program than standard 11 depreciation accounting. 12 So if the Commission were to, for 13 example, take your recommendation to 14 effectively penalize PG&E by taking early 15 retired assets out of rate base -- are you 16 with me so far? 17 Α Yes. The net amount, yes. 18 0 What would happen when the 19 longer-lived assets -- when assets have lived 20 longer than their excepted life, what happens 21 Is PG&E -- is your recommendation there? 22 that PG&E get a bonus? 23 I haven't made any recommendation Α 24 about longer-lived assets. MR. BUCHSBAUM: Can I go off the record 25 for one second. 26 27 ALJ LIRAG: All right. 28 Off the record.

(Off the record.) 1 2 ALJ LIRAG: Let's state that on the 3 record. 4 No more questions from Mr. 5 Buchsbaum. MR. BUCHSBAUM: Yes. No more 6 7 questions. Thank you. 8 ALJ LIRAG: Any redirect, Mr. Hawiger? 9 Just a couple of MR. HAWIGER: 10 questions. 11 ALJ LIRAG: All right. 12 REDIRECT EXAMINATION 13 BY MR. HAWIGER: 14 Q Mr. Borden, Mr. Buchsbaum mentioned 15 the issue of a fractional asset replacement. 16 Do you have a sense of what fraction of the 17 poles is being replaced in the Grid Hardening 18 program or proposed for replacement versus 19 nominal replacement? 20 PG&E's proposal is to replace all Α 21 poles in over 7,100 circuit miles. That is 22 certainly not TURN's proposal, but that is 23 what PG&E has proposed. 24 Q And do you have any data, or is 25 there data on the record discussing the 26 number of poles that this would represent 27 compared to PG&E's pole inventory? 28 I believe it was around Α Yes.

20,000 poles per year would be replaced under 1 2 this program, and that compares to a 3 traditional PG&E pole replacement program that was also around 20,000 poles per year. 4 5 MR. HAWIGER: Thank you. Those are all 6 my questions. 7 ALJ LIRAG: All right. MR. BUCHSBAUM: I have one further 8 9 question. 10 ALJ LIRAG: All right. 11 RECROSS-EXAMINATION 12 BY MR. BUCHSBAUM: 13 Yes. Do you know how many total 0 14 poles PG&E has. 15 I believe in Tier 3 PG&E has around Α 16 190,000 poles. 17 That's not what I asked. No. 0 Ι 18 asked total poles. I don't know how many total poles 19 Α 20 PG&E has. 21 Would you agree that it's in PG&E's Q 22 direct testimony on depreciation? 23 Α I don't know. 24 Would you agree, subject to check, Q 25 that it's in the neighborhood of 2 million to 26 4 million poles? 27 I have no idea. Α But, again, this 28 is a multi-year program under which PG&E's

1	proposal is to replace a large amount of
2	poles.
3	MR. BUCHSBAUM: I have no further
4	questions.
5	ALJ LIRAG: ALJ Lau?
6	ALJ LAU: No questions.
7	ALJ LIRAG: Mr. Hawiger, is there a
8	move to admit Exhibits 288 and 289 into the
9	record?
10	MR. HAWIGER: So moved, your Honor.
11	ALJ LIRAG: Any objections?
12	(No response.)
13	ALJ LIRAG: Hearing none, Exhibits 288
14	and 289 are received into the record.
15	(Exhibit No. 288 was received into evidence.)
16	evidence.)
17	(Exhibit No. 289 was received into evidence.)
18	cvidence. )
19	ALJ LIRAG: Mr. Middlekauff, a move to
20	admit Exhibits 291, 292 and 293 into the
21	record?
22	MR. MIDDLEKAUFF: Yes, your Honor. I
23	move to move those Exhibits 291, 292 and 293
24	into the record.
25	ALJ LIRAG: Any objections?
26	MR. HAWIGER: No, your Honor.
27	ALJ LIRAG: Hearing none, Exhibits 291,
28	292 and 293 are received into the record.

1	(Exhibit No. 291 was received into
2	evidence.)
3	(Exhibit No. 292 was received into evidence.291
4	evidence.29i
5	(Exhibit No. 293 was received into evidence.)
6	evidence. )
7	ALJ LIRAG: We are going to take a
8	10-minute break, and we'll be back at 11:30.
9	So just a small issue that I think might not
10	impact us. So the Commission had said that
11	they were not going to need this hearing
12	room, but there's a very, very, very small
13	chance that they will take the reporters,
14	which will have the same impact. So we're
15	going to confirm that that is not the case.
16	Otherwise, that 55 plus and 30 plus might
17	become 55 minus and 30 minus, minus, minus.
18	But I think that's not the case, but we'll
19	confirm that during the break.
20	All right. Off the record.
21	(Off the record.)
22	ALJ LIRAG: Let us go back on the
23	record. We are back from our morning
24	break second morning break.
25	Good morning, Ms. Dowdell.
26	THE WITNESS: Good morning, your Honor.
27	ALJ LIRAG: Excuse me for a while.
28	We'll get to you. We'll deal with something

1 else first. Let's start with the pending 2 answer to the data request. 3 Is there an answer, Mr. Hawiger? 4 MR. HAWIGER: Yes, your Honor. 5 An example of the data request that 6 Mr. Middlekauff wanted is already in the record in Exhibit 134, the Response to TURN, 7 8 Data Request 81, Question 4, which I think 9 the point being - to clarify - that PG&E did 10 not refuse to provide loading studies. PG&E 11 just stated they had not performed them, and 12 that's the gist of the data response. 13 ALJ LIRAG: And, Mr. Middlekauff, is 14 that fine? 15 MR. MIDDLEKAUFF: That's sufficient, 16 your Honor. 17 ALJ LIRAG: Next is on the subject of Exhibit 290. So I believe the -- over the 18 19 break, there was some discussion, and the 20 answer is that there is no common agreement 21 and TURN and PG&E are going to take their 22 chances on their ruling, which we'll do. 23 MR. HAWIGER: Yes. 24 ALJ LIRAG: So we heard both arguments 25 from - we'll kind of keep the suspense 26 running - Mr. Middlekauff and Mr. Hawiger, 27 and so first, let's clear the PG&E Data

Response to DR088-10 so that portion is fine

and will be admitted. 1 2 With regards to the SCE portion, we 3 understood the importance of this piece of information and we also understand that this 5 is an administrative hearing, wherein the 6 evidentiary rules may be slightly relaxed 7 compared to regular evidentiary rules. 8 But we sort of agree with PG&E that 9 this is an SCE witness, and so normally, 10 under normal circumstances, anything being 11 offered by that witness should be subject to 12 cross-examination. 13 Also, we took under consideration 14 that TURN is a party to Application 15 18-09-002; is that correct? 16 MR. HAWIGER: Yes, your Honor. 17 And also, there is the ALJ LIRAG: 18 ongoing SCE general rate case that is active right now, and I believe TURN is also a party 19 20 to that proceeding, or plans to be. 21 If TURN is not yet a party to that 22 proceeding, and so I would just like to state 23 that there are certain types of documents and 24 information that the Commission can take 25 judicial notice of in either of those 26 proceedings. 27 And because the proceedings are

still active, I would like TURN to explore

ways to try to get this information into those proceedings in such a way where we, the Commission, can take judicial notice of the same information you're trying to get admitted here.

MR. HAWIGER: Your Honor, I appreciate that guidance. It is technically impossible at the moment because the 18-09-002 proceeding has been submitted. We had hearings, and I can't remember when we settled, but, anyway, we've submitted a settlement. I don't know if there is an opportunity to submit any other evidence in the record.

ALJ LIRAG: There is also Edison's GRC and I think Mr. Hawiger is savvy enough to come up with some sort of -- I don't know if you can come up with a way to get that in, but please explore that possibility.

Also, once these evidentiary hearings here conclude, ordinarily the record would be closed, but we will explore ways to take judicial notice of certain information that TURN might be able to present regarding this topic.

In any case, we are basing the ruling on the fact that this is an SCE witness's document and there's just no way to

determine the accuracy of the information or the surrounding circumstances regarding the information based on how this document was presented and submitted in this proceeding.

MR. HAWIGER: Well, thank you, your Honor. I am struggling a little with your guidance because, normally, my understanding is the Commission cannot take judicial notice of an exhibit in another case.

ALJ LIRAG: Not an exhibit, but there are types of filings that we can take judicial notice of, such as rulings, scoping memos, and other documents that are filed of the same type or other analogous documents.

So you are correct that we do not normally take judicial notice of an exhibit, and I was referring to other types of documents that the Commission can take judicial notice of.

MR. HAWIGER: Well, I'm disappointed because the record on this very important issue is quite sparse on this type of evidence.

ALJ LIRAG: Also, you reminded me that if PG&E's testimony relies or compares itself with facts or other information regarding Edison's situation -- for example, there was mention of the fact that Edison's pole costs

1	
1	might be less than if PG&E's relying on that
2	argument or if any intervenor is relying on
3	any argument relating to that, then it is up
4	to the party alleging that that is the case
5	to provide information to support that
6	argument.
7	And if the argument is not
8	supported, then the Commission will apply the
9	proper weight to statements being presented;
10	in other words, if they're presenting certain
11	arguments and they're just saying this
12	without proper support for that, then it
13	doesn't seem like we can, you know I mean,
14	we'll take that into account.
15	MR. HAWIGER: Thank you.
16	ALJ LIRAG: All right.
17	MR. MIDDLEKAUFF: Thank you.
18	ALJ LIRAG: With that, the portion
19	relating to the Data Response to Exhibit 290
20	is admitted, but the SCE Response will be
21	denied, so that will be so I think based
22	on the document, page 1 and 2 is being
23	admitted, but then there are no markings on
24	the page, but pages 3 and 4 of Exhibit 290
25	are denied. So that's for clarity.
26	Ms. Dowdell, please raise your right
27	hand.
28	JENNIFER DOWDELL, called as a witness by TURN, having been sworn,

testified as follows: 1 2 ALJ LIRAG: Please state your name, 3 spell your last name, and provide a business address. 4 5 THE WITNESS: My name is Jennifer, 6 J-e-n-n-i-f-e-r, Dowdell, D-o-w-d-e-l-l. 7 My business address is The Utility 8 Reform Network, 785 Market Street, Suite 14, 9 San Francisco, California, and I do not know 10 the ZIP code -- oh, 94103. 11 ALJ LIRAG: I think it is Mr. Long who 12 is doing the direct. 13 MR. LONG: Can we go off record? 14 (Off the record.) 15 ALJ LIRAG: Let's go back on the 16 record. While we were off the record, there 17 was some discussion regarding the remainder 18 of today's schedule, and let's proceed with Direct Examination by Mr. Long. 19 20 MR. LONG: Thank you. 21 Hang on. I don't think ALJ LIRAG: 22 I've identified the exhibits. I got thrown 23 Let's identify exhibits pertaining to 24 Ms. Dowdell. First is Exhibit 294, this is 25 the Prepared Testimony of Jennifer Dowdell. 26 MR. LONG: Your Honor, could I clarify? 27 Was that the one marked TURN-08? 28 ALJ LIRAG: Let's go off the record.

	7
1	(Off the record.)
2	ALJ LIRAG: Back on the record.
3	We've identified Exhibit 294.
4	Exhibit 295 is the Revised
5	Testimony, Ms. Dowdell.
6	Exhibit 295-R is the Redline Version
7	of Exhibit 295.
8	Exhibit 296 is a document entitled:
9	"2017 GRC, Exhibit PG&E-03, Testimony on
10	Corrosion Control, Page 6-B to, dash, 32"; so
11	it looks like an excerpt of testimony.
12	Next is Exhibit 297. It's a
13	document entitled, "2017 GRC Exhibit,
14	PG&E-03, Testimony on SCADA, page 7-19 to
15	7-21." So it looks like another excerpt of a
16	PG&E exhibit.
17	(Exhibit No. 294 was marked for identification.)
18	(Exhibit No. 295 was marked for
19	identification.)
20	(Exhibit No. 295-R was marked for identification.)
21	(Exhibit No. 296 was marked for
22	identification.)
23	(Exhibit No. 297 was marked for identification.)
24	ALJ LIRAG: All right. Mr. Long.
25	DIDECT EVAMINATION
26	DIRECT EXAMINATION
27	BY MR. LONG:
28	Q All right. Ms. Dowdell, do you

1	have in front of you what has been marked as
2	Exhibit 294, Exhibit 295, and Exhibit 295-R?
3	A I have 295, which is my Revised
4	Testimony. I have 29
5	MR. LONG: Can we go off the record,
6	your Honor?
7	ALJ LIRAG: Off the record.
8	(Off the record.)
9	ALJ LIRAG: Back on the record.
10	I believe Ms. Dowdell has the right
11	testimonies on hand.
12	BY MR. LONG:
13	Q We'll start with what has been
14	marked as Exhibit 294, Ms. Dowdell. Was that
15	document prepared by you or under your
16	direction?
17	A Yes, it was.
18	Q Do you have any changes to your
19	testimony in Exhibit 294?
20	A Not in particular, but in the 294
21	corrected version.
22	Q 294 corrected version. This is the
23	Affordability testimony.
24	A There was an errata.
25	Q This is the Affordability
26	testimony.
27	
	A Oh, forgive me. Sorry about that.
28	Q You're not used to the hearing

1	exhibit numbers.
2	A No, I'm not. And I have many
3	testimonies. Okay.
4	Q So we're talking about the
5	Affordability testimony first.
6	A Thank you.
7	Q Do you have any changes to that
8	testimony?
9	A Yes. I actually do have an errata
10	and that is on page 14.
11	Q Okay. Again, we're talking about
12	the Affordability testimony.
13	MR. LONG: Can we go off the record?
14	ALJ LIRAG: Let's go off the record.
15	(Off the record.)
16	ALJ LIRAG: Let us go back on the
17	record.
18	While we were off the record, we
19	were discussing a little bit regarding
20	corrections, and I think we have an equitable
21	solution, Ms. Goodson, which is Ms. Goodson
22	providing guidance with what may not need to
23	be corrected anymore, but just clarify.
24	MS. GOODSON: Thank you, your Honor.
25	Ms. Dowdell, please correct me if
26	I'm wrong, but I believe the Statement of
27	Qualifications of yours, which is
28	Attachment 1 in Exhibit 294, is a truncated

```
version of the full Statement of
 1
     Qualifications, which appears as Attachment 1
 2
 3
     to Exhibit 295; is that correct?
           THE WITNESS:
                        That is correct.
 4
 5
           MS. GOODSON:
                          Thank you.
 6
           ALJ LIRAG:
                      So you're more qualified in
 7
     Exhibit 295. So for the full version, we'll
     take what is in Exhibit 295.
 8
 9
               Mr. Long.
     BY MR. LONG:
10
11
               Turning to Exhibit 295 and 295-R -
           Q
12
     that's the Accountability testimony - were
13
     these documents prepared by you or under your
14
     direction?
15
           Α
               They were.
16
           Q
               On these, do you have any changes
17
     to your testimony?
               I do.
18
           Α
19
               If you could explain them by
           Q
20
     reference to Exhibit 295, that is, the clean
21
     version so that we don't get confused, that
22
     would be helpful. So can you tell us the
23
     changes one by one?
24
           Α
               Yes, I can.
25
               On page 14, both changes are on
26
               And at the top of page 14, line 1,
     where it begins: "Based on TURN's reduced
27
28
     scope," that should be stricken from "based
```

on TURN's reduced scope" all the way through 1 line 4, "costs for this program." 2 3 Let me stop you there and make sure Q we have that. So you're basically saying the 4 5 sentence that begins at the end of line 1 beginning with the words, "Based on TURN's," 6 that entire sentence should be stricken 7 through line 4, the word "program." 8 9 Α That is correct. 10 Can you briefly explain the reason Q 11 for that change? 12 Yes. When we revised our 13 testimony, we inadvertently did not strike 14 that sentence, which confuses our proposal, 15 and so removing that sentence clarifies the 16 intent of our proposal, we believe. 17 0 It relates to your testimony 18 concerning PG&E's original work plan for 19 2019; is that right? 20 Α Yes. Now, is there another correction on 21 Q 22 that page? There is -- at line 7, there's a 23 Α It says: "Includes a 24 typographical error. 25 disallowance of 9.89 million." It should "Includes a disallowance of 9.59 26 27 million." 28 Thank you. Do you have any other Q

1 changes? 2 No, I do not. Α 3 Q Now, with these changes, are the facts stated in these exhibits -- that is, 4 5 Exhibit 294, 295, and 295-R, are the facts 6 stated in these exhibits true and correct, to the best of your knowledge? 7 8 Α They are. 9 And do the opinions expressed in Q 10 these exhibits reflect your best professional 11 judgment? 12 They do. Α 13 MR. LONG: Your Honor, Ms. Dowdell is 14 ready for cross-examination. 15 Just for the record, we are ALJ LIRAG: 16 also making the same corrections on 295-R. 17 Thank you, your Honor. MR. LONG: 18 ALJ LIRAG: All right. Let us take a 19 lunch break right now and be back at 1:00 20 p.m. 21 Just to clarify a little bit 22 regarding the schedule, I did say we would 23 proceed normally, but there is an issue, 24 though. We are trying to convince our 25 reporter to go home early, so that might come 26 into play. But right now, she's saying she's 27 fine; so we'll just assume that we're 28 proceeding normally and that we're not under

```
1
      any time pressure. But we'll clarify when we
 2
      come back from our lunch break at 1:00 p.m.
 3
                  Off the record.
             (Whereupon, at the hour of 12:00 p.m., a recess was taken until 1:00
 4
 5
             p.m.)
 6
 7
 8
 9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
```

1	AFTERNOON SESSION - 1:00 P.M.
2	* * * *
3	ALJ LIRAG: Let's go on the record.
4	We're back from our lunch break, and
5	we'll take care of a little side business,
6	Ms. Dowdell.
7	First, we'll identify as Exhibit
8	298, and this is an excerpt from PG&E-03,
9	pre-marked PG&E-03, which is the Workpapers,
10	page 7-32, and Workpapers 7-37. So that's
11	Exhibit 298.
12	(Exhibit No. 298 was marked for identification.)
13	identification. )
14	ALJ LIRAG: I think we can have a move
15	from Mr. Ouborg to admit Exhibits 296, 297,
16	and 298. My understanding is that these do
17	not pertain to Ms. Dowdell; is that correct?
18	MR. OUBORG: Yes, your Honor.
19	ALJ LIRAG: Who do these pertain to?
20	MR. OUBORG: The first one, 296, deals
21	with testimony from PG&E's original exhibit
22	PG&E-03, which is, I think, Exhibit 10, and
23	it deals with corrosion control. This is a
24	part of PG&E's testimony that Cal Advocates
25	responded to, and we referenced this page
26	from 2017 GRC in our testimony, and we
27	consulted with Ms. Shek before this, and she
28	authorized me to say that Cal Advocates does

1	not object to admitting this document to the
2	record.
3	ALJ LIRAG: So I will still say it out
4	there, any objections?
5	And no need for Ms. Shek to respond
6	all the way from the back.
7	(No response.)
8	ALJ LIRAG: Hearing none.
9	Exhibits 296, 297, and 298 are
10	received into the record.
11	(Exhibit No. 296 was received into evidence.)
12	cvidence.)
13	MR. LONG: I think Mr. Ouborg was just
14	speaking to Exhibit 296. I think Exhibits
15	297 and 298 are different and we do intend to
16	object.
17	ALJ LIRAG: Let us withdraw the
18	admission then. So only 296 is received into
19	the record.
20	Thank you, Mr. Long. I apologize
21	for jumping ahead. Please go ahead,
22	Mr. Ouborg.
23	MR. OUBORG: So Exhibit 297, your
24	Honor, this is some pages from the 2017 GRC
25	that relate to our SCADA testimony, and I
26	believe on this one, TURN is agreeable to
27	admit this page into the record.
28	ALJ LIRAG: All right. Is that

correct, Mr. Long?
MR. LONG: No objection, your Honor.
(Exhibit No. 297 was received into evidence.)
evidence.)
ALJ LIRAG: So no objection; Exhibit
297 is received into the record. I suppose
the objection is on Exhibit 298.
MR. OUBORG: Yes. 298 is another
exhibit relating to SCADA testimony. This
one attaches two workpapers from the 2017 GRC
that relate to one of the tables in our
testimony.
So there's a table in our testimony
that has a footnote that refers to the 2017
GRC as the source for certain efficiencies
that are included in the table in our SCADA
costs.
Unfortunately, we did not cite
precisely to the exact workpaper pages in the
2017 GRC, but we think that since those
pages, which contain those efficiencies, that
are used in the table in our current
testimony, we think the record would be
enhanced by having those workpapers added,
and I'll let TURN respond.
ALJ LIRAG: Any objections?
MR. LONG: Yes, your Honor.
TURN's objection is that as

Mr. Ouborg stated, the proffered exhibit includes workpaper pages that are not cited in the table that Mr. Ouborg is referencing. And if you look at the workpaper pages, it's just not immediately apparent how they relate to the proper testimony.

They had an opportunity to make these workpapers part of their testimony, and they did not. And I'm just concerned about adding something to the record that I don't understand, and I don't see how it relates to the table that they say it relates to.

ALJ LIRAG: Mr. Ouborg, is there any chance of revising this to include the proper footnote?

There is additional exhibits that we will get in, which is the update testimony and the comparison exhibit. So if this can be revised to include the footnote, we can include this when we determine the admissibility of those other exhibits.

MR. OUBORG: So, your Honor, you're suggesting we revise the footnote in the table in our current GRC testimony to specifically refer to the 2017 pages that it's based on?

ALJ LIRAG: So I don't know if it's an incorrect footnote or a missing footnote in

Exhibit 298, but I believe that is Mr. Long's 1 2 objection; so if that can be placed in, then 3 we can resubmit this document. If I can clarify, your 4 MR. LONG: 5 Honor? 6 ALJ LIRAG: Yes. 7 MR. LONG: The objection is that what 8 counsel is asking to have happen is, 9 essentially to buttress the testimony that PG&E presented in rebuttal with additional 10 11 workpapers that they didn't include in their 12 rebuttal. 13 And we were okay with that for 14 Exhibit 297 because there was a citation in 15 the Rebuttal Testimony to what is included in 16 Exhibit 297. The problem is PG&E's Rebuttal 17 Testimony does not include a citation to 18 these workpaper pages in Exhibit 298, so the 19 lack of citation is in PG&E's Rebuttal 20 Testimony. 21 And they're trying to add something 22 to their Rebuttal Testimony that wasn't 23 there. So that's the issue. 24 And as I explained, the problem is 25 it's not immediately apparent from their 26 Rebuttal Testimony that these workpaper pages 27 are related to their Rebuttal Testimony and

I don't

support their Rebuttal Testimony.

25

26

27

28

understand how they do relate. 1 2 ALJ LIRAG: So I think the argument is 3 that this information is already in the, I guess, PG&E's prior GRC workpapers; am I 4 5 understanding it correctly? 6 MR. LONG: No. It's -- this is -again, the issue is, and I don't mean this --7 8 I mean, mistakes happen, but there was an 9 opportunity to include these workpapers in 10 the attachments to their Rebuttal Testimony, 11 and they just missed that opportunity, and 12 now they're asking to make up for that at a 13 rather late point and with workpapers that 14 are not -- do not, to me at least, seem to be 15 apparently or evidently related to what PG&E 16 is trying to buttress. 17 MR. OUBORG: So, your Honor --18 MR. LONG: The problem is lateness here 19 and not having an opportunity to see this and 20 analyze this and do cross on it and that kind 21 of thing. 22 Your Honor, the footnote MR. OUBORG: 23 in our rebuttal testimony in this case states

MR. OUBORG: Your Honor, the footnote in our rebuttal testimony in this case states that certain numbers in a table, excluding efficiencies, applied the percentage of total unit cost that PG&E removed from its 2017 Forecast because of anticipated efficiencies.

1 specifically cite to the pages in the 2017 2 Forecast where we got those numbers. So - I 3 agree - we should be more specific, but it is clear that the efficiencies that are 4 5 considered in this table come from the 2017 6 Forecast, and all we're trying to do is just 7 add that workpaper to show those efficiencies in 2017 so the record is complete. 8 9 ALJ LIRAG: I'm going to set it aside for now. We'll have another break in the 10 11 afternoon. I'll give you and Mr. Long a 12 chance to confer, and then if there's no --13 if we're still at the point where Mr. Long is objecting, then we'll take the objection 14 15 under consideration. 16 But my inclination is if there's a 17 way to just correct the information, then 18 let's try and do that, but, if not, we'll 19 take Mr. Long's objections under 20 consideration, disregarding the fact that 21 something may have just been admitted. 22 All right. So we'll set that aside. 23 Next, let's identify Exhibit 299, 24 and this is the Prepared Testimony of Thomas 25 Long addressing PG&E's Risk Analysis and Continuation of Deferred Work Settlement 26 27 Requirements.

I guess cross had been waived for

1	Mr. Long, so I think I'll have Ms. Goodson
2	move this into the record.
3	A motion to move into the record?
4	MS. GOODSON: Yes, your Honor.
5	ALJ LIRAG: Any objections?
6	(No response.)
7	ALJ LIRAG: Hearing none.
8	Exhibit 299 is received into the
9	record.
10	(Exhibit No. 299 was received into evidence.)
11	evidence.)
12	ALJ LIRAG: Next, we have several cross
13	exhibits and this is for Ms. Dowdell. First,
14	is Exhibit 300, and it's a document entitled:
15	"Disconnections OIR, Phase 1, Scoping Memo."
16	Next is Exhibit 301, and these are
17	Excerpts from PG&E's Supplemental Response to
18	TURN Data Request 011, Question 01, with one
19	attachment.
20	Next is Exhibit 302. It's a
21	document entitled, "CPUC PPD Call-In Review
22	of Residential Customer Disconnection
23	Influences and Trends."
24	Next is Exhibit 303. This is a
25	document entitled, "Unemployment Data, Bureau
26	of Labor Statistics."
27	Next is Exhibit 304, and this is a
28	copy of "PG&E Advice Letter

1	4059-G-A/5467-E-A."
2	And, finally, we have Exhibit 305.
3	This contains Excerpt from Decision
4	18-12-013.
5	(Exhibit No. 300 was marked for identification.)
6 7	(Exhibit No. 301 was marked for identification.)
8	(Exhibit No. 302 was marked for identification.)
9	(Exhibit No. 303 was marked for
10	identification.)
11	(Exhibit No. 304 was marked for identification.)
12	(Exhibit No. 305 was marked for
13	identification.)
14	ALJ LIRAG: Let's proceed with
15	cross-examination by Ms. Slocum.
16	MS. SLOCUM: After conferring with
17	counsel before lunch, there will be one
18	additional document that is being prepared
19	right now, so we'll bring that at the
20	appropriate time.
21	ALJ LIRAG: All right.
22	CROSS-EXAMINATION
23	BY MS. SLOCUM:
24	Q Good afternoon, Ms. Dowdell.
25	A Good afternoon.
26	Q As you know, I'm Gail Slocum for
27	PG&E. I see from your Statement of
28	Qualifications that you have been working as

an energy policy analyst for TURN since March 1 2019, so a little over six months; is that 2 3 right? That is correct. 4 Α 5 0 And before that, you were a 6 consultant for about five years? 7 That is correct. Α 8 And before that, you worked at PG&E Q 9 for about 13 years, either as a consultant or 10 as an employee? 11 Yes. That is correct. Α 12 And just for full disclosure, we've 0 13 known each other during and since that time; 14 isn't that correct? 15 Α Absolutely. And it is always a 16 pleasure. 17 Me, too. It's kind of awkward, 0 18 but... Everybody's got a job. 19 Α 20 So in talking about your testimony 0 21 in Exhibit 294, you talk about the issue of 22 disconnections. And forgive me if I get some 23 of the pages wrong because I think I may be 24 looking at the pre-revisions version. 25 But what I have is page 15, line 26 15. It will probably be a little bit lower 27 than that for you. It's got three bullet 28 points followed by a paragraph that starts,

```
"In offering these findings."
 1
 2
               Yes, I'm there.
           Α
 3
               What page is that?
           Q
               That is page 14, and I think the
 4
           Α
 5
     first of those bullet points is because
 6
     there's a high correlation --
 7
           0
               Yes.
                     I'm not looking now at the
     bullet points. I'm looking at the sentence
 8
                          It starts: "In offering
 9
     that's after them.
     these findings, TURN recognizes that PG&E
10
11
     could choose to mitigate these impacts
12
     through its credit collection packages such
13
     as those under consideration in the CPUC's
     Disconnections Rulemaking, and you cite the
14
15
     Rulemaking No. 18-07-005.
16
               Do you see that?
               Yes, I do.
17
           Α
18
           0
               I'd like to get a sense of your
19
     familiarity with the Disconnections OIR.
20
               Do you agree that in the
21
     Disconnections OIR, the CPUC is working with
22
     many active parties, including TURN, to
23
     develop policies and rules that reduce
24
     disconnections and improve reconnection
25
     processes and outcomes for disconnected
26
     customers?
               Yes, I do.
27
           Α
28
               And during these GRC hearings last
           Q
```

1	Monday, October 14th, your colleague David
2	Chang of TURN testified that he has been
3	representing TURN in the CPUC's
4	Disconnections OIR since July 2008 when it
5	began; are you aware of that?
6	A I'm aware of his participation in
7	the disconnections, yes.
8	Q And during your work at TURN since
9	March 2019, have you, yourself, been directly
10	involved in working on the CPUC's
11	Disconnections OIR?
12	A Yes.
13	Q What has been your role?
14	A I have supported the TURN team
15	working on the Disconnections OIR, and I have
16	looked at some analysis.
17	Q Okay. When you were preparing your
18	July 26, 2019 testimony here, when you were
19	referencing disconnections, what did you do
20	to get up to speed on the Disconnections OIR?
21	A Can you clarify the question,
22	please?
23	Q Sure. You started work at TURN in
24	March, and then in late July, you submitted
25	this testimony; correct?
26	A Yes.
27	Q I'm trying to understand in that
28	period of time what you did to get up to

1 speed about the Disconnections OIR because it 2 was already underway. 3 Α Well, one of the things I did in preparing this testimony is I became familiar 4 5 with - I have it here - SB 598, which is, I 6 think, the direct, relevant part, and I 7 became familiar with the obligation incumbent upon the CPUC and then sort of passed through 8 9 to the utilities. And I think that's -- well, in 10 11 particular Section 2, 718A, part B, "to 12 conduct an assessment of improperly 13 identified impact of any proposed increase in 14 rates on disconnections or nonpayment, which 15 shall be included in the record of the 16 proceeding." 17 Would you please look at the 0 Okay. 18 cross exhibit that has been marked as Exhibit 19 300? 20 I have it. Α 21 It's entitled: "Disconnections OIR Q 22 Phase 1, Scoping Memo." 23 Α Yes. 24 Could you please read aloud the Q 25 first two sentences under the topic, "Background" at page 1? 26 "On July 20th, 2018, the Commission 27 28 approved this Order Instituting Rulemaking,

1 OIR, pursuant to Senate Bill, SB 598 to 2 address disconnection rates across 3 California's electric and gas Investor-Owned Utilities. 4 Among other things, the goal of 5 this proceeding is to adopt rules and 6 policies that will ultimately reduce 7 disconnections and improve reconnection 8 9 processes for disconnected customers. 10 Q Thank you. 11 Is that consistent with your 12 understanding of the purpose of the 13 Disconnection OIR? 14 Α I think, yes. Yes, in part. 15 By including disconnections-related Q arguments in TURN's GRC Phase I Testimony 16 17 here, TURN is not suggesting that the CPUC 18 should discontinue addressing disconnections comprehensively in its Disconnections and 19 20 Reconnections OIR; is it? 21 Α Absolutely not, but the 22 disconnection piece is really only part of 23 the story in terms of thinking about 24 affordability. It's what you're doing to 25 help customers given a level of rates. 26 And then the other lever is, in 27 fact, doing something about the actual level 28 of rates.

1	Q Understood.
2	A Okay.
3	Q I'm speaking about your testimony
4	on disconnections at this point.
5	A Okay.
6	Q So, please, look at PG&E's rebuttal
7	testimony in Exhibit 93. Do you have that?
8	ALJ LIRAG: Let's go off the record.
9	(Off the record.)
10	ALJ LIRAG: Let's go back on the
11	record. So let's proceed, Ms. Slocum.
12	BY MS. SLOCUM:
13	Q Do you have what's before you
14	what's been marked as Exhibit 93 PG&E's
15	Rebuttal?
16	A I do. Thank you.
17	Q And at page 7-2, in Q and A 8, and
18	starting specifically at line 14 through page
19	7-3, line 7, does TURN agree that
20	disconnections should continue to be
21	addressed comprehensively in the CPUC's
22	energy disconnections and reconnections
23	Rulemaking, R.18-07-005?
24	A Yes.
25	Q Now, turning back to your testimony
26	in Section 2C, which is about page 14, I
27	believe.
28	A Yes, I'm there.

```
TURN criticizes PG&E's initial
 1
           Q
 2
     analysis, which used a regression approach
 3
     that looked at whether there might be a
     relationship between bills and disconnections
 4
 5
     by using --
               Can I have that line?
 6
           Α
 7
               Oh, I'm sorry.
           Q
                      Let's go off the record.
 8
           ALJ LIRAG:
 9
               (Off the record.)
           ALJ LIRAG:
                        Let's continue, Ms. Slocum.
10
11
           MS. SLOCUM: Yes.
                              Thank you, your
12
     Honor.
13
           0
               So your testimony at page 14,
14
     lines 18 through 20, criticizes PG&E's
15
     initial analysis, which had used a regression
16
     approach that looked at whether there might
17
     be a relationship between bills and
18
     disconnections by using an annual average of
19
     the months of year; correct?
20
           Α
               Yes.
21
               And didn't PG&E's initial
           0
22
     comparison to annual bill amounts to annual
23
     number of disconnections find a none-to-weak
24
     correlation; in other words, not a
25
     statistically significant correlation?
               This is PG&E's original annual -- I
26
27
     don't think that's the case for all
28
     customers.
```

1	Q Okay. We'll return to that in a
2	moment. Your testimony talks a lot about
3	regression analysis, so I'd like to just get
4	a little sense of your understanding about
5	how regressions work.
6	I see from your Statement of
7	Qualifications that your undergraduate work
8	was in Mechanical Engineering, after which
9	you got an MBA in Economics and Finance, as
10	well as a CPA certificate and are licensed as
11	a CPA; is that correct?
12	A That is correct.
13	Q How many regression analyses have
14	you performed in your career?
15	A Are we counting grad school or all
16	told?
17	Q In your work life.
18	A Maybe a dozen complex regression
19	analyses.
20	Q Thank you.
21	A But what I will say
22	Q There's no question pending.
23	A Okay.
24	Q You can handle that on direct, if
25	you wish.
26	So looking back at your testimony
27	that we were just looking at at page 14, line
28	20, you go on to say, "For this type of

assessment to be capable of identifying the 1 2 impact of any proposed rate increases on disconnections, the relationship between 3 rates and disconnection would have to be 4 5 linear for all customers, and the level of 6 rates would have to be the primary driver." 7 Do you see that? 8 Α Yes. 9 And then you present your opinion Q 10 at page 15 -- no. Wait. I'm sorrv. 11 ALJ LIRAG: Off the record. 12 (Off the record.) 13 ALJ LIRAG: Let's go back on the 14 record. BY MS. SLOCUM: 15 16 Q Page 16, line 13, that a linear 17 correlation between the levels of rates and 18 the rates of disconnection, quote, "seems 19 unlikely," unquote; do you see that? 20 I do. Α Do you agree that a definitive 21 22 conclusion about whether there's a linear 23 correlation between the level of rates and 24 the level of disconnections should be based 25 on analysis of the most recent available 26 data? 27 It depends on the data series, but Α 28 if you want to know the current relationship,

you would need to look at the most recent 1 2 appropriate data. Yeah, I think that's 3 right. And do you agree that a definitive 4 0 5 conclusion about whether there's a linear correlation between the level of rates and 6 the level of disconnection over time should 7 be based on analysis of data in that same 8 9 time period? 10 Help me understand what you're Α 11 asking me. 12 You were just speaking about most 0 13 recent. And now I'm talking about a series 14 over a period of time. 15 Would you agree that that period of 16 time should align with the period of time 17 that's being reviewed for purposes of the 18 analysis? 19 Α Yes. The data series and the 20 period of time about which the conclusion is 21 being drawn should be contemporaneous, I 22 think. 23 I didn't see in your testimony any Q 24 independent regression that TURN performed to 25 analyze for itself, whether there might be 26 any correlation, linear or otherwise, between 27 changes in the level of PG&E's rates and the

number of disconnections. Did I miss

1	something?
2	A That's not TURN's role.
3	Q So you did not perform any
4	independent regression analysis using the
5	data that you were provided?
6	A We looked at some of the data.
7	Q And didn't perform a regression
8	analysis of your own; did you?
9	A We performed some ZIP code level
10	regression.
11	Q Why didn't you present it in your
12	testimony?
13	A Because we felt like the data that
14	we were given would not be data that was
15	likely to be dispositive either way for a lot
16	of reasons.
17	Q Okay. Isn't it true that in Data
18	Request, TURN 11, Question 4, issued on April
19	18th, 2019 by TURN, TURN asked PG&E for Excel
20	format data for the years 2010 and 2014 for
21	PG&E's disconnection rates by zip code?
22	A Yes, we did.
23	Q And TURN received data from PG&E in
24	response to this request on May 9th, 2019;
25	correct?
26	A Yes, we did.
27	Q Did TURN choose not to include the
28	regression analysis that you've just stated

1 you performed for some ZIP codes because the 2 results were not what TURN wanted to present? 3 TURN was having some trouble Α No. with the data that we were getting from PG&E, 4 5 and there was some question about the data 6 sets that we had versus the data sets that we 7 were being given over the period of years. Additionally, TURN sent the ZIP 8 9 code level data to our numerical analyst who 10 wove it up into county level data. 11 So that's primarily what we did 12 with it because we had a hard time with the 13 changing data sets. 14 Q Is it your opinion -- well, did 15 TURN's analysis, given the data that you had, 16 reach a conclusion? 17 It did not. And we had some Α 18 thoughts as to why that was the case. 19 thought about the data. We looked at it. And we said, okay, so the data doesn't 20 21 include the lag around billing. And then we 22 got other data that included a two-month lag, 23 but then we thought about payment plans, 24 which are --25 0 Okay. Yeah. Okay. 26 ALJ LIRAG: Let me interrupt. Sorry to 27 interrupt the flow of your questioning, but

I'm going to call a five-minute break to give

Shannon some relief.
So let's go off the record.
Mr. Long, can you use that time to
confer with Mr. Ouborg? If there's no
resolution, then I think I have something in
mind. So five-minute break.
MR. LONG: Sure.
(Recess taken.)
ALJ LAU: Let's go back on the record.
While we were off the record, PG&E
served another exhibit, and this is a
cross-examination exhibit from PG&E. We'll
identify it as Exhibit 306. This is "Excerpt
from Dowdell Errata Testimony, Redline."
(Exhibit No. 306 was marked for
identification.)
ALJ LAU: Ms. Slocum, you may continue
your cross.
BY MS. SLOCUM:
Q Now, Ms. Dowdell, we've already
talked about PG&E's Rebuttal Testimony in
Exhibit 93, and I assume you reviewed that
rebuttal testimony after you received it on
September 4th.
A I did.
Q And, please, turn to in the
rebuttal, Exhibit 93, to page 7-3, line 25.

1 Q Did you agree that after seeing 2 concerns that were expressed in TURN's testimony about PG&E's original linear 3 regression analysis of annual average data, 4 5 upon further review, PG&E presented a monthly 6 analysis, which it believed would provide a more accurate assessment of the relationship 7 between the two variables? 8 9 Α I agree that PG&E submitted 10 that analysis, yes. 11 And in its rebuttal testimony, PG&E 12 presented its results from comparing the 13 bills for a particular month with the 14 disconnections in that same month; that is, 15 January 2010 bills were compared with January 16 2010 disconnects; correct? 17 Α Yes. 18 And looking specifically at page 0 19 7-5 of the rebuttal, Table 7-2 --20 Α Yes. 21 -- do you see that PG&E's monthly 22 regression analysis there produced - that's 23 in the second column from the right -24 R-squared values that PG&E stated indicate 25 there is no correlation between monthly bills 26 and monthly disconnections for CARE FERA and 27 non-CARE FERA customers from 2010 to 2017? 28 I agree that's what the Α Yes.

1 rebuttal says. 2 Are you aware that earlier in these Q 3 GRC hearings on October 3rd, TURN cross-examined PG&E witness Travis Brown on 4 5 the subject of the monthly regression 6 analysis that was in PG&E's rebuttal? 7 Α I'm not aware of the date, but I 8 know Mr. Brown was cross-examined. 9 Did you help prepare those Q 10 cross-examination questions? 11 Α Actually, no. 12 Q Okay. During that 13 cross-examination, Ms. Goodson for TURN 14 questioned the appropriateness of comparing 15 the same month's bill amounts to that month's 16 number of disconnections, and asked Mr. Brown 17 questions establishing that under PG&E's 18 bill-collection protocols, a customer cannot 19 be disconnected between 43 and 58 days after 20 they received their bill assuming no previous 21 outstanding balances; is that also your 22 understanding? 23 Α I think it's about a two-month lag, 24 yeah. 25 0 Do you believe that any monthly 26 regression analysis of the relationship 27 between monthly bills and monthly disconnects 28 should incorporate this, approximately,

1 two-month delay such that, for example, 2 January 2010 bills should be compared to 3 March 2010 disconnects? I do not. I mean, I think there 4 5 should be a lag. I just don't think it 6 should be two months. What amount do you think it should 7 Q be? 8 9 Well, I think it needs to consider Α 10 the fact that there is -- so you use the 11 electricity; you get the bill, so that's your 12 roughly two-month lag, but there are about --13 it's taking me a minute. 14 So if you look at PG&E's 15 disconnections report, and you look at the 16 total number of payment plans for 2017, which 17 is also in your data series, you'll find --18 and if you'll indulge me because I do have it here so you can verify it. I think you'll 19 20 find that there's -- there's like 1,189,000 21 payment plans created. 22 And the average payment plan, so, 23 like, over 60 percent of payment plans, is 24 actually three to six months. And then 25 there's another tranche that's probably about 26 an additional 10 percent - it's like 100,000 27 - and it's like six to nine months.

So I think that the lag issue is

1	more complex than just adding the additional
2	two months.
3	MS. SLOCUM: Your Honor, may we go off
4	the record for a minute?
5	ALJ LIRAG: Off the record.
6	(Off the record.)
7	ALJ LIRAG: Let's go back on the
8	record. I believe I have identified Exhibit
9	298, and is there a solution to the
10	objection, Mr. Long?
11	MR. LONG: Yes, your Honor.
12	Mr. Ouborg and I have discussed the
13	matter. TURN is going to remove its
14	objection, and just with the understanding
15	that the table that this workpaper is
16	intended to support, which is Table 2-3 in
17	PG&E's Rebuttal Testimony, which I believe is
18	Hearing Exhibit 6.
19	This workpaper is intended solely
20	for the purpose of supporting certain numbers
21	that are associated with Footnote B in that
22	table, and that's the sole purpose for which
23	PG&E would be using Exhibit 298.
24	ALJ LIRAG: Agree with that
25	qualification, Mr. Ouborg?
26	MR. OUBORG: Yes, your Honor, we do.
27	(Exhibit No. 298 was received into evidence.)
28	evidence. j

1 ALJ LIRAG: So the objection is 2 With that, we shall admit Exhibit removed. 3 298 into the record. Let's go back off the record. 4 5 (Off the record.) 6 ALJ LIRAG: Let's go back on the 7 record. 8 MS. SLOCUM: Thank you, your Honor. 9 Ms. Dowdell, did you do an analysis Q 10 that incorporated your belief about what the 11 appropriate delay factors would be? 12 Α We did not. 13 0 But you would agree that there is 14 some group of customers for whom the 15 disconnection would occur between 53 and 58 16 days, such as those who don't qualify for a 17 payment plan; correct? 18 ALJ LIRAG: Let's go off the record. 19 (Off the record.) 20 ALJ LIRAG: Let's go back on the 21 record. 22 I believe Ms. Dowdell has answered. 23 MS. GOODSON: Let me just interject and 24 ask Ms. Slocum to clarify. Are you simply 25 asking Ms. Dowdell whether that's 26 conceivable, whether that's plausible, or are 27 you asking whether she has any knowledge 28 about whether the customers who've been

disconnected that are reflected in PG&E's 1 data series, whether any of them had no pay 2 3 plan prior to disconnection? MS. SLOCUM: I could do it either way, 4 5 but, I think, probably the easiest way to do 6 this is to say, when PG&E asked you the question before, I had mentioned the idea 7 of -- that we've been assuming no previous 8 9 outstanding balances; do you recall that? 10 Α No. I don't recall presuming no 11 previous outstanding balances. 12 Okay. So maybe that's where the 13 disconnect occurred. We were saying a 14 customer could not be disconnected for 15 between 53 and 58 days, after they received 16 their bill, assuming they have no previous 17 outstanding balance. 18 And there I'm referring to the 19 group of customers for whom they're -- they 20 are not on a pay plan and they are due; do 21 you have that in mind? 22 Α Okay. Let me just make sure I 23 understand the question. 24 So what you're saying is, consider the group of customers who have no 25 26 outstanding balance and are not on a pay 27 plan. 28 Q Correct.

1 Α And for that group of customers, 2 what are you asking me? 3 If the period of the lag is between Q 53 and 58 days, in that instance. 4 5 I have no specific, direct 6 knowledge, but that seems like it's about the billing cycle, so wouldn't fight with you 7 over that. I'm, you know... 8 9 Do you have any knowledge about Q 10 what proportion of customers falls into this 11 category we've been discussing? 12 The one that has no outstanding 13 balance and is not on a pay plan? It would 14 have to be -- well, I have no personal 15 knowledge. I could look at this study and 16 say, you know, the ones that aren't on a pay plan might fall into your category. 17 So if there's -- so are you asking 18 me to make the calculation? 19 I think you've answered the 20 Q No. 21 question. 22 Α Okav. 23 Look at what's been marked as Q 24 Exhibit 301. Since receiving PG&E's 25 Rebuttal -- first of all, when you talked 26 about TURN attempting to run its own monthly 27 regression analysis, when did that happen? 28 Α That happened kind of shortly after

1	getting the data, but then it was the long
2	data.
3	Q So we're talking about the period
4	before your testimony?
5	A Yes.
6	Q Okay. Great. So after you
7	received PG&E's Rebuttal, did TURN perform
8	any additional monthly regression analysis?
9	A No. We didn't because we felt like
10	the lag period didn't make sense to us based
11	on what we knew about payment plans and other
12	factors. I mean, there's was nothing
13	Q Hold on. Hold on. Let me just
14	understand what you said there.
15	So when you looked at PG&E's
16	Rebuttal, you did not see a lag factor there;
17	correct?
18	A No. We saw you're talking
19	about are you talking about 301?
20	Q No. I'm talking about the
21	rebuttal.
22	ALJ LIRAG: One at a time.
23	THE WITNESS: Okay. Okay. Yeah. No,
24	we didn't see that in the rebuttal.
25	BY MS. SLOCUM:
26	Q And looking at Exhibit 301, do you
27	recognize this as a supplemental data
28	response that PG&E provided to TURN, updating

PG&E's prior monthly regression analysis so 1 2 that it incorporated the two-month delay 3 suggested during TURN's cross of Mr. Brown? Α Yes. 4 5 0 Okav. And this was provided to 6 TURN on October 10th, 2019; correct? 7 Α Yes. 8 Have you reviewed the table Q 9 provided at the end of Exhibit 301 comparing 10 the findings from all three of the regression 11 analyses that PG&E has now performed? 12 Α Yes, I have. 13 The right-most column includes the 0 14 findings from the analysis provided to TURN 15 in May 2019. 16 Α Uh-huh. 17 And the second column from right 0 includes the findings from the monthly 18 19 analysis from PG&E's Rebuttal Testimony that 20 we just discussed. 21 Α Yes, I see that. And, finally, the third column from 22 Q 23 the right includes the findings from the 24 revised monthly analysis that incorporates a 25 two-month delay; do you see that as well? 26 Α Yes, I do. 27 Q Do you have any data to dispute 28 that a monthly analysis that reflects a

1 two-month delay, like this one, would 2 indicate that in most scenarios, there's 3 still no correlation between monthly bills and monthly disconnects, and in only two 4 5 scenarios, there's only a weak correlation? Do you have any data to dispute 6 7 that? We didn't run the analysis, 8 No. 9 but it doesn't make intuitive sense. 10 Looking, again, your testimony in Q 11 July at page 15, lines 6 to 16, you cite to a 12 December 2017 report from the Commission's 13 Policy and Planning Division on Residential 14 Customer Disconnections, Influences, and 15 Trends; correct? 16 Α Yes. 17 Did you read this report in full 0 18 before you finalized your July 2019 19 testimony? 20 Α Yes, I think I did. Yes. 21 And your testimony there at lines 8 Q 22 through 10, notes that CPUC's PPD concluded 23 that disconnections have dependancies on both 24 income and unemployment, which means there 25 may be a number of variables besides the amount of PG&E's monthly bills that have 26 27 predictive value for disconnections; correct? 28 I think that's the meaning I

Α

Yes.

Α

1 took from the report, yes. 2 So you generally agree there are a Q 3 variety of reasons that a given PG&E customer could end up being disconnected, even if only 4 5 for less than 24 hours? 6 Yes. But they might be -- they 7 might be co-linear; they might be related. 8 Let me just go through a couple of Q 9 examples. 10 Α Sorry. Sorry. 11 Would you expect someone who lost Q 12 their job, and, unfortunately, remained 13 unemployed for many months might be at 14 greater risk of seeing a disconnection than a 15 customer would have been, given the same bill 16 if they still had their job? 17 Α Yes. 18 And what about if a PG&E customer 0 19 suffered a health problem that prohibited or 20 limited the amount he or she could work? 21 Α Yes. God forbid. But, ves. 22 And what about someone who didn't 0 23 lose their income in any way or experience a 24 health problem, but experienced a significant 25 new expense or expenses, in a given month, outside of whatever level their PG&E bill was 26 27 for that month?

Let me make sure I understand the

28

1 hypothetical. You're saying somebody who 2 just had a credit card that month, or a high 3 expense that was not ongoing, but that was one time in a given month, do I think that 4 5 they would not pay their PG&E bill or and go to disconnection; is that question? 6 7 Q Yes. A significant new expense or 8 set of expenses in a given month outside of 9 whatever level their PG&E was for that month. 10 Α Then is it ongoing or is it one 11 time? 12 Does it matter to you? Q 13 Because people Α Yeah, it does. 14 don't like to be disconnected from essential 15 services. So in an ongoing situation where, 16 essentially, their income isn't sufficient to 17 cover their other essential services, like 18 housing and food and childcare, yeah, I think 19 it matters whether it's ongoing or whether 20 it's a sudden shock. 21 So let's assume that they don't Q 22 lose their income and they don't have a 23 health problem, but over a period of months, 24 they have some very significant other 25 expenses, like they've got to buy a car for 26 their kid that's going off to college, or

they've got to do something with their

mother-in-law who falls, you know, many

number of things can be significant expenses 1 2 over a period of months - correct - that could affect their ability to pay their PG&E 3 bill and might lead to disconnection? 4 5 Α So I got to push back --6 Q That is a yes or no question to 7 begin with. 8 Α Okay. 9 Does it or does it not represent a Q 10 situation in which this is another type of 11 reason that a customer could end up being 12 disconnected, but not because of their PG&E 13 bill? 14 Α Yeah. In an instance, sure, 15 somebody might make that choice. 16 Q Okay. Your testimony at page 15, 17 lines 6 through 16, summarized the 2017 CPUC 18 PPD report as having concluded that 19 disconnections have what you call a 20 dependency on income and unemployment; 21 correct? 22 Α Well, among other things, yeah. 23 Please look at Exhibit 302. Isn't Q 24 it this that same December 2017 CPUC PPD 25 report that you referenced in your testimony? 26 Α It is. 27 Doesn't this report at page 2, in Q 28 the second bullet point, specifically

26

27

28

bill.

conclude that the unemployment rate, in the 1 2 absence of policy shifts, is a very strong 3 independent predictor of the disconnection rate? 4 5 Α Yes. 6 0 And in the next bullet point, you 7 don't dispute that this same Policy Planning Division report found that income also has 8 predictive value, but is only moderately 9 correlated with disconnections? 10 11 That's what it says here. Α Yes. 12 Q And you don't dispute that; do you? 13 Well, I don't know what their Α 14 intent was in income. There are a number of 15 ways to look at this. There's, essentially, 16 what we looked at, which is sufficiency 17 income, and I think what they found was that 18 it was moderately correlated only because it 19 took a certain level of income not to have a 20 linear relationship that they found. 21 I think, on page 5, they look at, 22 essentially, if you don't get to \$90,000, 23 it's sort of linear, and then after about 24 \$90,000, which is around the sufficiency

Q So if you had been writing this

month, you tend to want to pay your electric

income, where you're not living month to

```
1
     report, you might have written that bullet
 2
     point a little bit more precisely?
 3
           Α
               I have would have written it
     differently, yes.
 4
 5
               And looking at PG&E's Rebuttal
 6
     Testimony in Exhibit 93 --
 7
           ALJ LIRAG: What's a time check for the
     remainder of your cross?
 8
           MS. SLOCUM: I have about 15 more
 9
10
     minutes, your Honor.
11
           ALJ LIRAG: All right. Let's proceed.
12
     I might call a break in between.
13
     BY MS. SLOCUM:
14
           Q
               Didn't PG&E attach, as one of the
15
     attachments, a January 13, 2015 Disconnection
16
     report to the CPUC on which some of your
17
     testimony from TURN relied?
18
               Wait a second. I'm confused.
     Where's that?
19
                       Let's go off the record.
20
           ALJ LIRAG:
21
               (Off the record.)
22
           ALJ LIRAG: Let's go back on the
23
     record.
24
     BY MS. SLOCUM:
25
               So, Ms. Dowdell, have you had an
26
     opportunity to compare what's attached to
27
     PG&E's Rebuttal as Attachment A, the January
     13, 2015 Disconnection report, and compare to
28
```

The

1 Exhibit 306, the excerpt from your testimony 2 showing the redlines for your errata? 3 Α Yeah. Do you agree that this is the same 4 0 5 report you are referring at page 13 of your 6 redline version of your errata testimony? 7 That's what it says in the footnote, but I'm not sure that's right 8 9 because I think I -- I think part of the 10 reason this is removed is because we had an 11 apples-to-oranges comparison in our data set. 12 Well, I'm really actually asking 13 you, given what your footnote says and what 14 was removed from your testimony, is that 15 report -- is the data that you're looking at 16 here in the attachment similar to the data 17 that you saw before you presented your 18 testimony? Ah --19 Α 20 0 That annual report on 21 disconnections. 22 Your Honor, I'm going to MS. GOODSON: 23 interject here. The witness is clearly 24 confused, and I will alert Ms. Slocum. 25 removed this table. It's erroneous for 26 several reasons, and Ms. Dowdell will be 27 happy to talk about that.

But that footnote is incorrect.

reference is actually to the disconnections 1 2 data that PG&E provided to the Commission and 3 many parties in the Residential Rates Rulemaking, R.12-06-013, as part of the CARE 4 5 restructuring phase. 6 There was a fairly robust data set provided by all of the utilities on electric 7 disconnections at the ZIP code, and that's 8 9 the data set that Ms. Dowdell used. 10 MS. SLOCUM: Thank you very Okay. 11 much, Counsel. 12 MS. GOODSON: You're welcome. BY MS. SLOCUM: 13 Ms. Dowdell, did you have the 14 Q 15 opportunity to review what's in Attachment A 16 to PG&E's Rebuttal after you received the 17 rebuttal? 18 Α Not carefully. 19 Do you agree with TURN's Q 20 rebuttal -- excuse me. Do you agree PG&E's 21 Rebuttal when it concluded that there had not 22 been an increase between 2014 and 2018 as you 23 had asserted in your original testimony, but 24 rather there had been a decrease in the 25 number of disconnections during that same 26 period? 27 I agree with PG&E's Rebuttal Α Yes.

Testimony on that point. Yes, absolutely.

And you don't disagree - do you -1 Q that the vast majority of customers who are 2 3 disconnected get reconnected within the first 24 hours; right? 4 I don't have -- I don't have direct 5 I can't say whether that's right 6 knowledge. or wrong, but if you're citing to this report 7 and it's on this report, then, yes, I'm 8 9 comfortable with that. 10 Okay. Q 11 Α If it's coming off this report, I'm 12 comfortable with that. 13 0 Okay. 14 ALJ LIRAG: Let's take a five-minute 15 break right now. Off the record. 16 (Recess taken.) ALJ LIRAG: Back on the record. 17 BY MS. SLOCUM: 18 19 Ms. Dowdell, are you aware that the 20 Disconnections OIR resulted in D.18-12-013, 21 which established three additional customer 22 protections, including new disconnection 23 exemptions? 24 Α Yes. Generally, yes. 25 0 And looking at cross Exhibit 304, the Advice Letter, is it your understanding 26 27 that these three new customer protections 28 from disconnections were added to PG&E's

tariffs effective last January 2019? 1 2 Α Yes. 3 And I'd like to confirm with you 0 what those three new disconnection 4 5 protections were by having you look at cross 6 Exhibit 305, which is excerpts from that 7 decision, specifically referring to pages 30 8 to 31. 9 Α Okay. Yes, I got it. I got 305. it. 10 11 Right. And the first new Q 12 protection, seen at page 30, provides, 13 "Effective January 1, each respective utility 14 shall set a goal of limiting residential 15 customer disconnections using recorded 2017 16 percentages for each respective utility"; do 17 you see that? 18 Α Yes. 19 Q Isn't the next one that "Effective 20 no later than the close of business December 21 21, 2018, residential customers shall not be 22 disconnected for nonpayment if they qualify 23 for medical baseline and are above 65 years 24 old as long as the customer agrees to a 25 payment plan"? 26 Α Yes. 27 Q And is it your understanding that 28 third new protection from that decision is

that "residential customers shall not be 1 2 disconnected when temperatures above 100 3 degrees or below 32 degrees are forecasted based on a 72-hour-look-ahead period"; 4 5 correct? 6 Α Yes. 7 Q In general, going forward from 8 January 2019 on, with these new protections 9 in place, wouldn't you expect the number of disconnections to be lower than it otherwise 10 11 would have been? 12 Yes, that's a good thing. It's 13 only half of the equation, though. In your testimony, you state that 14 Q 15 PG&E could choose -- on page 14 --16 Α Yes. 17 -- "PG&E could choose to mitigate 0 18 these impacts through its existing and/or new 19 credit collection practices such as those 20 under consideration in the Disconnections 21 OIR"; do you see that? 22 Α Yes. 23 But then you assert that there's no Q 24 guarantee that PG&E will do so; do you see 25 that? 26 Yes, I do. Α 27 0 That is not -- does that testimony, 28 then, seek to dispute that these three new

1 disconnection protections are currently 2 embedded in PG&E tariffs and are required 3 starting January 2019, and will remain in place until any CPUC reconsideration of them? 4 5 No. It does not dispute that. 6 0 And you don't disagree that there's 7 an ongoing follow-up phase of the OIR for disconnections looking at the potential for 8 9 further new policies that are expected to 10 lead to the adoption of even more 11 restrictions or protections relating to 12 disconnections; do you? 13 That's why the proceedings Α Yes. say PG&E could choose. 14 15 Now, your testimony generally Q 16 expresses concerns about the increase in 17 level of customer bills; right? 18 Α Yes, it does. 19 And are you aware that PG&E's Q disconnection rate, as of the end of 2018 20 21 was, approximately, 4.5 percent; whereas, 22 Southern California Edison's, during that 23 same time, was about 10 percent? 24 Α I wasn't aware of those exact 25 numbers, but I did know that PG&E's rate is lower than Southern California Edison's. 26 27 And isn't it true that rate design Q

changes can increase a customer's bill even

1	if the revenue requirement remains the same?
2	A Yes. I think that that is
3	accurate.
4	MS. SLOCUM: Thank you, your Honor.
5	Those are all my questions.
6	ALJ LIRAG: Ms. Goodson.
7	MS. GOODSON: Thank you, your Honor.
8	REDIRECT EXAMINATION
9	BY MS. GOODSON:
10	Q Ms. Dowdell, do you recall that
11	PG&E asked you whether you agreed that the
12	Commission should continue to comprehensively
13	address disconnections in Rulemaking
14	18-07-005?
15	A I do.
16	Q And you said, yes, the Commission
17	should continue to do so. Is that your
18	recollection?
19	A Yes, it is.
20	Q And in your opinion, is that the
21	only place that the Commission should
22	consider disconnections or is considering?
23	A No, it's not. Basically, in my
24	testimony, I make clear that the Commission
25	should consider disconnections in this
26	proceeding.
27	And in general when I think about
28	disconnections, as an outcome, I think there

1 are two sides that you can address reducing 2 that outcome. 3 And first side is what PG&E is doing and what some of the other utilities 4 5 are doing, and that is quite laudable; that's to create programs, customer programs, and to 6 begin to think about understanding the 7 function that describes or causes 8 disconnections, but the other side is to be 9 mindful of the level of bills because, truly, 10 11 in California, the cost of living is such 12 that people are squeezed. 13 And even if there's employment, if 14 you aren't making enough to cover your basic 15 needs, then you come under financial 16 insecurity and potentially energy insecurity, 17 to make a long story short. 18 Ms. Dowdell, to your knowledge, 19 does the Commission have any other current 20 proceedings, aside from the disconnections 21 rulemaking where it's looking at 22 affordability? 23 There is affordability proceeding, Α 24 and, once again, two sides of the same coin, and both very important. 25 And do you recall that Ms. Slocum 26 27 asked you to affirm her characterization of

PG&E's position in its original annual

1 analysis of the correlation between 2 disconnections and bills and she asked you to 3 confirm that PG&E found a none-to-weak correlation; do you recall that? 4 5 I recall that question. 6 0 And please turn to PG&E's Rebuttal Testimony - that's Exhibit 93 - and, 7 specifically, page 7-5. This is a table that 8 9 Ms. Slocum referred you to. This is table 10 7-2. 11 Α Yes. 12 In the column to the right, it 0 13 refers to the "Annual Analysis Finding," and 14 if you go down to Rows 13 to 18, do you see 15 that PG&E's conclusions for those data sets 16 were Moderate -- Moderate, Weak to Moderate, 17 and High correlations? I do. 18 Α 19 And do you recall that Ms. Slocum Q 20 asked about your experience conducting 21 regression analysis? 22 Α Yes. 23 And you told her that you would Q 24 probably have done a dozen complex analyses, 25 and you were starting to explain your 26 experience further; do you recall that? 27 Α Yes. 28 Can you talk a little bit more Q

1 about your experience with regression 2 analysis? 3 Α So - it's true - I've done about a dozen complex regression analyses. 4 5 When I was acting as a consultant, 6 before joining TURN, one of my jobs was to 7 look at employment data and determine for a 8 client over three years, in other words, each 9 year, whether there was a correlation around 10 demographics and employment outcomes, and so 11 I did perform that work. 12 Additionally, the most complex 13 regression analysis I performed was a program 14 I prepared while I was at the University of 15 Chicago, Graduate School of Business, where I 16 undertook to create an analysis that we 17 predict football pool winners. It was 18 complex. 19 Thank you. Q 20 And do you recall Ms. Slocum asking 21 you some questions about what the lag should 22 be between the issuance of a bill and the 23 time of disconnection? 24 Α Yes. 25 0 And she asked you to consider customers that aren't on a pay plan; there 26 27 are no other intervening factors that might

influence lag, and they get a bill, and she

asked you whether it was your understanding 1 2 that they could be disconnected within 53 to 3 58 days following the issuance of that bill; do you recall that? 4 5 Α Yes. 6 0 Is it your understanding that that 7 would be the earliest time they'd be eligible 8 for disconnection as opposed to the time when 9 they would be disconnected? They'd get, I think, a 30-day 10 Α Yes. 11 notice, then a 15-day notice, then a 7-day. 12 My question was actually a little 13 bit different. My question was - I'll ask it 14 in a different way - do you have any 15 knowledge as to whether PG&E implements 16 disconnection on the first day a customer is 17 eligible for disconnection as opposed to 18 doing it at a later time? 19 Α My understanding is they do not on 20 the first day. 21 Do you recall that Ms. Slocum asked Q 22 you some questions about what's been 23 identified as Hearing Exhibit 301, and 24 this -- particularly Table 2, which shows 25 PG&E's brand-new regression analysis 26 following TURN's cross-examination of PG&E? 27 Do you have --28 Α I do.

Q You do.

And Ms. Slocum asked you whether you had any data to dispute PG&E's, the result of PG&E's regression analysis. Do you recall that?

A Yes.

Q And did you have any concerns about that regression analysis aside from having any data to question their results?

A I did. So a couple of things: The first thing, which I think I've already said, is people are on payment plans and that's a significant number of people that's going to affect your lag. I don't know what the precise lag would be, but my thinking, it's probably more than two months.

Then there's the other fact that in the policy and planning report - ah, here, 302 - they do a nice job of talking about a variety of influences, and so if I were doing a regression and trying to figure out, essentially, a model that describes how disconnections relate to a lot of independent variables, I would add multiple variables, when something that is likely a highly predictive variable, such as bill levels, came up with a low correlation because sometimes when variables are interrelated -

1	and I say this not as an expert statistician;
2	I just say this as a user of regression on
3	occasion - sometimes you find that when
4	variables are interrelated, that the
5	R-squared changes based on the addition of
6	additional variables.
7	The other thing I would have looked
8	at was the significance factor. So sometimes
9	you find a fairly low R-squared for something
10	that would be predictive, but its significant
11	factor is extremely high. It's P-factor or
12	if you do it in Excel, I think they use
13	F-factor, so that would be a way that you
14	could begin to kind of get to where I think
15	598 wants to do, which is what are the
16	predictive factors? How do we understand
17	this?
18	Sorry. That was a little long, but
19	those are my thoughts and feelings on it.
20	MS. GOODSON: Thank you, your Honor. I
21	have no further questions on direct.
22	ALJ LIRAG: Ms. Slocum?
23	MS. SLOCUM: No recross.
24	ALJ LIRAG: Are the cross exhibits
25	ready to be moved into the record?
26	MS. SLOCUM: Yes, your Honor.
27	ALJ LIRAG: Is there a motion to admit
28	Exhibits 300 to 306 into the record?

1	you can, but if you are going to do that, I'd
2	rather you submit a motion to have the
3	specific information. Just so we're not
4	citing randomly, but on documents that we've
5	agreed can be cited from.
6	MS. SLOCUM: Very well, your Honor.
7	(Exhibit No. 304 was received into
8	evidence.)
9	ALJ LIRAG: So Exhibit 303 is
10	withdrawn. Exhibit 304 is admitted.
11	And then any response regarding
12	Exhibit 305?
13	MS. SLOCUM: Your Honor, I recognize
14	Ms. Goodson's point, but I think in other
15	instances, when we've questioned somebody on
16	something, provided this is a courtesy I
17	don't care whether it comes in or not, but I
18	think it might just be easier for it to come
19	in, just to have it to refer to instead of
20	people finding a decision.
21	ALJ LIRAG: I will accept Exhibit 305
22	on the explanation that if a portion of the
23	exhibit needs to be cited, it might be easier
24	to refer to Exhibit 305 than the entire
25	decision, which we would have to look at.
26	We might have to look it up anyway,
27	but let's just admit the exhibit, and then we
28	also admit Exhibit 306.

1	(Exhibit No. 305 was received into
2	evidence.)
3	(Exhibit No. 306 was received into evidence.)
4	MS. SLOCUM: Thank you, your Honor.
5	ALJ LIRAG: Let us pause to give
6	Mr. Ouborg a chance to move forward.
7	Let's go off the record.
8	(Recess taken.)
9	ALJ LIRAG: Let's go back on the record
10	for cross-examination by Mr. Ouborg.
11	CROSS-EXAMINATION
12	BY MR. OUBORG:
13	Q Good afternoon, Ms. Dowdell.
14	A Good afternoon.
15	Q Could you turn to your testimony,
16	which I believe is Exhibit 295, page 10?
17	ALJ LIRAG: Let me pause for a second.
18	I think Mr. Long is ready to move Exhibit 294
19	into the record.
20	MR. LONG: Yes. So moved, your Honor.
21	ALJ LIRAG: All right. This pertains
22	to the portion of the testimony that
23	Ms. Goodson and Ms. Slocum took care of.
24	Any objections?
25	(No response.)
26	ALJ LIRAG: Hearing none.
27	Exhibit 294 is received into the
28	record.

```
1
               (Exhibit No. 294 was received into
               evidence.)
 2
 3
           ALJ LIRAG: Let's continue.
 4
           MR. OUBORG: Thank you, your Honor.
               Ms. Dowdell, by way of an
 5
           0
 6
     introduction as to what I'm going to talk
 7
     about, this cross will be related to your
 8
     testimony regarding PG&E's Cross Bore
     Program, just to provide context for the
     record.
10
11
               So are you on page 10 of your
12
     testimony?
13
           Α
               I am.
14
           0
               And I'm going to read from line 16
15
     where it says: "PG&E in its Rebuttal
16
     Testimony explains that it now intends to
17
     perform at least 21,766 more units than in
18
     its original GRC Forecast, and that
     completion of these units will eliminate any
19
20
     cross bore deferred work."
               You go on to say, "TURN disagrees
21
22
     with this characterization because PG&E is
23
     still deferring the 10,000 high-risk San
24
     Francisco UTA inspections that it originally
25
     planned and was funded to perform in 2017 to
26
     2019, and is seeking to have ratepayers pay a
27
     second time for that high-cost work in 2020
28
     to 2022."
```

So I want to explore and discuss 1 2 PG&E's 2017 GRC Forecast for cross bores and to do that, I would ask you to turn to the 3 attachment to PG&E's recently filed -- or 4 5 recently submitted Surrebuttal Testimony. 6 Α Yes, I'm there. 7 Q Ms. Dowdell, have you had a chance 8 to review those pages? 9 Α Yes, I have. 10 And would you agree that they are Q 11 the testimony that was submitted by PG&E in 12 2017 GRC regarding its Cross Bore Program 13 and its Forecast for that program in that 14 case? 15 Α Yes. 16 Q And would you agree that this 17 testimony was submitted around sometime in 18 2015? 19 Α Yes. 20 0 Can you point to anything in the 21 testimony or these workpapers, Ms. Dowdell, 22 that refers to "Unable To Access Cross Bore Inspections" or "UTAs" as they've become 23 24 known as? 25 Α No. I don't see anything that says "UTA." 26 27 0 And, now, I want to refer you to what was previously identified as Hearing 28

```
1
     Exhibit 32. Do you have that in front of
 2
     you?
           MR. OUBORG: Your Honor, I have a spare
 3
 4
     copy.
 5
           ALJ LIRAG:
                      Let's go off the record.
 6
               (Off the record.)
 7
           ALJ LIRAG:
                      Let's go back on the
 8
     record.
              Please continue, Mr. Ouborg.
     BY MR. OUBORG:
 9
10
               You have in front of you Hearing
11
     Exhibit 32.
                  It's a response PG&E provided to
12
     a TURN data request, and I want to read
13
     Answer 3-A, and there it states:
                                        "PG&E did
14
     not have an established and published
15
     procedure in place for documenting incomplete
16
     inspections, or UTAs, prior to 2017.
17
               "During the beginning stages of the
18
     Cross Bore Program, the program's focus was
19
     on the development and refinement of the
20
     program, including identifying inspection
21
     criteria, performed records review, and
22
     establishing an inspection process, along
23
     with documenting the results of complete
24
     inspections.
                   It was not until 2017, when
25
     PG&E noticed the higher rates of unsuccessful
26
     inspections, and began to categorize these
27
     locations and refer to them as UTAs and PG&E
28
     started to create a plan to address these
```

locations for completion." 1 2 Do you see that? 3 Α Yes, I do. And since PG&E filed this 2017 GRC 4 0 5 in 2015, do you agree that based on that 6 response PG&E gave to that data request, the 2017 GRC Forecast could not have included 7 estimation or cost estimates of UTAs? 8 9 I'm not sure I agree with that Α 10 because -- so PG&E had done -- by 2016, it 11 had done 92,000 of these inspections. 12 So whether they were called "UTAs" 13 or whether they were called something else, 14 it would seem to me that, given the first 15 cross bore, I believe, started in -- the 16 first activity started 2011 and 2012, I would 17 think that PG&E would be aware of the issue 18 around Unable To Access. 19 So, yes, I agree that there was no "UTA" name used, but I can't imagine PG&E 20 21 would not be aware that there were, in fact, 22 UTA locations. 23 So are you saying you do not agree Q 24 with the response PG&E gave that we just read 25 from Hearing Exhibit 32? 26 What it says is that PG&E did Α No. 27 not have an established, published -- and published procedure for documenting UTAs 28

```
prior to 2017. So I believe that.
 1
                                          And I
 2
     believe that there was not -- as attached,
 3
     there wasn't even a procedure for doing the
     inspections before 2016, but what I'm
 4
 5
     disagreeing with is that PG&E could not have
 6
     known about UTA locations.
 7
           Q
               All right. Thank you.
 8
               Can you now look at the testimony
 9
     from 2017 that was attached to the
10
     surrebuttal, and could you turn to page
11
     WP 4-42 of that? Sorry. It's App A-18, but
12
     the original number --
13
           Α
               Got you.
                         Got you.
                                    I'm there.
14
           Q
               Okay. And at the bottom it says,
     "Cost Assumptions." Do you see that?
15
16
           Α
               Uh-huh.
17
                     I'm sorry. What page again?
           MR. LONG:
18
           MR. OUBORG: Appendix A-18 to the
19
     Surrebuttal, and the original workpaper is
20
     WP 4-42, Project Summary.
21
           MR. LONG:
                      Thank you.
22
     BY MR. LONG:
23
           Q
               And then at the bottom it says,
24
     "Cost Assumptions." It states, "The costs
25
     for the Cross Bore Program are based on the
26
     2014 costs for performing records reviews and
     conducting approximately 33,570 inspections."
27
28
           Α
               Uh-huh.
```

So would you agree that PG&E's cost 1 Q 2 forecast and its number of units at forecast 3 was based on 2014 data? Α Yes, that's seems right. 4 5 0 So based on our foregoing 6 discussion, would you agree that PG&E's 2017 GRC Cross Bore Forecast, which was submitted 7 in 2015, did not include analysis for 8 9 performing UTAs in the Forecast? I don't think I can make that 10 Α 11 assumption. 12 But you see nothing in the 13 workpapers or testimony that --14 Α I see nothing. 15 -- indicates --Q I'm sorry. I didn't mean to 16 Α 17 interrupt you. 18 I thought earlier you 0 Sorry. 19 agreed that there was nothing that you saw in 20 the testimony or workpapers that indicated 21 that this type of Cross Bore Inspection had 22 been contemplated or was forecast? 23 Α I saw nothing in the testimony and 24 workpapers that said something called "UTA" 25 had been considered in the testimony. But as I said before, I think that PG&E would have 26 27 to -- given the volume of the inspections it 28 had performed, some of them in San Francisco,

1 had encountered this situation, whether it was called "UTA" or not. 2 3 But that's just an assumption of Q yours. There's no evidence that PG&E knew 4 5 about these or was documenting that these 6 existed? I believe PG&E's Data Response that 7 Α 8 it was not documenting that these existed. 9 Q Thank you. 10 Next, I want to turn to "Deferred Work Principles," and I provided a reference 11 12 exhibit on that. 13 Α Got it. 14 MR. OUBORG: Your Honor, do you have 15 it? 16 ALJ LIRAG: I can follow along. BY MR. OUBORG: 17 18 These are pages from the 2017 GRC 19 Settlement, and particularly the pages that 20 address the principles for deferred work. Can you look at page 1-30 of that document? 21 22 Α Yes. 23 And there, it states about a third Q 24 of the way down, that "PG&E agrees that in 25 the next GRC and its next gas transmission 26 and storage rate case, that PG&E will need to 27 take additional steps in order to seek 28 ratepayer funding for work that was

previously authorized and funded when all the 1 2 following are true: (a), the work was 3 requested and authorized based on representations that it was needed to provide 4 5 safe and reliable service." 6 With respect to that first criteria, (a), Ms. Dowdell, do you agree that 7 "requested and authorized based" refers to 8 the 2017 GRC? 9 10 Α Yes. 11 Q Right. And with respect to the second -- I'll read the second criteria, (b), 12 13 "PG&E did not perform all of the authorized 14 and funded work as measured by authorized 15 explicit or imputed units of work"; do you 16 see that? 17 Α Yes. 18 And would you agree that where it 0 says "as measured by authorized explicit or 19 imputed units of work," it is referring to 20 21 the "imputed units of work" adopted in the 22 2017 GRC? 23 Α Yes. I believe that is the 24 reference. 25 0 Thank you. 26 Ms. Dowdell, do you agree that the 27 imputed units of work for Cross Bore 28 Inspections from the 2017 GRC was 123,307

1	inspections?
2	A Yeah, that sounds right.
3	Q And do you agree that PG&E has now
4	testified that it expects to perform all
5	those units that are imputed?
6	A PG&E has testified that, yes.
7	Q Do you agree that PG&E expects to
8	spend \$21.8 million more than its 2017 GRC
9	authorized funding to complete all the
10	imputed units?
11	MR. LONG: Objection; I don't know how
12	the witness could testify to PG&E's
13	expectations.
14	ALJ LIRAG: Sustained.
15	MR. OUBORG: Let me rephrase the
16	question.
17	Q Do you agree that PG&E has
18	testified that it will spend 21.8 million
19	more than its 2017 GRC authorized funding to
20	complete all the imputed units?
21	A Yes. PG&E has testified to that
22	effect and it's provided its data responses
23	as to that.
24	Q Ms. Dowdell, can you refer to your
25	testimony at page 14?
26	A Yes.
27	Q And on my version, it says line 6,
28	but it may slightly changed. I'm referring

```
to the last sentence of the first block of
 1
     text at the top, which says, "TURN's Forecast
 2
 3
     is $10.64 million" --
           Α
 4
               Yes.
 5
           Q
               -- "2020 Forecast"; right?
 6
           Α
               Yes.
 7
           0
               And you also propose, I believe,
 8
     that PG&E performed an average of 30,000
 9
     inspections per year?
10
           Α
               Yes.
11
               And so your proposed funding
           Q
12
     level -- do you agree with me that your
13
     proposed funding level will result in about
14
     $32 million of revenue for PG&E?
15
           Α
               So...
16
           Q
               That's 10.64 times three.
17
               No, I don't think so.
           Α
                                       I think that
18
     PG&E's requesting something like $29 million
19
     in 2020, and what my recommendation is saying
20
     is that there are 10,000 UTA inspections
21
     which are for the shareholder's account.
22
               And so my forecast would take that
23
     $29 million and would deduct the cost,
24
     assuming the TURN/Cal Advocates unit cost
25
     from that for 10,000 UTA inspections, which
     would be disallowed and would be at the
26
27
     shareholder's account.
28
               And then going forward, we would
```

then fund the remaining amounts at -- well, I 1 think I've calculated this -- so then we 2 3 would have --4 Can I -- can I stop you there? 0 5 Α Yes. 6 Can you point to me in your 0 7 testimony where you state what PG&E's funding 8 levels should be in 2021 and 2022? 9 Α It's on page 14, Footnote 36 is where I make that calculation. And we struck 10 11 the sentence that we talked about at the 12 beginning of this session because it was 13 unclear. So I'm trying to clarify that our 14 15 proposal is not that PG&E would sustain a 16 disallowance of \$10 million for three years, 17 but that the total disallowance would be 18 10.64 -- oh, I'm sorry. It would be \$9.89 19 million. 20 Ms. Dowdell, do you understand how 0 21 expense ratemaking works in the GRC; in other 22 words, the Commission adopts a, in this 23 particular rate case, 2020 amount. This is 24 an expense program; isn't it? 25 Α Yes. And if the Commission adopted your 26 0 27 \$10.64 million recommendation, that's what 28 PG&E gets subject to post-test-year

1 ratemaking, it pretty much gets that for the 2 next three years. So I think that I do understand how 3 Α GRC ratemaking works, and I'm attempting to 4 5 clarify this because when I read the 6 surrebuttal, it became clear that PG&E had misunderstood TURN's intention in our 7 proposal, and I apologize if our proposal was 8 9 not clear, but the intention of the proposal is not -- it is to have a disallowance of 10 11 9.89 million --12 MR. LONG: Just so we don't have a 13 wrong number in the record, it's 9.59 --14 THE WITNESS: I'm sorry. 15 MR. LONG: -- we corrected that. 16 THE WITNESS: Yeah, sorry about that. 17 9.59 for 10,000 UTAs that ratepayers 18 reasonably believe that we should have received, and funding for 30,000 inspections 19 a year, and so if you ignore the disallowance 20 21 for the purposes of the 2020 Forecast, the 22 2020 Forecast would be built off of 20.2 --23 \$20.237 million. 24 So that I explain that in my 25 Footnote 36. And, again, I apologize because 26 that is not very clear in my revised 27 testimony. Does that help? 28 BY MR. LONG:

1 Q So the total amount you're 2 recommending would be - I'm speaking 3 generally here - about 10 million in 2020 with the disallowance? 4 5 Α Yes. And then 20 million, and 20 million 6 0 7 for the following GRC; so you're talking about 50 million, roughly? 8 9 Α Yes. 10 Would you agree that given the Q 11 90,000 inspections you're recommending over 12 the three years, that that results -- would you accept, subject to check my lawyer math, 13 14 that that's about \$588 per inspection? 15 Α I'm going to assume that Sure. 16 your math is correct. 17 And you're agreeing with Cal 0 18 Advocates that non-UTA inspection should cost 19 about \$639; is that correct? 20 Yes, I am. But what I'm saying is 21 that there were 10,000 UTA inspections that 22 TURN believes were part and parcel of what 23 was funded in the 2017 GRC. 24 They were not performed. They are 25 high-risk area. It's important. And by not performing them, by performing lower-risk 26 27 inspections, ratepayers didn't get the safety

package that we thought we were going to get.

1 Q Would you also agree that the 588 2 average unit cost that you're recommending 3 is, you know, slightly over half of what you believe a UTA inspection would cost of 959? 4 5 Yes. The math works out that way, but upshot of my recommendation is that 6 7 10,000 UTA inspections --I -- I --8 Q 9 Α -- would be at the shareholders --10 I think we got that. Q 11 Α Okay. 12 So do you still have that exhibit Q 13 in front of you, the Deferred Work 14 Principles? Can you look at Deferred Work 15 Principle 6, which appears on 1-30? 16 Α Yes. 17 0 Do you think that severely 18 underfunding a critical safety program is 19 consistent with Deferred Work Principle 6, 20 which states in the second part of principle 21 there, "Adopted revenue requirements and the 22 disposition of disputed ratemaking issues 23 should be consistent of the goal supporting 24 PG&E's ability to provide safe and reliable 25 service"? 26 MR. LONG: Objection. Are you asking 27 the witness to accept that she's proposing a

severe underfunding of the program or are you

1 just asking in general, an abstraction? 2 MR. OUBORG: I'm asking the witness to 3 accept that her recommendation is 4 underfunding a program. 5 MR. LONG: Maybe you should break up your question. 6 7 ALJ LIRAG: Ask it one at a time. BY MR. OUBORG: 8 9 Would you agree that based on your Q recommendation, the program is underfunded 10 11 with respect to routine Cross Bore 12 Inspections and significantly underfunded 13 with respect to UTA inspections given the 14 unit cost that you're recommending? 15 Α I don't think that's true. 16 Q So you don't think giving \$588 for 17 inspections that you're saying cost almost a 18 \$1,000; you don't think that's a significant underfunding? 19 20 Α Well, your number is an average, 21 and it falls out of the pact that 22 shareholders will need to fund the 10,000 UTA 23 inspections that were not delivered in this 24 proposal. 25 0 Ms. Dowdell, do you think it's a 26 reasonable outcome or application of the 27 deferred work principles to take funding from 28 the 2020 GRC for a program where PG&E

performed all the authorized units and spent 1 2 \$20 million more than was authorized in the 3 previous rate case? Do you think that's a reasonable 4 5 and fair outcome, an application of those 6 principles? 7 It's the proposal that I'm Α 8 sponsoring, so I most certainly support the 9 proposal. It is -- to me, given the history 10 of the program, given the UTA situation, 11 given the recent ramp-up relative to past 12 performance, it ultimately is really part of 13 what the deferred work settlement is about. And if we're talking about relative 14 15 disallowances in terms of moving this process 16 to a clear showing, which is, you know, the reasonableness that underlies the showing 17 18 that was done in deferred work, frankly, if we can get there with a \$10 million 19 20 disallowance, I'd rather us not be in this 21 situation where we're talking about a much 22 larger disallowance. 23 24

Would you agree that PG&E performed all units of work, as measured by the imputed units -- we went over this earlier.

I'm just trying to understand where the deferred work comes from.

> Α Oh.

25

26

27

28

Deferred work principles don't 1 0 2 apply unless there's deferred work in the first. All the units, the imputed units, 3 were performed. 4 5 So I understand what you're asking 6 And here's why I think that the assertion that no deferred work principles 7 apply here is wrong. 8 9 The reason I think it's wrong is because underlying everything about this 10 11 proceeding we're in, is the idea 12 reasonableness. 13 ALJ LIRAG: Let's get directly at the 14 answer. Let's cut off a little of the 15 explanation. 16 THE WITNESS: Okay. It's never -- the 17 deferred work settlement requires reasonableness. And so it's never 18 reasonable --19 20 BY MR. OUBORG: 21 Q Sorry. Sorry. Where does it say 22 I mean, it's very explicit. 23 three criteria where if those are met, there's deferred work. Then the utility has 24 25 to make certain showings. In this case, PG&E's authorized 26 27 funding and requested units from last GRC 28 were the numbers we talked about. PG&E

1	performed all those. And under the explicit
2	wording, and it says explicitly, "as measured
3	by the imputed units of work."
4	A The explicit wording says that, but
5	implicit is that PG&E's cost request must
6	always be reasonable.
7	And it's not reasonable to perform
8	low risk work when you could be performing
9	high-risk work.
10	ALJ LIRAG: Let's get a little bit to
11	the question and answer. I think we're
12	arguing over a difference in opinion, and
13	this is better argued in briefs.
14	MR. OUBORG: Your Honor, I agree. Can
15	you give me one moment off the record?
16	ALJ LIRAG: Yes.
17	(Off the record.)
18	ALJ LIRAG: Let's go back on the
19	record.
20	MR. OUBORG: Your Honor, that concludes
21	my cross-questions of Ms. Dowdell.
22	ALJ LIRAG: Are you ready, Mr. Long?
23	MR. LONG: Can I take a short break?
24	ALJ LIRAG: Let's take a five-minute
25	break then. Off the record.
26	(Recess taken.)
27	ALJ LIRAG: Back on the record.
28	Mr. Long.

1	MR. LONG: Thank you, your Honor.
2	REDIRECT EXAMINATION
3	BY MR. LONG:
4	Q Ms. Dowdell, you were asked
5	questions about let me find the page, page
6	14 the top of page 14 of your testimony,
7	and Mr. Ouborg was concerned that TURN was
8	effectively seeking a funding level of - I
9	believe he said - \$32 million over three
10	years.
11	And I know you tried to clarify
12	your recommendation in your response to his
13	questions, but my first question is: "TURN
14	is proposing a 9.59 million disallowance for
15	10,000 UTA inspections that were not
16	completed in 2017 to 2019." That's in your
17	testimony.
18	A Yes.
19	Q Are you proposing that that
20	disallowance be applied in each year of the
21	upcoming rate period?
22	A No, I am not.
23	Q So your total disallowance then
24	would be \$9.59 million; is that right?
25	A Yes.
26	Q And if it were spread equally over
27	three years, would TURN have a problem with
28	that?

1	A Not at all.
2	Q And then he was quoting a figure of
3	\$588 per inspection; do you recall that?
4	A Yes, I do.
5	Q And that that included the
6	disallowance that we just talked about; is
7	that right?
8	A Yes, it did.
9	Q So what is your actual proposed
10	funding, proposed level, or unit cost
11	proposal for non-UTA inspections and UTA
12	inspections?
13	A Let me quickly do the math here to
14	make sure.
15	Q I think it's Footnote 36 on your
16	testimony.
17	A Yes, but the unit cost
18	Q I think they're right there.
19	A Thank you.
20	So, yes, for UTA inspections, we're
21	proposing \$959 and for non-UTA, we're
22	proposing \$639 per inspection.
23	Q Thank you.
24	Now, you were asked about the
25	reasonableness, essentially, of TURN's
26	proposal to disallow funding for 10,000 UTA
27	inspections. Where does TURN what is the
28	basis of TURN's concern regarding PG&E's

deferral of the originally planned 10,000 UTA 1 2 San Francisco inspections and deferring those 3 to the next rate case period? TURN's concern is that there is an 4 5 expectation that PG&E will always do the 6 highest risk, most important work first, and PG&E itself has said that these San Francisco 7 UTAs are highest risk, most important work, 8 9 and yet it is deferring them. 10 And TURN is concerned about the 11 safety implications of those deferrals and it 12 doesn't seem reasonable to us to defer the 13 most important, you know, highest risk work. 14 Q And if that work were performed in 15 the 2017 to 2019 period, what are the 16 financial implications to PG&E of deferring 17 that work -- I should say, what are the 18 financial implications to PG&E of deferring 19 that work to the 2020-to-2022 period? 20 Objection, your Honor. MR. OUBORG: 21 That is outside the scope of what I 22 was asking Ms. Dowdell about. We were not 23 talking about financial consequences. 24 was something that was covered in previous 25 testimony. ALJ LIRAG: I'll allow it to provide 26 27 additional clarity.

THE WITNESS: And I will make it brief.

If the UTAs are performed within the 1 rate-case cycle, then any overage is paid for 2 by shareholders and it's paid for at the 3 current expected rate. 4 5 If it's pushed into the next 6 rate-case cycle, then ratepayers pay for work twice, which is what our deferred work issue 7 is all about, and we pay at a higher rate 8 9 because there's an escalation on these 10 things. 11 MR. LONG: That's all my questions. 12 Thank you, your Honor. 13 ALJ LIRAG: Mr. Ouborg, recross? 14 MR. OUBORG: Yes. 15 REDIRECT EXAMINATION 16 BY MR. OUBORG: 17 Ms. Dowdell, your counsel asked you 0 18 whether -- well, I think you testified that 19 PG&E should do the highest risk work first; 20 is that correct? 21 Α Yes, I did. 22 And that you're objecting to PG&E 0 23 not doing 10,000 UTAs in San Francisco in 24 2019 as they -- not forecasting the rate 25 case, but planned to do in late 2018 when they looked at the 2019 work; isn't that 26 27 correct? 28 Α Well, to be specific, our objection

1	comes from the fact that the UTAs are the
2	most important work, and there is a general
3	expectation regardless of work plan that the
4	work plan would contain doing the most
5	important work first.
6	Q And if the consequences of doing
7	those 10,000 units slowed PG&E's program,
8	absorbed its resources, to the extent where
9	it underperformed generally on the Cross Bore
10	Program, few units in other areas; would that
11	be acceptable?
12	A That's a hypothetical that doesn't
13	have a lot of parameters around it. I don't
14	know.
15	Q The other thing you said is, and
16	you keep saying, and your testimony is full
17	of it full of this reference. Sorry.
18	Your Honor, I'll rephrase my question.
19	ALJ LIRAG: We got the meaning.
20	BY MR. OUBORG:
21	Q You say several times that
22	ratepayers shouldn't pay twice.
23	A Yes.
24	Q And as we established, PG&E did not
25	forecast in its 2017 GRC UTAs, they're not
26	even mentioned in there.
27	So are you saying that the

authorized funding and the units adopted in

28

the 2017 GRC included funding for 10,000 1 2 UTAs? 3 I'm saying that it included funding for the most important work. 4 And that 5 ratepayers rely on PG&E to understand its 6 business such that it can identify the most 7 important work. 8 And I am also saying that given the 9 volume of work that was performed prior to 10 the Forecast and given the period of time and 11 the severity of the risk, that TURN would 12 expect PG&E to be aware of circumstances like 13 UTAs which should have impacted its Forecast. 14 MR. OUBORG: May I have a moment off 15 the record? 16 ALJ LIRAG: All right. Off the record. 17 (Off the record.) 18 ALJ LIRAG: All right. Back on the 19 record. 20 BY MR. OUBORG: 21 Ms. Dowdell, would you agree that Q 22 the reason PG&E said that UTAs in San 23 Francisco were high-risk work is because that 24 work is San Francisco where cross bore find 25 rates are higher and the consequences of a 26 cross bore incident would be higher? 27 Yes, in part. But let me just say that if you haven't done any UTAs, then the 28

find rate might not be the same. 1 It's kind 2 of a black hole of risk, the way we see it. I'm just asking, if you agree that 3 Q the higher risk you referred to refers to the 4 5 fact these are Cross Bore Inspections in San 6 Francisco. 7 Α That they're urban area cross bores, yes, where the building denser and the 8 9 likelihood of an ignition, the downside is worse, yeah. 10 11 Correct. So if PG&E performed Q 12 equivalent cross bore work in San Francisco 13 that wasn't UTA-related, wouldn't that be an 14 equivalent risk reduction to what PG&E 15 originally planned for 2019? 16 Α See, I don't know. And I -- this is -- this is the concern that TURN has --17 18 ALJ LIRAG: Let's just cut it to "I 19 don't know" and that's your answer. 20 THE WITNESS: Okay. Fair enough. 21 ALJ LIRAG: I do have one question 22 regarding one of your answers. 23 So your proposal regarding the 9.59 24 million reduction over three years, on that 25 topic. 26 THE WITNESS: Yes, your Honor. 27 So if we were to take ALJ LIRAG: 28 one-third of that and reduced the 2020

```
1
     revenue requirement for PG&E, because of this
 2
     reduction, would that still fall under your
 3
     proposal?
 4
           THE WITNESS: Sure.
           ALJ LIRAG: All right. No further
 5
 6
     questions.
 7
               Are we ready to move 295 and 295-R
 8
     into the record?
 9
           MR. LONG: Yes, your Honor. So moved.
10
           ALJ LIRAG: Any objection?
11
               (No response.)
12
           ALJ LIRAG: Hearing none.
13
               Exhibit 295 and 295-R are moved into
     the record. Thank you, Ms. Dowdell. You're
14
15
     excused.
16
           THE WITNESS: Thank you, your Honor.
17
               (Exhibit No. 295 was received into
               evidence.)
18
               (Exhibit No. 295-R was received into
19
               evidence.)
20
           ALJ LIRAG: Off the record.
21
               (Off the record.)
22
           ALJ LIRAG: Let's go back on the
23
     record. Good afternoon, Mr. Kerans. It
24
     should have been good morning, but it's good
25
     afternoon.
26
               MICHAEL KERANS, called as a witness
           by PG&E, having been sworn, testified
27
           as follows:
28
           ALJ LIRAG: Thank you for coming back.
```

And since you are a repeat witness,
we know who you are, and I believe the record
has where you work.
THE WITNESS: Thank you.
ALJ LIRAG: And in the interest of
time, I will assume you prepared the
surrebuttal.
THE WITNESS: Yes.
(Reporter requests clarification.)
ALJ LIRAG: Michael Kerans,
K-e-r-a-n-s.
In the interest of time, I will ask
if you have any corrections to what has been
identified as an Exhibit 287, which is your
Surrebuttal Testimony.
THE WITNESS: I do not.
May I get my bottle of water?
ALJ LIRAG: Let's go off the record.
(Off the record.)
ALJ LIRAG: Back on the record.
No corrections to Exhibit 287, and I
believe somewhere in the record of this
proceeding, we already have your
qualifications.
Mr. Ouborg, is he ready for cross?
MR. OUBORG: Yes, your Honor.
ALJ LIRAG: Mr. Long.
MR. LONG: Thank you, your Honor.

1	CROSS-EXAMINATION
2	BY MR. LONG:
3	Q Good afternoon, Mr. Kerans.
4	Could we start with page 3 of your
5	surrebuttal?
6	A Yes.
7	Q Question-Answer 8, you are saying
8	there that, essentially, that risk reduction
9	from UTA and non-UTA inspection in San
10	Francisco is the same?
11	A That's correct. They're the same.
12	Q Now, before we talk about comparing
13	risk for UTAs versus non-UTAs, are we agreed
14	that San Francisco cross bores pose the
15	highest risk in the PG&E system?
16	A Yeah. Given the information we
17	have today, that's a factual statement.
18	Q Now, about this UTA versus non-UTA
19	risk question, on lines 7 and 8 of your
20	testimony on page 3 I'm sorry.
21	Lines 10 and 11, you say that, "Any
22	San Francisco Cross Bore Inspection has the
23	same expected cross bore find rate"; is that
24	correct?
25	A Yeah. For San Francisco, that's
26	correct.
27	Q Okay. And you cite there in
28	Footnote 9 to Hearing Exhibit 10, PG&E-03,

```
page 4-12, lines 2 to 4; do you see that?
 1
 2
               Yes, I do.
           Α
 3
               Now, that testimony, we can pull it
           Q
     out if need be, but if you want --
 4
 5
           ALJ LIRAG: Let's go off the record.
 6
               (Off the record.)
 7
           ALJ LIRAG: Let's go back on the
 8
     record.
 9
     BY MR. LONG:
               Page 4-12, that testimony you
10
           Q
11
     referenced just gives the find rate.
12
     doesn't compare the find rates for UTA and
13
     non-UTA; is that right?
14
           Α
               That's correct. Our experience is
15
     with cross bore find rates.
16
           Q
               Now, I believe PG&E has testified
17
     in this case that there have been no UTA
18
     inspections performed in San Francisco to
     date; isn't that right?
19
20
               That's correct. I believe we
           Α
21
     testified to that earlier.
22
               So then if you haven't performed -
           0
23
     according to PG&E - any UTA inspections in
24
     San Francisco, what is your evidence that the
25
     UTA and non-UTA inspections have the same
     find rate?
26
               It's a fairly straightforward
27
           Α
28
              It's that throughout all the
     answer:
```

inspections we performed during the UTA --1 2 I'm sorry -- the Cross Bore Program, we have 3 an experience with the find rate, and that find rate should carry through similarly and 4 5 statistically as you would expect for the UTA 6 location. There's nothing distinguishing 7 them from installation practice; so there shouldn't be anything distinguishing them 8 9 unnecessarily from a find rate. 10 But this has not been empirically Q 11 tested? 12 This proposition that the UTA and 13 non-UTA find rates are the same has not been empirically tested; isn't that right? 14 15 Α Are you saying that there has been 16 calculated evidence of it by finding them; is 17 that what you mean by "empirical"? 18 Right. You do not have any 0 empirical evidence to support the position 19 20 that the find rates for the two types of 21 inspections are the same? 22 So, I guess, I would disagree with And the reason being is the way cross 23 24 bores are created is through directional 25 drilling, trenchless technology, and that's 26 how they're created. 27 Since they are all created in the

same fashion, whether they propagate in a

1 location that results in a UTA or they 2 propagate in a routine location, there would 3 be no difference between the two based on the installation method. 4 5 My question was about evidence as opposed to -- the answer you just gave is 6 7 sort of theory in my opinion. It's not -it's not based on doing UTAs in San 8 9 Francisco, and saying: This is the find rate 10 we found. It's not evidence-based; isn't 11 that right? 12 Α I disagree completely. No. 13 So, again, let me ask the question: 0 14 What is the evidence, given the fact that 15 PG&E's position is that it's done no UTA 16 inspections, yet in San Francisco at least 17 what you're calling UTA inspections --18 MR. OUBORG: Objection, your Honor. MR. LONG: -- that the find rate is the 19 20 same. 21 MR. OUBORG: He's answered this 22 question. He said he disagrees and he said 23 what he thinks the evidence is. It's based 24 on the way these are created. He believes 25 that's the evidence. I think he's answered 26 the question. 27 I feel like I have gotten MR. LONG:

two different answers. When I asked the

28

question the first time, he said, "Yes, we 1 2 haven't done any; we don't have evidence." Now he's saying, "We do have 3 evidence." So I don't understand the 4 5 testimony. 6 ALJ LIRAG: For clarity, let's repeat the question, and let's let Mr. Kerans answer 7 it whether or not he has answered it before 8 9 or twice or twice but differently. BY MR. LONG: 10 11 Q So PG&E has done, by your 12 reckoning, no UTA Cross Bore Inspections. 13 you do not have any evidence from doing UTA 14 Cross Bore Inspections of what the find rate 15 is; is that fair to say? 16 Α Are you asking about a UTA find 17 rate comparatively to a cross bore find rate 18 for routine inspections? 19 Based on doing UTA inspections, Q 20 yes. 21 We haven't done any Α No. 22 inspections; so there's not a value to be had 23 there. 24 All right. So a moment ago, you Q 25 agreed that San Francisco cross bores posed 26 the highest risk; am I remembering correctly? 27 Α Yes. 28 From the standpoint of reducing the Q

Q

1 most risk, does it not make the most sense to 2 do the highest risk work before doing lowest 3 risk work? I think, generally, that would be 4 5 the case. I think there are instances, just 6 broadly speaking, where you can create volumes of work in other locations that 7 exceed risk reduction levels by doing 8 9 different levels of risk if the volumes are 10 higher. 11 So let's turn to what's been Q 12 previously marked and admitted as Hearing 13 It's PG&E's Response to TURN Exhibit 31. 14 Data Response 87-2. Let me know when you 15 have that. I have this here. 16 Α 17 Okay. And just as a foundational 0 18 fact, PG&E was authorized in 2017 through 19 2019 to perform roughly 123,000 inspections over that period; isn't that right? 20 21 Yeah, that's roughly correct. Α 22 Yet, in 2017, the number of San Q 23 Francisco Cross Bore Inspections fell from 24 17,886 in the previous year to 3,113; is that 25 right? That's correct. That's the line on 26 Α 27 the bottom there.

Right. And if you go to the next

1 page, the year after, the number declined 2 further to 801 inspections; do you see that? 3 Α Yes. 4 0 Is that accurate? 5 Α Yes, I see that. It is accurate. 6 Okay. So now from your Surrebuttal 0 Testimony, Answer 9, you're telling us that 7 8 if we were to fill in the number for 2019 in 9 this table, it would be a total of 10,340 10 broken out by 8,840 recorded through October 11 14th, 2019, and a projected 1,500 for the 12 rest of 2019; is that right? 13 Yes, that's what it says. Α 14 Q And these 10,340 are all non-UTA 15 inspections; is that right? 16 Α That's correct. 17 So here's the question I have: Ιf 0 18 San Francisco cross bores - you've agreed -19 pose the highest risk, why didn't PG&E 20 perform these 10,000 non-UTA San Francisco 21 inspections in 2017 or 2018 or over that 22 two-year period instead of waiting to do that 23 work in 2019? 24 Α So, my involvement with the Cross 25 Bore Program was largely through this 26 proceeding in the rate case, which largely 27 began midway through 2018. 28 So I'm not necessarily able to

present exactly what happened in '17 and '18, but what I would cite to is in our workpaper, and it's on 4-15 of the original testimony.

And in there, we calculate from 2017 - I'll call it the "UTA find rate" - I believe that's what it's cited to there, which shows a condition where while work was attempted in San Francisco, there was a high rate of UTAs being identified, which, obviously, created a situation that, I believe, Mr. Abranches and I spoke to earlier where while inspections were happening, they weren't necessarily being completed.

And if you don't complete an inspection, you're not necessarily reducing any risk at all; thus, there was a decision that was made to work in locations where there could be complete inspections and risk reduction would occur.

Q So San Francisco inspections are the highest risk. Those are the cross bores PG&E is most worried about, but you don't do those inspections in 2017 and 2018 because you had been concerned about UTAs? I'm just not quite following the explanation.

A Well, I'll restate it, and it's from our previous testifying, but it was along the lines that as you progress through

28

work and if you're not successfully 1 completing inspections, you're not really 2 3 reducing any risk. The ratepayers aren't receiving any 4 risk reduction for that; and if you continue 5 6 down that road and you don't have any risk reduction, you haven't really done much 7 8 there. 9 Whereas, if you adjust and look for 10 ways you can address these issues that you 11 can go through and come back to them, you can 12 proceed with risk reduction in other areas 13 where you know you have success, and then you 14 have UTAs still, obviously, which is what 15 we're talking about. But then come 2019, you're able to 16 Q 17 do 10,000 inspections. What changed? 18 I don't have a specific answer for that. I know we talked about the WFR 19 20 document. 21 I'm sorry, "WFR"? Q 22 That what a -- when we came with Α 23 Andrew Abranches, the second day we spoke to 24 a work and financial review document, and it 25 spoke to the plan that was originally 26 outlined related to the UTAs, and then it

And there was a determination made

spoke to the revised plan.

28

all about UTAs.

1 there to make more attempts understanding 2 that they would have a high fail rate into 3 the UTAs, but still progress into a successful inspection rate of roughly 50 4 5 percent in that scenario, and that is where 6 these 8,000 are currently coming from. 7 Let me ask a different question 8 So we see from Hearing Exhibit 31 that 9 for whatever reason, PG&E did not do that 10 many non-UTA Cross Bore Inspections 2017 and 11 2018, and based on Surrebuttal Testimony, 12 you're telling us there were at least 10,000 13 more non-UTA inspections that needed to be 14 done in San Francisco. 15 So that leads me to the following 16 question: If 10,000 or more non-UTA cross 17 bore inspections in San Francisco still 18 needed to be done in 2019, why was there so much emphasis in PG&E's original plan on 19 20 doing UTA inspections? 21 I'm sorry. Could you repeat the Α 22 question? 23 You recall that PG&E's original Q plan in your testimony, in your very 24 25 testimony, was to do 10,000 UTA inspections. It didn't say "non-UTA inspections." 26 It was

If there were 10,000 non-UTA

1 inspections still to be done, why was there 2 almost -- why was there so much focus, 3 exclusive focus, on UTA inspections? So that plan is, again, referenced 4 Α 5 in my Workpaper 415, and it does focus on 6 There's 10,000 units of UTAs it speaks UTAs. 7 to, but there's an additional almost 14,000. So I don't know that it was 8 9 exclusively focusing on UTAs as you've noted. 10 Well, when it comes to San Q 11 Francisco, it was all about doing UTA 12 inspections in San Francisco; isn't that 13 right? 14 Α So, we developed a plan to complete 15 the UTAs in San Francisco as the rest of the 16 testimony speaks to. 17 It initially focused on 2019, 18 starting that plan, continuing into 2020, and 19 working to finish in 2021. 20 The focus at the time was to start 21 that plan, which involved the UTAs. And, as 22 I should note, at the time of this workpaper 23 being prepared, there was actually only 5,212 24 UTAs noted, which meant in order to continue 25 to complete UTAs at the rate we expected to find them, you'd continue to inspect San 26 27 Francisco in that year. The UTAs would then

materialize, and you'd complete the 10,000

1	UTAs. So that was the original focus.
2	Does that help answer the question?
3	Q I'm sorry. I'm just not getting
4	it.
5	ALJ LIRAG: Let's go off the record.
6	(Off the record.)
7	ALJ LIRAG: Let's go back on the
8	record. You can continue, Mr. Long.
9	THE WITNESS: Maybe I should just
10	clarify.
11	BY MR. LONG:
12	Q Let me try again.
13	I mean, are we agreed that PG&E's
14	Direct Testimony in this case was proposing
15	doing a key element was doing 10,000 San
16	Francisco UTA inspections, and there was a
17	discussion of why it was important to do
18	those UTA inspections; isn't that right?
19	A There was a plan to do the 10,000,
20	which shifted. I think there was a
21	discussion specific to the risk of inspecting
22	in San Francisco, but not specific to the
23	risk of UTA.
24	Q Are you saying now that in your
25	testimony, your direct testimony, it did not
26	emphasize UTA inspections in San Francisco?
27	It didn't distinguish between UTA
28	and non-UTA?

1 Α No. I was saying it emphasized the 2 forecast to do them, but I was just citing 3 that the risk discussion was specific to San Francisco Cross Bore Inspections in general. 4 5 So, again, my question is: 6 there were 10,000 non-UTA inspections still to be done, at least, why was the emphasis or 7 8 why was the focus in direct testimony on doing UTA inspections? 9 10 I'm just not understanding why. 11 MR. OUBORG: Your Honor, objection. 12 This question's been asked over and over. 13 And I think it also assumes a fact 14 not in evidence. I think Castle (sic) is 15 saying that PG&E knew there were 10,000 16 non-UTAs in San Francisco that were just 17 waiting to be done. I don't think that's 18 what the witness testified to. 19 ALJ LIRAG: All right. I'll sustain. 20 Let me just ask, though, the 10,000 21 non-UTAs you're referring to, Mr. Long, is 22 that located in San Francisco as well or not 23 in San Francisco? 24 MR. LONG: Well, yeah. I mean, the 25 surrebuttal is they found 10,000 non-UTAs to 26 do. 27 ALJ LIRAG: In San Francisco? 28 MR. LONG: In San Francisco.

28

ALJ LIRAG: All right. 1 2 MR. LONG: And my question is, they 3 weren't talking about that in their original proposal. It was all about UTAs. And I'm 4 5 trying to understand why it was all about 6 UTAs in the original. Is part of this included in 7 ALJ LIRAG: 8 the 14,000 non-UTAs? 9 THE WITNESS: So, yeah. I think you're 10 speaking to the workpaper work. There's a 11 volume of inspections remaining. 12 And then there was -- I believe 13 there was 21,000 that were going to be UTA, 14 and then the remainder of those would turn 15 into routine inspection. So, yeah, that would be within that. 16 17 So, I guess, to clarify it, it's really that in order to go perform UTAs, you 18 19 have to start inspecting, and then UTAs will 20 eventually be found through the normal 21 inspection process, which is what's happened 22 over time. 23 However, when we did the 2019 plan 24 and revised it, we understood that we were 25 going to find a lot of unsuccessful locations 26 and that meant that we would get to this 27 volume we are speaking to now because some

would turn into UTAs, as expected.

```
Others would become successful
 1
 2
     inspections that we're noting here in this
 3
     conversation.
     BY MR. LONG:
 4
               All right. Let's move on.
 5
           0
               We noted earlier your testimony on
 6
 7
     page 3 of your surrebuttal, that is
 8
     indicating that for 2019, PG&E's current plan
 9
     is to do 10,340 non-UTA inspections; right?
10
           MR. OUBORG:
                        What page is that,
11
     Counsel?
12
           MR. LONG:
                       Page 3 of the surrebuttal.
13
                         And the line?
           MR. OUBORG:
14
           MR. LONG:
                     It's answer 9.
15
           THE WITNESS: I see it.
     BY MR. LONG:
16
17
           0
               It's broken out by 8,849 UTA Cross
18
     Bore Inspections that are completed,
19
     according to this as of October 14th, 2019,
20
     and another 1,500 projected to be done in the
21
     remainder of 2019; do you see that,
22
     Mr. Kerans?
23
           Α
               Yes, I see that.
24
           Q
               Where did you get those numbers
25
     from?
               Those numbers in Answer 9?
26
           Α
27
           Q
               Yes.
               Those come from the cross bore
28
           Α
```

1	team.
2	Q Cross bore team. Who in particular
3	gave you those numbers?
4	A So as I discussed previous, Austin
5	Hastings is the Director.
6	Q Okay.
7	A And one of his employees has
8	provided those numbers.
9	Q So somebody gave numbers to
10	Mr. Hastings, who gave numbers to you?
11	A We requested Austin Hastings
12	support it, and he directed an employee to
13	work with us.
14	Q Okay. Did the employee give them
15	directly to you?
16	A Yeah. They were sent to us via
17	e-mail.
18	Q How did the employee get the
19	numbers?
20	A They go into their database of the
21	work they manage, and they pull these numbers
22	out.
23	Q So somebody else - not testifying -
24	went into a database, and supplied you with
25	numbers that that person pulled out of a
26	database; is that right?
27	A That's roughly correct.
28	Q And what did you do to verify the

1 accuracy of the numbers that you were given? 2 Α Yeah. So, they sent me a 3 spreadsheet because I asked, I'd like to see where this is. I just didn't want to see a 4 5 number. So I asked to see a spreadsheet, and 6 then I reviewed -- for the 8,800 locations, I looked at that, and then I checked if they 7 8 were in San Francisco, and then I 9 sporadically checked to ensure if these 10 looked like what I would expect. 11 Looked like what you would expect; I don't follow that. 12 13 Addresses in San Francisco, 14 roughly, and then, roughly, within regions 15 within San Francisco where I would expect 16 them to be. 17 So what's the spreadsheet that 0 18 you're referring to? What did that consist 19 of? 20 It was, I guess -- I don't have it Α 21 It had a lot of columns to it. memorized. 22 It had addresses. It had -- I believe it had 23 sewer, ID numbers, the routine things that 24 they would catalog in a database. 25 So you have a spreadsheet that 26 shows cross bore inspections just by San 27 Francisco or performed systemwide, or how 28 does that work?

1	A So the database, obviously, has					
2	everything, and then we selected for San					
3	Francisco to see the work that's completed in					
4	San Francisco.					
5	Q Is that something that could be					
6	made available for TURN for us to look at?					
7	MR. OUBORG: Can we go off the record?					
8	ALJ LIRAG: Off the record.					
9	(Off the record.)					
10	ALJ LIRAG: Let's go on the record.					
11	There's discussion of providing					
12	documents regarding Cross Bore Inspections					
13	and let's have Mr. Long and Mr. Ouborg or					
14	someone else from PG&E work out the details					
15	on that. If something needs to be redacted,					
16	then discuss it, and then just have the					
17	document. All right.					
18	MR. LONG: Thank you, your Honor.					
19	Yes. That's the end of my					
20	questions. Thank you, Mr. Kerans.					
21	ALJ LIRAG: Redirect, Mr. Ouborg?					
22	MR. OUBORG: One second, your Honor.					
23	ALJ LIRAG: Off the record.					
24	(Off the record.)					
25	ALJ LIRAG: Let's go back on the					
26	record. Any redirect?					
27	MR. OUBORG: One question, your Honor.					
28	///					

## REDIRECT EXAMINATION

BY MR. OUBORG:

Q Mr. Kerans, you were asked 8,840 non-UTA cross bore inspections that PG&E has now done in San Francisco. Can you clarify how PG&E became aware that those existed so that they -- well, can you identify how and when PG&E generated the identity of those so that they could perform those inspections?

A Yeah. So there remains a population of inspections to do in San Francisco and each one has a likelihood of being completed or turned into a UTA. So that was part of the remaining population that I've noted in the Workpaper 4-15.

So that had been there, and we elected to inspect those in order to get to this volume of work, knowing that many would turn into UTAs and would be an incomplete inspection, but if we continued to inspect, we would ultimately get to the volume we expected under the original work plan.

Q When did we decide to go and inspect those remaining locations in San Francisco, roughly; do you know?

A I would say roughly that was in the February time frame when that work of the financial review committee was done.

```
That was my redirect
 1
           MR. OUBORG:
 2
     question, your Honor.
 3
           ALJ LIRAG: Any question off that,
 4
     Mr. Long?
 5
           MR. LONG:
                      No, your Honor.
 6
           ALJ LIRAG: So move, Mr. Ouborg, to
 7
     admit Exhibit 287 into the record?
 8
           MR. OUBORG: So moved.
 9
           ALJ LIRAG: Any objection?
10
               (No response.)
11
               (Exhibit No. 287 was received into
               evidence.)
12
13
           ALJ LIRAG: Hearing none.
               Exhibit 287 is moved into the
14
15
              Thank you, Mr. Kerans, and all the
     record.
16
     witnesses that appeared and were made
17
     available for cross. So you're excused,
18
     Mr. Kerans, finally.
19
               This will take probably five
20
     minutes. We shall just go over some
21
     reminders about the proceeding moving
22
     forward.
23
               I believe on November 1, we have
24
     several things to do: One is the briefing
25
     document regarding the AB 1054 Revenue
26
     Requirement, and the updated testimony, and
27
     the comparison exhibit, and then we also have
28
     the Revised Declaration from Mr. Lipps.
```

27

28

1 This will either be a joint proposal 2 between the City and County of San Francisco 3 and PG&E or separate documents, and then our possible Rebuttal Testimony from PG&E if it 4 5 chooses to do so. And then we are currently scheduled 6 7 to have hearings on November 6th. We shall 8 set that 10:00 a.m. on November 6th, and this 9 is solely for the purpose of possible cross-exam to Mr. Lipps, and if PG&E provides 10 11 rebuttal testimony, then whoever the witness 12 is that sponsors that. Also, possible 13 hearing regarding updated testimony. 14 So parties will confer with PG&E. 15 PG&E has until November 5, noon, to notify the service list whether or not the hearing 16 17 can be canceled or, otherwise, as of now, we 18 will assume that the hearing will occur. So for purposes of briefing, the 19 20 RAMP report -- I think I said this before, 21 but just to make sure, the RAMP report and 22 the SED report, anything off those two 23 documents, parties can just directly cite off 24 those documents. There's no need to move 25 these into the record of this proceeding, 26 understanding that these are documents from

I believe comments to the interim

PG&E's RAMP proceeding.

1	decision regarding the interim rates motion					
2	are due, I believe, on Tuesday. That date					
3	may not be accurate.					
4	Let's talk about when the transcript					
5	corrections proposal can be due. Do we have					
6	a date?					
7	MS. GANDESBERY: We talked to TURN,					
8	your Honor, about November 2nd, given that					
9	the transcripts are taking about four or five					
10	days.					
11	ALJ LIRAG: Is that enough time,					
12	Mr. Long? I understand that PG&E has more					
13	resources than intervenors.					
14	MR. LONG: I think that can work for					
15	TURN, of course, with the exception of any					
16	hearing dates, like November 6th, that happen					
17	after that.					
18	ALJ LIRAG: So we're talking about					
19	transcript corrections up to this day,					
20	October 18th.					
21	Is that fine, Mr. Burns?					
22	MR. BURNS: Yes.					
23	ALJ LIRAG: I'll have you speak for					
24	Cal PA.					
25	MR. BURNS: I think we can do that.					
26	ALJ LIRAG: We'll set November 2 as the					
27	date for					
28	MS. GANDESBERY: It looks like that's a					

1 Saturday. 2 ALJ LIRAG: So we'll make it the next 3 Monday after that date, which is November 4. So any proposed adjustments to the 4 5 briefing schedule, which is currently set at 6 November 15 for the opening briefs? 7 MR. LONG: Yes, your Honor. 8 TURN would request that the opening 9 briefs be submitted one week after the 10 schedule in the scoping ruling, November 11 22nd, and that reply briefs also be moved 12 back one week so that they would be due on 13 December 13th. 14 We ask this for a variety of 15 One is cross bore issues still reasons: 16 potentially being up in the air; the 17 transcripts might not be available; and, 18 candidly, factors such as exhaustion, 19 vacation schedules, and parental illnesses, 20 and things like that have come up in these 21 hearings. 22 ALJ LIRAG: That's fine. I'm not going 23 to ask PG&E. I will accept that date. It's 24 delaying the briefs by a week. 25 So any comments, Mr. Burns? No, your Honor. 26 MR. BURNS: 27 ALJ LIRAG: Opening briefs are now due 28 November 22nd and reply briefs are now due

December 13th. It is one week later than 1 2 when they were originally due. 3 And as I stated yesterday, this will not delay the schedule of the proposed 4 5 decision in any way. Anything to say, Ms. Gandesbery? 6 7 MS. GANDESBERY: Well, your Honor, I 8 wanted to say that we prefer to keep things 9 moving along because it is so important to us 10 to have a proposed decision as soon as 11 possible. So we would be happy to keep to 12 the existing schedule. And then if something 13 comes up on the cross bore, we can deal with 14 that separately. 15 ALJ LIRAG: We will keep things moving 16 along. 17 ALJ Lau and I have developed a 18 schedule, and we are able to start working on 19 the proposed decision even without the briefs 20 submitted on November 15, as originally 21 scheduled in the scoping memo. So this won't 22 cause any delay. I guarantee that. 23 Thank you, your Honor. MS. GANDESBERY: 24 ALJ LIRAG: And, I guess, we can 25 guarantee we won't take as long as the Edison 26 decision. That's the only guarantee I can 27 give. 28 MS. GANDESBERY: I appreciate that,

1	your Honor.					
2	ALJ LIRAG: So that takes care of all					
3	the remaining business.					
4	Any other things to address before					
5	we conclude?					
6	MR. BURNS: Thank you.					
7	I have a one-minute correction for					
8	one of our exhibits, referring to Exhibit 166					
9	in the record.					
10	ALJ LIRAG: All right. 166.					
11	MR. BURNS: Which is premarked as Cal					
12	Advocates 23. Cal Advocates exhibit					
13	referring to page 12, line 5. There is a					
14	number there: "137835." It turns out that					
15	was in error, and the correct number is					
16	"132961."					
17	This was pointed out to us by PG&E,					
18	I think, on October 7th or so. We just					
19	wanted to correct that.					
20	ALJ LIRAG: We'll correct that in our					
21	records.					
22	MR. BURNS: Thank you, your Honor.					
23	ALJ LIRAG: Thank you. Any other					
24	business?					
25	(Hearing none.)					
26	ALJ LIRAG: So on behalf of ALJ Lau,					
27	again, we would like to thank all the					
28	witnesses that submitted testimony. We are					

28

not looking forward to reading all -- close 1 2 to 300 exhibits, but we'll do so. I think it 3 enhances the record. We thank all the counsel that 4 5 participated in the hearings. I could 6 probably name all of them. I have a good memory, but I'll just refer to 7 8 Ms. Gandesbery, Mr. Ouborg, Mr. Long, 9 Mr. Burns is here on behalf of Ms. Shek, 10 Mr. Gondai is here. And also special thanks 11 to Mr. Arnold, again, for facilitating the 12 schedule. We managed to finish very late on 13 the last day, but at least we don't have to 14 extend. Thank you also for maintaining that schedule board. 15 16 Thank you also to Ms. Ramaiya, who 17 was facilitating the GRC proceeding on behalf 18 of PG&E. Thank you also very much to 19 Shannon, who took care of the entire day 20 today, for the most part, and all the other 21 Thank you to Nathan Poon, who was reporters. 22 substituting for Marian. And then thank you 23 also to ALJ Lau, and Commissioner Randolph, 24 who was here on some of the hearings. 25 All right. So with that, we 26 conclude. It should be Day 20, although we 27 had four days off, so Day 16 of our four

weeks of Evidentiary Hearings. We're still

```
1
     scheduled for November 6th, but in the event
 2
     that that is cancelled, I would like to thank
 3
     everyone that's in this room, and everyone
 4
     that committed to hearings from Day 1. So
 5
     we'll work on the proposed decision. Thank
 6
           Let's go off the record.
 7
               (Whereupon, at the hour of 4:05
           p.m., this matter having been continued
           to 10:00 a.m., November 6, 2019 at
 8
           San Francisco, California, the
 9
           Commission then adjourned.)
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
```

1	BEFORE THE PUBLIC UTILITIES COMMISSION				
2	OF THE				
3	STATE OF CALIFORNIA				
4					
5					
6	CERTIFICATION OF TRANSCRIPT OF PROCEEDING				
7	I, DORIS HUAMAN, CERTIFIED SHORTHAND REPORTER				
8	NO. 10358, IN AND FOR THE STATE OF CALIFORNIA, DO				
9	HEREBY CERTIFY THAT THE PAGES OF THIS TRANSCRIPT				
10	PREPARED BY ME COMPRISE A FULL, TRUE, AND CORRECT				
11	TRANSCRIPT OF THE TESTIMONY AND PROCEEDINGS HELD IN				
12	THIS MATTER ON OCTOBER 18, 2019.				
13	I FURTHER CERTIFY THAT I HAVE NO INTEREST IN THE				
14	EVENTS OF THE MATTER OR THE OUTCOME OF THE PROCEEDING.				
15	EXECUTED THIS OCTOBER 25, 2019.				
16					
17					
18					
19					
20	$\sim \sim $				
21	DORIS HUAMAN CSR NO. 10538				
22	CSK NO. 10330				
23					
24					
25					
26					
27					
28					

1	BEFORE THE PUBLIC UTILITIES COMMISSION				
2	OF THE				
3	STATE OF CALIFORNIA				
4					
5					
6	CERTIFICATION OF TRANSCRIPT OF PROCEEDING				
7	I, SHANNON ROSS, CERTIFIED SHORTHAND REPORTER				
8	NO. 8916, IN AND FOR THE STATE OF CALIFORNIA, DO				
9	HEREBY CERTIFY THAT THE PAGES OF THIS TRANSCRIPT				
10	PREPARED BY ME COMPRISE A FULL, TRUE, AND CORRECT				
11	TRANSCRIPT OF THE TESTIMONY AND PROCEEDINGS HELD IN				
12	THIS MATTER ON OCTOBER 18, 2019.				
13	I FURTHER CERTIFY THAT I HAVE NO INTEREST IN THE				
14	EVENTS OF THE MATTER OR THE OUTCOME OF THE PROCEEDING.				
15	EXECUTED THIS OCTOBER 25, 2019.				
16					
17					
18					
19					
20	Sh-V2				
21	SHANNON ROSS CSR NO. 8916				
22					
23					
24					
25					
26					
27					
28					

	<b>011</b> 2979:18	2907:9 2909:22,27	<b>178,000</b> 2897:3
<b>\$</b>	<b>015</b> 2888:6	2991:18 3052:21	<b>18</b> 2887:2 2909:7,14,20
<b>\$1,000</b> 2948:23 2949:2	<b>088</b> 2888:19	<b>11:30</b> 2958:8	25 2910:8,11 2914:6 2987:14 3017:14
3039:18	<b>088-10</b> 2888:5	<b>12</b> 3076:13	3059:1
<b>\$10</b> 3035:16 3040:19		<b>123,000</b> 3057:19	<b>18-07-005</b> 2982:15
<b>\$10.64</b> 3034:3 3035:27	1	<b>123,307</b> 3032:28	3015:14
<b>\$17,000</b> 2948:15	<b>1</b> 2888:20 2893:10,22	<b>12:00</b> 2971:4	<b>18-09-002</b> 2888:6
<b>\$17,557</b> 2930:12	2908:5 2923:20	<b>13</b> 2909:7,14,20,25	2895:2 2960:15 2961:8
<b>\$2.5</b> 2896:5	2941:24,28 2947:13 2963:22 2967:28	2910:7,10 2949:15 2981:9 2989:16	<b>18-12-013</b> 2980:4
<b>\$20</b> 3040:2	2968:2,26 2969:5	3008:15,28 3009:5	<b>18th</b> 2991:19 3073:20
<b>\$20,000</b> 2929:6,10	2979:15 2984:22,26	3017:14	<b>19</b> 2916:27 2917:4 2920:27
2948:27	3012:13 3071:23	<b>132961</b> 3076:16	<b>190,000</b> 2956:16
<b>\$20.237</b> 3036:23	<b>1,189,000</b> 2996:20	<b>134</b> 2959:7	<b>194,000</b> 2896:26
<b>\$21.8</b> 3033:8	<b>1,500</b> 3058:11 3066:20	<b>137835</b> 3076:14	•
<b>\$26,408</b> 2930:13	<b>1-30</b> 3031:21 3038:15	<b>13th</b> 3074:13 3075:1	<b>1:00</b> 2970:19 2971:2,4 2972:1
<b>\$29</b> 3034:18,23	<b>1.5</b> 2896:7	<b>14</b> 2916:1 2946:13	
<b>\$32</b> 3034:14 3043:9	<b>10</b> 2915:14 2924:4	2947:1 2964:8 2967:10 2968:25,26 2982:4	2
<b>\$420,000</b> 2925:16	2948:10 2972:22 2996:26 3003:22	2986:18,26 2987:13	2 0000 00 0007 5 0 40
<b>\$475,200</b> 2926:22	3014:23 3024:16	2988:27 3013:15 3033:25 3035:9 3043:6	<b>2</b> 2893:23 2897:5,8,13 2898:25 2915:28
<b>\$5,000</b> 2949:5	3025:11 3037:3 3052:21,28		2916:15 2918:15
<b>\$588</b> 3037:14 3039:16	<b>10,000</b> 3025:23	<b>14,000</b> 2915:16 3062:7 3065:8	2940:20 2942:6 2956:25 2963:22
3044:3	3034:20,25 3036:17	<b>14,300</b> 2915:4,11	2984:11 3006:27
<b>\$600,000</b> 2928:25	3037:21 3038:7 3039:22 3043:15	2916:14 2944:24	3019:24 3053:1 3073:26
<b>\$639</b> 3037:19 3044:22	3044:26 3045:1	<b>14th</b> 2983:1 3058:11	<b>2-3</b> 2997:16
<b>\$9.59</b> 3043:24	3046:23 3047:7 3048:1 3058:20 3060:17	3066:19	<b>2.9</b> 2908:13
<b>\$9.89</b> 3035:18	3061:12,16,25,28	<b>15</b> 2895:1 2916:17 2918:13 2944:3 2947:1	
<b>\$90,000</b> 3007:22,24	3062:6,28 3063:15,19	2949:15 2981:25,26	<b>20</b> 2888:8 2953:11 2987:14 2988:28
<b>\$959</b> 3044:21	3064:6,15,20,25	2989:10 3003:11 3006:16 3008:9 3074:6	3037:6
	<b>10,340</b> 3058:9,14 3066:9	3075:20	<b>20,000</b> 2956:1,4
(	<b>10-foot</b> 2931:16	<b>15,000</b> 2949:9	<b>20.2</b> 3036:22
(a) 0000 0 7	<b>10-minute</b> 2958:8	<b>15-day</b> 3019:11	<b>2000</b> 2918:14
(a) 3032:2,7	<b>10.64</b> 3034:16 3035:18	<b>153</b> 2891:10	<b>2008</b> 2983:4
<b>(b)</b> 3032:12	<b>100</b> 2953:25 3013:2	<b>16</b> 2914:26,27 2916:17	<b>2010</b> 2991:20 2994:15
<b>(d)</b> 2902:12	<b>100,000</b> 2996:26	2946:13 2989:16	16,27 2996:2,3
		3003:11 3006:17 3025:14	<b>2011</b> 3028:16
0	<b>1054</b> 3071:25	<b>166</b> 3076:8,10	<b>2012</b> 3028:16
<b>003</b> 2888:16	<b>10:00</b> 3072:8		<b>2014</b> 2918:24 2942:21
<b>01</b> 2979:18	<b>10th</b> 3002:6	<b>17</b> 3059:1	2991:20 3010:22 3029:26 3030:3
	<b>11</b> 2888:16 2906:12	<b>17,886</b> 3057:24	3023.20 3030.3

Index: \$1,000..2014

**2015** 2942:20 2948:1,3, 20 2949:1,19 2951:26 3008:15,28 3026:18 3028:5 3030:8 **2016** 3028:10 3029:4 **2017** 2942:20 2965:9.13 2972:26 2973:24 2974:10,14,20 2975:25 2977:26 2978:1,5,8 2994:27 2996:16 3003:12 3006:17,24 3012:15 3025:25 3026:2,12 3027:16,24 3028:4,7 3029:1,9 3030:6 3031:18 3032:9, 22,28 3033:8,19 3037:23 3043:16 3045:15 3047:25 3048:1 3057:18,22 3058:21 3059:5,23 3061:10 **2018** 2895:9 2921:14 2930:6,11 2942:21 2984:27 3010:22 3012:21 3014:20 3046:25 3058:21,27 3059:23 3061:11

**2019** 2887:2 2895:9 2898:7 2930:7,13 2969:19 2981:2 2983:9, 18 2991:19,24 3002:6, 15 3003:18 3012:1 3013:8 3014:3 3025:26 3043:16 3045:15 3046:24,26 3049:15 3057:19 3058:8,11,12, 23 3060:16 3061:18 3062:17 3065:23 3066:8,19,21

**2020** 2917:16 2948:2,3, 20 2949:19 3025:27 3034:5,19 3035:23 3036:21,22 3037:3 3039:28 3049:28 3062:18

2020-to-2022 3045:19

**2021** 2917:16 3035:8 3062:19

**2022** 2917:16 3025:28 3035:8

20th 2984:27

**21** 3012:21

**21,000** 3065:13

**21,766** 3025:17

**21.8** 3033:18

**22nd** 3074:11.28

**23** 2923:20 3076:12

**24** 2922:13 2928:23 2937:20 2946:20 3004:5 3011:4

**25** 2906:25 2937:18,21 2946:20 2993:27

**25,000** 2949:11

**26** 2907:14,16 2908:1 2917:27 2921:23 2930:22 2937:7 2940:17 2941:22 2983:18

**287** 2890:10 3051:14,21 3071:7,11,14

**288** 2887:21 2888:9 2889:4 2941:21 2944:4 2946:12 2957:8,13,15

**289** 2887:23 2888:11 2889:5 2957:8,14,17

**29-** 2966:4

**29.5** 2944:2

**290** 2887:25,28 2888:8, 13 2891:26.28 2892:3. 25 2959:18 2963:19,24

**291** 2888:17 2907:6,17 2909:23 2910:2 2942:3, 13 2944:3 2957:20,23, 27 2958:1

**292** 2888:18 2929:16 2957:20,23,28 2958:3

**293** 2915:27 2916:2 2944:21 2957:20,23,28 2958:5

**294** 2964:24 2965:3,17 2966:2,14,19,20,22 2967:28 2970:5 2981:21 3024:18,27 3025:1

**295** 2965:4,7,18 2966:2, 3 2968:3,7,8,11,20 2970:5 3024:16 3050:7, 13,17

**295-R** 2965:6,20 2966:2 2968:11 2970:5,16 3050:7,13,18

**296** 2965:8,21 2972:15, 20 2973:9,11,14,18

**297** 2965:12,23 2972:15 2973:9.15.23 2974:3.6 2976:14,16

**298** 2972:8,11,12,16 2973:9,15 2974:7,8 2976:1,18 2997:9,23,27 2998:3

**299** 2978:23 2979:8,10

**2C** 2986:26

**2nd** 3073:8

3

**3** 2894:3 2896:22,27 2897:4,8,13 2898:15,28 2906:11 2907:8 2908:6, 13,17,21 2909:21,27 2916:15 2918:16 2937:7,9 2940:17,21 2941:24,28 2942:6,7 2956:15 2963:24 3052:4,20 3066:7,12

**3,113** 3057:24

3-A 3027:13

**30** 2907:1 2910:13,19 2929:1 2933:4,7,22 2946:11 2950:12 2958:16,17 3012:7,12

**30,000** 3034:8 3036:19

**30-day** 3019:10

**300** 2979:14 2980:5 2984:19 3021:28 3022:11,12

**300,000** 2897:12

**301** 2979:16 2980:6 3000:24 3001:19,26 3002:9 3019:23 3022:11.13

**302** 2979:20 2980:8 3006:23 3020:19 3022:11,15

**303** 2979:24 2980:9 3022:4,18 3023:9

Index: 2015..5

**304** 2979:27 2980:11 3011:25 3023:7,10

**305** 2980:2.12 3012:6.9 3022:6 3023:12,21,24 3024:1

**306** 2993:13.15 3009:1 3021:28 3023:28 3024:2

**31** 2947:1 2949:21 2950:12 3012:8 3057:13 3061:8

**32** 2965:10 3013:3 3027:1,11 3028:25

**33,570** 3029:27

**36** 3035:9 3036:25 3044:15

3rd 2995:3

4

**4** 2894:7 2918:13,14 2919:10 2922:14 2926:22 2937:7 2944:7 2956:26 2959:8 2963:24 2969:2,8 2991:18 3053:1 3074:3

**4-12** 3053:1.10

**4-15** 3059:3 3070:15

4-42 3029:11,20

**4.5** 3014:21

**40** 2888:8

4059-G-A/5467-E-A 2980:1

**414** 2942:19

**415** 3062:5

43 2995:19

4th 2993:24

5

**5** 2906:5,8,9,15,19 2907:26 2908:16 2916:28 2917:5,6

0000001 10, 20.			
2920:21,27 2921:13 2924:1 2951:7 3007:21	<b>7-5</b> 2994:19 3017:8 <b>7-day</b> 3019:11	Α	2925:5,10 2930:5 2985:27 3044:9
3072:15 3076:13 <b>5,212</b> 3062:23	<b>718A</b> 2984:11	<b>A-18</b> 3029:11,18	<b>add</b> 2895:11,27 2900:7 2925:15 2943:17
<b>5.1</b> 2907:25	<b>72</b> 2911:24	<b>A.18-09-002</b> 2894:24	2976:21 2978:7 3020:24
<b>50</b> 2891:1 3037:8 3061:4	<b>72-hour-look-ahead</b> 3013:4	<b>a.m.</b> 2887:2 3072:8 <b>AB</b> 3071:25	added 2974:24 3011:28
<b>53</b> 2998:15 2999:15	<b>785</b> 2887:18 2964:8	ability 2894:3 3006:3	adding 2975:10 2997:1
3000:4 3019:2	<b>7th</b> 3076:18	3038:24	addition 3021:5
<b>55</b> 2958:16,17 <b>58</b> 2995:19 2998:15	8	<b>Abranches</b> 3059:11 3060:23	additional 2892:18 2922:4 2924:8 2928:5
2999:15 3000:4 3019:3	<b>8</b> 2906:4 2924:4,11,27	absence 3007:2	2975:16 2976:10 2980:18 2996:26
<b>588</b> 3038:1	2928:23 2931:21	<b>absolutely</b> 2897:10	2997:1 3001:8 3011:21 3021:6 3031:27
<b>598</b> 2984:5 2985:1 3021:15	2986:17 3003:21 3052:7,19	2981:15 2985:21 3010:28	3045:27 3062:7
	<b>8,000</b> 3061:6	absorbed 3047:8	<b>Additionally</b> 2992:8 3018:12
6	<b>8,800</b> 3068:6	abstraction 3039:1	address 2887:16,18
<b>6</b> 2888:20 2997:18 3003:11 3006:17 3033:27 3038:15,19	<b>8,840</b> 3058:10 3070:3 <b>8,849</b> 3066:17 <b>801</b> 3058:2	accept 3023:21 3037:13 3038:27 3039:3 3074:23	2891:16 2893:13 2902:3 2921:6 2927:7, 18 2929:14 2935:6
<b>6-B</b> 2965:10	<b>81</b> 2959:8	<b>acceptable</b> 2934:26 2935:14,18 3047:11	2964:4,7 2985:2 3015:13 3016:1
<b>60</b> 2996:23	<b>87-2</b> 3057:14	Access 3026:22	3027:28 3031:20 3060:10 3076:4
<b>62</b> 2908:8		3028:18	addressed 2887:10
<b>65</b> 3012:23	9	accomplished 2937:23	2890:4 2926:12 2934:13 2986:21
6th 2887:8 3072:7,8 3073:16	<b>9</b> 2888:7 2906:2 2918:15 2924:12 2928:24 3052:28	account 2951:22 2952:11 2954:8	<b>addresses</b> 2908:22 2923:21 3068:13,22
7	3058:7 3066:14,26	2963:14 3034:21,27  Accountability	<b>addressing</b> 2910:7 2978:25 2985:18
<b>7</b> 2906:4 2911:22	<b>9-20</b> 2896:16	2968:12	adhere 2933:3
2918:9,14,15,27 2919:8,10 2923:20	<b>9.59</b> 2969:26 3036:13, 17 3043:14 3049:23	<b>accounting</b> 2952:17 2954:11	adhering 2934:14
2930:25 2944:7 2969:23 2986:19	<b>9.89</b> 2969:25 3036:11	<b>accuracy</b> 2904:26	<b>adjust</b> 3060:9
3052:19	<b>90,000</b> 3037:11	2962:1 3068:1	adjustments 3074:4
<b>7,100</b> 2925:8 2955:21	<b>92,000</b> 3028:11	<b>accurate</b> 2994:7 3015:3 3058:4,5 3073:3	administrative 2887:4 2960:5
<b>7-19</b> 2965:14	<b>93</b> 2986:7,14 2993:22, 27 3008:6 3017:7	<b>acting</b> 3018:5	admissibility 2975:21
<b>7-2</b> 2986:17 2994:19 3017:10	<b>94103</b> 2887:19 2964:10	<b>active</b> 2960:18,28 2982:22	<b>admission</b> 2892:3,7 2973:18
<b>7-21</b> 2965:15	<b>959</b> 3038:4	activity 3028:16	admit 2891:28 2902:22
<b>7-3</b> 2986:19 2993:27	<b>9:30</b> 2887:2	actual 2899:24 2904:27	2957:8,20 2972:15
<b>7-32</b> 2972:10 <b>7-37</b> 2972:10	<b>9th</b> 2991:24	2910:22 2911:9 2922:14,25 2924:3	2973:27 2998:2 3021:27 3022:10 3023:27,28 3071:7

Index: 5,212..admit

admitted 2892:23 agreeing 3037:17 3045:26 3046:13 and/or 3013:18 2960:1 2961:5 2963:20. 3047:19 3048:16,18 agreement 2959:20 **Andrew** 3060:23 23 2978:21 3023:10 3049:18,21,27 3050:5, 3022:24 3057:12 10,12,20,22,28 3051:5, annual 2987:18,22,26 agrees 3012:24 10,18,20,27 3053:5,7 admitting 2973:1 3031:24 3056:6 3063:5,7 adopt 2889:21 2985:6 3064:19,27 3065:1,7 **ahead** 2973:21 **annually** 2916:15 3069:8,10,21,23,25 **adopted** 2924:26 air 3074:16 3071:3,6,9,13 3073:11, 2953:2 3032:21 18,23,26 3074:2,22,27 answers 2896:13 3035:26 3038:21 alert 3009:24 3075:15,17,24 3076:2, 3047:28 10,20,23,26 align 2990:16 anticipated 2977:27 adoption 3014:10 alleging 2963:4 **ALJ** 2887:15,20,28 anymore 2905:13 adopts 2924:4 3035:22 2888:15,26 2890:9,17 allowed 2952:23 2891:14,18,24,27 **Advice** 2979:28 aloud 2984:24 2892:20 2893:1,5,8 apologize 2973:20 3011:26 2894:21,27 2895:10,16, amount 2926:9 **Advocates** 2972:24,28 23 2896:1 2900:6 2938:22 2946:22 App 3029:11 3034:24 3037:18 2901:4 2903:2,12,27 2947:4 2949:16 3076:12 2904:10,25 2905:5,11, apparent 2975:5 2954:17 2957:1 2996:7 17 2907:11 2912:24 affect 3006:3 3020:14 3003:26 3004:20 2915:21,23 2916:4 3035:23 3037:1 apparently 2977:15 affirm 3016:27 2918:1,4,7 2920:16,17 amounts 2987:22 2923:23 2924:22 **appeared** 3071:16 affordability 2966:23, 2926:6,13 2935:21 2995:15 3035:1 25 2967:5,12 2985:24 **appears** 2930:16 2940:13,27 2941:1,2,6, analogous 2912:27 3016:22,23 10,16 2945:9,11,15,25, 2962:14 28 2949:28 2951:2,5 afternoon 2972:1 **Appendix** 3029:18 2954:27 2955:2,8,11 analyses 2988:13,19 2978:11 2980:24,25 apples-to-oranges 3002:11 3017:24 2956:7,10 2957:5,6,7, 3024:13,14 3050:23,25 3018:4 3052:3 11,13,19,25,27 2958:7, 22,27 2959:13,17,24 application 2888:6 age 2933:26 analysis 2902:8,21,26 2960:17 2961:15 2911:17 2912:7,14,21, 2962:10,24 2963:16,18 aged 2948:5,8 2952:14 22,25 2913:3,6,7 2964:2,11,15,21,28 2915:9,12 2916:22 **agree** 2901:28 2905:27 2965:2,24 2966:7,9 2918:11 2919:19 2934:1 2939:5,10 **applied** 2921:12 2967:14,16 2968:6 2943:28 2944:22 2956:21,24 2960:8 2970:15,18 2972:3,14, 2978:25 2983:16 2978:3 2982:20 19 2973:3,8,17,28 apply 2926:16 2963:8 2987:2,15 2988:3 2986:19 2989:21 2974:5,26 2975:13,27 2989:25 2990:8,18 2990:4,15 2994:1,9,28 2976:6 2977:2 2978:9 2991:4,8,28 2992:15 2997:24 2998:13 approach 2987:2,16 2979:5,7,12 2980:14,21 2994:4,6,10,22 2995:6, 3004:2 3009:4 3010:19, 2986:8,10 2987:8,10 appropriateness 26 2998:9 3000:27 20,27 3026:10,16 2989:11,13 2992:26 3001:8 3002:1,14,19, 3028:5,9,19,23 3030:1, 2993:9,17 2997:5,7,24 24,28 3003:8 3017:1, 6 3032:7,18,26 3033:3, **approved** 2984:28 2998:1,6,18,20 3001:22 13,21 3018:2,13,16 7,17 3034:12 3037:10 3008:7,11,20,22 approving 2940:5 3019:25 3020:4,8 3038:1 3039:9 3040:23 3011:14,17 3015:6 3030:8 3042:14 3048:21 approximately 3021:22,24,27 3022:2, 3049:3 10,17,23,28 3023:9,21 analyst 2981:1 2992:9 3024:5,9,17,21,26 agreeable 2973:26 analyze 2944:14 3025:3 3027:5,7 2977:20 2990:25 agreed 3015:11 3023:5

3031:16 3033:14

3039:7 3041:13

3042:10,16,18,22,24,27

3030:19 3052:13

3056:25 3058:18

3063:13

Index: admitted..arborist

2994:4 3009:20

2944:24

3016:28 3017:13

3049:22 3055:28

2907:2 2967:23

3036:8.25

2976:25

3009:11

2937:4 2968:2 3038:15

2895:2,3,6,12,17,18,21

2914:16,23,25 2960:14

3039:26 3040:5

2977:25 3043:20

2897:3,12 2929:6,10

2930:12 2995:28

3014:21 3029:27

**April** 2991:18

arborist 2914:4

2920:10 2939:19,20

3041:2,8

2995:14

analyzed 2918:9

2927:20 2936:10

3005:21 3037:15

3051:6 3072:18

2940:1.2 **assumed** 2923:12 average 2915:13 2903:26 2906:11 2925:12 2930:16 2947:3,4 2911:8,10 2913:10,15 arborist's 2939:5,10 2949:16 2953:28 2925:1,10 2942:2,11,19 **assumes** 2922:14 **arborists** 2920:14 2954:2 2987:18 2994:4 2945:3 2951:28 2952:1 3064:13 2939:14 2940:4 2996:22 3034:8 3038:2 2962:3 2963:21 assuming 2923:3 3039:20 2968:27,28 2969:6 area 2910:6 2925:9 2949:2 2995:20 2999:8, 2975:26 2989:24 avoided 2940:18 3037:25 3049:7 16 3034:24 2990:8 3001:10 3013:4 2942:1 3021:5 3028:5 3029:25 areas 2905:22 2910:20 assumption 2923:15 2929:13 2930:18 aware 2983:5,6 2995:2, 3030:3,5 3032:3,8 2924:11 2926:9 3039:9 3055:3,8,23 3047:10 3060:12 7 3011:19 3014:19,24 2950:20 3030:11 3056:19 3061:11 3028:17,21 3048:12 argued 3042:13 3031:3 3070:6 **baseline** 3012:23 assumptions 2947:16 **arguing** 3042:12 awareness 2950:24 bases 2939:28 3029:15,24 **argument** 2895:24 awkward 2981:17 basic 2892:14 3016:14 attach 3008:14 2963:2,3,6,7 2977:2 **axis** 2953:20,21 attached 3008:26 basically 2969:4 argumentative 3015:23 2949:25 3029:2,9 В **attaches** 2974:10 basing 2961:26 arguments 2959:24 2963:11 2985:16 **basis** 2921:9 2923:15 attachment 2888:20 B-O-R-D-E-N 2887:17 2926:3 2939:11 ascertain 2896:9 2967:28 2968:2 back 2899:8 2905:1 3044:28 2979:19 3008:27 ascertained 2918:22 2910:2 2915:23 3009:16 3010:15 began 2983:5 3027:26 2922:11,12 2931:20 3026:4 asks 2894:11 2929:20 3058:27 2932:17 2933:23 attachments 2887:24 aspect 2910:13 2936:27 2937:5,17 begin 2914:20 3006:7 2889:5 2895:15 2939:2 2941:10 3016:7 3021:14 aspects 2908:23 2977:10 3008:15 2945:11,28 2951:5 2917:7 beginning 2969:6 2958:8,22,23 2964:15 attempt 2902:3 2946:4 3027:17 3035:12 assert 3013:23 2965:2 2966:9 2967:16 attempted 3059:8 2970:19 2971:2 2972:4 begins 2968:27 2969:5 **asserted** 3010:23 2973:6 2986:10,25 attempting 3000:26 behalf 3076:26 assertion 2899:5 2988:26 2989:13 3036:4 3041:7 2993:9 2997:7 2998:3, belief 2998:10 **attempts** 3061:1 6,20 3006:5 3008:22 asses 2920:15 **believed** 2900:17 3011:17 3024:9 3027:7 attention 2910:2 3042:18,27 3048:18 2994:6 assessment 2944:28 2922:11 2937:17 3050:22,28 3051:20 2984:12 2989:1 2994:7 **believes** 2908:20 attestation 2892:9 3053:7 3060:11 3063:7 3037:22 3055:24 asset 2937:2,3 3069:25 3074:12 attributed 2940:21 2951:22,24 2954:8 bigger 2896:19 background 2892:17 2955:15 August 2930:6 2984:26 bill 2985:1 2987:22 assets 2908:3 2930:20 **Austin** 3067:4.11 2995:15,20 2996:11 backward 2945:1 2931:4 2933:10.13.15. 2999:16 3004:15.26 authenticate 2892:8 20 2934:11 2946:15,23 **balance** 2951:23,24 3005:5 3006:4.13 2947:18 2950:23 authority 2899:9 2999:17,26 3000:13 3007:27 3014:28 2952:3 2953:5 2954:6, 3018:22,28 3019:3 15,19,24 authorize 2899:20 **balances** 2995:21 3020:26 2999:9,11 **assume** 2924:14,20 authorized 2952:6 bill-collection 2995:18 base 2946:24 2949:8 2972:28 3032:1,3,8,13, 2947:27 2948:26 billing 2992:21 3000:7 2970:27 2993:22 14,19 3033:9,19 2950:15 2952:23

Index: arborist's..billion

2954:7,15

**based** 2892:9 2896:23

**billion** 2891:5 2896:5,8

3040:1.2 3041:26

3047:28 3057:18

bills 2987:4,17 2994:13,15,25 2995:27 2996:2 3003:3,26 3014:17 3016:10 3017:2 bit 2916:26 2917:25 2921:21 2930:20 2948:16 2967:19 2970:21 2981:26 3008:2 3017:28 3019:13 3042:10 black 3049:2 **blanket** 2939:26 block 3034:1 **bonus** 2954:22 **Borden** 2887:12,13,17, 22,24 2888:22 2889:3, 24 2890:5,12,15,19 2891:23 2905:6,21 2907:15 2909:19 2910:11,28 2912:5,24 2914:26 2915:1 2916:7, 25 2917:24 2918:8 2920:27 2923:19,26 2924:26 2926:5,8,19 2927:3 2928:15,22 2929:15 2930:21 2931:19 2933:19 2934:17 2935:25 2936:11 2938:10

Borden's 2888:2,24 2889:27 2890:4 2916:17

2941:20 2945:21,26

2946:3,11 2955:14

**bore** 3025:8.20 3026:12,22 3027:18 3028:15 3029:25 3030:7,21 3032:27 3039:11 3047:9 3048:24,26 3049:5,12 3052:22,23 3053:15 3054:2 3056:12,14,17 3057:23 3058:25 3061:10,17 3064:4 3066:18,28 3067:2 3068:26 3069:12 3070:4 3074:15 3075:13

bores 3026:2 3049:8 3052:14 3054:24

3056:25 3058:18 3059:21

**bothered** 2901:19

**bottle** 3051:17

**bottom** 2907:22 2930:10 2950:11 2951:9 3029:14,23 3057:27

**brand-new** 3019:25

break 2903:21,22 2920:23 2946:5 2958:8, 19,24 2959:19 2970:19 2971:2 2972:4 2978:10 2992:28 2993:6 3008:12 3011:15 3039:5 3042:23,25

breakdown 2902:25

**briefing** 3071:24 3072:19 3074:5

briefly 2900:5 2901:28 2969:10

**briefs** 2891:16 3042:13 3074:6,9,11,24,27,28 3075:19

bring 2893:20 2907:12 2910:17 2980:19

**broad** 2912:16

**broadly** 3057:6

**broken** 3058:10 3066:17

**brought** 2910:19

**Brown** 2995:4,8,16 3002:3

Buchsbaum 2905:11, 15 2940:12 2946:8,10 2947:21 2950:3 2951:6 2954:25 2955:5,6,14 2956:8,12 2957:3

Buchsbaum's 2941:2

**building** 3049:8

built 3036:22

bullet 2981:27 2982:5,8 3006:28 3007:6 3008:1

**Bureau** 2979:25 3022:20,26

burning 2943:25

**Burns** 3073:21,22,25 3074:25,26 3076:6,11,

**business** 2887:15 2964:3,7 2972:5 3012:20 3018:15 3048:6 3076:3,24

**buttress** 2976:9 2977:16

buy 3005:25

C

Cal 2931:11 2972:24,28 3037:17 3073:24 3076:11,12

calculate 2921:12 2942:8 3059:4

calculated 2913:22 2919:12 2941:24 2942:10 2944:6 3035:2 3054:16

**calculation** 2910:15,18 2911:10 2947:2 3000:19 3035:10

calculations 2916:19 2921:16 2927:28

California 2887:1 2964:9 3014:22,26 3016:11

California's 2985:3

call 2992:28 3006:19 3008:12 3059:5

**Call-in** 2979:21

**called** 2887:13 2952:13 2963:28 3028:12,13 3030:24 3031:2 3050:26

calling 3055:17

**Calvert** 2887:26 2888:23 2891:25 2893:12,20 2898:1,6 2899:7

**Calvert's** 2888:3

canceled 3072:17

**candidly** 3074:18

Index: bills..Chang

capable 2989:1

capital 2896:6 2899:24

car 2927:19 3005:25

card 3005:2

care 2887:9,12 2972:5 2994:26 3010:4 3023:17 3024:23 3076:2

career 2988:14 carefully 3010:18 carry 3054:4

cars 2927:8

case 2892:11 2896:3,7 2899:26 2951:17,20 2952:19,20 2953:9 2954:8 2958:15,18 2960:18 2961:26 2962:9 2963:4 2977:23 2987:27 2992:18 3026:14 3031:26 3035:23 3040:3 3041:26 3045:3 3046:25 3053:17 3057:5 3058:26 3063:14

**Castle** 3064:14 catalog 3068:24

catastrophic 2937:27 2938:4

categories 2933:13

categorize 3027:26 category 3000:11,17

caveats 2938:26

**CEMA** 2920:1

certificate 2988:10

cetera 2918:27

chance 2901:3 2920:24 2925:18 2958:13 2975:14 2978:12 3024:6 3026:7

**chances** 2959:22

Chang 2983:2

<b>change</b> 2935:26	clarification 3051:9	collection 2982:12	2950:1
2969:11	clarifies 2969:15	3013:19	complaining 2950:1
<b>changed</b> 2936:4 3033:28 3060:17	<b>clarify</b> 2912:27 2933:14	college 3005:26	complete 2978:8
<b>changing</b> 2992:13	2941:14 2942:11 2947:19 2959:9	<b>column</b> 2994:23 3002:13,17,22 3017:12	3027:23 3033:9,20 3059:14,18 3062:14,25,
characterization	2964:26 2967:23 2970:21 2971:1 2976:4	<b>columns</b> 3068:21	28
2901:11 3016:27 3025:22	2983:21 2998:24 3035:14 3036:5	comfortable 3011:9,12	<b>completed</b> 3043:16 3059:13 3066:18
<b>chart</b> 2922:28	3043:11 3063:10	<b>comment</b> 2903:25	3069:3 3070:13
<b>check</b> 2956:24 3008:7	3065:17 3070:5	<b>comments</b> 2900:10 3072:28 3074:25	<b>completely</b> 2901:10 2913:18 2925:27
3037:13	clarifying 2940:14	<b>Commission</b> 2914:19,	3055:12
<b>checked</b> 2930:15 3068:7,9	<b>clarity</b> 2963:25 3045:27 3056:6	22,24 2920:15 2950:21 2951:8 2952:7 2953:3	completing 3060:2
<b>Chicago</b> 3018:15	<b>class</b> 2897:8,13	2954:5,12 2958:10	<b>completion</b> 3025:19 3028:1
childcare 3005:18	classification	2960:24 2961:3 2962:8, 18 2963:8 2984:27	complex 2898:20
<b>choice</b> 3006:15	2896:23,24 2904:23	3010:2 3015:12,16,21,	2988:18 2997:1
<b>choose</b> 2982:11	classifications 2898:21	24 3016:19 3022:6 3035:22,26	3017:24 3018:4,12,18
2991:27 3013:15,17			comprehensively
3014:14	clean 2968:20	Commission's 3003:12	2985:19 2986:21 3015:12
chooses 3072:5	<b>clear</b> 2907:23 2925:3, 23 2926:19 2932:19	committee 3070:28	conceivable 2998:26
<b>circuit</b> 2925:8,16 2928:25 2932:2,6	2938:24 2959:27 2978:4 3015:24 3036:6, 9,26 3040:16	<b>common</b> 2959:20	<b>concept</b> 2924:27
2928:25 2932:2,6 2934:19,20 2955:21		commonly 2943:23	2933:17
circuits 2927:6	clearance 2931:14	companies 2899:17	concern 2901:22
circumstance 2952:9	cleared 2938:9	comparable 2892:12	2938:18 2952:2 3044:28 3045:4
circumstances		2897:2,7	3049:17
2939:25 2952:7	<b>clearing</b> 2906:9 2909:1 2917:9	comparatively	concerned 2890:26
2960:10 2962:2 3022:28 3048:12	client 3018:8	3056:17	2975:9 3043:7 3045:10
<b>citation</b> 2976:14,17,19	<b>close</b> 3012:20	<b>compare</b> 2902:27	3059:24
cite 2908:5,7 2949:26	closed 2961:22	2904:21 3008:26,28 3053:12	<b>concerns</b> 2901:20 2994:2 3014:16 3020:7
2952:18 2974:18	closer 2907:12	compared 2906:20	conclude 2924:3
2978:1 2982:14 3003:11 3022:25	co-counsel 2905:10	2922:25 2955:27	2961:21 3007:1 3076:5
3052:27 3059:2	<b>co-linear</b> 3004:7	2960:7 2994:15 2996:2	concluded 2918:9
3072:23	coaching 2923:24	<b>compares</b> 2956:2 2962:25	3003:22 3006:18 3010:21
<b>cited</b> 2896:15 2910:28 2937:9 2975:2 3023:5,	code 2931:15 2933:3	comparing 2925:4,19	concludes 3042:20
23 3059:6	2937:25 2964:10	2994:12 2995:14	conclusion 2903:23
citing 3011:7 3023:4	2991:9,21 2992:9 3010:8	3002:9 3052:12	2918:11 2989:22
3064:2		comparison 2975:18	2990:5,20 2992:16
<b>City</b> 3072:2	codes 2992:1	2987:22 3009:11 3071:27	conclusions 3017:15
<b>claim</b> 2925:20	coin 3016:24	<b>compel</b> 2901:19	condition 2932:10
<b>claims</b> 2920:7	colleague 2983:1	complain 2949:22	3059:7
		2311pixiii 2070.22	

Index: change..condition

conditions 2903:10 3030:22 3013:5 3037:16,19 2980:17 3010:11 3046:20,27 3049:11 3046:17 3066:11 conduct 2919:18 contemporaneous 3052:11,24,26 3053:14, 2984:12 2990:21 counsel's 2893:24 20 3057:21,26 3058:16 **conducted** 2916:21 contention 2943:19 3067:27 3076:15,19,20 count 2898:27 2943:6 2944:22.27 context 2895:27.28 **corrected** 2966:21,22 counted 2911:12.13 2967:23 3036:15 conducting 3017:20 2919:14 2939:7 3025:9 counting 2988:15 3029:27 Continuation 2978:26 correction 2969:21 county 2992:10 3072:2 conductor 2895:7 3076:7 continue 2920:18 2896:4,8 2898:8 **couple** 2918:1 2931:7 2932:5 2936:7 2986:20 corrections 2889:11 2921:27 2922:5,15,17 2955:9 3004:8 3020:10 2987:10 2993:17 2967:20 2970:16 2923:11,28 2924:5,6,8, 3051:13,21 3073:5,19 3015:12,17 3025:3 **courtesy** 3023:16 16,28 2925:5,9 3027:8 3060:5 3062:24, 2926:10,21 2927:27 correctly 2977:5 cover 2895:7 2922:23 26 3063:8 2928:3 3056:26 2924:14 2926:10 continued 3070:20 3005:17 3016:14 conductors 2925:1 **correlated** 3007:10,18 continuing 3062:18 covered 2896:4,8 confer 2978:12 2993:4 correlation 2982:6 2898:7 2921:27 2922:4, 3072:14 contributing 2943:26 2987:24,25 2989:17,23 15,17 2923:10,28 2990:6,26 2994:25 conferring 2980:16 control 2965:10 2924:5,6,8,16,28 3003:3,5 3017:1,4 2972:23 2925:1,5,9 2926:9,21 confirm 2958:15,19 3018:9 3020:27 2927:26 2928:3 3012:3 3017:3 conversation 3066:3 correlations 3017:17 3045:24 **confused** 2968:21 converted 2921:20 corrosion 2965:10 CPA 2988:10.11 3008:18 3009:24 2972:23 **convince** 2970:24 **CPUC** 2979:21 2982:21 confuses 2969:14 **cost** 2892:11 2896:4.6 2984:8 2985:17 **copy** 2890:12 2897:24 2899:17,18,26 2906:20 3006:17,24 3008:16 consequences 2929:25 2930:1 3045:23 3047:6 2922:7,18,21 2924:3,18 2979:28 3027:4 3014:4 3048:25 2925:2.10 2926:25 CPUC's 2982:13 correct 2889:14 2929:12 2930:11 conservative 2953:4 2983:3,10 2986:21 2890:15 2893:3,7 2931:1 2938:23 3003:22 2907:8,23,24 2908:3,4, 2946:17 2947:3 consideration 9,10,15,18,25 2909:4,5, 2948:11,20,25,27 2960:13 2978:15,20 create 3016:6 3018:16 9,17,23 2910:4,8,14 2949:16,18,19 2950:22 2982:13 3013:20 3027:28 3057:6 2914:7,8 2915:5 2916:8 2951:13,20 2977:26 considered 2906:14. 2917:17 2918:17 created 2996:21 3016:11 3028:8 22.26 2978:5 3030:25 2919:7 2921:1,4,6,7,18, 3054:24,26,27 3055:24 3029:15,24 3030:1 27,28 2922:16 2926:22, 3059:10 3034:23.24 3037:18 consist 3068:18 26 2928:7,11,17 3038:2,4 3039:14,17 **creating** 2946:17 consistent 2908:11 2929:2,18 2937:11 3042:5 3044:10,17 2985:11 3038:19,23 2939:23 2940:9,25 credit 2951:16,21 costs 2896:10 2899:24 2941:4 2944:6,15 2982:12 3005:2 constraints 2938:20 2916:27 2921:10 2945:4 2949:12,20,24 3013:19 2922:9,14,24,26 2950:9 2953:27 construction 2936:2,5 crew 2934:18 2923:4,12 2924:13 2960:15 2962:15 **consultant** 2981:6,9 2967:25 2968:3.4 2925:4,5,12 2926:28 **criteria** 2939:14 3018:5 2928:25 2930:3,5,6,17 2969:9 2970:6 2972:17 3027:21 3032:7,12 2931:2 2952:22 consulted 2972:27 2974:1 2978:17 2981:4, 3041:23 2962:28 2969:2 7,11,14 2983:25 contact 2916:12 **critical** 3038:18 2974:17 3029:24,26 2987:19 2988:11,12 2991:25 2994:16 contained 2889:13,17 criticizes 2987:1,14 **counsel** 2900:10 2998:17 2999:28 2896:28 2926:28 2918:1 2926:1,7 cross 2887:26 2891:22 3001:17 3002:6 2929:25 2932:7 2976:8 2894:4 2941:2 2943:5 contemplated 3003:15,27 3006:2,21

Index: conditions..cross

2977:20 2978:28 3012:21 3013:1 date 2893:19 2900:27 definition 2913:2 2979:12 2984:18 3018:26 2995:7 3053:19 3073:2. 2946:27 2993:18 3002:3 3008:8 6,27 3074:3,23 cut 3041:14 3049:18 definitive 2989:21 3011:25 3012:5 dates 3073:16 2990:4 3021:24 3025:7,8,20 cycle 2938:23 3000:7 3026:2,12,22 3027:18 3046:2,6 **David** 2983:1 **degrees** 3013:3 3028:15 3029:25 day 2887:6 2914:21 **delay** 2905:6 2996:1 3030:7,21 3032:27 D 3019:16,20 3060:23 2998:11 3002:2,25 3039:11 3047:9 3073:19 3003:1 3075:4,22 3048:24,26 3049:5,7,12 D-O-W-D-E-L-L 3051:25 3052:14,22,23 days 2995:19 2998:16 **delayed** 2901:26 2964:6 3053:15 3054:2,23 2999:15 3000:4 3019:3 delaying 3074:24 3056:12,14,17,25 3073:10 **D.18-12-013** 3011:20 3057:23 3058:18,24 delivered 3039:23 dead 2919:25 damaged 2931:27 3059:21 3061:10,16 demographics 2932:11,13,14,19,26,27 3064:4 3066:17,28 deal 2909:15 2958:28 3018:10 3067:2 3068:26 3075:13 dash 2965:10 3069:12 3070:4 denied 2963:21,25 dealing 2908:28 **data** 2888:4,5,16,19 3071:17 3074:15 denominator 2919:2 2892:5,12,13,14 3075:13 deals 2906:9 2909:3.8 2893:6,14,17 2894:14 2972:20,23 denser 3049:8 cross-exam 3072:10 2895:1 2896:21,27 **December** 3003:12 depend 2939:24 cross-examination 2897:2,5,6,7,12,18,23 3006:24 3012:20 2898:5,6,17,26 2899:2, 2888:1,24 2889:25 dependancies 3074:13 3075:1 15,28 2901:6,9 2891:19 2893:18 3003:23 2902:11,17,28 2904:2, 2894:20 2905:7,9,19,22 decide 2934:4 3070:23 dependency 3006:20 7,11,15,24,26 2906:11 2946:9 2960:12 **decided** 2893:18 2907:7,18 2908:8 2970:14 2980:15,22 depends 2913:23 2910:16 2909:26 2911:9,19 2993:12 2995:10,13 2989:27 2912:11,20 2913:16 3019:26 3022:5 decides 2914:22 deployed 2928:3 2915:28 2916:7,10 3024:10,11 3052:1 **decision** 2895:21 2918:20,21 2919:6,12 2931:18 cross-examined 2903:16 2905:14 2925:19,22 2926:2 depreciated 2947:5 2995:4.8 2934:26 2939:28 2929:17,26 2937:8 2948:9,15,22,23 2940:24 2942:2,20,21 2980:3 3012:7,28 cross-questions 2949:17 2944:14 2945:5,23 3022:7 3023:20,25 3042:21 3059:16 3073:1 3075:5, 2946:6 2955:24,25 depreciation 2948:10, current 2936:1,5,9 2959:2,5,8,12,27 10,19,26 12,19 2949:3 2950:22, 2974:22 2975:24 26,27 2952:4,6,17 2963:19 2979:18,25 **Declaration** 3071:28 2989:28 3016:19 2953:1 2954:11 2989:26,27 2990:2,8,19 3046:4 3066:8 declined 3058:1 2956:22 2991:5,6,13,14,17,20, 23 2992:4,5,6,9,10,13, curve 2953:15,24 **decrease** 3010:24 describe 2900:18 15,19,20,22 2994:4 **customer** 2979:22 2996:17 2999:2 3001:1, deduct 3034:23 describes 3016:8 2995:18 2999:14 2,27 3002:27 3003:6 3020:22 defer 3045:12 3003:14 3004:3,15,18 3009:11,15,16 3010:2. describing 2906:5 3006:11 3011:21,27 deferral 3045:1 6,9 3017:15 3018:7 3012:15,24 3014:17 3020:3,9 3022:26 description 2937:22 deferrals 3045:11 3016:6 3019:16 3027:12 3028:6 3030:3 design 3014:27 3031:7 3033:22 **deferred** 2978:26 **customer's** 3014:28 3057:14 3025:20 3031:10,20 designation 2931:11 customers 2982:26 3038:13,14,19 3039:27 **database** 2918:23 detail 2904:18 2985:9,25 2987:28 3040:13,18,27 3041:1, 2940:26 2941:25 2989:5 2994:27 2,7,17,24 3046:7 detailed 2902:25 2942:12,14 2944:8 2998:14,28 2999:19,25

Index: cross-exam..details

deferring 3025:23

3045:2,9,16,18

details 3069:14

3067:20,24,26 3068:24

3069:1

3000:1,10 3011:2

deteriorated 2932:3,8, disagreeing 3029:5 discontinue 2985:18 3069:17 3071:25 15 disagrees 3025:21 **discovery** 2890:25 documenting determination 3055:22 2943:9 3027:15,23 3028:28 2927:27 3060:28 3031:5,8 disallow 3044:26 **discuss** 2887:8 determine 2892:20 2903:11 2904:28 **documents** 2960:23 disallowance 2969:25. 2900:2 2922:20 2962:1 2946:13,21 2947:2 2962:13.14.18 2968:13 26 3035:16,17 3036:10, 2975:20 3018:7 2952:26 3026:1 3023:4 3069:12 3072:3, 20 3037:4 3040:20,22 3069:16 23,24,26 3043:14,20,23 3044:6 develop 2982:23 dollars 2891:5 discussed 2905:16 developed 3062:14 disallowances 2997:12 3002:20 2921:12,14,20 3075:17 3040:15 3067:4 **Dowdell** 2958:25 development 3027:19 disallowed 3034:26 discussing 2935:2 2963:26,28 2964:6,24, deviation 2953:7 disappointed 2962:20 2955:25 2967:19 25 2965:5,28 2966:10, 3000:11 14 2967:25 2970:13 difference 2898:23 disclosure 2981:12 2972:6,17 2979:13 discussion 2931:8 2924:18 2925:2.28 disconnect 2999:13 2980:24 2993:14.20 2952:4 2959:19 2931:9 3042:12 3055:3 2998:9,22,25 3008:25 disconnected 2982:25 2964:17 3030:6 differences 2900:18 3009:26 3010:9,14 3063:17,21 3064:3 2985:9 2995:19 2999:1, 2924:13 3011:19 3015:10 3069:11 14 3004:4 3005:14 3016:18 3024:13 differential 2922:7 3006:12 3011:3 disposition 3038:22 3025:5 3026:7,21 3012:22 3013:2 3019:2, 3032:7,26 3033:24 differently 2952:16 dispositive 2991:15 3035:20 3039:25 3008:4 3056:9 3042:21 3043:4 disconnection **dispute** 2892:15 difficult 2928:14 3045:22 3046:17 3002:27 3003:6 3007:7, 2979:22 2985:2,13,22 3048:21 3050:14 difficulty 2935:1 2989:4,18 2990:7 12 3013:28 3014:5 2991:21 2998:15 3020:3 downside 3049:9 direct 2888:21 2889:1, 2999:3 3004:14 3005:6 disputed 2899:2 5.28 2910:1 2917:27 dozen 2988:18 3017:24 3006:4 3007:3 3008:15, 3038:22 2922:11 2930:2,24 3018:4 28 3011:22 3012:4 2931:20 2937:17 3014:1,20 3018:23 disputes 2896:2 **DR088-10** 2959:28 2956:22 2964:12,19 3019:8,16,17 disregarding 2978:20 2965:26 2984:6 dramatically 2891:1 disconnections 2988:24 3000:5 3011:5 distinguish 3063:27 drawn 2990:21 3021:21 3063:14,25 2979:15 2981:22 3064:8 2982:14,19,21,24 distinguishing drew 2953:24 2983:4,7,11,15,19,20 3054:6.8 directed 2893:11 2984:1,14,21 2985:8, **drilling** 3054:25 2942:8 3067:12 distributed 2915:26 18,19 2986:4,20,22 driver 2899:18 2989:6 direction 2966:16 2987:4,18,23 2989:3,24 distribution 2896:22, 2968:14 2990:28 2994:14,26 due 2911:23 2918:25 26 2897:3 2898:14 2995:16 2996:15 2902:18 2925:22 2924:7 2927:13 directional 3054:24 3003:14,23,27 3006:19 2999:20 3073:2,5 **district** 2916:16 3007:10 3009:21 3074:12,27,28 3075:2 directly 2941:25 3010:1,8,25 3011:20,28 2946:7 2983:9 3041:13 **Division** 3003:13 dying 2919:25 3012:15 3013:10,20 3067:15 3072:23 3007:8 3014:8,12 3015:13,22, Director 3067:5 document 2888:3 25,28 3016:9,20 3017:2 Ε 2893:24,27,28 2894:4, 3020:23 disaggregating 8,9,27 2903:9,11 2944:9 e-mail 3067:17 disconnections-2952:1 2961:28 2962:3 related 2985:15 disagree 2901:10 2963:22 2965:8,13 earlier 2920:28 2966:15 2973:1 2976:3 2929:9 2947:23 3011:1 2938:11 2952:22 disconnects 2994:16 3014:6 3054:22 2979:14,21,25 2980:18

Index: deteriorated..earlier

2953:28 2995:2

3030:18 3040:25

3031:21 3060:20,24

2995:27 2996:3 3003:4

3055:12

3053:21 3059:11 embedded 3014:2 equitable 2967:20 evidentiary 2887:6 3066:6 2960:6,7 2961:20 **emission** 2911:11 equivalent 3049:12,14 earliest 3019:7 evidently 2977:15 emissions 2940:18 Eric 2887:13,17,22 early 2953:26 2954:7, exact 2898:19 2906:27 **emphasis** 3061:19 errata 2915:2 2966:24 14 2970:25 2907:3 2911:6 2913:2 3064:7 2967:9 2993:14 3009:2. 2917:15 2926:11 easier 3023:18,23 emphasize 3063:26 2939:13 2974:19 **easiest** 2999:5 erred 2977:28 3014:24 emphasized 3064:1 Economics 2988:9 erroneous 3009:25 Examination 2888:21 empirical 3054:17,19 2889:1 2918:6 2941:18 **Edison** 2892:5 2893:26 error 2890:18 2969:24 2955:12 2964:19 empirically 3054:10,14 2894:5,10,13 2896:17 3076:15 2965:26 3015:8 3043:2 2897:2,4,9,10 2898:2, **employee** 2981:10 **escalation** 2921:6,11, 3046:15 3070:1 10,15,24 2899:10 3067:12,14,18 17 3046:9 examples 3004:9 2900:12,19,24 2902:8, employees 3067:7 20,24 2904:2,3,18 essential 3005:14.17 **exceed** 3057:8 2914:19,24 2922:26 employment 3016:13 essentially 2976:9 2923:17 2924:1 2925:6, 3018:7,10 **Excel** 2894:12,15 3005:16 3007:15,22 19 2926:15 2942:27 2897:11,22 2991:19 encountered 3031:1 3020:22 3044:25 2943:4 2952:20 3021:12 3052:8 3075:25 end 2887:11 2888:23 **excepted** 2954:20 established 3011:21 2969:5 3002:9 3004:4 **Edison's** 2895:5,6 exception 3073:15 3027:14 3028:27 3006:11 3014:20 2896:11,15 2899:6 3047:24 3069:19 2902:21 2914:16 excerpt 2965:11,15 2919:16 2925:10,21 establishing 2995:17 2972:8 2980:3 2993:13 energy 2981:1 2986:22 2942:26 2952:12 3009:1 3022:6 3016:16 3027:22 2961:15 2962:27,28 **excerpts** 2979:17 engineering 2927:28 estimate 2924:5 3014:22,26 2988:8 2927:1 2929:7,9 3012:6 effect 3033:22 excluding 2977:24 estimated 2928:24 enhanced 2895:8 effective 2891:1 2909:11 2974:24 **estimates** 2913:13 exclusive 3062:3 2931:1 3012:1,13,19 ensure 2928:4 3068:9 3028:8 exclusively 3062:9 effectively 2911:18 entire 2889:27 2952:11 estimation 3028:8 2954:14 3043:8 excuse 2898:24 2969:7 3023:24 2924:21 2958:27 eventually 3065:20 efficiencies 2974:15. **entitled** 2894:28 3010:20 21 2977:25,27 2978:4,7 Everybody's 2981:19 2965:8,13 2979:14,21, **excused** 3050:15 effort 2896:25 evidence 2892:19 25 2984:21 3071:17 2898:12 2924:21 egress 2927:13 entry 2951:16,21 exempt 2931:10 2957:15,17 2958:1,5 **elected** 3070:17 enunciated 2900:8 2961:13 2962:23 exemptions 3011:23 2973:11 2974:3 electric 2985:3 equally 3043:26 exhaustion 3074:18 2979:10 2997:27 3007:26 3010:7 3022:12,14,15 3023:7 **equation** 3013:13 exhibit 2887:21,23,25, electricity 2996:11 3024:1,3 3025:1 3031:4 equipment 2908:13,21 26,28 2888:1,8,9,11,13, 3050:17,19 3053:24 **element** 2912:14 2909:2 2916:13 16,18,23 2890:10 3054:16,19 3055:5,14, 3063:15 2891:21,22,26,28 2930:27 2931:10,12,14, 23,25 3056:2,4,13 2892:3,10,13,19,25,27 17,22,26,28 2932:3,5, **elements** 2912:15 3064:14 3071:11 2894:17 2896:28 14,16,18 2933:5,7,19, eligible 3019:7,17 evidence-based 2897:6,24 2902:13 21,26 2934:4,5,6,15,21, 3055:10 24 2935:7,15,16,18 2903:19 2907:6,17 eliminate 2913:17,26

Index: earliest..exhibit

2909:22 2910:2

2915:20,26,27 2916:2,

evidence.291 2958:3

2936:1,7,22 2937:22,25

2938:3,8 2940:19

3025:19

17 2929:16 2941:21 2942:3,13,18 2944:3,4, 19,20,21 2946:12 2950:28 2957:15,17 2958:1,3,5 2959:7,18 2962:9,10,16 2963:19, 24 2964:24 2965:3,4,6, 7,8,9,12,13,16,17,18, 20,21,23 2966:2,14,19 2967:1,28 2968:3,7,8, 11,20 2970:5 2972:7, 11,12,21,22 2973:11, 14,23 2974:3,5,7,9 2975:1,18 2976:1,14, 16,18 2978:23 2979:8, 10,14,16,20,24,27 2980:2,5,6,8,9,11,12 2981:21 2984:18 2986:7,14 2993:11,12, 13,15,22,27 2997:8,18, 23,27 2998:2 3000:24 3001:26 3002:9 3006:23 3008:6 3009:1 3011:25 3012:6 3017:7 3019:23 3022:8,12,13, 15,24 3023:7,9,10,12, 21,23,24,27,28 3024:1, 2,16,18,27 3025:1 3027:1,11 3028:25 3031:12 3038:12 3050:13.17.18 3051:14. 21 3052:28 3057:13 3061:8 3071:7,11,14,27 3076:8,12

exhibits 2887:21 2889:4 2957:8,13,20, 23,27 2964:22,23 2970:4,6,10 2972:15 2973:9,14 2975:16,21 2979:13 3021:24,28 3022:10 3076:8

**existed** 3031:6,8 3070:6

**existing** 2919:28 2932:3,5 2934:5,6 2935:16 2936:7,14 2937:3,15 2946:14 3013:18 3075:12

**expect** 2891:9 2915:17 2921:15 2922:24 2928:18 2931:28 2932:20 2936:23 3004:11 3013:9 3048:12 3054:5

3068:10,11,15

**expectation** 3045:5 3047:3

expectations 3033:13

**expected** 2891:3 3014:9 3046:4 3052:23 3062:25 3065:28 3070:22

expects 3033:4,7

**expense** 3004:25 3005:3,7 3035:21,24

**expenses** 3004:25 3005:8,25 3006:1

**experience** 3004:23 3017:20,26 3018:1 3053:14 3054:3

experienced 3004:24

**expert** 2928:6 2950:27 2952:5 3021:1

expertise 2914:2

**experts** 2950:25 2952:4,28

**explain** 2893:27 2944:25 2968:19 2969:10 3017:25 3036:24

**explained** 2926:14 2976:24

**explains** 2923:7 3025:16

**explanation** 2892:18 3023:22 3041:15 3059:25

**explicit** 3032:15,19 3041:22 3042:1,4

explicitly 3042:2

**explore** 2960:28 2961:19,22 3026:1

exposure 2927:7

**expressed** 2970:9 2994:2

**expresses** 3014:16

**extent** 2911:19 2913:5, 26,28 2919:23 2922:9 2932:18 2934:10

2937:3 2938:16 3047:8

**extrapolated** 2919:6 2940:23,27

**extremely** 2892:10 2900:1 2932:19 3021:11

F

**F-FACTOR** 3021:13

face 2946:16

facilities 2927:17

fact 2901:18 2909:6 2925:1 2938:19 2961:27 2962:28 2978:20 2985:27 2996:10 3020:17 3028:21 3047:1 3049:5 3055:14 3057:18 3064:13

**factor** 2921:17 3001:16 3021:8,11

**factors** 2998:11 3001:12 3018:27 3021:16 3074:18

**facts** 2889:13 2916:18 2935:26 2962:26 2970:4,5

factual 3052:17

fail 2930:27 2931:21,26 2932:14,20 2935:8 3061:2

failed 2932:4,9 2933:24

fails 2931:24

**failure** 2931:23 2933:18 2946:16

**fair** 3040:5 3049:20 3056:15

**fairly** 2925:3 3010:6 3021:9 3053:27

**fall** 2915:15 3000:17 3050:2

falling 2918:25 2939:15

**falls** 3000:10 3005:28 3039:21

false 2904:14

familiar 2950:21 2984:4,7

Index: exhibits..find

familiarity 2982:19

**fashion** 2939:26 3054:28

**February** 3070:27

feel 2894:16 3055:27

feelings 3021:19

**fell** 2911:26 2918:28 3057:23

**felt** 2901:14 2991:13 3001:9

**FERA** 2994:26,27

field 2940:4

fight 3000:7

**figure** 2922:14 2926:22 2941:28 2944:2 3020:21 3044:2

**figures** 2918:19 2923:1 2941:23 2942:6 2944:7

file 2894:12,15 2901:19

**filed** 2962:13 3026:4 3028:4

filings 2962:11

fill 3058:8

final 2899:13

finalized 3003:18

**finally** 2897:1 2980:2 3002:22 3071:18

**Finance** 2988:9

**financial** 2938:19 3016:15 3045:16,18,23 3060:24 3070:28

find 2891:7 2910:24 2912:3 2914:20 2915:13 2987:23 2996:17,20 3021:3,9 3043:5 3048:24 3049:1 3052:23 3053:11,12,15, 26 3054:3,4,9,13,20 3055:9,19 3056:14,16, 17 3059:5 3062:26 3065:25 finding 2934:11 2935:7 2939:14 2952:20 3017:13 3023:20 3054:16 **findings** 2982:1,10 3002:10,14,18,23 finds 2935:28 fine 2941:16 2947:22 2959:14,28 2970:27 3073:21 3074:22 finish 2920:26 3062:19 fire 2931:11 2937:14 2939:16 2943:21 fire-resistance 2936:20 2937:1 fire-resistant 2936:16, 25 fire-retardant 2943:24 five-minute 2992:28 2993:6 3011:14 3042:24 flow 2992:27 fluid 2936:17,20,25 2937:1 focus 2905:21 2917:14 2920:2 2946:26 3027:18 3062:2,3,5,20 3063:1 3064:8 focused 2933:17 2934:16 3062:17 **focusing** 2917:21 3062:9 follow 3031:16 3068:12

follow-up 3014:7 food 3005:18 football 3018:17 **footnote** 2908:8 2974:14 2975:15,19,23, 28 2977:22 2997:21 3009:8.13.28 3035:9 3036:25 3044:15 3052:28 **forbid** 3004:21 forced 2931:3

**forecast** 2891:13 2896:6 2899:21,27 2900:2 2922:25 2923:10,11,16,17,28 2924:1,2,15 2926:20 2929:1 2977:27 2978:2, 6 3025:18 3026:2,13 3028:7 3030:2.7.9.22 3034:2,5,22 3036:21,22 3047:25 3048:10,13 3064:2 forecasted 2925:4

3013:3 forecasting 3046:24

foregoing 3030:5

forgive 2966:27 2981:22

**formally** 2949:13 format 2991:20

forthcoming 2901:8

**forward** 2887:11 2914:16 3013:7 3024:6 3034:28 3071:22

forward-looking 2944:28

**found** 2894:14 2911:22,24 2918:26,28 3007:8,17,20 3017:3 3055:10 3064:25 3065:20

foundation 2893:23.25 2894:2 2898:16

foundational 3057:17

**fraction** 2955:16

**fractional** 2952:9.15 2955:15

frame 3070:27

framework 2931:8

**Francisco** 2887:1,19 2964:9 3025:24 3030:28 3045:2,7 3046:23 3048:23,24 3049:6,12 3052:10,14, 22,25 3053:18,24 3055:9,16 3056:25 3057:23 3058:18,20 3059:8,20 3061:14,17

3062:11,12,15,27 3063:16,22,26 3064:4, 16,22,23,27,28 3068:8, 13,15,27 3069:3,4 3070:5,12,25 3072:2

frankly 2953:3 3040:18

free 2891:16 2903:11

front 2966:1 3027:1.10 3038:13

full 2968:1,7 2981:12 3003:17 3047:16,17

function 3016:8

fund 2924:6 3035:1 3039:22

**funded** 3025:25 3032:1,14 3037:23

funding 2912:2 2915:6 3031:28 3033:9,19 3034:11,13 3035:7 3036:19 3039:27 3041:27 3043:8 3044:10,26 3047:28 3048:1,3

fuses 2940:21 future 2899:25

G

Gail 2980:26

Gandesbery 2890:15, 16 3073:7,28 3075:6,7, 23,28

gas 2985:3 3031:25

**gauge** 2947:18

gave 2901:22 2902:24 2904:18 2912:10 2920:24 2923:10 2938:26 3028:6,24 3055:6 3067:3,9,10

general 2928:1 2934:7 2950:24 2960:18 3013:7 3015:27 3039:1 3047:2 3064:4

generally 2910:6 2915:4 2921:8 2938:2, 13 2939:17 3004:2 3011:24 3014:15

3037:3 3047:9 3057:4

generated 3070:8

Index: finding..grid

get all 2911:18

qist 2959:12

give 2929:25 2939:7 2952:18 2978:11 2992:28 3024:5 3042:15 3067:14 3075:27

giving 2901:26 3039:16

glad 2895:25

goal 2899:19,27 2985:5 3012:14 3038:23

God 3004:21

**good** 2887:5 2937:4 2958:25,26 2980:24,25 3013:12 3024:13,14 3050:23,24 3052:3

Goodson 2967:21,24 2968:5 2979:1.4 2995:13 2998:23 3009:22 3010:12 3015:6,7,9 3021:20 3022:3 3024:23

Goodson's 3023:14

grad 2988:15

**Graduate** 3018:15

**GRC** 2925:15 2961:15 2965:9,13 2972:26 2973:24 2974:10,15,20 2975:24 2977:4 2982:28 2985:16 2995:3 3025:18 3026:2, 12 3028:4,7 3030:7 3031:18,25 3032:9,22, 28 3033:8,19 3035:21 3036:4 3037:7,23 3039:28 3041:27 3047:25 3048:1

Great 3001:6

greater 3004:14

grid 2890:1,2 2895:5 2896:4,5 2900:3 2919:16 2932:24 2933:28 2935:4,5 2955:17

group 2998:14 2938:12 2955:17 high 2896:11 2939:15 3021:20,26 3022:1,3,19 2999:19,25 3000:1 2982:6 3005:2 3017:17 3023:6,13 3024:4,20 harding 2896:5 3021:11 3059:8 3061:2 3025:4 3027:3 3031:14 groups 2920:12 **Hastings** 3067:5,10,11 3042:14,20 3043:1 high-cost 3025:27 **GS&RP** 2914:16 3045:20 3046:12 Hawiger 2887:25,27 2925:17 high-fire 2916:16 3047:18 3049:26 2888:25,27,28 2889:2, 3050:9,16 3051:26,28 guarantee 3013:24 high-level 2890:6 24 2891:17 2892:2 3055:18 3064:11 3075:22,25,26 2894:22,25 2895:4,11, high-risk 2910:3 3069:18,22,27 3071:2,5 18,25 2896:2 2901:7,27 guess 2890:14 2911:2 3025:23 3037:25 3073:8 3074:7,26 2904:13,14 2912:12 3075:7,23 3076:1,22 2935:1 2977:4 2978:28 3042:9 3048:23 2917:2 2923:18 3054:22 3065:17 Honor's 2899:11 2924:19 2926:6,7 higher 2923:3,16 3068:20 3075:24 2932:7 2933:6,12 2924:1,2 3027:25 Honors 2940:10 **guidance** 2912:24 2941:6,13,17,19 3046:8 3048:25,26 2961:7 2962:7 2967:22 2945:6,13 2947:15 3049:4 3057:10 hour 2971:4 2949:25 2955:8,9,13 **hours** 3004:5 3011:4 **highest** 2899:18 2956:5 2957:7,10,26 Н 3045:6,8,13 3046:19 2959:3,4,23,26 2960:16 housing 3005:18 3052:15 3056:26 2961:6,16 2962:5,20 3057:2 3058:19 hundred 2913:20 **H-2** 2907:21 2963:15 3059:21 **hundreds** 2897:22 **H1** 2910:3 health 3004:19,24 highly 3020:25 3005:23 hypothetical 2947:28 half 3013:13 3038:3 2948:26 3005:1 **historical** 2944:14,15 healthy 2909:16 hand 2963:27 2966:11 3047:12 2945:2 2951:13,20 2910:25 2911:20,24,25 handed 2951:1 2912:1 2913:5,18,27 **history** 3040:9 2915:14 2916:12 ı handle 2988:24 **hitting** 2927:8,19 2918:5,10,26 2919:1, **Hang** 2964:21 19.23 2920:2 2939:8. hold 2917:20 3001:13 **ID** 3068:23 12,21 2940:5 2943:28 **happen** 2914:21 hole 3049:2 idea 2956:27 2999:7 2944:10 2954:18 2976:8 2977:8 3041:11 home 2970:25 3000:27 3073:16 hear 2892:22 2893:8 identification 2888:9, Honestly 2922:6 **happened** 2902:14 heard 2959:24 11,13 2916:2 2965:17, 3000:28 3059:1 Honor 2887:27 2888:25 19,20,22,23 2972:12 hearing 2887:11 3065:21 2889:24 2890:22 2980:5,7,8,10,11,13 2893:15 2957:13,27 2891:20 2892:2,26 2993:15 happening 3059:12 2958:11 2960:5 2893:4 2894:7,16,26 2966:28 2973:8 2979:7 identified 2889:4 happy 2890:7 2892:16 2895:4,25 2897:20 2997:18 3019:23 2890:11 2944:18 2897:25 2903:21 2900:4,9 2901:11 3024:26 3026:28 3009:27 3075:11 2964:22 2965:3 2903:20,23 2905:4 3027:10 3028:25 2984:13 2997:8 2915:19 2916:6 hard 2992:12 3050:12 3052:28 3019:23 3026:28 2925:25 2926:3 3057:12 3061:8 hard-to-find 2946:5 3051:14 3059:9 2935:24 2941:5,13 3071:13 3072:13,16,18 2945:8,13,18 2957:10, **identify** 2887:20 hardened 2935:17 3073:16 3076:25 22,26 2958:26 2959:4, 2913:25 2915:26 **hardening** 2890:1,2 hearings 2887:7 16 2960:16 2961:6 2964:23 2972:7 2896:5 2900:3 2905:24 2893:20 2961:10,21 2962:6 2964:26 2966:6 2978:23 2993:13 2908:24 2917:26 2982:28 2995:3 3072:7 2967:24 2970:13,17 3048:6 3070:7 3074:21 2919:16 2920:25 2972:18 2973:24 identifying 2914:3 2921:22,26 2922:3 2974:2,27 2975:22 heavier 2896:18 2989:1 3027:20 2927:5,18 2930:21 2976:5 2977:17,22 2932:2,24 2933:21,28 helpful 2968:22 2979:4 2987:12 2997:3, **identity** 3070:8 2934:2,19,27 2935:5, 11,26 2998:8 3008:10 helping 2920:14 **ignition** 2916:11 12,28 2936:13,26 3009:22 3015:4,7 2918:10 2919:27

Index: group..ignition

2937:2,8 2940:26	include 2911:3	indicating 3066:8	18,26 3064:4,6,9
3049:9	2922:18,26 2923:11	indications 2931:25	3065:11 3066:2,9,18
ignitions 2911:23	2975:14,19,20 2976:11, 17 2977:9 2991:27	indulge 2996:18	3068:26 3069:12 3070:4,9,11
2918:14,22 2919:3	2992:21 3030:8	_	
2937:10,26 2938:4 2942:1,19 2944:8,9,15	included 2894:11	influence 3018:28	installation 2895:7 2924:5 3054:7 3055:4
	2895:14 2902:8	influences 2979:23	
ignorance 2894:23	2914:18 2923:13	3003:14 3020:20	installed 2946:23 2947:10,28 2951:25
<b>ignore</b> 3036:20	2927:1 2934:9 2974:16	information 2890:23	2952:3,21 2953:5
illnesses 3074:19	2976:15 2984:15 2992:22 3028:7 3044:5	2894:6 2899:4 2900:12, 24 2901:2,6,8,13,15,16,	instance 3000:4
imagine 2934:17	3048:1,3 3065:7	23,25,26 2902:1,2	3006:14
3028:20	includes 2888:4	2918:22 2919:21	instances 3023:15
immediately 2975:5	2922:21 2923:3	2920:6,9 2926:1,25	3057:5
2976:25	2924:28 2929:1	2928:13 2929:11,21 2960:4,24 2961:1,4,23	Instituting 2984:28
impact 2952:24	2969:24,26 2975:2 3002:13,18,23	2962:1,3,26 2963:5	intend 2973:15
2958:10,14 2984:13		2977:3 2978:17	
2989:2	including 2926:11 2982:22 2985:15	3022:21 3023:3	intended 2997:16,19
impacted 3048:13	3011:22 3027:20	3052:16	intends 3025:16
impacts 2982:11	income 3003:24	inhibit 2943:25	intent 2969:16 3007:14
3013:18	3004:23 3005:16,22	initial 2904:2 2948:27	intention 3036:7,9
impeach 2915:20	3006:20 3007:8,14,17,	2949:18 2987:1,15,21	interest 3051:5,12
impeachment 2944:20	19,25	initially 3062:17	
implements 2913:23	incompatible 2930:28	insecurity 3016:16	interests 2903:14
3019:15	incomplete 2894:8,17	inspect 3062:26	interim 3072:28 3073:1
	2904:11 3027:15	2070-17 20 24	:t:t 0000 00
implications 2890:27		3070:17,20,24	interject 2998:23
implications 2890:27 3045:11,16,18	3070:19	inspecting 2934:11	3009:23
3045:11,16,18			3009:23 interrelated 3020:28
3045:11,16,18 implicit 3042:5	3070:19	inspecting 2934:11	3009:23
3045:11,16,18 implicit 3042:5 importance 2960:3	3070:19 incorporate 2995:28	inspecting 2934:11 3063:21 3065:19 inspection 2919:1 3027:20,22 3030:21	3009:23 interrelated 3020:28 3021:4 interrupt 2992:26,27
3045:11,16,18 implicit 3042:5 importance 2960:3 important 2919:24	3070:19 incorporate 2995:28 incorporated 2998:10	inspecting 2934:11 3063:21 3065:19 inspection 2919:1 3027:20,22 3030:21 3037:14,18 3038:4	3009:23 interrelated 3020:28 3021:4
3045:11,16,18 implicit 3042:5 importance 2960:3 important 2919:24 2962:21 3016:25	3070:19 incorporate 2995:28 incorporated 2998:10 3002:2 incorporates 3002:24	inspecting 2934:11 3063:21 3065:19 inspection 2919:1 3027:20,22 3030:21 3037:14,18 3038:4 3044:3,22 3052:9,22	3009:23 interrelated 3020:28 3021:4 interrupt 2992:26,27
3045:11,16,18 implicit 3042:5 importance 2960:3 important 2919:24	3070:19 incorporate 2995:28 incorporated 2998:10 3002:2	inspecting 2934:11 3063:21 3065:19 inspection 2919:1 3027:20,22 3030:21 3037:14,18 3038:4	3009:23 interrelated 3020:28 3021:4 interrupt 2992:26,27 3030:17
3045:11,16,18 implicit 3042:5 importance 2960:3 important 2919:24 2962:21 3016:25 3037:25 3045:6,8,13	3070:19 incorporate 2995:28 incorporated 2998:10 3002:2 incorporates 3002:24 incorrect 2975:28	inspecting 2934:11 3063:21 3065:19 inspection 2919:1 3027:20,22 3030:21 3037:14,18 3038:4 3044:3,22 3052:9,22 3059:15 3061:4	3009:23 interrelated 3020:28 3021:4 interrupt 2992:26,27 3030:17 intervening 3018:27
3045:11,16,18 implicit 3042:5 importance 2960:3 important 2919:24 2962:21 3016:25 3037:25 3045:6,8,13 3047:2,5 3048:4,7	3070:19 incorporate 2995:28 incorporated 2998:10 3002:2 incorporates 3002:24 incorrect 2975:28 3009:28 increase 2891:3,8 2896:7 2921:10	inspecting 2934:11 3063:21 3065:19 inspection 2919:1 3027:20,22 3030:21 3037:14,18 3038:4 3044:3,22 3052:9,22 3059:15 3061:4 3065:15,21 3070:20 inspections 3025:24 3026:23 3027:16,24,26	3009:23 interrelated 3020:28 3021:4 interrupt 2992:26,27 3030:17 intervening 3018:27 intervenor 2963:2 intervenors 3073:13
3045:11,16,18  implicit 3042:5  importance 2960:3  important 2919:24 2962:21 3016:25 3037:25 3045:6,8,13 3047:2,5 3048:4,7 3063:17 3075:9	3070:19 incorporate 2995:28 incorporated 2998:10 3002:2 incorporates 3002:24 incorrect 2975:28 3009:28 increase 2891:3,8 2896:7 2921:10 2984:13 3010:22	inspecting 2934:11 3063:21 3065:19 inspection 2919:1 3027:20,22 3030:21 3037:14,18 3038:4 3044:3,22 3052:9,22 3059:15 3061:4 3065:15,21 3070:20 inspections 3025:24 3026:23 3027:16,24,26 3028:11 3029:4,27	3009:23  interrelated 3020:28 3021:4  interrupt 2992:26,27 3030:17  intervening 3018:27 intervenor 2963:2 intervenors 3073:13 introduced 2890:3
3045:11,16,18  implicit 3042:5  importance 2960:3  important 2919:24 2962:21 3016:25 3037:25 3045:6,8,13 3047:2,5 3048:4,7 3063:17 3075:9  impossible 2961:7 improperly 2984:12	3070:19 incorporate 2995:28 incorporated 2998:10 3002:2 incorporates 3002:24 incorrect 2975:28 3009:28 increase 2891:3,8 2896:7 2921:10 2984:13 3010:22 3014:16,28	inspecting 2934:11 3063:21 3065:19 inspection 2919:1 3027:20,22 3030:21 3037:14,18 3038:4 3044:3,22 3052:9,22 3059:15 3061:4 3065:15,21 3070:20 inspections 3025:24 3026:23 3027:16,24,26 3028:11 3029:4,27 3030:27 3032:28	3009:23 interrelated 3020:28 3021:4 interrupt 2992:26,27 3030:17 intervening 3018:27 intervenor 2963:2 intervenors 3073:13 introduced 2890:3 introduces 2891:4
3045:11,16,18  implicit 3042:5  importance 2960:3  important 2919:24 2962:21 3016:25 3037:25 3045:6,8,13 3047:2,5 3048:4,7 3063:17 3075:9  impossible 2961:7	3070:19 incorporate 2995:28 incorporated 2998:10 3002:2 incorporates 3002:24 incorrect 2975:28 3009:28 increase 2891:3,8 2896:7 2921:10 2984:13 3010:22 3014:16,28 increases 2989:2	inspecting 2934:11 3063:21 3065:19 inspection 2919:1 3027:20,22 3030:21 3037:14,18 3038:4 3044:3,22 3052:9,22 3059:15 3061:4 3065:15,21 3070:20 inspections 3025:24 3026:23 3027:16,24,26 3028:11 3029:4,27 3030:27 3032:28 3033:1 3034:9,20,25 3036:19 3037:11,21,27	3009:23 interrelated 3020:28 3021:4 interrupt 2992:26,27 3030:17 intervening 3018:27 intervenor 2963:2 intervenors 3073:13 introduced 2890:3
3045:11,16,18 implicit 3042:5 importance 2960:3 important 2919:24 2962:21 3016:25 3037:25 3045:6,8,13 3047:2,5 3048:4,7 3063:17 3075:9 impossible 2961:7 improperly 2984:12 improve 2982:24 2985:8	3070:19 incorporate 2995:28 incorporated 2998:10 3002:2 incorporates 3002:24 incorrect 2975:28 3009:28 increase 2891:3,8 2896:7 2921:10 2984:13 3010:22 3014:16,28	inspecting 2934:11 3063:21 3065:19 inspection 2919:1 3027:20,22 3030:21 3037:14,18 3038:4 3044:3,22 3052:9,22 3059:15 3061:4 3065:15,21 3070:20 inspections 3025:24 3026:23 3027:16,24,26 3028:11 3029:4,27 3030:27 3032:28 3033:1 3034:9,20,25 3036:19 3037:11,21,27 3038:7 3039:12,13,17,	3009:23  interrelated 3020:28 3021:4  interrupt 2992:26,27 3030:17  intervening 3018:27 intervenor 2963:2 intervenors 3073:13 introduced 2890:3 introduces 2891:4
3045:11,16,18  implicit 3042:5  importance 2960:3  important 2919:24 2962:21 3016:25 3037:25 3045:6,8,13 3047:2,5 3048:4,7 3063:17 3075:9  impossible 2961:7 improperly 2984:12 improve 2982:24	3070:19 incorporate 2995:28 incorporated 2998:10 3002:2 incorporates 3002:24 incorrect 2975:28 3009:28 increase 2891:3,8 2896:7 2921:10 2984:13 3010:22 3014:16,28 increases 2989:2	inspecting 2934:11 3063:21 3065:19 inspection 2919:1 3027:20,22 3030:21 3037:14,18 3038:4 3044:3,22 3052:9,22 3059:15 3061:4 3065:15,21 3070:20 inspections 3025:24 3026:23 3027:16,24,26 3028:11 3029:4,27 3030:27 3032:28 3033:1 3034:9,20,25 3036:19 3037:11,21,27 3038:7 3039:12,13,17, 23 3043:15 3044:11,12,	3009:23 interrelated 3020:28 3021:4 interrupt 2992:26,27 3030:17 intervening 3018:27 intervenor 2963:2 intervenors 3073:13 introduced 2890:3 introduces 2891:4 introduction 3025:6
3045:11,16,18  implicit 3042:5  importance 2960:3  important 2919:24 2962:21 3016:25 3037:25 3045:6,8,13 3047:2,5 3048:4,7 3063:17 3075:9  impossible 2961:7 improperly 2984:12 improve 2982:24 2985:8  imputed 3032:15,20,	3070:19 incorporate 2995:28 incorporated 2998:10 3002:2 incorporates 3002:24 incorrect 2975:28 3009:28 increase 2891:3,8 2896:7 2921:10 2984:13 3010:22 3014:16,28 increases 2989:2 incumbent 2984:7	inspecting 2934:11 3063:21 3065:19 inspection 2919:1 3027:20,22 3030:21 3037:14,18 3038:4 3044:3,22 3052:9,22 3059:15 3061:4 3065:15,21 3070:20 inspections 3025:24 3026:23 3027:16,24,26 3028:11 3029:4,27 3030:27 3032:28 3033:1 3034:9,20,25 3036:19 3037:11,21,27 3038:7 3039:12,13,17,	3009:23 interrelated 3020:28 3021:4 interrupt 2992:26,27 3030:17 intervening 3018:27 intervenor 2963:2 intervenors 3073:13 introduced 2890:3 introduces 2891:4 introduction 3025:6 intuitive 3003:9
3045:11,16,18  implicit 3042:5  importance 2960:3  important 2919:24 2962:21 3016:25 3037:25 3045:6,8,13 3047:2,5 3048:4,7 3063:17 3075:9  impossible 2961:7 improperly 2984:12 improve 2982:24 2985:8  imputed 3032:15,20, 21,27 3033:5,10,20	incorporate 2995:28 incorporated 2998:10 3002:2 incorporates 3002:24 incorrect 2975:28 3009:28 increase 2891:3,8 2896:7 2921:10 2984:13 3010:22 3014:16,28 increases 2989:2 incumbent 2984:7 incurred 2925:5 independent 2915:8 2916:21 2919:21	inspecting 2934:11 3063:21 3065:19 inspection 2919:1 3027:20,22 3030:21 3037:14,18 3038:4 3044:3,22 3052:9,22 3059:15 3061:4 3065:15,21 3070:20 inspections 3025:24 3026:23 3027:16,24,26 3028:11 3029:4,27 3030:27 3032:28 3033:1 3034:9,20,25 3036:19 3037:11,21,27 3038:7 3039:12,13,17, 23 3043:15 3044:11,12, 20,27 3045:2 3049:5 3053:18,23,25 3054:1, 21 3055:16,17 3056:12,	3009:23 interrelated 3020:28 3021:4 interrupt 2992:26,27 3030:17 intervening 3018:27 intervenor 2963:2 intervenors 3073:13 introduced 2890:3 introduces 2891:4 introduction 3025:6 intuitive 3003:9 inventory 2892:14
3045:11,16,18  implicit 3042:5  importance 2960:3  important 2919:24 2962:21 3016:25 3037:25 3045:6,8,13 3047:2,5 3048:4,7 3063:17 3075:9  impossible 2961:7  improperly 2984:12  improve 2982:24 2985:8  imputed 3032:15,20, 21,27 3033:5,10,20 3040:24 3041:3 3042:3	incorporate 2995:28 incorporated 2998:10 3002:2 incorporates 3002:24 incorrect 2975:28 3009:28 increase 2891:3,8 2896:7 2921:10 2984:13 3010:22 3014:16,28 increases 2989:2 incumbent 2984:7 incurred 2925:5 independent 2915:8 2916:21 2919:21 2920:6,8 2932:23	inspecting 2934:11 3063:21 3065:19 inspection 2919:1 3027:20,22 3030:21 3037:14,18 3038:4 3044:3,22 3052:9,22 3059:15 3061:4 3065:15,21 3070:20 inspections 3025:24 3026:23 3027:16,24,26 3028:11 3029:4,27 3030:27 3032:28 3033:1 3034:9,20,25 3036:19 3037:11,21,27 3038:7 3039:12,13,17, 23 3043:15 3044:11,12, 20,27 3045:2 3049:5 3053:18,23,25 3054:1, 21 3055:16,17 3056:12, 14,18,19,22 3057:19,23	3009:23  interrelated 3020:28 3021:4  interrupt 2992:26,27 3030:17  intervening 3018:27 intervenor 2963:2 intervenors 3073:13 introduced 2890:3 introduces 2891:4 introduction 3025:6 intuitive 3003:9 inventory 2892:14 2899:2 2955:27
3045:11,16,18 implicit 3042:5 importance 2960:3 important 2919:24 2962:21 3016:25 3037:25 3045:6,8,13 3047:2,5 3048:4,7 3063:17 3075:9 impossible 2961:7 improperly 2984:12 improve 2982:24 2985:8 imputed 3032:15,20, 21,27 3033:5,10,20 3040:24 3041:3 3042:3 inadvertently 2969:13 incidences 2940:20	incorporate 2995:28 incorporated 2998:10 3002:2 incorporates 3002:24 incorrect 2975:28 3009:28 increase 2891:3,8 2896:7 2921:10 2984:13 3010:22 3014:16,28 increases 2989:2 incumbent 2984:7 incurred 2925:5 independent 2915:8 2916:21 2919:21	inspecting 2934:11 3063:21 3065:19 inspection 2919:1 3027:20,22 3030:21 3037:14,18 3038:4 3044:3,22 3052:9,22 3059:15 3061:4 3065:15,21 3070:20 inspections 3025:24 3026:23 3027:16,24,26 3028:11 3029:4,27 3030:27 3032:28 3033:1 3034:9,20,25 3036:19 3037:11,21,27 3038:7 3039:12,13,17, 23 3043:15 3044:11,12, 20,27 3045:2 3049:5 3053:18,23,25 3054:1, 21 3055:16,17 3056:12,	interrelated 3020:28 3021:4 interrupt 2992:26,27 3030:17 intervening 3018:27 intervenor 2963:2 intervenors 3073:13 introduced 2890:3 introduces 2891:4 introduction 3025:6 intuitive 3003:9 inventory 2892:14 2899:2 2955:27 investments 2946:14
3045:11,16,18 implicit 3042:5 importance 2960:3 important 2919:24 2962:21 3016:25 3037:25 3045:6,8,13 3047:2,5 3048:4,7 3063:17 3075:9 impossible 2961:7 improperly 2984:12 improve 2982:24 2985:8 imputed 3032:15,20, 21,27 3033:5,10,20 3040:24 3041:3 3042:3 inadvertently 2969:13 incidences 2940:20 incident 3048:26	incorporate 2995:28 incorporated 2998:10 3002:2 incorporates 3002:24 incorporates 3002:24 incorrect 2975:28 3009:28 increase 2891:3,8 2896:7 2921:10 2984:13 3010:22 3014:16,28 increases 2989:2 incumbent 2984:7 incurred 2925:5 independent 2915:8 2916:21 2919:21 2920:6,8 2932:23 2942:25 2944:22	inspecting 2934:11 3063:21 3065:19  inspection 2919:1 3027:20,22 3030:21 3037:14,18 3038:4 3044:3,22 3052:9,22 3059:15 3061:4 3065:15,21 3070:20  inspections 3025:24 3026:23 3027:16,24,26 3028:11 3029:4,27 3030:27 3032:28 3033:1 3034:9,20,25 3036:19 3037:11,21,27 3038:7 3039:12,13,17, 23 3043:15 3044:11,12, 20,27 3045:2 3049:5 3053:18,23,25 3054:1, 21 3055:16,17 3056:12, 14,18,19,22 3057:19,23 3058:2,15,21 3059:12, 18,20,23 3060:2,17 3061:10,13,17,20,25,26	interrelated 3020:28 3021:4 interrupt 2992:26,27 3030:17 intervening 3018:27 intervenor 2963:2 intervenors 3073:13 introduced 2890:3 introduces 2891:4 introduction 3025:6 intuitive 3003:9 inventory 2892:14 2899:2 2955:27 investments 2946:14 Investor-owned
3045:11,16,18 implicit 3042:5 importance 2960:3 important 2919:24 2962:21 3016:25 3037:25 3045:6,8,13 3047:2,5 3048:4,7 3063:17 3075:9 impossible 2961:7 improperly 2984:12 improve 2982:24 2985:8 imputed 3032:15,20, 21,27 3033:5,10,20 3040:24 3041:3 3042:3 inadvertently 2969:13 incidences 2940:20	incorporate 2995:28 incorporated 2998:10 3002:2 incorporates 3002:24 incorporates 3002:24 incorrect 2975:28 3009:28 increase 2891:3,8 2896:7 2921:10 2984:13 3010:22 3014:16,28 increases 2989:2 incumbent 2984:7 incurred 2925:5 independent 2915:8 2916:21 2919:21 2920:6,8 2932:23 2942:25 2944:22 2990:24 2991:4 3007:3	inspecting 2934:11 3063:21 3065:19  inspection 2919:1 3027:20,22 3030:21 3037:14,18 3038:4 3044:3,22 3052:9,22 3059:15 3061:4 3065:15,21 3070:20  inspections 3025:24 3026:23 3027:16,24,26 3028:11 3029:4,27 3030:27 3032:28 3033:1 3034:9,20,25 3036:19 3037:11,21,27 3038:7 3039:12,13,17, 23 3043:15 3044:11,12, 20,27 3045:2 3049:5 3053:18,23,25 3054:1, 21 3055:16,17 3056:12, 14,18,19,22 3057:19,23 3058:2,15,21 3059:12, 18,20,23 3060:2,17	interrelated 3020:28 3021:4 interrupt 2992:26,27 3030:17 intervening 3018:27 intervenor 2963:2 intervenors 3073:13 introduced 2890:3 introduces 2891:4 introduction 3025:6 intuitive 3003:9 inventory 2892:14 2899:2 2955:27 investments 2946:14 Investor-owned 2985:3

Index: ignitions..involved

2983:10 3062:21 involvement 3058:24 irrespective 2902:6 **issuance** 3018:22 3019:3 issue 2898:13 2900:20, 21 2902:4 2904:9 2909:16 2912:23 2915:9 2916:22 2923:21 2925:6 2926:12 2927:21 2936:10 2939:8 2955:15 2958:9 2962:22 2970:23 2976:23 2977:7 2981:21 2996:28 3028:17 3046:7 **issued** 2991:18 issues 2892:11 2893:14 2900:2 2905:14 2927:7,13 3038:22 3060:10 3074:15 Item 2908:12 2910:2 items 2917:19 iteration 2903:9 2904:8 J-E-N-N-I-F-E-R 2964:6 **January** 2994:15 2996:2 3008:15,27 3012:1,13 3013:8 3014:3 **Jennifer** 2963:28 2964:5.25 **iob** 2981:19 3004:12,16 3020:19 jobs 3018:6 joining 3018:6 joint 3072:1 Judge 2887:4 2920:16

J

2941:15.22 2942:24

judgment 2889:19

2934:4,22 2970:11

judicial 2960:25 2961:3,23 2962:8,12, 16,19 **July** 2983:4,18,24 2984:27 3003:11,18

jumping 2973:21 **June** 2942:21

Κ

K-E-R-A-N-S 3051:11

Kerans 3050:23,26 3051:10 3052:3 3056:7 3066:22 3069:20 3070:3 3071:15,18

**key** 2896:2,13 2900:1 3063:15

kid 3005:26

kind 2913:22 2920:4 2929:4 2959:25 2977:20 2981:17 3000:28 3021:14 3049:1

knew 3001:11 3031:4 3064:15

knowing 3070:18

knowledge 2889:15 2970:7 2998:27 3000:6, 9.15 3011:6 3016:18 3019:15

L

**labor** 2891:7 2921:10 2938:20 2979:26 3022:20,26

lack 2902:2 2976:19

**lag** 2992:21,22 2995:23 2996:5,12,28 3000:3 3001:10,16 3018:21,28 3020:14,15

large 2913:24 2952:2 2957:1

largely 3058:25,26

larger 2896:17,18 3040:22

largest 2892:11 2896:6 last-minute 2894:17 Lastly 2943:27

late 2904:4 2953:27 2977:13 2983:24 3046:25

**lateness** 2977:18

**Lau** 2903:12 2907:11 2918:1,4,7 2920:16 2940:13,27 2941:1,15, 22 2942:24 2957:5,6 2993:9,17 3075:17 3076:26

laudable 3016:5

law 2887:4 2934:14

lawyer 3037:13

lay 2894:2

lead 3006:4 3014:10

**leads** 3061:15

Letter 2979:28 3011:26

level 2915:6 2985:25.27 2989:5,23,24 2990:6,7, 27 2991:9 2992:9,10 3004:26 3005:9 3007:19 3014:17 3016:10 3034:12,13 3043:8 3044:10

levels 2989:17 3020:26 3035:8 3057:8,9

lever 2985:26

licensed 2988:10

life 2948:11 2954:20 2988:17

likelihood 2937:26 2938:4 2939:15 3049:9 3070:12

limited 3004:20

**limiting** 3012:14

linear 2989:5,16,22 2990:5,26 2994:3 3007:20,23

lines 2897:12 2906:4 2910:7,25 2911:26 2914:28 2915:15 2917:13,21 2918:28

2919:27 2923:20 2924:3,11 2928:23 2937:7,20 2939:16 2941:24 2942:6 2946:13,20 2947:1 2949:15 2950:10 2987:14 3003:11,21 3006:17 3052:19,21 3053:1 3059:28

Index: involvement..Lirag

**Lipps** 3071:28 3072:10

**Lirag** 2887:4,15,20,28 2888:15,26 2890:9,17 2891:14,18,24,27 2892:20 2893:1,5,8 2894:21,27 2895:10,16, 23 2896:1 2900:6 2901:4 2903:2.27 2904:10,25 2905:5,11, 17 2912:24 2915:21,23 2916:4 2920:16,17 2923:23 2924:22 2926:6,13 2935:21 2941:2,6,10,16 2945:9, 11,15,25,28 2949:28 2951:2,5 2954:27 2955:2,8,11 2956:7,10 2957:5,7,11,13,19,25, 27 2958:7,22,27 2959:13,17,24 2960:17 2961:15 2962:10,24 2963:16,18 2964:2,11, 15,21,28 2965:2,24 2966:7,9 2967:14,16 2968:6 2970:15,18 2972:3,14,19 2973:3,8, 17,28 2974:5,26 2975:13,27 2976:6 2977:2 2978:9 2979:5, 7,12 2980:14,21 2986:8,10 2987:8,10 2989:11,13 2992:26 2997:5,7,24 2998:1,6, 18,20 3001:22 3008:7, 11,20,22 3011:14,17 3015:6 3021:22,24,27 3022:2,10,17,23,28 3023:9,21 3024:5,9,17, 21,26 3025:3 3027:5,7 3031:16 3033:14 3039:7 3041:13 3042:10,16,18,22,24,27 3045:26 3046:13 3047:19 3048:16,18 3049:18,21,27 3050:5, 10,12,20,22,28 3051:5,

10,18,20,27 3053:5,7 3056:6 3063:5,7 3064:19,27 3065:1,7 3069:8,10,21,23,25 3071:3,6,9,13 3073:11, 18,23,26 3074:2,22,27 3075:15,24 3076:2,10, 20,23,26

list 3072:16

listing 2953:21

lists 2898:20

lived 2954:19

living 2910:24 2911:19, 23 2912:1 2913:5,18,27 2915:14 2918:10 2919:22 2920:2 3007:25 3016:11

**loading** 2895:13 2898:5 2928:2,7,9,16, 21 2952:13 2959:10

**located** 2897:4 3064:22

**location** 3054:6 3055:1.2

locations 3027:27 3028:1,22 3029:6 3057:7 3059:17 3065:25 3068:6 3070:24

long 2914:10 2947:19 2964:11,13,19,20,26 2965:24.27 2966:5.12 2967:13 2968:9,10 2970:13,17 2973:13,20 2974:1,2,27 2976:4,7 2977:6,18 2978:11,13, 25 2979:1 2993:3,7 2997:10,11 3001:1 3012:24 3016:17 3021:18 3022:25 3024:18,20 3029:17,21, 22 3033:11 3036:12,15, 28 3038:26 3039:5 3042:22,23,28 3043:1,3 3046:11 3050:9 3051:27,28 3052:2 3053:9 3055:19.27 3056:10 3063:8,11 3064:21,24,28 3065:2 3066:4,12,14,16 3069:13,18 3071:4,5

3073:12,14 3074:7 3075:25

**Long's** 2976:1 2978:19

longer 2934:6 2954:20

longer-lived 2954:19, 24

looked 2908:27 2909:1 2913:4 2922:6 2983:16 2987:3,16 2991:6 2992:19 3001:15 3007:16 3021:7 3046:26 3068:7,10,11

lose 3004:23 3005:22

lost 3004:11

lot 2897:18 2938:18 2988:2 2991:15 3020:23 3047:13 3065:25 3068:21

loved 2897:15

low 2906:15,20,26 2907:2 2910:26 2937:26 2938:4 3020:27 3021:9 3042:8

lower 2925:14,17 2929:12 2981:26 3013:10 3014:26

lower-risk 3037:26

lowest 3057:2

**lunch** 2970:19 2971:2 2972:4 2980:17

## М

made 2897:28 2900:5, 11,19 2925:20 2926:8 2927:28 2951:17,21 2954:23 3059:17 3060:28 3069:6 3071:16

maintaining 2934:15 2935:10

**maintenance** 2917:9 2934:8 2935:3

**major** 2911:20 **majority** 3011:2

**make** 2889:11 2890:6, 11 2903:24,25 2922:10

2924:11 2934:26 2949:17 2969:3 2975:7

2977:12 2999:22

3000:19 3001:10 3003:9 3004:28

3006:15 3015:24

3016:17 3030:10

3035:10 3041:25 3044:14 3045:28

3057:1 3061:1 3072:21 3074:2

makes 2931:12

**making** 2906:18 2939:28 2944:25 2947:16 2950:20,26 2970:16 3016:14

manage 3067:21

management 2890:1 2895:8 2905:23 2908:23 2909:12 2916:26 2917:8 2920:1, 26 2939:3

manual 2953:2

**March** 2981:1 2983:9, 24 2996:3

marked 2888:9,11,13 2909:22 2916:2 2929:16 2964:27 2965:17,18,20,21,23 2966:1,14 2972:12 2980:5,6,8,9,11,12 2984:18 2986:14 2993:15 3000:23 3057:12

Market 2887:18 2964:8

**markings** 2963:23

mass 2950:23 2954:8

material 2943:24

materialize 3062:28

math 2929:5 2930:15 3037:13,16 3038:5 3044:13

**matter** 2997:13 3005:12

**matters** 2887:9,10 3005:19

**MBA** 2988:9

meaning 3003:28 3047:19

Index: list..midway

means 2904:12 2938:14 2948:8 3003:24

meant 3062:24 3065:26

**measured** 3032:14,19 3040:24 3042:2

Mechanical 2988:8

**medical** 3012:23

meet 2936:1.5.8

**memo** 2979:15 2984:22 3075:21

memorized 3068:21

memory 2943:1

memos 2962:13

mention 2962:28

mentioned 2938:10 2955:14 2999:7 3047:26

met 3041:23

method 3055:4

mic 2907:12

Michael 3050:26 3051:10

Middlekauff 2891:19, 20,26 2892:26 2893:3, 7,10 2897:28 2900:4,9 2901:10 2903:20,28 2905:3,7,8,18,20 2907:11,13 2912:17 2913:8 2915:19 2916:4, 5 2917:4 2918:3 2920:17,19 2924:9,24 2925:25 2926:18 2932:9 2933:9,15 2935:23 2940:10,15 2941:4,12 2945:15,17, 20 2949:26 2957:19,22 2959:6,13,15,26 2963:17

**Middlekauff's** 2895:24 2946:2

midway 3058:27

mile 2925:8,16 2928:25

2929:2 2932:2,6 2934:19,20 miles 2891:10 2929:1 2955:21 million 2956:25.26 2969:25,27 3033:8,18 3034:3,14,18,23 3035:16,19,27 3036:11, 23 3037:3,6,8 3040:2, 19 3043:9,14,24 3049:24 mind 2906:26,28 2913:1,9,20 2921:5 2931:9 2933:28 2935:14,19,26 2944:25 2993:6 2999:21 mindful 3016:10 minus 2948:12 2958:17 minute 2901:2 2920:25 2932:11 2996:13 2997:4 minutes 2890:6 2892:17 3008:10 3071:20 missed 2977:11 missing 2975:28 **misstates** 2924:20 2947:17 mistakes 2977:8 misunderstood 3036:7 **mitigate** 2906:25 2915:18 2982:11 3013:17 mitigating 2938:14 mitigation 2910:27 2911:8,14 2931:1 2938:22 model 3020:22 **Moderate** 3017:16 moderately 3007:9,18 moment 2901:21 2945:7 2961:8 2988:2 3042:15 3048:14

3056:24

Monday 2983:1 3074:3

month 2994:13,14
 3004:25,27 3005:2,4,8,
 9 3007:25,26

month's 2995:15

monthly 2994:5,21,25,
 26 2995:5,25,27
 3000:26 3001:8 3002:1,
 18,24,28 3003:3,4,26

months 2900:16
 2981:2 2987:19 2996:6,
 24,27 2997:2 3004:13
 3005:23 3006:2
 3020:16

morning 2887:5 2958:23,24,25,26 3050:24

mother-in-law 3005:28

**motion** 2901:19 2979:3 3021:27 3023:2 3073:1

move 2891:28 2892:2, 23 2917:24 2925:26 2926:4 2927:12 2935:21 2957:8,19,23 2972:14 2979:2,3 3024:6,18 3050:7 3066:5 3071:6 3072:24

**moved** 2892:19 2957:10 3021:25 3024:20 3050:9,13 3071:8,14 3074:11

**moving** 2887:10 2927:15 3040:15 3071:21 3075:9,15

multi-year 2956:28

**multiple** 2928:12 3020:24

Ν

**nature** 2898:14

**necessarily** 3058:28 3059:13,15

needed 2900:11,22 2921:25 2922:3 2936:15 3032:4 3061:13,18 neighborhood 2956:25

**net** 2946:22,27,28 2947:26 2948:2 2954:17

**Network** 2964:8

newly 2952:3 2953:5

nice 3020:19

**nominal** 2921:12,20 2955:19

non-care 2994:27

non-exempt 2908:20 2909:2 2930:20,26 2931:13 2933:9,13,15, 20 2934:21 2936:22 2937:22,25 2938:3,8

non-uta 3037:18 3044:11,21 3052:9,18 3053:13,25 3054:13 3058:14,20 3061:10,13, 16,26,28 3063:28 3064:6 3066:9 3070:4

**non-utas** 3052:13 3064:16,21,25 3065:8

**non-wood** 2922:2,8,10 2943:15,18,20

none-to-weak 2987:23 3017:3

**nonexempt** 2908:3,12 2931:10

nonpayment 2984:14 3012:22

nonresponsive 2925:27

noon 3072:15

**normal** 2960:10 3022:28 3065:20

**note** 2889:26 2894:7 3062:22

**noted** 3062:9,24 3066:6 3070:15

notes 3003:22

notice 2910:12 2917:13,15 2931:21 2951:9 2960:25 2961:3, 23 2962:8,12,16,19 3019:11 3022:27

Index: mile..objection

**noticed** 3022:22 3027:25

notify 3072:15

noting 3066:2

**November** 2887:8 3071:23 3072:7,8,15 3073:8,16,26 3074:3,6, 10,28 3075:20

number 2894:24,25

2898:21 2906:8,10 2908:6,14 2911:2,3 2919:5 2921:2 2923:2 2955:26 2987:23 2990:28 2995:16 2996:16 3003:25 3006:1 3007:14 3010:25 3013:9 3020:13 3029:12 3030:2 3036:13 3039:20 3057:22 3058:1,8 3068:5 3076:14,15

numbers 2904:19 2905:12 2911:1 2915:3 2917:16 2940:15,22 2942:10 2944:19 2945:4 2967:1 2977:24 2978:2 2997:20 3014:25 3041:28 3066:24,26 3067:3,8,9, 10,19,21,25 3068:1,23

numerator 2919:1 numerical 2992:9

0

O&m 2932:22

**object** 2899:7 2924:19 2973:1,16

**objecting** 2893:1,5 2978:14 3046:22

objection 2893:9 2912:12 2938:27 2947:15 2949:25 2974:2,5,7,28 2976:2,7 2978:14 2997:10,14 2998:1 3022:2,9 3033:11 3038:26 3045:20 3046:28

3050:10 3055:18 3064:11 3071:9 objectionable 2894:18 objections 2892:25 2957:11,25 2973:4 2974:26 2978:19 2979:5 3022:18 3024:24 objects 3022:4,5,8 obligation 2984:7 observation 2890:6 obtain 2896:21.25 2898:2 2899:14 2901:5 **obtained** 2898:19 occasion 3021:3 occur 2932:21 2998:15 3059:19 3072:18 occurred 2948:13 2999:13 October 2887:2 2983:1 2995:3 3002:6 3058:10 3066:19 3073:20 3076:18 offered 2960:11 offering 2982:1,9 offhand 2942:17 official 3022:27 officially 3022:22 **OIR** 2979:15 2982:19, 21 2983:4,11,15,20 2984:1,21 2985:1,13,20 3011:20 3013:21 3014:7 one-billion-dollar 2891:8

one-minute 3076:7 one-third 2925:13 3049:28 ongoing 2899:16 2960:18 3005:3,10,15, 19 3014:7 open 2895:20 opening 3074:6,8,27 operation 2937:25operational 2931:4 2946:15

opinion 2891:24 2914:9,12 2927:22 2932:28 2989:9 2992:14 3015:20 3042:12 3055:7

**opinions** 2889:17 2970:9

**opportunity** 2893:13, 16 2894:20 2961:13 2975:7 2977:9,11,19 3008:26 3010:15

**oppose** 2922:1 2927:16 2936:19 2938:13,18,25 2939:22

**opposed** 2904:27 2952:10 3019:8,17 3055:6

opposes 2936:21

order 2900:2 2984:28 3031:27 3062:24 3065:18 3070:17

ordinarily 2961:21

original 2948:11 2969:18 2972:21 2987:26 2994:3 3010:23 3016:28 3025:18 3029:12,19 3059:3 3061:19,23 3063:1 3065:3,6 3070:22

originally 2947:9 3025:24 3045:1 3049:15 3060:25 3075:2,20

Ouborg 2972:15,18,20 2973:13,22,23 2974:8 2975:1,3,13,22 2977:17,22 2993:4 2997:12,25,26 3024:6, 10,12 3025:4 3027:3,8, 9 3029:18 3031:14,17 3033:15 3039:2,8 3041:20 3042:14,20 3043:7 3045:20 3046:13,14,16 3047:20 3048:14,20 3051:25,26 3055:18,21 3064:11 3066:10,13 3069:7,13, 21,22,27 3070:2 3071:1,6,8

**outcome** 3015:28 3016:2 3039:26 3040:5

**outcomes** 2982:25 3018:10

outlined 2911:22 3060:26

outstanding 2995:21 2999:9,11,17,26 3000:12

**overage** 3046:2

overhang 2906:9 2907:22 2908:28 2916:13 2917:8

overhead 2890:28 2927:5 2936:13

overloading 2902:5

overruns 2899:26

overview 2890:20

Р

**P-FACTOR** 3021:11

**p.m.** 2970:20 2971:2,4, 5 2972:1

PA 3073:24

package 3037:28

**packages** 2982:12

pact 3039:21

pages 2897:22 2909:6, 14,20,25 2910:9,10 2963:24 2973:24 2974:19,21 2975:2,4,25 2976:18,26 2978:1 2981:23 3012:7 3026:8 3031:18,19

**paid** 3046:2,3

paragraph 2923:20 2981:28

parameters 3047:13

parcel 3037:22

pardon 2894:23

**parental** 3074:19

Index: objectionable..percent

part 2896:28 2905:9,10, 25 2907:21 2909:11 2913:24 2921:25 2922:2 2927:4,17 2928:10,16 2929:20 2930:20 2936:12,22,26 2943:9 2972:24 2975:8 2984:6,11 2985:14,22 3009:9 3010:4 3037:22 3038:20 3040:12 3048:27 3065:7 3070:14

partially 2932:27 participation 2983:6

**parties** 2891:15 2982:22 3010:3 3072:14,23

**party** 2960:14,19,21 2963:4

passed 2984:8

past 3040:11

pause 3024:5,17

pay 2931:3 2950:16 2999:2,20,26 3000:13, 16 3005:5 3006:3 3007:26 3018:26 3025:26 3046:6,8 3047:22

**paying** 2949:22 2950:8 2951:27

payment 2992:23 2996:16,21,22,23 2998:17 3001:11 3012:25 3020:12

penalize 2954:14

pending 2887:9 2895:20,21 2946:3 2959:1 2988:22

**people** 3005:13 3016:12 3020:12,13 3023:20

**percent** 2891:2 2906:5, 8,10,15,19,25 2907:1, 25,26 2908:6,13,14,16, 17,21 2910:13,19 2911:23,25 2913:20 2918:9,13,14,15,27

2919:8,10 2924:1 2937:9 2940:17,18,20, 21 2941:28 2942:1,6 2944:2,7 2948:10 2996:23,26 3014:21,23 3061:5 percentage 2896:18, 19 2906:24 2913:9,14, 19,22 2941:23 2977:25 percentages 2898:26, 28 2913:12 3012:16 perform 2912:22,25 2991:3,7 3001:7 3018:11 3025:17,25 3032:13 3033:4 3042:7 3057:19 3058:20

performance 3040:12 performed 2915:8 2928:2 2959:11 2988:14 2990:24 2991:9 2992:1 3002:11 3018:13 3027:21 3030:28 3034:8 3037:24 3040:1,23 3041:4 3042:1 3045:14 3046:1 3048:9 3049:11

3065:18 3070:9

performing 2932:1 3029:26 3030:9 3037:26 3042:8

3053:18,22 3054:1

3068:27

period 2919:4 2942:18 2983:28 2990:9,14,15, 16,20 2992:7 3000:3 3001:3,10 3005:23 3006:2 3010:26 3013:4 3043:21 3045:3,15,19 3048:10 3057:20 3058:22

periods 2942:16

person 3067:25

personal 3000:14

personally 2939:27

pertain 2890:14 2972:17,19

pertaining 2887:26 2964:23

**pertains** 3024:21

**PG&E** 2888:4,7,15 2890:23 2891:6,11,16 2892:21,22 2893:21,22 2895:12 2896:3,12,16, 21,25 2897:15,17,25 2898:4,8,15,23 2899:15,22 2900:18 2901:7,28 2902:7,8,14, 20,27 2903:4 2904:21 2905:27 2908:19,24 2911:5 2912:4,10 2913:3,11,23,24,28 2915:16 2919:7,12 2922:21 2923:2,10 2925:19,20 2926:20,23, 25 2927:12,14 2928:12, 19 2929:11 2932:1 2933:20 2934:2,10,13, 18,26 2935:7,27 2936:13,23 2940:3,24, 26 2941:26 2942:8,18 2943:6,8,11,14,22 2944:1,8,14 2945:4,5, 22 2954:14,21,22 2955:23 2956:3,14,15, 20 2959:9,10,21,27 2960:8 2965:16 2976:10 2977:15,26 2979:28 2980:27 2981:8 2982:10 2991:19,23 2992:4 2993:10,12 2994:5,9, 11,24 2995:4 2997:23 2999:6 3001:28 3002:11 3004:3,18,26 3005:5,9 3006:3,12 3008:14 3010:2 3013:15,17,24 3014:2, 14 3015:11 3016:3 3017:3 3019:15,26 3025:15,22 3026:11 3027:11,13,25,27 3028:4,6,10,17,20,24, 26 3029:5 3030:26 3031:4,24,26 3032:13 3033:3,6,7,17,21 3034:8,14 3035:15,28 3036:6 3039:28 3040:23 3041:28 3045:5,7,16,18 3046:19,22 3047:24 3048:5,12,22 3049:11, 14 3050:1.26 3052:15 3053:16,23 3056:11

3057:18 3058:19

3059:22 3061:9 3064:15 3069:14 3070:4,6,8 3072:3,4,10, 14,15 3073:12 3074:23 3076:17

**PG&E's** 2888:18 2889:28 2890:1,25 2892:13,22 2893:6 2896:10 2898:26 2899:4 2904:20,24 2909:11 2910:13,15,18 2911:9,21 2912:19 2915:28 2916:12,15 2917:6 2918:23 2922:24 2923:16,28 2924:4,27 2925:4,6 2926:28 2927:4,9 2928:24,28 2929:7 2934:21 2936:1,12 2938:11,20 2940:23 2941:25 2942:2,7,20 2943:19 2946:13 2955:20,27 2956:21,28 2962:25 2963:1 2969:18 2972:21,24 2976:16,19 2977:4 2978:25 2979:17 2986:6,14 2987:1,14, 21,26 2990:27 2991:21 2993:21 2994:3,21 2995:6.17 2996:14 2997:17 2999:1 3000:24 3001:7,15 3002:1,19 3003:26 3008:5,27 3010:16,20, 27 3011:28 3014:19,25 3016:28 3017:6,15 3019:25 3020:3,4 3025:8 3026:2,4 3030:1,6 3031:7 3033:12 3034:18 3035:7 3038:24 3041:26 3042:5 3044:28 3047:7 3055:15 3057:13 3061:19,23 3063:13 3066:8 3072:27

PG&E-03 2965:9,14 2972:8,9,22 3052:28

phase 2979:15 2984:22 2985:16 3010:5 3014:7

piece 2898:12 2931:26 2933:5,21 2934:21,23 2935:28 2936:7 2960:3 2985:22

Index: percentage..pole

**place** 3013:9 3014:4 3015:21 3027:15

**plan** 2946:27,28 2947:26 2969:18 2996:22 2998:17 2999:3,20,27 3000:13, 17 3012:25 3018:26 3027:28 3047:3,4 3060:25,27 3061:19,24 3062:4,14,18,21 3063:19 3065:23 3066:8 3070:22

planned 3025:25 3045:1 3046:25 3049:15

**planning** 3003:13 3007:7 3020:18

plans 2960:20 2992:23 2996:16,21,23 3001:11 3020:12

**plant** 2947:7,8 2948:1, 2,3,4 2951:22 2952:24

plausible 2998:26

pleasure 2981:16

play 2970:26

point 2894:1 2906:4,18 2910:17 2923:19 2924:10 2935:6,12 2950:10 2959:9 2977:13 2978:13 2986:4 3006:28 3007:6 3008:2 3010:28 3023:14 3026:20 3035:6

pointed 2920:28 3076:17

**points** 2895:26 2897:27 2900:5,7 2901:13 2981:28 2982:5,8

**pole** 2895:13 2897:13, 14 2898:5,27 2901:6 2917:25 2922:3,18,22, 27 2923:4,12 2924:7,14 2925:8,18 2927:2,19,25 2928:2,4,6,9,16,21,24 2929:6,10,21 2930:11, 17 2931:17 2947:10,11,

12,13 2948:5,6,22 2949:24 2950:8,17 2951:25 2952:13,14 2955:27 2956:3 2962:28 pole-loading 2902:16, 26 2904:17,19,22 2943:7,8 2945:22 poles 2896:19,20,22, 23,27 2897:4,7,8,19 2898:7,11,14,21,22,25 2899:6 2902:18 2921:25 2922:2,8,10 2923:12 2924:28 2925:11,13,19,20 2926:11,25 2927:8,13, 17 2928:13 2929:2,12 2930:5 2943:15,16,18, 20,22,25 2949:23 2950:8,16,23 2951:27 2952:15,21 2953:25 2955:17,21,26 2956:1, 4,14,16,18,19,26 2957:2 **policies** 2982:23 2985:7 3014:9 policy 2981:1 3003:13 3007:2.7 3020:18 **pool** 3018:17 poor 2932:10 population 3070:11,14 portion 2893:2 2894:28 2909:8 2935:4 2947:6 2959:28 2960:2 2963:18 3023:22 3024:22 portions 2927:6 pose 2919:26 2920:4 3052:14 3058:19 posed 2913:4 2924:8

3056:25

poses 2937:26 2938:3 position 2925:7 2931:22 2932:4,15 2934:25 2936:6 3016:28 3054:19 3055:15 possibility 2961:19

post-test-year 3035:28

potential 2902:5 2910:23,27 3014:8

potentially 3016:16 3074:16

power 2910:25 2915:15 2927:19

**PPD** 2979:21 3003:22 3006:18,24

practice 2950:22 2951:1,8 2953:8,12 3054:7

**practices** 3013:19 pre-marked 2972:9

pre-revisions 2981:24

preceding 2938:7

precise 3020:15

precisely 2974:19 3008:2

**predict** 3018:17

predictive 3003:27 3007:9 3020:26 3021:10,16

predictor 3007:3

preemptive 2930:28 2931:2

prefer 3075:8

prejudicial 2893:21,22

premarked 3076:11

premature 2946:17

**prepare** 2995:9

**prepared** 2887:22 2889:7 2964:25 2966:15 2968:13 2978:24 2980:18 3018:14 3051:6 3062:23

preparing 2928:10 2983:17 2984:4

prerogative 2899:11

present 2915:12 2961:24 2989:9 2991:11 2992:2 3059:1 presented 2890:24 2903:13 2962:4 2963:9 2976:10 2994:5,12 3009:17

presenting 2963:10

presents 3022:20

pressure 2971:1

presume 2899:11,20

**presumed** 2897:20

presuming 2999:10

pretty 2948:21 2953:3 3036:1

previous 2902:11 2923:19 2995:20 2999:8,11,16 3040:3 3045:24 3057:24 3059:27 3067:4

previously 3026:28 3032:1 3057:12

**primarily** 2900:19 2992:11

**primary** 2943:19 2946:21 2950:14 2989:6

principle 3038:15,19,

**principles** 3031:11,20 3038:14 3039:27 3040:6 3041:1,7

**printout** 2898:19

prior 2977:4 2999:3 3002:1 3027:16 3029:1 3048:9

probative 2899:3,15 2900:1

probe 2910:22 2911:8

probing 2911:14

**problem** 2902:1 2976:16,24 2977:18 3004:19.24 3005:23 3043:27

**problems** 2934:11

procedure 3027:15 3028:28 3029:3

**proceed** 2888:26 2891:18 2905:6 2946:7 2964:18 2970:23 2980:14 2986:11 3008:11 3060:12

Index: pole-loading..progress

proceeding 2889:22 2914:20 2919:17,18 2960:20,22 2961:9 2962:4 2970:28 2984:16 2985:6 3015:26 3016:23 3041:11 3051:23 3058:26 3071:21 3072:25,27

proceedings 2960:26, 27 2961:2 3014:13 3016:20

process 3027:22 3040:15 3065:21

**processes** 2982:25 2985:9

**produced** 2898:18 2994:22

professional 2889:19 2934:3,22 2970:10

proffered 2975:1

program 2890:28 2895:5 2898:8 2909:12 2910:13,23 2912:2 2913:23 2916:14 2917:8 2921:26 2926:28 2927:18 2932:24 2933:28 2934:2,28 2935:3,12 2936:13,22,26 2952:2, 14 2954:10 2955:18 2956:2,3,28 2969:2,8 3018:13 3025:9 3026:12,13 3027:18,20 3029:25 3035:24 3038:18,28 3039:4,10, 28 3040:10 3047:7,10 3054:2 3058:25

program's 3027:18

programs 2913:12 2919:28 2932:22 2933:2 2934:9 3016:6

**progress** 2903:17 3059:28 3061:3

prohibited 3004:19 2943:11 2945:22 qualify 2932:7 2998:16 2946:4 2959:10 2963:5 3012:22 Project 3029:20 2964:3 2994:6 3025:9 question 2888:16,19 projected 3058:11 3032:4 3038:24 **R-SOUARED** 2994:24 2894:9,11 2899:16 3066:20 3045:26 3021:5,9 2902:24 2903:3 propagate 3054:28 **provided** 2894:15 2904:16 2906:12 R.12-06-013 3010:4 2896:13 2897:5,11,16, 2907:9,17 2909:22,27 3055:2 R.18-07-005 2986:23 17 2898:24,25 2901:12 2911:15 2912:5,16,21 proper 2926:17 2963:9, 2919:7,12 2940:24,26 2916:1 2923:8 2926:5 radius 2931:16 12 2975:6,14 2991:5 3001:28 3002:5, 2928:15 2940:14 raise 2905:13 2963:26 2941:15 2945:17 proportion 3000:10 9,14 3010:2,7 3023:16 3027:11 3031:11 2946:2,3 2948:4 2956:9 raised 2900:21 2901:20 proposal 2913:10,15, 3033:22 3067:8 2959:8 2979:18 17 2914:15 2915:15 **RAMP** 3072:20,21,27 2983:21 2988:22 providing 2967:22 2917:7.10 2921:16 2991:18 2992:5 2999:7, ramp-up 3040:11 3069:11 2925:16,17 2933:22,25 23 3000:21 3005:6 2944:23 2947:24 randomly 3023:4 **Public** 2931:15 2933:3 3006:6 3017:5 3019:12, 2949:8 2950:14 13 3020:9 3033:16 2937:24 rate 2896:7 2899:26 2955:20,22 2957:1 3039:6 3042:11 2946:24 2949:7 2969:14,16 3035:15 published 3027:14 3043:13 3047:18 2952:23 2954:7,15 3036:8,9 3039:24 3028:27,28 3049:21 3052:19 2960:18 2989:2 3007:1, 3040:7,9 3044:11,26 3055:5,13,22,26 **pull** 3053:3 3067:21 4 3014:20.25.27 3049:23 3050:3 3065:4 3056:1,7 3058:17 3031:26 3035:23 3072:1 3073:5 pulled 3067:25 3061:7,16,22 3063:2 3040:3 3043:21 3045:3 3064:5 3065:2 3069:27 proposals 2908:24 purpose 2910:21 3046:4,8,24 3049:1 3071:2,3 2911:7 2948:26 3052:23 3053:11,26 propose 2914:5 3034:7 2985:12 2997:20.22 **question's** 3064:12 3054:3,4,9 3055:9,19 **proposed** 2895:22 3072:9 3056:14,17 3058:26 **Question-answer** 2912:4 2916:16 3059:5,9 3061:2,4 **purposes** 2947:28 3052:7 2919:16 2946:14 3062:25 2990:17 3036:21 2955:18,23 2984:13 questioned 2995:14 3072:19 rate-case 3046:2,6 2989:2 3034:11,13 3023:15 3044:9,10 3074:4 **pursuant** 2931:14 ratemaking 3035:21 questioning 2920:20 3075:4,10,19 2932:23 2985:1 3036:1,4 3038:22 2935:22 2992:27 **proposes** 2914:5 **pursue** 2903:8 ratepayer 3031:28 **questions** 2894:1,4 proposing 2919:15,17 push 3006:5 ratepayers 2931:3 2918:2,24 2931:7 2936:14 3038:27 2949:22 2950:7,15 2939:3 2940:11,12 **pushed** 3046:5 3043:14,19 3044:21,22 2951:26 3025:26 2941:11 2942:23 3063:14 put 2897:25 2913:11 2943:27 2955:4,7,10 3036:17 3037:27 2914:15 2925:28 3046:6 3047:22 3048:5 2956:6 2957:4,6 proposition 3054:12 2932:16 2933:23 3060:4 2995:10,17 3015:5 propounded 2929:17 2934:24 2936:26 3018:21 3019:22 rates 2984:14 2985:2, 2943:24 3021:21 3043:5,13 protection 3012:12,28 25,28 2989:4,6,17,18, 3046:11 3050:6 23 2990:6,27 2991:21 protections 3011:22. 3069:20 Q 3010:3 3027:25 27 3012:5 3013:8 3048:25 3053:12,15 quick 2940:13 3014:1,11 qualification 2997:25 3054:13,20 3073:1 quickly 3044:13 protocols 2995:18 qualifications 2967:27 re-do 2904:3 quote 2906:15 2989:18 **provide** 2887:15 2968:2 2980:28 2988:7 reach 2903:23 2992:16 2892:17 2897:18 3051:24 **quoting** 3044:2 2898:6,9 2902:7,17 **reaches** 2912:3

Index: prohibited..read

R

read 2949:14 2951:19

qualified 2968:6

2916:19 2919:13

2923:25 2928:13

2984:24 3003:17 3025:14 3027:12 3028:24 3032:12 3036:5 reads 2908:19 ready 2903:18 2970:14 3021:25 3024:18 3042:22 3050:7 3051:25 realized 2902:19 reason 2893:10 2910:16 2923:14 2924:26 2929:9 2969:10 3006:11 3009:10 3041:9 3048:22 3054:23 3061:9 reasonable 2899:20, 28 2906:24 3039:26 3040:4 3041:19 3042:6, 7 3045:12 reasonableness 2891:12 3040:17 3041:12.18 3044:25 reasons 2892:27 2991:16 3004:3 3009:26 3074:15 rebuilt 2932:6

rebuttal 2888:7 2890:2, 26 2891:4,16 2895:14 2896:12,15,16 2898:9 2899:22 2900:13,16,17, 25 2904:20 2938:11 2976:10,12,15,16,19, 22,26,27,28 2977:10,23 2986:6,15 2993:21,23, 27 2994:11,19 2995:1,6 2997:17 3000:25 3001:7,16,21,24 3002:19 3008:5,27 3010:16,17,20,21,27 3017:6 3025:15 3072:4, 11

recall 2914:17 2999:9, 10 3015:10 3016:26 3017:4,5,19,26 3018:20 3019:4.21 3020:5 3044:3 3061:23

received 2892:6 2925:22 2957:14,15,17, 28 2958:1,3,5 2973:10, 11,18 2974:3,6 2979:8, 10 2991:23 2993:23 2995:20 2997:27 2999:15 3001:7 3010:16 3022:12,13,15 3023:7 3024:1,2,27 3025:1 3036:19 3050:17,18 3071:11

receiving 3000:24 3060:4

recent 2989:25 2990:1, 13 3040:11

recently 3026:4,5

recess 2941:9 2971:4 2993:8 3011:16 3024:8 3042:26

reckoning 3056:12

recognize 2938:26 3001:27 3023:13

recognizes 2982:10

recollection 2952:19 3015:18

recommend 2915:1.3

recommendation 2921:1 2939:6,11 2946:21 2950:26 2951:28 2954:13,21,23 3034:19 3035:27 3038:6 3039:3,10 3043:12

recommending 3037:2,11 3038:2 3039:14

reconnected 3011:3

reconnection 2982:24 2985:8

reconnections 2985:20 2986:22

reconsideration 3014:4

record 2887:5 2892:1, 21,24,28 2902:12 2915:21,22,24,25 2926:1 2941:8,11 2945:7,9,10,12,25,27 2946:1 2947:23 2951:3, 4,5 2954:25,28 2955:1,

3,25 2957:9,14,21,24, 28 2958:20.21.23 2959:7 2961:14,21 2962:21 2964:13,14,16, 28 2965:1,2 2966:5,7,8, 9 2967:13,14,15,17,18 2970:15 2971:3 2972:3 2973:2,10,19,27 2974:6,23 2975:10 2978:8 2979:2,3,9 2984:15 2986:8,9,11 2987:8,9 2989:11,12,14 2993:2,9,10 2997:4,5,6, 8 2998:3,4,5,7,18,19,21 3008:20,21,23 3011:15, 17 3021:25,28 3024:7, 9,19,28 3025:10 3027:5,6,8 3036:13 3042:15,17,19,25,27 3048:15,16,17,19 3050:8,14,20,21,23 3051:2,18,19,20,22 3053:5,6,8 3063:5,6,8 3069:7,8,9,10,23,24,26 3071:7,15 3072:25 3076:9

recorded 2946:22,27, 28 2947:26 2948:2 3012:15 3058:10

records 3027:21 3029:26 3076:21

recovery 2950:22

recross 2945:16 3021:23 3046:13

**RECROSS-EXAMINATION** 2945:19 2956:11

redacted 3069:15

redirect 2941:7,11,18 2945:14 2955:8,12 3015:8 3043:2 3046:15 3069:21,26 3070:1 3071:1

redline 2965:6 2993:14 3009:6

redlines 3009:2

reduce 2913:11 2982:23 2985:7

reduced 2968:27 2969:1 3049:28

reduces 2951:22,24

Index: reads..refresh

reducing 2890:27 3016:1 3056:28 3059:15 3060:3

reduction 2906:5.16. 19.24 2908:7 2910:12. 19,23 2911:5,17 2912:7,9,14,20,22,25 2913:2,6,7,13,15 2914:1 2915:11 2916:11 2944:2,23,28 3049:14,24 3050:2 3052:8 3057:8 3059:19 3060:5,7,12

refer 2918:12 2975:25 3023:19.24 3026:27 3027:27 3033:24

reference 2909:21,24, 26 2928:23 2950:28 2968:20 3010:1 3031:11 3032:24 3047:17

referenced 2908:14 2972:25 3006:25 3053:11 3062:4

references 2894:10

referencing 2975:3 2983:19

referred 2907:26 3017:9 3049:4

referring 2894:26 2933:16 2940:16 2962:17 2999:18 3009:5 3012:7 3032:20 3033:28 3064:21 3068:18 3076:8,13

refers 2910:3 2974:14 3017:13 3026:22 3032:8 3049:4

refinement 3027:19

reflect 2937:1 2970:10

reflected 2999:1

**reflects** 3002:28 **Reform** 2964:8

refound 2920:20

refresh 2943:1

relocation 2927:16

refuse 2959:10 **rely** 3048:5 2934:23 2935:15,17 requested 2897:19 2948:1 2955:17 2956:1 3032:3,8 3041:27 regard 2891:10 relying 2963:1,2 3067:11 replaced-asset regions 3068:14 remain 3014:3 2946:17 requesting 3034:18 remainder 2964:17 **regression** 2987:2,15 replacement 2908:13, **requests** 2902:11 3008:8 3065:14 2988:3,13,18 2990:24 20 2917:26 2921:24,25 2918:21 3051:9 3066:21 2991:4,7,10,28 2994:4, 2922:3 2923:4 2927:2 22 2995:5,26 3000:27 required 2924:7 **remained** 3004:12 2928:24 2930:17,28 3001:8 3002:1.10 2936:3 2938:8 3014:2 2931:2 2933:27 3017:21 3018:1,4,13 remaining 3035:1 2936:21 2940:19 requirement 3015:1 3019:25 3020:4,8,21 3065:11 3070:14,24 2947:4 2948:12 3050:1 3071:26 3021:2 3076:3 2949:10,16,19 2955:15, requirements 2978:27 regressions 2988:5 18,19 2956:3 remains 3015:1 3038:21 3070:10 regular 2960:7 replacements requires 2933:26 2922:19,22,27 2924:7, **remember** 2961:10 regulations 2932:23 3041:17 15 2929:21 2930:11 2934:14 2937:24 remembering 3056:26 research 2920:12 replaces 2929:12 relate 2888:2 2973:25 reminded 2962:24 residential 2979:22 2974:11 2975:5 2977:1 replacing 2922:1,7 reminders 3071:21 3003:13 3010:3 2929:1 2935:10 3020:23 3012:14,21 3013:1 2943:15 removal 2909:3,10,16 **related** 2976:27 resiliency 2943:21 2910:3,24 2911:12 reply 3074:11,28 2977:15 3004:7 3025:7 2912:19,23 2913:25 3060:26 resistant 2937:14 2915:4,6,9 2917:10,18 report 2996:15 relates 2888:2 2904:25 3003:12,17 3004:1 resolution 2903:18 2918:5 2919:19 2921:2 3006:18,25,27 3007:8 2969:17 2975:11,12 2939:8 2940:5 2943:28 2993:5 3008:1,16,28 3009:5, relating 2901:8 removals 2909:9 **resolves** 2914:24 15,20 3011:7,8,11 2926:15 2963:3,19 3020:18 3072:20,21,22 remove 2915:16 resort 2903:1 2974:9 3014:11 2916:14 2936:3 reporter 2970:25 **resources** 2931:15 **relation** 2940:14 2939:12 2944:24 3051:9 2933:3 2937:24 3047:8 2946:22 2949:7 relationship 2987:4,17 3073:13 **reporters** 2958:13 2997:13 2989:3,28 2994:7 respect 2897:27 2995:26 3007:20 represent 2889:18 **removed** 2914:3 2898:16 3032:6,11 2930:4 2955:26 3006:9 2919:24,26,27 2920:3 **relative** 2899:5,16 3039:11,13 2939:17.22.23 2977:26 3040:11,14 representation 2998:2 3009:10,14,25 respective 3012:13,16 2893:25 relaxed 2960:6 **removing** 2969:15 respond 2895:26 representations relevant 2888:7 2900:5,12,22 2901:3,27 3032:4 repeat 2917:2 3051:1 2892:10 2933:1,27 2904:13 2973:5 3056:6 3061:21 representing 2983:3 2984:6 2974:25 repeatedly 2898:4 reproduce 2902:21 Reliability 2895:5 responded 2901:16 **rephrase** 2924:23 2972:25 reliable 3032:5 request 2888:4,5,16,19 3033:15 3047:18 2893:14.17 2895:1 3038:24 response 2888:4,5,15, 2898:17 2902:13 replace 2896:20 19 2892:5,23 2893:2,6 relied 2907:8 3008:17 2898:7 2925:7 2931:21 2906:11 2915:28 2894:13,22 2895:1,23 relief 2993:1 2936:14 2946:14 2916:7,10 2925:22 2896:13 2897:23 2947:11 2949:28 2929:17,20,26 2945:23 2898:2,19,26 2900:27 relies 2962:25 2952:3 2955:20 2957:1 2946:6 2959:2,5,8 2901:4 2904:2,6,7,15, 2979:18 2991:18.24 relocating 2927:6 24 2907:7,18 2908:9 replaced 2925:14 3022:27 3027:12 2912:11,19,20 2915:28

Index: refuse..response

3028:6 3042:5 3074:8

2916:8,20,23 2926:2

2927:26 2930:27

2931:23,28 2932:20

2943:18 2944:26 2969:12 2975:19 rules 2960:6,7 2982:23 3075:4,12,18 2957:12 2959:7,12,28 3002:24 3036:26 2985:6 scheduled 3072:6 3060:27 3065:24 2963:19,20 2973:7 ruling 2903:6,14,24 3075:21 2979:6,17 2991:24 3071:28 2959:22 2961:27 3001:28 3022:17 schedules 3074:19 revising 2975:14 3074:10 3023:11 3024:25 school 2988:15 3027:11 3028:6,24 **right-most** 3002:13 rulings 2962:12 3018:15 3031:7 3043:12 risk 2903:5,13 2906:5, run 2903:13 2931:23 3050:11 3057:13,14 **scope** 2890:28 2899:23 16.19.24 2908:6 3000:26 3003:8 3071:10 2968:28 2969:1 2910:12,19,23,26 running 2959:26 3045:21 **responses** 3033:22 2911:5,8,13,17,21 2912:1,6,8,13,20,22,25 rural 2929:13 scoping 2962:12 responsive 2889:27 2913:2,4,6,7,11,13,14, 2979:15 2984:22 rest 3058:12 3062:15 18,27,28 2915:10,18 3074:10 3075:21 S 2916:11 2919:22,26 restate 3059:26 search 2945:26 2946:5 2920:4,15 2927:8 safe 3032:5 3038:24 restrictions 3014:11 2931:1 2935:6 2937:2 **section** 2909:19 2938:15.22 2940:17 2984:11 2986:26 safety 2890:27 2895:5 restructuring 3010:5 2944:2,23,28 2946:16 3037:27 3038:18 **SED** 3072:22 resubmit 2976:3 2978:25 3004:14 3045:11 3042:8 3045:6.8.13 seek 2892:7 3013:28 result 2904:27 2915:11 **San** 2887:1,18 2964:9 3046:19 3048:11 3031:27 2916:13 3020:4 3025:23 3030:28 3049:2,4,14 3052:8,13, 3034:13 seeking 3025:26 3045:2,7 3046:23 15,19 3056:26 3057:1, 3043:8 3048:22,24 3049:5,12 2,3,8,9 3058:19 **resulted** 3011:20 3052:9,14,22,25 3059:16,18,21 3060:3, selected 3069:2 results 2908:21 2931:1 3053:18,24 3055:8,16 5,6,12 3063:21,23 2992:2 2994:12 3020:9 **Sempra** 2905:14,15 3056:25 3057:22 3064:3 3027:23 3037:12 3058:18,20 3059:8,20 **Senate** 2985:1 riskiest 2913:25 3055:1 3061:14,17 3062:10,12, sense 2922:10 2955:16 15,26 3063:15,22,26 risks 2927:18 retired 2953:26,27,28 2982:18 2988:4 3064:3,16,22,23,27,28 2954:1,6,15 road 3060:6 3001:10 3003:9 3057:1 3068:8,13,15,26 retirement 2951:14,17, 3069:2,4 3070:5,11,24 robust 3010:6 **sentence** 2908:19 20 2952:10,11 3072:2 2923:7 2938:7 2946:18 role 2983:13 2991:2 retirements 2952:15 2969:5,7,14,15 2982:8 Saturday 3074:1 room 2958:12 3034:1 3035:11 **return** 2988:1 **savvy** 2961:16 roughly 2996:12 **sentences** 2984:25 reused 2934:5 SB 2984:5 2985:1 3037:8 3057:19.21 separate 3072:3 3061:4 3067:27 revenue 3015:1 **SCADA** 2965:14 3068:14 3070:25,26 3034:14 3038:21 separately 2926:24 2973:25 2974:9,16 3050:1 3071:25 3075:14 round 2890:24 **scale** 2912:3 review 2979:21 2994:5 September 2993:24 routine 2920:1 3039:11 **SCE** 2894:28 2960:2,9, 3010:15 3026:8 3055:2 3056:18 **series** 2918:21.24 18 2961:27 2963:20 3027:21 3060:24 3065:15 3068:23 2989:27 2990:13,19 3070:28 SCE's 2888:5 2893:2 2996:17 2999:2 Row 2941:28 2924:2 reviewed 2904:24 served 2993:11 2990:17 2993:22 **Rows** 3017:14 **scenario** 2935:25 3002:8 3068:6 **service** 2905:28 3061:5 rule 2903:7,12,19 2949:24 2950:9,17 reviews 3029:26 **scenarios** 3003:2.5 rulemaking 2982:14, 2951:14,21 3032:5

Index: responses..services

3038:25 3072:16

services 3005:15,17

**schedule** 2964:18

2970:22 3074:5,10

15 2984:28 2986:23

3010:4 3015:13

3016:21

revise 2975:23

revised 2965:4 2966:3

**session** 2972:1 sic 3064:14 **slowed** 3047:7 spend 3033:8,18 3035:12 sick 2919:25 small 2958:9,12 spent 3040:1 set 2903:16 2906:11 side 2903:6 2972:5 smaller 2898:11 **spoke** 2950:25 3059:11 2907:8 2909:21,27 2925:21 3060:23,25,27 3016:3,9 2915:28 2931:8 2978:9, 22 3005:8 3009:11 sides 3016:1.24 sole 2997:22 sponsored 2916:8 3010:6,9 3012:14 significance 3021:8 **solely** 2924:17 2925:1 sponsoring 2893:27 3072:8 3073:26 3074:5 2997:19 3072:9 3040:8 significant 2987:25 sets 2951:27 2992:6.13 **solution** 2967:21 **sponsors** 3072:12 3004:24 3005:7,24 3017:15 3006:1 3020:13 2997:9 sporadically 3068:9 **settled** 2961:11 3021:10 3039:18 sort 2903:17 2912:26 **spread** 3043:26 **settlement** 2895:19,22 significantly 3039:12 2960:8 2961:17 2984:8 2914:18 2942:26 3007:23 3055:7 spreadsheet 2897:11, similar 2897:16 2943:2,3 2961:12 16 3068:3,5,17,25 sounds 3033:2 2902:20 2922:9 2978:26 3031:19 3009:16 spreadsheets 2897:23 3040:13 3041:17 source 2893:28 similarly 3054:4 2894:6,14 2974:15 **squeezed** 3016:12 severe 3038:28 simple 2912:21 2926:5 sources 2894:12 **stages** 3027:17 **severely** 3038:17 2928:15 2929:5 Southern 3014:22,26 stand 2929:26 **severity** 3048:11 **simpler** 2912:6 **spare** 3027:3 **standard** 2950:21 sewer 3068:23 simply 2923:16 2951:1,8 2952:16 **sparking** 2939:16 **Shannon** 2993:1 2998:24 2953:8,12 2954:10 **sparse** 2962:22 **shape** 2937:4 single 2892:11 2896:6 **standards** 2936:2,4,5, 2925:8 speak 3073:23 shareholder's 3034:21,27 sit 2914:12 2929:8 **speaking** 2939:17 standpoint 3056:28 2973:14 2986:3 shareholders 3038:9 situation 2954:4 **start** 2905:26 2914:22, 2990:12 3037:2 3057:6 3039:22 3046:3 2962:27 3005:15 23 2930:24 2959:1 3065:10,27 2966:13 3052:4 3006:10 3031:1 Shek 2972:27 2973:5 3040:10,21 3059:10 **speaks** 2898:17 3062:20 3065:19 shifted 3063:20 3062:6.16 3075:18 situations 2943:16 **shifts** 3007:2 **species** 2910:3 **started** 2914:14 size 2896:24 2911:11,13 2917:9,18 2983:23 3027:28 **shock** 3005:20 sizes 2899:5 2921:2 3028:15,16 **short** 3016:17 3042:23 slightly 2892:4 specific 2897:27 **starting** 2986:18 **shortly** 3000:28 2935:26 2960:6 2927:20 2932:2 2933:6, 3014:3 3017:25 3033:28 3038:3 25 2934:18 2947:18 3062:18 **show** 2978:7 2978:3 3000:5 3023:3 Slocum 2980:15,16,23, starts 2918:23 2981:28 **showed** 2896:26 3046:28 3060:18 2982:9 26 2986:11,12 2987:10, 3063:21,22 3064:3 **showing** 2897:2,12 11 2989:15 2993:17,19 state 2887:15 2906:14 2898:25 2922:28 2997:3 2998:8,24 specifically 2919:9 2916:18 2928:28 3009:2 3040:16,17 2999:4 3001:25 3008:9, 2929:14 2975:25 2937:20 2955:2 13,24 3009:24 3010:10, 2978:1 2986:18 **showings** 3041:25 2960:22 2964:2 13 3011:18 3015:4 2994:18 3006:28 3013:14 3035:7 3016:26 3017:9,19 3012:7 3017:8 shown 2922:25 3018:20 3019:21 **stated** 2901:7 2927:12 2941:23 2942:2 specifies 2947:18 3020:2 3021:22,23,26 2937:16 2938:21 **shows** 2922:28 **speed** 2983:20 2984:1 3022:1,17,19,25 2944:21 2959:11 2925:10 3019:24 3023:6,13 3024:4,23 2970:4,6 2975:1 3059:7 3068:26 spell 2887:15 2964:3 2991:28 2994:24

Index: session..stated

•			
3075:3	3000:15	<b>support</b> 2912:2 2916:19 2921:24,26	2977:24 2978:5 2994:19 2997:15,16,22
statement 2901:5 2925:24 2932:25	subject 2892:15 2956:24 2959:17	2922:4 2925:9 2927:26 2928:4 2943:15 2963:5,	3002:8 3009:25 3017:8, 9 3019:24 3058:9
2938:11 2950:18 2953:22 2967:26	2960:11 2995:5 3035:28 3037:13	12 2976:28 2997:16 3040:8 3054:19	tables 2974:11
2968:1 2980:27 2988:6 3052:17	<b>submit</b> 2961:13 3023:2	3067:12	tack 2902:7
statements 2963:9	submitted 2892:28	supported 2963:8 2983:14	tackle 2888:22
<b>states</b> 2950:13 2977:23	2895:19 2961:9,11 2962:4 2983:24 2994:9	2000.2	<b>takes</b> 3076:2
3027:13 3029:24 3031:23 3038:20	3026:5,11,17 3030:7 3074:9 3075:20	<b>supporting</b> 2997:20 3038:23	<b>taking</b> 2948:19 2954:14 2996:13 3073:9
stating 2911:4 2950:2,	3076:28	<b>suppose</b> 2892:22 2974:6	talk 2903:21,22 2916:25
4,7	<b>subpart</b> 2902:12	supposedly 2911:25	2917:25 2921:21 2930:19 2981:21
<b>statistically</b> 2987:25 3054:5	subsequently 2942:5	surrebuttal 2890:13	3009:27 3017:28
statistician 3021:1	<b>subset</b> 2918:27	3026:5 3029:10,19	3025:6 3052:12 3073:4
statistics 2979:26	substantial 2890:3	3036:6 3051:7,15 3052:5 3058:6 3061:11	<b>talked</b> 2912:19 2949:15 2993:21 3000:25
3022:20,26	substantiated 2891:12	3064:25 3066:7,12	3035:11 3041:28
<b>status</b> 2895:16	substantiation	surrounding 2962:2	3044:6 3060:19 3073:7
<b>Stay</b> 2907:16	2926:16	<b>survivor</b> 2953:15,24	talking 2908:2 2912:10, 13,18 2933:7,11
<b>steps</b> 3031:27	substitute 2924:23	survivors 2953:21	2937:21 2947:8,9,20,27
<b>stop</b> 2969:3 3035:4	<b>success</b> 3060:13	<b>suspect</b> 2920:11	2948:3 2949:18 2967:4, 11 2981:20 2990:13
<b>storage</b> 3031:26	successful 3061:4	suspense 2959:25	3001:3,18,19,20
<b>story</b> 2985:23 3016:17	3066:1	sustain 2924:22	3020:19 3037:7 3040:14,21 3045:23
straightforward	successfully 3060:1	3035:15 3064:19	3060:15 3065:3
3053:27	<b>sudden</b> 3005:20	Sustained 3033:14	3073:18
stranded 2931:2	suffered 3004:19	<b>sworn</b> 2887:13 2889:21 2963:28 3050:26	talks 2903:8 2988:2
<b>Street</b> 2887:18 2964:8	sufficiency 3007:16,24	<b>system</b> 2896:14	target 2927:15
<b>stricken</b> 2968:28 2969:7	<b>sufficient</b> 2913:17 2924:6 2926:10	2905:24 2908:24	targeting 2947:14
strict 2953:2	2939:11 2959:15	2917:26 2920:25 2921:22,26 2922:2	tariffs 3012:1 3014:2
strike 2925:26 2926:4	3005:16	2927:5,17 2930:21	taught 2917:23
2969:13	suggested 3002:3	2932:1 2933:21 2934:2, 12,19,27 2935:12,17,28	team 2983:14 3067:1,2
strong 3007:2	<b>suggesting</b> 2975:23 2985:17	2936:13,26 2938:12 3052:15	technically 2914:21 2961:7
struck 3035:10	<b>Suite</b> 2964:8	systemwide 3068:27	technology 3054:25
struggling 2962:6	summarized 3006:17		telling 3058:7 3061:12
<b>studies</b> 2895:13 2898:5 2902:16	<b>Summary</b> 3029:20	T	temperatures 3013:2
2904:17,22 2928:7,9	supervision 2889:8	table 2898:25 2907:22	<b>tend</b> 3007:26
2943:7,9,12 2945:23 2959:10	<b>supplemental</b> 2979:17 3001:27	2908:12,17,18 2916:28 2917:5,6 2920:21,27	term 2935:9 2943:21 terminology 2932:12,
<b>study</b> 2904:19 2914:6, 10,13,20 2919:14,15 2928:2,16,21 2942:25	supplied 3067:24	2921:13 2922:16 2951:9,10 2974:13,16, 22 2975:3,12,24	13

Index: statement..terminology

terms 2900:11 2917:10 2951:25 2985:23 3040:15 **territory** 2905:28 2911:21 2919:3 tested 3054:11.14 testified 2887:13 2942:25 2964:1 2983:2 3033:4,6,18,21 3046:18 3050:26 3053:16,21 3064:18 testify 3033:12 testifying 3059:27 3067:23 testimonies 2966:11 2967:3 testimony 2887:22,24 2888:2,3,7 2889:5,14, 18,22,27,28 2890:2,4, 26 2891:4 2895:14 2896:12 2900:17,20,21, 26 2904:20 2905:23,25 2906:2,10 2907:15,27 2908:2,22,28 2909:2,3, 7,8,14,20,26 2910:17, 22 2911:1,4,7,16,22 2912:7 2914:6,27 2915:13 2916:18,28 2917:27 2918:12 2921:5 2922:24 2923:5 2924:21 2927:9 2928:10,17 2929:14 2930:22 2931:5,20 2933:11,16 2937:13 2938:12 2940:16 2941:22 2945:1,3 2946:12 2947:17

2949:14 2956:22

2962:25 2964:25

2974:9,12,13,23

2965:5,9,11,14 2966:4,

19,23,26 2967:5,8,12

2968:12,17 2969:13,17

2972:21,24,26 2973:25

2975:6,8,17,24 2976:9,

15,17,20,22,26,27,28

2977:10,23 2978:24

2981:20 2983:18,25

2990:23 2991:12

2984:4 2985:16 2986:3,

7,25 2987:13 2988:2,26

2993:14,21,23 2994:3,

11 2997:17 3001:4 3002:19 3003:10,19,21 3006:16,25 3008:6,17 3009:1,6,14,18 3010:23,28 3013:14,27 3014:15 3015:24 3017:7 3024:15,22 3025:8,12,16 3026:5, 11,17,21 3029:8 3030:13,20,23,25 3033:25 3035:7 3036:27 3043:6,17 3044:16 3045:25 3047:16 3051:15 3052:20 3053:3,10 3056:5 3058:7 3059:3 3061:11,24,25 3062:16 3063:14,25 3064:8 3066:6 3071:26 3072:4, 11.13 3076:28 text 3034:2

theory 3055:7 thing 2977:21 3013:12 3020:11 3021:7

3047:15

things 2984:3 2985:5 3006:1.22 3020:10 3046:10 3068:23 3071:24 3074:20 3075:8,15 3076:4

**thinking** 2904:12 2985:23 3020:15

thinks 3055:23

**Thomas** 2978:24

thought 2942:26 2948:21 2992:19,23 3030:18 3037:28

**thoughts** 2992:18 3021:19

threat 2916:16

threshold 2906:27 2907:4

thrown 2964:22

**Thursday** 2900:28

Tier 2896:22,27 2897:4, 5,8,13 2898:14,25,28 2916:15 2918:15,16 2956:15

time 2889:11 2901:1 2902:23 2903:15 2904:28 2911:10,25 2919:3 2927:24 2942:15,18 2971:1 2980:20 2981:13 2983:28 2990:7,9,14, 16,20 2992:12 2993:3 3001:22 3005:4,11 3008:7 3014:23 3018:23 3019:7,8,18 3025:27 3039:7 3048:10 3051:6,12 3056:1 3062:20,22 3065:22 3070:27 3073:11

timely 2901:17

times 2893:15 2896:10 2928:12 3034:16 3047:21

today 2887:11 2893:12 2905:1 2914:13 2929:8, 27 3052:17

today's 2964:18

told 2988:16 3017:23

top 2950:12 2968:26 3034:2 3043:6

topic 2910:6 2912:26 2918:5 2941:3,7 2961:25 2984:25 3049:25

total 2956:13,18,19 2977:25 2996:16 3035:17 3037:1 3043:23 3058:9

totally 2890:7 2952:25

touching 2949:11

traditional 2932:22 2935:3 2956:3

traditionally 2933:2

tranche 2996:25

transaction 2951:13

transcript 3073:4,19

transcripts 3073:9 3074:17

transformer 2936:24, 27,28

transformers 2930:26 2936:15,16,20 2937:10, 14,15 2940:22

Index: terms..turn

transmission 3031:25

**Travis** 2995:4

treated 2949:12 2952:16

treatment 2952:6 2953:4 2954:10

treatments 2953:1

tree 2909:3,9,10,16 2912:18.22 2916:12 2917:9,18 2918:25,26 2919:19 2921:2 2939:8, 12,15,17,21,23 2940:5 2943:28

trees 2910:25 2911:20. 24,26,27 2912:1 2913:5,18,25,27 2914:3 2915:4,11,15,17 2916:14 2918:5,10,28 2919:23,25 2920:3 2944:10,11,24

trenchless 3054:25

**Trends** 2979:23 3003:15

trouble 2992:3

troubled 2903:28

troubling 2904:9

true 2889:14 2897:10, 28 2902:27 2925:24 2970:6 2991:17 3014:27 3018:3 3032:2 3039:15

trued-up 2899:25

**truncated** 2967:28

**Tuesday** 3073:2

turn 2887:13,18 2888:4, 5 2891:15,21 2893:16 2895:1 2896:3,9,21 2900:11,19,20 2901:5, 6,12,14,18 2903:4 2904:1 2906:3 2907:8, 14 2909:21,26 2914:5 2915:8 2916:21,27 2917:14,15 2919:17 2921:24 2922:1 2924:4

2927:16 2929:17 2936:19,21,23 2938:24 2940:23,27 2941:21 2944:3 2946:11 2951:7 2953:11 2959:7,21 2960:14,19,21,28 2961:24 2963:28 2973:26 2974:25 2979:18 2981:1 2982:10,22 2983:2,3,8, 14,23 2985:17 2986:19 2987:1 2990:24 2991:18,19,23,27 2992:2,3,8 2993:26 2995:3,13 2997:13 3000:26 3001:7,28 3002:6,14 3008:17 3017:6 3018:6 3022:4, 5,8 3024:15 3025:21 3026:3 3027:12 3029:10 3031:10 3037:22 3043:7,13,27 3044:27 3045:10 3048:11 3049:17 3057:11,13 3065:14,28 3069:6 3070:19 3073:7, 15 3074:8

TURN's 2888:16,19 2906:11 2915:27 2921:1,16 2931:22 2932:4 2935:14 2936:6 2950:25 2952:4 2955:22 2968:27 2969:1,6 2974:28 2985:16 2991:2 2992:15 2994:2 3002:3 3010:19 3019:26 3034:2 3036:7 3044:25, 28 3045:4

TURN-08 2964:27

**TURN-1** 2916:17

TURN/CAL 3034:24

**turned** 2911:26 3070:13

**turning** 2968:11 2986:25

turns 3076:14

two-minute 2890:20

**two-month** 2992:22 2995:23 2996:1,12 3002:2,25 3003:1

two-year 3058:22

**type** 2899:2 2902:7 2934:8 2962:14,22 2988:28 3006:10 3030:21

**types** 2930:26 2931:12 2960:23 2962:11,17 3054:20

typographical 2969:24

U

**U-4** 2951:1

**Uh-huh** 3002:16 3029:16,28

**ultimately** 2985:7 3040:12 3070:21

**unable** 2891:7 2893:28 2897:18 2898:8 2903:22 3026:22 3028:18

**unclear** 2891:2,6 2899:23 3035:13

undepreciated 2947:6

underfunded 3039:10, 12

underfunding

3038:18,28 3039:4,19 **undergraduate** 

2988:7

undergrounding 2891:9,11 2938:14,16, 25.28

**underlies** 3040:17

underlying 2897:23 3041:10

underperformed 3047:9

understand 2899:22 2909:10 2923:5,14 2929:4,5 2937:27 2947:24 2948:4,18 2952:5 2960:4 2975:11 2977:1 2983:27 2990:10 2999:23

3001:14 3004:28

3021:16 3035:20 3036:3 3040:26 3041:5 3048:5 3056:4 3065:5 3073:12

understanding

2898:10 2911:9 2921:9, 11 2924:25 2927:4,11 2928:1 2931:13 2934:7 2936:12 2938:3 2940:3 2943:21 2962:7 2972:16 2977:5 2985:12 2988:4 2995:22 2997:14 3011:26 3012:27 3016:7 3019:1,6,19 3061:1 3064:10

understood 2952:28 2960:3 2986:1 3065:24

undertook 3018:16 underway 2984:2

3072:26

unemployed 3004:13

unemployment

2979:25 3003:24 3006:20 3007:1

unfavorable 2903:5

**unhealthy** 2911:27 2919:25 2944:11

unit 2896:10 2923:28 2930:3,5,6,11 2977:26 3034:24 3038:2 3039:14 3044:10,17

units 3025:17,19 3030:2 3032:15,20,21, 27 3033:5,10,20 3040:1,24,25 3041:3,27 3042:3 3047:7,10,28 3062:6

universities 2920:13

University 3018:14

unnecessarily 3054:9

unquote 2989:19

unsafe 2935:8

unsuccessful 3027:25 3065:25

**upcoming** 3043:21

update 2975:17

Index: Turn's..values

**updated** 3071:26 3072:13

**updating** 3001:28

**upshot** 3038:6

urban 3049:7

usefulness 2904:26

user 3021:2

usual 2892:4

UTA 3025:24 3026:26 3028:20,22 3029:6 3030:24 3031:2 3034:20,25 3037:21 3038:4,7 3039:13,22 3040:10 3043:15 3044:11,20,26 3045:1 3052:9,18 3053:12,17, 23,25 3054:1,5,12 3055:1,15,17 3056:12, 13,16,19 3059:5 3061:20,25 3062:3,11 3063:16,18,23,26,27 3064:9 3065:13 3066:17 3070:13

UTA-RELATED 3049:13

UTAS 3026:23 3027:16, 27 3028:8,12,28 3030:9 3036:17 3045:8 3046:1, 23 3047:1,25 3048:2, 13,22,28 3052:13 3055:8 3059:9,24 3060:14,26 3061:3,27 3062:6,9,15,21,24,25, 27 3063:1 3065:4,6,18, 19,28 3070:19

**utilities** 2914:18 2919:22 2942:28 2984:9 2985:4 3010:7 3016:4

**utility** 2919:28 2920:7 2932:22 2933:2 2964:7 3012:13,16 3041:24

V

**vacation** 3074:19

values 2994:24

**variable** 3020:26 variables 2994:8 3003:25 3020:24,28 3021:4,6 variety 3004:3 3020:20 3074:14 vast 3011:2 veg 2917:7 2920:26 vegetation 2889:28 2895:8 2905:23 2908:23 2909:11 2916:26 2920:1 2931:14 2938:7 2939:3 vegetation-caused 2944:9 vehicular 2927:7 verify 2996:19 3067:28 version 2965:6 2966:21,22 2968:1,7,21 2981:24 3009:6 3033:27 versus 2899:6 2922:8 2925:19 2944:11 2955:18 2992:6 3052:13,18 **volume** 3030:27 3048:9 3065:11,27 3070:18,21 volumes 3057:7,9 wait 2891:22 2893:19 2989:10 3008:18 waited 2900:26 2901:1

waiting 3058:22 3064:17 waived 2978:28 wanted 2900:23 2930:19 2949:17

2959:6 2992:2 3075:8 3076:19

W

warrant 2899:3

warranted 2891:3 2953:8

water 3051:17

ways 2961:1,22 3007:15 3060:10

weak 3003:5 3017:16

week 2902:28 3074:9. 12,24 3075:1

weight 2922:4 2924:8 2926:17 2928:5 2963:9

weighted 2930:16

WFR 3060:19,21

who've 2998:28

**wildfire** 2911:20 2935:6 2937:27 2938:5. 15 2943:26

wildfire-prone 2905:27

**wildfires** 2906:25

winners 3018:17

wire 2896:18

withdraw 2917:22 2973:17 3022:23.24

withdrawn 3023:10

withheld 2901:28

withholding 2901:25

witness's 2961:28

witnesses 3071:16 3076:28

wood 2921:24 2922:1.8 2943:15,22,25

word 2924:20,23 2932:8 2949:28 2969:8

wording 3042:2,4

words 2927:8 2934:23 2946:26 2953:27 2963:10 2969:6 2987:24 3018:8 3035:22

work 2891:8,9 2899:21 2903:5 2926:10 2932:2 2935:13 2969:18 2978:26 2983:8,23 2988:5,7,17 3004:20 3018:11 3025:20,27 3031:11,20,28 3032:2,

14,15,20,21,27 3038:13,14,19 3039:27 3040:13,18,24,27 3041:1,2,7,17,24 3042:3,8,9 3045:6,8,13, 14,17,19 3046:6,7,19, 26 3047:2,3,4,5 3048:4, 7,9,23,24 3049:12 3051:3 3057:2,3,7 3058:23 3059:7,17 3060:1,24 3065:10 3067:13,21 3068:28 3069:3,14 3070:18,22, 27 3073:14

worked 2981:8

working 2980:28 2982:21 2983:10,15 3062:19 3075:18

workpaper 2894:10,11 2926:23 2927:1 2974:19 2975:2,4 2976:18,26 2978:7 2997:15,19 3029:19 3059:2 3062:5,22 3065:10 3070:15

workpapers 2894:12 2895:13 2902:9 2972:9. 10 2974:10.24 2975:8 2976:11 2977:4,9,13 3026:21 3030:13,20,24

works 3035:21 3036:4 3038:5

worried 3059:22

worse 3049:10

worth 2948:10.15

wove 2992:10

**WP** 3029:11,20

writing 3007:28

written 3008:1,3

wrong 2902:23 2904:16 2914:28 2915:2 2967:26 2981:23 3011:7 3036:13 3041:8,9

Υ

year 2915:5 2938:23 2948:24 2949:2 2956:1,

4 2987:19 3018:9 3034:9 3036:20 3043:20 3057:24 3058:1 3062:27 year-over-year 2921:9 year-to-date 2930:7,13

Index: variable..zip

years 2895:8 2921:3 2933:4,8,22 2946:23 2948:8,9,23 2953:6,22 2981:6,9 2991:20 2992:7 3012:23 3018:8 3035:16 3036:2 3037:12 3043:10,27 3049:24

yesterday 2890:11 2892:6 2898:3.18 2900:14 2925:23 3075:3

Ζ

**zip** 2964:10 2991:9,21 2992:1,8 3010:8