

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE  
STATE OF CALIFORNIA

ADMINISTRATIVE LAW JUDGES JESSICA T. HECHT and MARCELO  
POIRIER, co-presiding

Order Instituting Investigation on	)	EVIDENTIARY
the Commission's Own Motion into the	)	HEARING
Operations and Practices of Southern	)	
California Gas Company with Respect	)	
to the Aliso Canyon storage facility	)	
and the release of natural gas, and	)	
Order to Show Cause Why Southern	)	
California Gas Company Should Not Be	)	
Sanctioned for Allowing the	)	Investigation
Uncontrolled Release of Natural Gas	)	19-06-016
from its Aliso Canyon Storage	)	
Facility. (U904G)	)	

REPORTERS' TRANSCRIPT  
Virtual Proceeding  
May 7, 2021  
Pages 2318 - 2460  
Volume 17

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VIRTUAL PROCEEDING

MAY 7, 2021 - 10:00 A.M.

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ADMINISTRATIVE LAW JUDGE POIRIER: The Commission will come to order.

This is May 7th, 2021, day 17 of the Evidentiary Hearings in I.19-06-016.

Yesterday, we left off with redirect of Mr. Neville by Mr. Lotterman. We are going to continue with that. And then we will move on to some recross.

Mr. Lotterman, please go ahead.

MR. LOTTERMAN: Thank you, your Honor.

DAN NEVILLE,

resumed the stand and testified further as follows:

REDIRECT EXAMINATION

BY MR. LOTTERMAN:

Q Good morning, Mr. Neville.

Can you hear me?

Are you on mute, sir?

A Good morning. Yes.

Q All right. Here we go.

Mr. Neville, I have one short topic and then one not-so-short topic. And then I will be done.

Let's begin, if you would, by talking about the annual meeting that

1 SoCalGas had with DOGGR. I believe Mr. Gruen  
2 showed you a couple exhibits which were  
3 presentations by SoCalGas to DOGGR.

4 Did you have an occasion or  
5 opportunity to attend any of those annual  
6 meetings?

7 A Yes.

8 Q What was your understanding of  
9 their purpose?

10 A It was a means for us and the  
11 storage engineering to meet annually with  
12 DOGGR to familiarize themselves -- to  
13 refamiliarize DOGGR with our operation. We  
14 discuss -- we put presentations together,  
15 discussed the geology of the field, the  
16 production, items related to storage and well  
17 work, upcoming well work, in-well work that  
18 had been done within the time frame between  
19 the prior meeting.

20 Q Would DOGGR pose questions from  
21 time to time in those meetings?

22 A Yes.

23 Q Okay. Did you find those meetings  
24 productive?

25 A Yes.

26 Q All right. All right.

27 Let's turn to shoe leaks, my final  
28 topic. I wanted to clarify some testimony

1 that has been made over the last couple of  
2 days about it. And I would like to begin by  
3 orienting everyone -- or orienting you and  
4 everyone else in this hearing as to where  
5 these shoe leaks and shoes are located.

6 I would like to start, if I could,  
7 Mr. Moshfegh, by pulling up Figure 5 --

8 MR. MOSHFEGH: And, Mr. Lotterman, can  
9 I just interject?

10 Can I request from the ALJs for IT  
11 to enable my share feature?

12 ALJ POIRIER: Yes. Let's go off the  
13 record.

14 (Off the record.)

15 ALJ POIRIER: We'll be back on the  
16 record. We were just getting an exhibit  
17 ready.

18 And please continue, Mr. Lotterman.

19 MR. LOTTERMAN: Thank you, your Honor.

20 Q All right.

21 Mr. Neville, what I would like to  
22 do is start with Figure 5 from the Blade  
23 geology report. And, for the record, this is  
24 -- this figure is contained in Commission  
25 Exhibit 1000, Volume II. And the  
26 supplemental report is entitled, "SS-25  
27 Geology Summary Dated May 31, 2019." And I'm  
28 going to ask Mr. Moshfegh to go to page 14.

1                   And as you can see, Mr. Neville,  
2 Figure 5 depicts the West-East cross section  
3 across the Aliso Canyon field.

4                   Do you see that?

5           A     Yes.

6           Q     Are you generally familiar with the  
7 geology that underlies the Aliso Canyon  
8 facility?

9           A     Yes.

10          Q     All right. Well, let's start at  
11 the top and work our way down.

12                   Do you see the names across the top  
13 of that figure, "Frew, Standard Sesnon,  
14 Porter, and Fernando Fee"?

15                   What do those names depict?

16          A     Those names correspond to the  
17 original leasing that was conducted during  
18 the oil operation days of the field. So they  
19 are -- they are certain lease boundaries.  
20 There's the Frew lease, the Standard Sesnon  
21 lease, the Porter lease, and the Fernando Fee  
22 lease.

23          Q     And is it fair to assume that if a  
24 well was entitled "Frew 3," for example, or  
25 "Standard Sesnon 25," that it was used as a  
26 production well as part of those particular  
27 leases?

28          A     Yes, back in the oil production

1 era.

2 Q Okay. And do you see the depiction  
3 for SS-25 within the Standard Sesnon portion  
4 of this figure?

5 A Yes.

6 Q All right.

7 Now, let's work our way down from  
8 there. And we don't have to belabor this  
9 point.

10 But do you see the well crossing  
11 through various geologic formations?

12 A Yes.

13 Q And do you see it crossing through  
14 several faults?

15 A Yes.

16 Q And can you tell by this figure  
17 roughly where the SS-25 well ends depth-wise  
18 -- not depth-wise as far as feet, but just in  
19 what zone or what particular geological area  
20 the well stops?

21 A Yes. If you see the -- kind of the  
22 orange-ish, pink color at the very bottom  
23 that -- in fact, there's a reference there  
24 that says, "Sesnon Zone." So the blue  
25 vertical line going down is the SS-25 well.  
26 And so it -- the bottom of that well is at  
27 the bottom of the sesnon zone.

28 Q And is the sesnon zone the storage

1 zone we've been talking about off and on for  
2 the last couple weeks?

3 A Yes.

4 Q And is that the zone that initially  
5 oil was removed from and then SoCalGas, once  
6 it took over the lease, began injecting and  
7 withdrawing and storing gas in it?

8 A Yes.

9 Q And where, roughly, vis-à-vis that  
10 sesnon zone, is the cap rock we've been  
11 talking about?

12 A So within the sesnon zone there is  
13 a line there referred to as the S1 -- you  
14 could see that S1. So the storage zone would  
15 be below that point and would go down to the  
16 green zone that's right below the orange-pink  
17 zone. But above that, S1 is referred to as  
18 the cap rock.

19 Q Okay. All right.

20 Now let's go, Mr. Moshfegh, if we  
21 could, to Table 3, in the same exhibit, on  
22 page 22. And let's start at the top of the  
23 page. It's labeled "Table 3, SS-25 summary  
24 of formation tops and geologic descriptions  
25 of penetrated formations."

26 Do you see that, Mr. Neville?

27 A Yes.

28 Q All right. And, again, we're not

1 going to belabor this point. But I just want  
2 to make sure that this geology vis-à-vis the  
3 well shoe is clarified.

4 And just on page 1, do you see  
5 various formations and -- as well as two  
6 thrust faults identified?

7 A Yes, I do. Yes.

8 Q All right.

9 And does this table depict,  
10 basically, the top -- or the surface of the  
11 well down to about, let's see here,  
12 7,588 feet?

13 A If you could scroll down to the  
14 bottom. That page -- oh.

15 Q Page 1, Mr. Moshfegh -- page 22,  
16 excuse me.

17 A Yes. So that page illustrates the  
18 top and bottom of each one of those  
19 individual zones that the well encounters on  
20 its path down to the storage zone.

21 Q All right. Let's go to page 23, if  
22 we could. And let's actually work our way up  
23 from the bottom to the top of that table.

24 Let's start at the very bottom, Mr. Neville.

25 Do you see the total well depth of  
26 SS-25 identified?

27 A Yes.

28 Q And then above that I see 1, 2, 3,

1 4, 5, 6, 7, 8, areas marked S1 through S14.

2           Could you explain very briefly what  
3 those depict?

4           A    So those are individual sands  
5 within the sesnon zone.  And I'm not a  
6 geologist, so -- but I do know that these --  
7 these are individual sands within what's  
8 called the "sesnon" -- "sesnon zone."  They  
9 would include -- in some of these sands, they  
10 appear to be connected.  Some appear to have  
11 claystone in between.

12           Q    And do you see on page 23, the  
13 sesnon cap rock depicted?

14           A    Yes.

15           Q    Could you -- I know you can't do  
16 this visually.

17                    But can you at least describe where  
18 that is on this table?

19           A    So the cap rock is -- is a section  
20 approximately 213 feet of thickness above the  
21 S1 sand.

22           Q    Okay.  And I believe at one point  
23 during Mr. Gruen's examination, he asked you  
24 about the thickness of the S1 sands.

25                    Do you wish to clarify your  
26 question earlier?  -- your answer earlier,  
27 excuse me.

28           A    Yes.  I believe -- I thought they

1 were -- the S1 was in the 10-foot -- maybe I  
2 said 10- to 15-foot range. It appears to be  
3 thicker than what I had thought. It shows 39  
4 feet.

5 Q Okay. And then just above the row  
6 that says "sesnon" -- before we go there, so  
7 why is cap rock important in a storage zone?

8 A The cap rock is the seal. That's  
9 the top seal that prevents the gas from  
10 moving to the surface within the storage  
11 reservoir.

12 Q And just above the sesnon cap rock  
13 row, there's a row in red that says  
14 "Miocene-Pliocene unconformity."

15 Do you know what that depicts?

16 A That's the -- that's what we refer  
17 to as the "MP." It depicts the -- an  
18 easily-identifiable marker at the top of the  
19 cap rock.

20 Q And why is an MP important in a  
21 well schematic or the geology of a particular  
22 well or storage zone?

23 A Since it's -- since it marks the  
24 top of the seal, it really defends -- in the  
25 case of shoe leaks, it defends the area that  
26 you do not want to hear any noise or see any  
27 noise. You want to ensure that there's no  
28 movement of gas above the Miocene-Pliocene

1 unconformity. ]

2 Q Now would you, if you can, would  
3 you place for us on this table, on page 2,  
4 page 23 to be precise, would you place within  
5 these various zones where the shoe of SS --  
6 where the production casing shoe of SS-25 is  
7 located?

8 A The production casing shoe, I  
9 believe, was -- I have to look back. It was  
10 somewhere around 8490, if I remember.

11 Q Okay. So where would that put you  
12 in the S-sands' layers?

13 A That puts you down into the S4, S6  
14 area. And that depth is -- just for clarity,  
15 would you mind if I just look at my testimony  
16 to get the casing, the shoe depth?

17 Q Of course.

18 ALJ POIRIER: Let's go off the record.

19 (Off the record.)

20 ALJ POIRIER: Back on the record.

21 Please go ahead.

22 BY MR. LOTTERMAN:

23 Q Mr. Neville, during our brief  
24 break, were you able to determine where the  
25 shoe of SS-25 -- where the bottom of the shoe  
26 is located on -- both in terms of feet and  
27 where it would be located on this table we're  
28 looking at?

1           A    Yes.  The shoe is at 8585, which is  
2 within the S6 sand.

3           Q    All right.  So, to be clear, the  
4 bottom of the shoe on the production casing  
5 is below the S1 and S2 and for that matter S4  
6 sands, as well as below the Sesnon caprock;  
7 is that true?

8           A    Yes.

9           Q    All right.  And by the way, I know  
10 we've used the term "shoe" elsewhere.  Is  
11 there also a surface casing shoe on SS-25?

12          A    Yes.

13          Q    All right.  Mr. Moshfegh, let's go  
14 to, if we could, Figure 9 in the Blade Main  
15 Report, and again this is Commission  
16 Exhibit 1000, and at page 27.  All right.  If  
17 you could give us, Mr. Moshfegh, just a  
18 complete picture of the schematic and then we  
19 will focus in on the bottom for purposes of  
20 my remaining redirect.  All right.

21                    So, to be clear, Mr. Neville, could  
22 you point out to us the two shoes that are on  
23 SS-25 and would you do us a favor and  
24 distinguish between the two?

25          A    Sure.  The upper casing -- the  
26 surface casing shoe where you have your  
27 pointer is approximately 990 feet.

28          Q    All right.  And where is the

1 production casing shoe on SS-25?

2 A The production casing shoe is at  
3 8585 feet.

4 Q Okay. Now, Mr. Moshfegh, if you  
5 would just blow up as best you can that  
6 bottom portion of Figure 9. Great. Okay.

7 So, Mr. Neville, what is a shoe  
8 leak?

9 A A shoe leak is the movement of gas  
10 around the bottom of the casing, which in  
11 this case be 8585 feet and up through the  
12 cement of microannulus in the cement to the  
13 point that it enters or gets to the MP zone  
14 which represents the top of the caprock,  
15 which would mean that gas has moved around  
16 the bottom of the casing up through the  
17 cement and to the MP, and at that point,  
18 exits the seal of the reservoir.

19 Q What causes gas to take that path?

20 A It's microannulus in the cement.  
21 It could be -- it's just a small area, small  
22 pass between the cement and the steel. It  
23 could be cracked within the cement, I  
24 suppose, but some pathway from the shoe  
25 through, in this case, two or 300 feet of  
26 cement column.

27 Q Is the cement you're talking about  
28 depicted on the Figure 9?

1           A    Yes.

2           Q    Could you describe where?

3           A    The cement is noted as the dots  
4 that are outside of the production casing on  
5 each side shown, yes.  And it's illustrated  
6 as the top of cement, the T-O-C as being at  
7 7,000 feet.

8           Q    Is it fair to assume that that  
9 cement goes completely around the production  
10 casing from 7,000 feet to the bottom of the  
11 cement?

12          A    Yes.

13          Q    Okay.  So if I understand you  
14 correctly, when -- if and when SoCalGas  
15 believed there's a casing shoe, potential  
16 casing shoe leak issue, is it an issue with  
17 the integrity of the production casing  
18 itself?

19          A    No.

20          Q    Is it an issue with some sort of  
21 corrosion on the production casing itself?

22          A    No.

23          Q    In those circumstances, in your  
24 experience, does SoCalGas consider potential  
25 shoe leaks as a safety issue?

26          A    Well, the shoe leak is such a minor  
27 amount of gas and it's at the bottom of the  
28 well.  I wouldn't consider it as a safety

1 issue.

2 Q Then why are shoe leaks monitored  
3 and from time-to-time remediated?

4 A Well, they're not generally --  
5 well, the reason is because that it's a loss  
6 of inventory, for one.

7 Q What does that mean?

8 A It's a loss of gas inventory out of  
9 the storage cell. And it warrants, even  
10 though they could potentially be small, it  
11 warrants repair.

12 Q And would you explain how a shoe  
13 leak is repaired, just very briefly?

14 A Yes. The -- it requires a workover  
15 rig. The well is killed with workover fluid.  
16 The tubing's removed, sometimes the packer.  
17 And it requires perforating, shooting holes  
18 in the casing within the caprock itself right  
19 above the storage zone, to try to establish a  
20 communication to the microannulus channel of  
21 gas that's coming through it. So the casing  
22 is perforated. And once it's found that, you  
23 know, that the rig could pump into it, then a  
24 certain amount of cement is pumped into --  
25 through those perforations hoping to stop the  
26 shoe leak.

27 Q Okay. And is that a typical  
28 practice in the gas storage business?

1           A    I believe so.  I know it is in  
2 SoCalGas, I believe to be the case, yes.

3           Q    Okay.  All right.  So let's turn  
4 briefly then to how you monitor a well like  
5 SS-25 for shoe leaks.  And, again, we don't  
6 need to re-plow this field, but staying with  
7 that diagram and let's maybe zoom out a  
8 little bit so we can get a full visual here.

9                   Mr. Neville, I believe you spoke in  
10 response to some questions by Mr. Gruen.  You  
11 talked about how a temp log is run in a well.  
12 And I believe you actually even put it in  
13 your testimony.  And you talked about  
14 anomalies and the like.  We don't need to  
15 talk about that again.

16                   But I guess the question I have for  
17 you is why did SoCalGas typically run a temp  
18 log first?

19           A    Well, a temp log serves as kind of  
20 a baseline top-to-bottom view of geothermal  
21 gradient, and it would show deviations from  
22 gradients which could then be further  
23 investigated.

24           Q    Okay.  And who typically sort of  
25 performs or runs a temp log at Aliso Canyon  
26 for SoCalGas?

27           A    The company uses outside  
28 contractors to run these temperature surveys.

1           Q   Who typically interprets the  
2 results?

3           A   Field engineers.

4           Q   And was that your responsibility  
5 from time-to-time during your career at  
6 SoCalGas?

7           A   Yes.

8           Q   You mentioned also using earlier  
9 temp logs. Why would you use earlier temp  
10 logs when you're running a new one say in,  
11 you know, 1985?

12          A   Well, the new one, what I would do  
13 would be to take the new one and I would  
14 overlay it on the older ones. And it was a  
15 lot easier to see if there are any changes.  
16 We're looking for changes from year-to-year.  
17 And to have the older surveys with you when  
18 you do the analysis of the new survey is the  
19 proper way to identify -- review a new  
20 temperature survey.

21          Q   Why are changes important?

22          A   Change could indicate a new  
23 anomaly, which may need to be investigated  
24 further.

25          Q   Can a change also indicate where --  
26 an anomaly that showed up earlier but did not  
27 show up in a subsequent temp log?

28          A   I'm sorry. Could you repeat that?



1 depths in a well, if not a genuine shoe leak?

2 A Well, the storage zone itself is a  
3 coolant, so there's a large temperature drop  
4 when the temperature survey gets to the  
5 storage zone.

6 Q Okay. And are the temp logs  
7 themselves kept in the well files at Aliso  
8 Canyon?

9 A Yeah, they're kept in one of the  
10 component well files called the well survey  
11 file.

12 Q Would noise logs also be kept in  
13 that file?

14 A Due to the -- the noise logs are in  
15 the well log file.

16 Q Okay. So why would SoCalGas  
17 typically run a noise log after a temp log if  
18 it sees an anomaly in the temp log?

19 A Well, it needs to assure that the  
20 anomaly is not an actual movement of gas,  
21 that there isn't a leak.

22 Q Is it your experience that noise  
23 logs tend to be more focused than sort of the  
24 top-to-bottom survey of a temp log?

25 A Yes. In fact, when running a noise  
26 log, one would zero in on the anomaly and  
27 run -- I think I mentioned in earlier  
28 testimony that a noise log -- you actually,

1 when you run the log, you have to stop, let  
2 the noise settle for a minute or so before  
3 you get a reading, so a noise log is run over  
4 the temperature anomaly in a much finer  
5 course where there's more frequent stops to  
6 help better define the noise anomaly.

7 Q Okay. I think you answered this  
8 question earlier, but let me re-ask it in  
9 this context. What else can cause noise at  
10 the shoe of a well besides a legitimate shoe  
11 leak?

12 A As I mentioned earlier, I think  
13 cross flow between some of the zones in the  
14 storage zone, the S1, the S2. Even noise  
15 from gas moving in the storage reservoir can  
16 cause noise.

17 Q Let's turn finally to radioactive  
18 tracer studies. How do those studies differ  
19 in terms of investigation and results with a  
20 temp or noise log?

21 A I'm sorry, could you repeat the  
22 question.

23 Q Yeah. We've talked about  
24 temperature logs. We've talked about noise  
25 logs. I wanted to finally just quickly touch  
26 on radioactive tracer studies. My question  
27 is how is the function of a radioactive  
28 tracer study different from a temp and a

1 noise log?

2 A Well, it's another tool in the tool  
3 box, so to speak. I think it would help  
4 even -- help confirm the results from the  
5 noise log. It's usually the third  
6 investigative tool used in a shoe leak  
7 investigation.

8 Q And what exactly is traced in a  
9 radioactive tracer study?

10 A So there's a small amount of  
11 radioactive element that's injected into the  
12 well. The well is put on a low amount of  
13 injection, and so the tracer survey follows  
14 this radioactivity down the well and it looks  
15 to see that it will not make a -- kind of a  
16 U-turn and progress back up through the  
17 casing. No shoe leak would be one that, you  
18 know, the gas would go into the reservoir and  
19 it wouldn't return back up the outside of the  
20 production casing.

21 Q Okay. So once SoCalGas has  
22 analyzed the potential shoe leak using a  
23 temperature log, a noise log, and potentially  
24 a radioactive tracer study, how does it  
25 decide -- just generally, how does it decide  
26 whether, for example, to continue to monitor  
27 the issue or to go put a workover rig on it  
28 and remediate the issue?

1           What are the factors that come to  
2 play in that type of analysis if you know?

3           A    Well, the most important factor is  
4 the location of the noise.  And, again, it's  
5 the summation of all of these tools.  But the  
6 noise is what I would consider the most  
7 important.  If there's noise that continues  
8 up through the caprock into the MP, that's a  
9 high indication -- higher indication that  
10 there's a shoe leak.

11           Q   All right.  And was that process to  
12 your knowledge followed by SoCalGas during  
13 that mid-1980s time frame that Mr. Gruen  
14 walked you through during cross-examination?

15           A    Yes, based on the surveys and the  
16 notes in the files, yes.

17           Q   All right.  And to be clear, when  
18 that type of analysis is done, whether it's  
19 by you or an engineer back in the 1990s, is  
20 he or she applying his or her professional  
21 judgment?

22           A    Yes.

23           Q   All right.  And were the results of  
24 that mid-1980s analysis, was that reflected  
25 in that daily activities report that we  
26 viewed during Mr. Gruen's cross-examination?

27           A    Yes.

28           Q   All right.

1           And so, Mr. Moshfegh, just so the  
2 record is clear, let's pull up Exhibit 267.  
3 I want to go to jump page 0030.

4           ALJ POIRIER: Just for the record, this  
5 is SED-267?

6           MR. LOTTERMAN: Yes. Thank you, your  
7 Honor.

8           Q    So we're going to page 030, and I  
9 wanted to hone in on the entry dated 7-16-85.  
10 Do you see that entry, Mr. Neville, dated  
11 7-16-1985?

12          A    Yes.

13          Q    I don't need to read it into the  
14 record, but is that the evidence that you  
15 point to that in the 1983 to 1985 time frame  
16 some engineers at SoCalGas ran these  
17 temperature logs, noise logs, and tracer  
18 studies and wrote down the conclusions which  
19 are captured in that entry on 7-16-1985?

20          A    Yes.

21          Q    Okay. And, again, I'm not going to  
22 belabor this point, but if we go earlier in  
23 time, this activity remarks also lays out the  
24 various temperature surveys run and the  
25 tracer surveys run and that type of thing;  
26 correct?

27          A    Yes.

28          Q    And if you go later on in this well

1 activities report through, I believe, 1997,  
2 it also lays out subsequent temperature and  
3 noise logs run on SS-25, including in and  
4 around the location of that well's shoe; is  
5 that right?

6 A Yes.

7 Q And as far as you know, were those  
8 temperature and noise logs run on SS-25  
9 through and including October 2014?

10 A Yes.

11 Q Okay. In fact, did Blade summarize  
12 in a figure the various noise and temperature  
13 logs that were run on SS-25 through the  
14 course of that well's operations by SoCalGas?

15 A Yes.

16 MR. LOTTERMAN: Mr. Moshfegh, very  
17 briefly, let's go to Figure 13 of Blade's  
18 main report. That's page 30. Let's just  
19 blow up, if we could, that figure.

20 Q Mr. Neville, is it your  
21 understanding that the information depicted  
22 on Figure 13 of Blade's main report, which is  
23 Commission Exhibit 1000, depicts the more  
24 than 30 years of noise and temp logs that  
25 were conducted on SS-25?

26 A Yes.

27 Q Now, did you undertake your own  
28 analysis of this logging data at this well?

1 A Yes.

2 Q In fact, is that analysis outlined  
3 in your sur-reply, which we've marked as  
4 SoCalGas Exhibit 21?

5 A Yes.

6 Q And did you undertake that analysis  
7 to dispute Ms. Felts' view that the 30 years  
8 of logging data showed a shoe leak at SS-25?

9 A Yes.

10 Q And did you agree with Ms. Felts'  
11 view?

12 A No.

13 Q Did the SoCalGas engineers in the  
14 1983 through 1985 time frame agree with  
15 Ms. Felts' view?

16 A No.

17 Q Did Blade agree with Ms. Felts'  
18 view?

19 A No.

20 MR. GRUEN: Objection, your Honor,  
21 calls for speculation. He's now testifying  
22 as to what Blade's views are on the matter.

23 MR. LOTTERMAN: Okay. Then --

24 MR. GRUEN: That's most appropriate for  
25 Blade.

26 MR. LOTTERMAN: I'll withdraw the  
27 question, your Honor.

28 Mr. Moshfegh, would you highlight

1 and expand on the last two paragraphs below  
2 Figure 13.

3 Q While he's doing that, Mr. Neville,  
4 let me ask the question this way to address  
5 Mr. Gruen's objection: Is it your  
6 understanding that Blade disagrees with  
7 Ms. Felts' view that the logging data of  
8 SS-25 showed a shoe leak, just your  
9 understanding?

10 A Yes, it is my understanding.

11 Q And is your understanding based on  
12 those two paragraphs that Mr. Moshfegh has  
13 highlighted on page 30 of the main Blade  
14 report, Commission Exhibit 1000?

15 A Yes.

16 Q Would you read those two paragraphs  
17 into the record.

18 A It says:

19 No anomalies were ever recorded  
20 during the measurements.

21  
22 Figure 14 shows the temperature  
23 survey from October 21, 2014, the  
24 last survey before the incident of  
25 October 23, 2015, and shows no  
26 anomalies related to casing  
27 integrity. A cooling feature was  
28 found below approximately

1                   8,200 feet related to gas  
2                   injection and withdrawal, but it  
3                   was not related to a casing  
4                   integrity issue.

5           Q     And do you agree with Blade's  
6 conclusion as set forth on page 30 of  
7 Commission Exhibit 1000?

8           A     Yes.

9           Q     All right. So let's go back, if we  
10 could just -- and I've got just a couple more  
11 questions. Let's just go back to Figure 5 of  
12 the Blade geology report, page 14.

13                   Mr. Neville, just a couple more  
14 questions and then I'm done. So I want you  
15 to assume -- vis-à-vis this figure, I want  
16 you to assume that gas is leaking around the  
17 bottom of the well but below the caprock.  
18 Okay. Are you with me?

19           A     Yes.

20           Q     Where would that gas go?

21           A     Well, it would stay within the S1,  
22 the S2, and the S4. Basically there's  
23 different sands that are associated with the  
24 storage zone.

25           Q     And by definition, would it stay  
26 below the caprock?

27           A     Yes.

28           Q     Let's modify the hypothetical just



1           A     Extremely low.

2           MR. LOTTERMAN: I have no further  
3 questions, your Honor.

4           ALJ POIRIER: Thank you. Let's go off  
5 the record.

6                     (Off the record.)

7           ALJ POIRIER: We'll be on the record.  
8 We're going to take a break until 11:00.

9                     Thank you, and off the record.

10                    (Off the record.)

11                    (Recess taken.)

12           ALJ POIRIER: We'll be back on the  
13 record. We just took a short break.

14                    I believe Mr. Lotterman has a  
15 clarification on the exhibit number. Please  
16 go ahead.

17           MR. LOTTERMAN: I do. Thank you, your  
18 Honor. I misspoke during my redirect of Mr.  
19 Neville. And I would like to walk through  
20 the correct exhibit numbers for the record.

21                    Basically, the geology summary  
22 report dated May 31, 2019 is actually  
23 Commission Exhibit 1002, not 1,000. So, to  
24 be clear, the Figure 5 that we looked at,  
25 that was from Exhibit 1002. Table 3 that we  
26 looked at was from Exhibit 1002. Figure 9,  
27 the wellbore schematic, that was from the  
28 main report; so that is Commission

1 Exhibit 1000. And, finally, the summary of  
2 temp and noise logs that Blade put in its  
3 main report under Figure 13 was also  
4 Commission Exhibit 1,000.

5 Thank you, your Honor.

6 ALJ POIRIER: Okay. Thank you.

7 We'll move to recross with Mr.  
8 Gruen. Let's give the presenter ball to Mr.  
9 Zarchy, please.

10 And why don't you go ahead and  
11 start, Mr. Gruen.

12 MR. LOTTERMAN: You're on mute, Mr.  
13 Gruen.

14 ALJ POIRIER: Mr. Gruen, you're muted.

15 CROSS-EXAMINATION

16 BY MR. GRUEN:

17 Q Thank you. Pardon me.

18 Let's go back to -- if -- Mr.  
19 Zarchy, if you could pull Exhibit SED-274  
20 back onto the screen share.

21 And I'll ask you --

22 ALJ POIRIER: Mr. Gruen, let's -- sorry  
23 to interrupt. It doesn't look like he has  
24 the presenter ball. Let's go off the record.

25 (Off the record.)

26 ALJ POIRIER: We'll be back on the  
27 record.

28 Please go ahead, Mr. Gruen.

1 BY MR. GRUEN:

2 Q Thank you, your Honor.

3 Mr. Neville, do you see in front of  
4 you Exhibit SED-247, the estimated well  
5 conditions as of 11-10-15 as shown on the  
6 title page?

7 A Yes.

8 Q Do you recall Mr. Lotterman asking  
9 you questions about this exhibit?

10 A I believe so. I might have to  
11 scroll down to see.

12 Q Go ahead, Mr. Zarchy.

13 Why don't we follow you, Mr.  
14 Neville.

15 A Oh, yes. Okay. Yes.

16 Q Okay. And do you recall -- just  
17 for clarity, let's got to bottom just to have  
18 the Bates number for the record,  
19 AC\_CPUC\_SED\_DR\_17\_0046340.

20 And if we go about to the middle of  
21 the page there -- that's good. Thank you.

22 Do you see on the right, the note  
23 that says:

24 Unable the use lower  
25 nipple, use M Lock for SSSV  
26 nipple. See wire-line  
27 tickets.

28 Do you see that?

1           A    Yes.

2           Q    I believe Mr. Lotterman asked you  
3 about this note in his redirect.

4                    What does "M Lock for SSSV nipple"  
5 mean?

6           A    It's a -- I'm not familiar with  
7 that, the M Lock.  But as its used in the  
8 context here, it's a -- it's a device that  
9 would land at the -- let me -- give me some  
10 time, please.

11                   I'm not certain -- familiar with  
12 the term "M Lock," but it's -- it -- I'm just  
13 guessing.

14           Q    We don't want you to guess.  I'll  
15 ask the next question.

16                   Let's go to the bottom of the  
17 exhibit there, if we could, just for purposes  
18 of refreshing.

19                   Do you see 6-16-86 notation there?

20           A    Yes.

21           Q    Let me just ask you, at any time  
22 after 1986 -- between 1986 and the incident,  
23 did SoCalGas put a subsurface safety valve in  
24 the well?

25           A    Not after '86.

26           Q    Okay.  And going back to the  
27 notation that we just -- if you scroll up,  
28 Mr. Zarchy.

1           If I could ask you about wire-line  
2 tickets, what are those?

3           A    The wire-line tickets are the -- in  
4 the invoice files. They represent the work  
5 done by the wire-line company and they --  
6 those -- that work gets stored in the well  
7 invoice file.

8           Q    Okay. So it shows briefly what the  
9 company did and perhaps how much they charged  
10 to SoCalGas?

11          A    Yes.

12          Q    Okay. And, in this case, what was  
13 the year of the wire-line tickets referenced  
14 in this note?

15                   What was the year those wire-line  
16 tickets were produced?

17          A    Oh, it doesn't reference the year.

18          Q    Okay.

19          A    It just references -- it references  
20 the tickets. So it doesn't reference the  
21 year.

22          Q    So you don't know?

23          A    I don't know.

24          Q    Okay. Let's go to the upper-right  
25 corner of the document. And I'm looking at  
26 the dates in the upper-right corner. The  
27 last one says:

28                   2-16-79 and 2-20-79, replaced

1 safety system.

2 Do you see that?

3 A Yes.

4 Q But that -- it doesn't say when the  
5 subsurface safety valve was actually pulled  
6 there, does it?

7 A No, it doesn't.

8 Q When was the subsurface safety  
9 valve pulled?

10 A It would be in the well invoice  
11 file. I believe it was sometime in 1980,  
12 subject to check.

13 Q Okay. Thank you.

14 Let's go now to another line of  
15 questions regarding -- do you recall being  
16 asked about Vertilog by Mr. Lotterman?

17 A Yes.

18 Q If you're looking for a problem in  
19 the casing, isn't it better that Vertilog  
20 overstates metal loss than if it understates  
21 it?

22 A Not to the degree that it  
23 overstated it, in my opinion.

24 Q Okay. Bear with me a second.

25 At what point in time was the  
26 accuracy or the quality the Vertilog  
27 acceptable in your perspective?

28 A I don't know.

1           Q    But SoCalGas -- excuse me -- tested  
2 and approved the Vertilog technology for the  
3 storage integrity management program it  
4 created in 2014 and implemented later; is  
5 that right?

6           A    It -- it implemented Vertilog --  
7 with Vertilog technology, I guess -- which is  
8 magnetic flux technology. It's not a  
9 Vertilog. It's a newer version, so to speak,  
10 of the Vertilog. It's called a  
11 high-resolution Vertilog.

12          Q    Okay. And that technology that --  
13 just so we're on the same page, that's the  
14 technology that SoCalGas tested and approved  
15 in 2014, that Vertilog technology -- the  
16 updated form of it, if you will, that you  
17 just discussed; is that not right?

18          A    Yes.

19          Q    Let's go to Exhibit SoCalGas-167,  
20 which is the exhibit that Mr. Lotterman used  
21 on redirect here.

22                   And if we -- do you remember being  
23 asked about this exhibit?

24                   This is SoCalGas -- okay. Let me  
25 back up.

26                   This is Exhibit SoCalGas-167,  
27 e-mail from Todd Van de Putte to Bret Lane,  
28 RE: DOGGR Update, prelim draft November 10,

1 2015. And if you -- that's on the title  
2 page. And if we go down -- scroll down, if  
3 you would.

4 Do you recall being asked about  
5 this document from Mr. Lotterman,  
6 Mr. Neville?

7 A Yes.

8 Q Okay. And for the record, this is  
9 an e-mail from Todd Van de Putte to Bret Lane  
10 dated 11/10/2015. We'll scroll down and read  
11 the Bates number if we could. Ending -- I'll  
12 just give the end; -46338.

13 And if we go just up to the top, I  
14 notice it's from Todd Van de Putte to Bret  
15 Lane, but that the introduction of the e-mail  
16 says, "Hi, Bruce."

17 Do you see that?

18 A Yes.

19 Q Who's Bruce?

20 A I noticed that. I don't know who  
21 Bruce is though.

22 Q Okay.

23 Your Honor, no further questions.

24 ALJ POIRIER: Okay. Thank you, Mr.  
25 Gruen.

26 Ms. Bone, do you have additional  
27 cross?

28 MS. BONE: Yes, your Honor, we do.

1                   And the presenter ball needs to be  
2 transferred to Mr. Benjamin Katzenberg.

3                   ALJ POIRIER: Okay. Let's go off the  
4 record.

5                   (Off the record.)

6                   ALJ POIRIER: We'll go back on the  
7 record.

8                                   CROSS-EXAMINATION

9 BY MS. BONE:

10                  Q    Good morning, Mr. Neville. You're  
11 almost done.

12                  A    Good morning.

13                  Q    Do you recall yesterday on redirect  
14 by Mr. Lotterman where you explained in  
15 detail your experience with the Vertilog  
16 results for the Montebello well?

17                  A    Yes.

18                  Q    And how the casing only revealed a  
19 scratch, whereas the Vertilog results had  
20 identified a larger amount of corrosion?

21                  A    Yes.

22                  Q    So let's look again at your 1991  
23 Vertilog memo, which is Exhibit SoCalGas-153.

24                               And, Mr. Katzenberg, if you could  
25 scroll down to page 3? And, Mr. Katzenberg,  
26 you're going to need to -- let's see, scroll  
27 back up. But we're going to need to expand  
28 this now so that we can see it better. Is

1 that possible?

2 Okay. I think you need to scroll  
3 up a little bit more. That's not the last  
4 page, sorry. Go to page 3. There we go.  
5 Recommendations, number one. Okay.

6 And, Mr. Neville, can you see those  
7 recommendations at point number one?

8 A Yes.

9 Q Did you recommend that SoCalGas  
10 discontinue the use of casing evaluation  
11 tools in this memo?

12 A No.

13 Q In fact, didn't you recommend that  
14 the next casing evaluation tool be done using  
15 a different vendor, such as Schlumberger or  
16 Halliburton?

17 A Yes.

18 Q Did you ever recommend that  
19 SoCalGas just stop all use of casing  
20 evaluation tools?

21 A No.

22 Q Mr. Lotterman, several times in his  
23 redirect of your testimony, referred to the  
24 year 1999.

25 Did you hear that when that was  
26 happening?

27 A I don't recall the significance of  
28 1999.

1 Q I believe that he was referring to  
2 your memo; but your memo was drafted in 1991;  
3 correct?

4 A Yes.

5 Q And the quality of casing  
6 evaluation tools to detect corrosion has  
7 improved since 1991, hasn't it?

8 A Yes.

9 Q And were there other tools  
10 available to evaluate well casings even in  
11 1991?

12 A I believe that, as I mentioned  
13 here, there was a Schlumberger tool and a  
14 Halliburton tool.

15 Q In your opinion, is a casing  
16 evaluation an important component of an  
17 integrity management program?

18 A Yes.

19 MS. BONE: I have no further questions,  
20 your Honor.

21 ALJ POIRIER: Thank you, Ms. Bone.

22 Mr. Lotterman, do you have any  
23 additional redirect based on this?

24 MR. LOTTERMAN: Just a clarification,  
25 your Honor, to the extent during my redirect  
26 of Mr. Neville on SoCalGas Exhibit-153 I did  
27 say "1999," I meant 1991. And I thank Ms.  
28 Bone for that clarification.

1 ALJ POIRIER: Okay.

2 Mr. Neville, you are done. I want  
3 to thank you for your participation in this  
4 hearing since four -- almost four and a half  
5 days. So I appreciate your time and  
6 everybody else's. Again, as ALJ Hecht said  
7 yesterday, it's been a learning experience,  
8 for sure. I know about more about shoes than  
9 I ever thought I would.

10 THE WITNESS: Thank you.

11 ALJ POIRIER: So let's go off the  
12 record.

13 (Off the record.)

14 ALJ POIRIER: So let's go back on the  
15 record.

16 Mr. Stoddard --

17 MR. STODDARD: Your Honor, can I just  
18 have three minutes before we go back on the  
19 record?

20 ALJ POIRIER: Sure. Let's go back off  
21 the record.

22 (Off the record.)

23 ALJ POIRIER: Back on the record.

24 We'll take a break until 11:25.  
25 Thank you.

26 Off the record.

27 (Recess taken.)

28 ALJ POIRIER: So we'll be back on the

1 record. We just had a short break. We're  
2 going to be moving to the exhibits.

3 And we'll start with Mr. Stoddard.

4 MR. STODDARD: Thank you, your Honor.

5 Are we back on the record?

6 ALJ POIRIER: We are.

7 MR. STODDARD: So starting -- and to  
8 begin with, we did confer also with SED. And  
9 we have, I believe, resolution on  
10 stipulations for all of the exhibits, as  
11 well, that are going to be moved in.

12 To identify SoCalGas's exhibits from  
13 both direct and redirect that need to be  
14 moved into the record, the first is  
15 SoCalGas-01, which is the prepared opening  
16 testimony of Dan Neville dated November 22,  
17 2019.

18 Next is SoCalGas-15, which is the  
19 prepared reply testimony of Dan Neville dated  
20 March 20th, 2020.

21 Next is SoCalGas-16, Exhibit to the  
22 prepared reply testimony of Dan Neville,  
23 dated March 20, 2020.

24 SoCalGas-21, prepared surreply  
25 testimony of Dan Neville, June 30th, 2020.

26 SoCalGas-22, exhibits to prepared  
27 surreply testimony of Dan Neville June 30th,  
28 2020.

1           And then there was one redirect  
2 exhibit which was discussed, which is  
3 SoCalGas-167. And the description of that is  
4 e-mail from Todd Van de Putte to Bret Lane,  
5 RE: DOGGR update, preliminary draft.

6           ALJ POIRIER: And you're requesting to  
7 move those exhibits into the record?

8           MR. STODDARD: SoCalGas requests to  
9 move those into the record. And on the last  
10 item, I believe SED stipulated to admission  
11 of SoCalGas-167.

12           ALJ POIRIER: Let's hear from -- do we  
13 have any objection for moving these exhibits  
14 into the record?

15           MS. PURCHIA: Your Honor, did you say  
16 Exhibit 16?

17           ALJ POIRIER: No -- um -- we're looking  
18 at Exhibits SoCalGas 1, 15, 16, 21, 22, and  
19 167.

20           Do any of the parties have objections  
21 to moving these into the record?

22           MS. PURCHIA: Your Honor, SED  
23 stipulated to moving those exhibits into the  
24 record. But we do have remarks that we would  
25 like to make about SoCalGas-167.

26           Would this be an appropriate time?

27           ALJ POIRIER: Sure. Go ahead.

28           MS. PURCHIA: Okay. As Mr. Gruen

1 pointed out yesterday, SoCalGas objected when  
2 SED attempted to introduced SED-218 in record  
3 on redirect of Ms. Margaret Felts, our  
4 witness. SoCalGas's objection was sustained,  
5 and parties were instructed not to introduce  
6 redirect exhibits. Then yesterday, after  
7 SoCalGas completed its cross-examination,  
8 SoCalGas introduced a redirect exhibit and  
9 expressed it was only demonstrative.

10 For efficiency purposes and clarity  
11 of the record, SED stipulates to SoCalGas-167  
12 going into to record. But we would request  
13 your Honors to direct SoCalGas not to serve,  
14 display, and request to move any more  
15 redirect exhibits into the record during this  
16 set of hearings.

17 ALJ POIRIER: Mr. Stoddard?

18 MR. STODDARD: Thank you, your Honor.

19 The response to that is simply that  
20 SED that was introducing an exhibit that was  
21 an incomplete document. It was an attachment  
22 that was included with an email that was  
23 produced together and Bates-sequential order  
24 to SED. And the redirect exhibit was being  
25 offered as an exception, which your Honors I  
26 believe recognized at the time, for the sake  
27 of completeness. To the degree that parties  
28 introduced exhibits which are incomplete

1 portion of documents, SoCalGas will continue  
2 to reserve the right to introduce redirect  
3 exhibits for the purpose of making sure the  
4 complete version of the document is in the  
5 record.

6 ALJ POIRIER: Thank you. I'll make  
7 some brief remarks.

8 I think yesterday was an exception.  
9 It was an excerpt. I think if we're serving  
10 exhibits that have excerpts, they should at  
11 least have -- if we can serve the whole  
12 document shorter, I think it's better for the  
13 record. If we have excerpts of longer  
14 documents, usually we ask for a table of  
15 contents or that some type of cover page is  
16 included so that we understand where it's  
17 coming from.

18 So I do think, generally, we're not  
19 going to allow exhibit on redirect. But I  
20 think if it's going to a complete document,  
21 that's something that we're going to consider  
22 on a case-by-case basis. Because we want to  
23 have a clear record.

24 With that, I will grant SoCalGas's  
25 request to move Exhibits SoCalGas-01,  
26 SoCalGas-15, SoCalGas-16, SoCalGas-21,  
27 SoCalGas-22, and SoCalGas-167.

28 (Exhibit No. SoCalGas-01 was  
received into evidence.)

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(Exhibit No. SoCalGas-15 was received into evidence.)

(Exhibit No. SoCalGas-16 was received into evidence.)

(Exhibit No. SoCalGas-21 was received into evidence.)

(Exhibit No. SoCalGas-22 was received into evidence.)

(Exhibit No. SoCalGas-167 was received into evidence.)

ALJ POIRIER: Now we'll move to SED.

MS. PURCHIA: Thank you, your Honor.

I've got a cough a little bit -- one second -- swallowed my water wrong.

Okay. So we have quite a few exhibits that we're moving in. Would it be okay just to read the numbers? Or would you like me to read the titles?

ALJ POIRIER: The numbers are fine. Just please don't go too quickly, because I'm going to be noting them and so is the court reporter.

MS. PURCHIA: Okay.

So, SED-231, SED-238, SED-241, SED-257, SED-262, SED-263, SED-264, SED-265, SED-266, SED-267, SED-268, SED-269, SED-274, SED-275, SED-277, SED-279, SED-280, SED-283, SED-284, SED-285, SED-286, SED-287, SED-294.

Then we have SED-R-295, which was served this morning. This is a revised

1 exhibit of the SS-25 well file. And we  
2 called that "Portions of the SS-25 well  
3 file."

4 We have SED-R-269, which was served  
5 this morning. This is the revised SS-29 well  
6 file. And we have called that "Excerpted  
7 portions of the SS-29 well file."

8 We have SED-R-297, which is the  
9 revised exhibits for the tubing invoices for  
10 SS-25. And we have -- I believe we called  
11 that "Excerpted portions of SS-25 tubing  
12 invoices."

13 And then we have SED-298 and  
14 SED-299.

15 So SED requests to move these into  
16 the record. And we believe that SoCalGas has  
17 stipulated to that.

18 ALJ POIRIER: Mr. Stoddard?

19 MR. STODDARD: Thank you, your Honor.

20 Yes; with the one note, which is,  
21 Ms. Purchia didn't describe and didn't read  
22 the descriptions of most of the exhibits, but  
23 she did read the description, which are  
24 important for purposes of the stipulation --  
25 the meet and confer for the revised exhibits.  
26 And provided, and so long as the court  
27 reporter caught that, and they are admitted  
28 as retitled as Ms. Purchia, SoCalGas

1 stipulates to admission of these exhibits.

2 ALJ POIRIER: Thank you.

3 Ms. Bone, do you have anything --

4 MS. BONE: Yes, I --

5 ALJ POIRIER: Do you have anything  
6 further on these exhibits? I just want to be  
7 --

8 MS. BONE: No.

9 ALJ POIRIER: Okay. Thank you.

10 So we will grant SED's request and  
11 move exhibits SED-231, SED-238, SED-241,  
12 SED-257, SED-262, SED-263, SED-264, SED-265,  
13 SED-266, SED-267, SED-268, SED-269, SED-274,  
14 SED-275, SED-277, SED-279, SED-280, SED-283,  
15 SED-284, SED-285, SED-286, SED-287, SED-294,  
16 SED-R-295, SED-R-296, SED-R-297, SED-298, and  
17 SED-299 are all moved onto the record.

18 (Exhibit No. SED-231 was received  
19 into evidence.)

20 (Exhibit No. SED-238 was received  
21 into evidence.)

22 (Exhibit No. SED-241 was received  
23 into evidence.)

24 (Exhibit No. SED-257 was received  
25 into evidence.)

26 (Exhibit No. SED-262 was received  
27 into evidence.)

28 (Exhibit No. SED-263 was received  
into evidence.)

(Exhibit No. SED-264 was received  
into evidence.)

(Exhibit No. SED-265 was received

1 into evidence.)  
2 (Exhibit No. SED-266 was received  
into evidence.)  
3 (Exhibit No. SED-267 was received  
4 into evidence.)  
5 (Exhibit No. SED-268 was received  
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6 (Exhibit No. SED-269 was received  
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7 (Exhibit No. SED-274 was received  
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9 (Exhibit No. SED-275 was received  
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11 into evidence.)  
12 (Exhibit No. SED-279 was received  
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13 (Exhibit No. SED-280 was received  
14 into evidence.)  
15 (Exhibit No. SED-283 was received  
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16 (Exhibit No. SED-284 was received  
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18 (Exhibit No. SED-285 was received  
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19 (Exhibit No. SED-286 was received  
20 into evidence.)  
21 (Exhibit No. SED-287 was received  
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28 (Exhibit No. SED-298 was received

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into evidence.)

(Exhibit No. SED-299 was received  
into evidence.)

ALJ POIRIER: Did I miss anything? ]

MS. PURCHIA: You got it. Thank you.

ALJ POIRIER: Great. Thank you.

Now we'll move on to Ms. Bones.

MS. BONE: Yes, your Honor, Cal

Advocates would like to move into the record  
CalPA-407 and CalPA-411. And we understand  
that SoCalGas has stipulated to the entry of  
these exhibits into the record.

MS. PURCHIA: I heard earlier that you  
did stipulate to that, Mr. Stoddard.

MR. STODDARD: That's correct, your  
Honor.

ALJ POIRIER: Ms. Purchia, anything?

MS. PURCHIA: No objection from SED.

ALJ POIRIER: Thank you.

Cal Advocates' request to move  
CalPA-407 and CalPA-411 is granted and those  
are moved onto the record.

(Exhibit No. CalPA-407 was received  
into evidence.)

(Exhibit No. CalPA-411 was received  
into evidence.)

ALJ POIRIER: Let's go off the record.

(Off the record.)

ALJ POIRIER: Back on the record.

1           We'll be taking a short break to get  
2 the witnesses ready, until 11:50. Thank you.  
3 Off the record.

4           (Off the record.)

5           ALJ POIRIER: Let's go back on the  
6 record.

7           I am returning from a short break to  
8 get the witnesses online for the Webex. We  
9 also had a brief discussion on how we were  
10 going to proceed, since we have a panel of  
11 two witnesses. It sounds like we're going to  
12 start with general questions. We're going to  
13 start with Mr. Hower or Mr. Stinson, first  
14 one, and then move to the other.

15           And then I asked -- just asked all  
16 participants to be deliberate and make sure  
17 we are not engaging in any crosstalk.

18           With that, Mr. Lotterman, do you  
19 want to call your witnesses?

20           MR. LOTTERMAN: Yes. Thank you, your  
21 Honor.

22           SoCalGas calls Tim Hower and Charlie  
23 Stinson of MHA.

24           TIM HOWER, called as a witness by  
25 Southern California Gas Company, having  
26 been sworn and having attested,  
27 testified as follows:

28           CHARLES STINSON, called as a witness  
by Southern California Gas Company,  
having been sworn and having attested,  
testified as follows:

1 ALJ POIRIER: Mr. Hower, can you state  
2 your name for the record and spell your last  
3 name?

4 WITNESS HOWER: Timothy Hower,  
5 H-o-w-e-r.

6 ALJ POIRIER: And, Mr. Stinson, can you  
7 state your name and spell your last?

8 WITNESS STINSON: Charles Stinson,  
9 S-t-i-n-s-o-n.

10 ALJ POIRIER: Thank you. I am now  
11 going to read the witness attestation. I am  
12 going to read through the whole thing and  
13 then I will ask each of you to indicate if  
14 you agree with that attestation.

15 I do solemnly swear under penalty of  
16 perjury that the testimony I give in the case  
17 now pending before this Commission shall be  
18 the truth, the whole truth and nothing but  
19 the truth.

20 I attest I will testify based on my  
21 own knowledge and memory, free from external  
22 influences or pressures.

23 I attest I will adhere to all formal  
24 requirements of testifying under oath,  
25 including the prohibition against being  
26 coached.

27 I attest I will only refer to  
28 materials provided by the parties, exhibits

1 premarked and identified by the parties and  
2 previously shared with the opposing party.

3 I attest I will not make any  
4 recordings of the proceeding. I attest that  
5 I understand that any recordings of the  
6 proceeding held by Webex, including  
7 screenshots or other visual copying of a  
8 hearing is absolutely prohibited.

9 I attest that I understand that  
10 violations of these prohibitions may result  
11 in sanctions, including removal from the  
12 evidentiary hearings, restricted entry into  
13 future hearings, denial of entry to future  
14 hearings or any other sanctions deemed  
15 necessary by the Commission.

16 I attest I will not engage in any  
17 private communications by phone, text or  
18 e-mail, or any other mode of communication  
19 while under oath and being examined.

20 If I experience any attempts to  
21 tamper with my testimony today, I will report  
22 the occurrence to the presiding officer  
23 immediately, with myself and ALJ Hecht being  
24 presiding officers.

25 First, Mr. Hower, do you attest to  
26 this?

27 WITNESS HOWER: Yes, I do.

28 ALJ POIRIER: Mr. Stinson, do you

1 attest?

2 WITNESS STINSON: I do, your Honor.

3 ALJ POIRIER: Thank you.

4 Mr. Lotterman.

5 MR. LOTTERMAN: Thank you, your Honor.

6 DIRECT EXAMINATION

7 BY MR. LOTTERMAN:

8 Q Gentlemen, I would like to identify  
9 your testimony before we proceed.

10 First of all, do you have copies of  
11 your testimony -- hard copies of your  
12 testimony and exhibits in your respective  
13 offices?

14 WITNESS HOWER: Yes.

15 WITNESS STINSON: Yes.

16 Q All right. So let's walk through  
17 them and then I will ask each of you to adopt  
18 them.

19 So let's begin with SoCalGas  
20 Exhibit 4R entitled Prepared Reply Testimony  
21 of Tim Hower and Charlie Stinson of MHA  
22 Petroleum Consultants, dated March 20, 2020.  
23 And this is a redline version of an earlier  
24 submission. And the redline version was  
25 served on all parties last week, I believe  
26 Wednesday, April 28, 2021.

27 Next exhibit is SoCalGas 4-2. And  
28 this is the final with redlines adopted

1 version of the Prepared Reply Testimony of  
2 Tim Hower and Charlie Stinson of MHA  
3 Petroleum Consultants, dated March 20, 2020  
4 and also served on April 28, 2021.

5           We then have SoCalGas Exhibit 5,  
6 which is a multi-volume compilation of  
7 exhibits to Prepared Testimony of -- excuse  
8 me, to Prepared Reply Testimony of Tim Hower  
9 and Charlie Stinson of MHA Petroleum  
10 Consultants, dated March 20, 2020. And that  
11 was served on March 12, 2021, with no  
12 corrections.

13           We then have SoCalGas Exhibit 27,  
14 which is the prepared Sur Reply Testimony of  
15 Tim Hower and Charlie Stinson of MHA  
16 Petroleum Consultants, dated June 30, 2020  
17 and served on March 12, 2021.

18           And finally we have SoCalGas  
19 Exhibit 28, which are the Exhibits to  
20 Prepared Sur Reply Testimony of Tim Hower and  
21 Charlie Stinson of MHA Petroleum Consultants,  
22 dated June 30, 2020 and served on March 12,  
23 2021.

24           Mr. Hower, were these documents  
25 prepared and/or compiled by you?

26           WITNESS HOWER: Yes.

27           Q Mr. Stinson, were these documents  
28 as marked prepared and compiled by you?

1 WITNESS STINSON: Yes.

2 Q Mr. Hower, do you adopt these five  
3 exhibits as your testimony in this  
4 proceeding?

5 WITNESS HOWER: Yes.

6 Q Mr. Stinson, do you adopt these  
7 five exhibits as your testimony in this  
8 proceeding?

9 WITNESS STINSON: I do.

10 Q Mr. Hower, would you briefly  
11 describe your experience and background?

12 WITNESS HOWER: Sure. I have 40 years'  
13 experience in oil, gas and gas storage  
14 engineering; specific to gas storage, I've  
15 been involved in the evaluation and  
16 optimization of underground gas storage  
17 projects in the United States, Europe and  
18 Australia. I have conducted industry  
19 training courses in gas storage. I've  
20 co-authored a textbook that dealt with  
21 reservoir management of gas storage  
22 reservoirs.

23 I have personally been to  
24 approximately 30 storage sites in the U.S.  
25 and worked data associated with over 70  
26 storage reservoirs. And I've had the  
27 opportunity to testify before numerous state  
28 regulatory bodies, as well as

1 internationally, also.

2 Q Mr. Stinson, would you briefly  
3 describe your experience and background?

4 WITNESS STINSON: Yes. I have over  
5 42 years of experience in the oil and gas  
6 industry. A large portion of that, about  
7 32 years of that, was working for an  
8 Australian company for Northwest Natural Gas.  
9 These are primarily nonutility, unregulated  
10 companies in gas exploration and gas  
11 transmission and then primarily in  
12 underground gas storage, permitting,  
13 development and operations.

14 I -- while at Northwest Natural, I  
15 served for over 20 years on the American Gas  
16 Association Underground Storage Committee,  
17 including one year as Chairman. And I am a  
18 Licensed Petroleum Engineer.

19 Q Mr. Stinson, how many gas storage  
20 facilities have you visited over your career?

21 A Yeah. I have visited over 30 gas  
22 storage facilities on the ground primarily  
23 through my work with the American Gas  
24 Association and also early in the development  
25 stages of storage for the Mist Gas Field in  
26 Oregon. I visited with several companies,  
27 primarily here in California regarding their  
28 development and operational activities for

1 underground storage.

2 Q Mr. Hower, would you mind just  
3 briefly describing the respective role that  
4 you and Mr. Stinson took in preparing the  
5 testimony that has been presented in this  
6 proceeding?

7 WITNESS HOWER: Sure. I typically took  
8 the lead role in preparing our testimony. I  
9 would then, once I had an outline or a draft  
10 or the testimony started, I would pass it off  
11 to Mr. Stinson. He and I would then worked  
12 with it collaboratively, and then typically I  
13 would finish it up and work with the counsel.

14 MR. LOTTERMAN: Thank you.

15 Your Honor, Mr. Hower and  
16 Mr. Stinson are available for  
17 cross-examination.

18 ALJ POIRIER: Thank you, Mr. Lotterman.  
19 I think at this point it makes sense to break  
20 for lunch and SED can start after that.

21 So we will take a lunch break until  
22 1:15. And we will be off the record.

23

24 (Whereupon, at the hour of 12:01  
25 p.m., a recess was taken until 1:17  
p.m.) ]

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AFTERNOON SESSION - 1:17 P.M.

\* \* \* \* \*

TIM HOWER and CHARLES STINSON,  
resumed the stand and testified further as  
follows:

ALJ HECHT: We'll be back on the  
record.

We are returning from lunch on  
Friday, May 7th. This morning two new  
witnesses were sworn and gave their direct  
testimony. So we're going to pick up with  
the cross-examination of Mr. Hower and  
Mr. Stinson.

Are there any questions or  
housekeeping issues before I tell Mr. Gruen  
he may begin?

(No response. )

ALJ HECHT: It doesn't look like it.  
Okay. Mr. Gruen, you can go ahead.

MR. GRUEN: Thank you, your Honor.

CROSS-EXAMINATION

BY MR. GRUEN:

Q Good afternoon, Mr. Hower and  
Mr. Stinson. My name is Darryl Gruen and I  
am an attorney on behalf of the California

1 Public Utilities Commission's Safety and  
2 Enforcement Division in this proceeding.

3 And just a couple of clarifications  
4 and questions to establish common  
5 understandings of certain terms that may be  
6 applicable throughout the cross-examination  
7 to get us started.

8 So, since both of you -- just as a  
9 matter of starting, since both of you  
10 together are testifying as part of a panel,  
11 just to clarify, when I use the term "you" I  
12 mean it to refer to either or both of you.  
13 So it may turn out that certain questions end  
14 up being answered by one of you, based on  
15 your knowledge or background, but either of  
16 you is welcome to answer.

17 In certain cases, I will have  
18 questions directed to one of you, such as  
19 when I'm asking about your specific  
20 background, for example, and we'll do our  
21 best to clarify that for the record. And if  
22 you could help with that, that would be  
23 appreciated as well, so we have a clear  
24 record of which one of you is talking.

25 All right. Just with that  
26 understanding, if I could just ask, and these  
27 questions are really directed for both of  
28 you, so if you could take turns answering,

1 I'd appreciate it.

2 First of all, are each of you alone  
3 at the moment?

4 WITNESS HOWER: Yes.

5 WITNESS STINSON: Yes.

6 Q Thank you. And are you able to  
7 communicate separately or privately with  
8 anyone, while you communicate through the  
9 Webex connection you have to the hearings  
10 here today?

11 WITNESS HOWER: No.

12 WITNESS STINSON: No.

13 Q Thank you. Do you consent to allow  
14 anyone to record or in any way transcribe  
15 your testimony in this proceeding, other than  
16 the court reporter approved by the California  
17 Public Utilities Commission?

18 WITNESS HOWER: No.

19 WITNESS STINSON: No.

20 Q Okay. And if I press your memory,  
21 please feel free to say that you don't  
22 recall. And if you don't know, please also  
23 let me know that, and I will work with that.  
24 I will take that answer and continue to move  
25 on with the questions as quickly and as  
26 expeditiously as I can. Do you understand?

27 WITNESS HOWER: Yes.

28 WITNESS STINSON: Yes, I do.

1 Q Thank you. Okay. And just to  
2 clarify a couple of common understandings for  
3 terms that we may use today, when we talk  
4 about "Blade" today, can we agree that we are  
5 referring to Blade Energy Partners?

6 WITNESS HOWER: Yes.

7 WITNESS STINSON: Yes.

8 Q Thank you. And when we use the  
9 term "Aliso Canyon" or "Aliso Canyon  
10 facility" or "Aliso," can we agree that we  
11 are all talking about SoCalGas Aliso Canyon  
12 Natural Gas Storage Facility?

13 WITNESS HOWER: Yes.

14 WITNESS STINSON: Yes.

15 Q And if we use the term "root cause  
16 analysis" or "RCA," can we agree that refers  
17 to Blade's root cause analysis and  
18 supplemental reports issued in May of 2019?

19 WITNESS HOWER: Yes.

20 WITNESS STINSON: Yes.

21 Q And the use of the term "SS-25,"  
22 with regards to that term, can we agree that  
23 that refers to Standard Sesnon 25 well at the  
24 Aliso Canyon facility?

25 WITNESS HOWER: Yes.

26 WITNESS STINSON: Yes.

27 Q Okay. And the use of the term  
28 "incident," when we use that term, if we use

1 that term, can we agree that refers to the  
2 release of gas from the SS-25 facility that  
3 was discovered beginning October 23rd, 2015?

4 WITNESS HOWER: Yes.

5 WITNESS STINSON: Yes.

6 Q Okay. Thank you. All right.

7 So just to do a bit of background  
8 first, and these questions are directed to  
9 Mr. Stinson. We'll start with you, if I can.  
10 This is questions about your background.

11 So if we could, as a start, go to  
12 your résumé or CV which was included as an  
13 exhibit in your reply testimony. I believe  
14 that's, for the record, SCG Exhibit 4R. And  
15 if we could go to the page with the Bates  
16 stamp on it 5.1159. And for the record, you  
17 see that title of the cover page Prepared  
18 Reply Testimony of Tim Hower and Charlie  
19 Stinson MHA Petroleum Consultants, March 20,  
20 2020. And that is SoCalGas-4R, and if we go  
21 to the Bates stamp 5.1159?

22 WITNESS STINSON: Yes, I am looking for  
23 that.

24 Q I believe this should be toward the  
25 end of the document.

26 ALJ HECHT: We'll be off the record  
27 while we find our place.

28 (Off the record.)

1 ALJ HECHT: We'll be back on the  
2 record.

3 While we were off the record, we had  
4 some conversation about page numbers and  
5 Bates numbers. I am going to ask that all of  
6 the attorneys and witnesses try to be careful  
7 in identifying exactly which exhibit and what  
8 page numbers of that exhibit they are  
9 referring to. That will help our court  
10 reporters and will help me and my co-assigned  
11 ALJ later to keep track of what you're  
12 referring to and I want to make sure that the  
13 right version of this, which I think is  
14 SoCalGas Exhibit-4R, is the one that gets  
15 onto the exhibit list and ultimately is  
16 entered into the record.

17 With that, I will say, Mr. Gruen you  
18 may go ahead.

19 MR. GRUEN: Thank you, your Honor.

20 Q Okay, Mr. Zarchy. If we could go  
21 to your CV in Exhibit -- SoCalGas Exhibit 05.  
22 Pardon me. SoCalGas-05, Part 2. And I think  
23 we have there -- there we are. Okay. Pardon  
24 the oversight, your Honor.

25 So here, Mr. Stinson, do you see  
26 the Bates number at the bottom of the page  
27 SoCalGas-5.1159?

28 WITNESS STINSON: Yes, I do.

1 Q And if you're following along using  
2 a hard copy, I will just ask you to let me  
3 know when you're ready so we can proceed.

4 A I can read the one on the screen.  
5 Thank you.

6 Q Okay. Very good. Thank you.  
7 Okay. Looking at your background here, I see  
8 that you have background as a mathematician  
9 and I would like to understand if that  
10 background qualifies you as a Petroleum  
11 Engineer as well.

12 So if we can scroll down, I believe  
13 you had clarified that you have background as  
14 a -- you are a Registered Petroleum Engineer  
15 in your direct testimony, and I believe here  
16 you also -- your résumé states, and let's go  
17 down a little bit further. There it is.

18 Okay. The Professional Registration you're a  
19 Registered Petroleum Engineer in the state of  
20 Oregon, No. 11498, February 1982. Do I have  
21 that right?

22 A Yes, that's correct.

23 Q Okay. What requirements do you  
24 have to meet in order to get licensed in  
25 Oregon as a Petroleum Engineer?

26 A Oregon follows the -- sort of the  
27 federal guidelines for engineering  
28 registration. And they issue -- annually

1 they issue tests for engineers. So I had to  
2 -- my degree is in Applied Mathematics,  
3 Bachelor of Science Degree from University of  
4 Colorado. When I got -- as I was getting  
5 close to getting out of the Navy, I took an  
6 engineering training exam.

7 I subsequently got employed by  
8 Northwest Natural Gas in December of 1978.  
9 And early in 1979, I got involved in their  
10 gas exploration activities in the gas field.  
11 That led to a discovery which ultimately led  
12 to the development of underground storage.  
13 In the course of that, I was working with a  
14 petroleum engineer out of Bakersfield. He  
15 sort of became my mentor. And after about  
16 three years of doing that, I had documented  
17 enough experience between that and the time I  
18 had spent in the Navy, to qualify for a  
19 Professional Engineering License. And I took  
20 the exam, passed and got my registration.

21 Q Okay. Thank you. Did you take any  
22 petroleum engineering classes in order to get  
23 registered -- to get licensed as a Petroleum  
24 Engineer?

25 A I did some -- I will call them  
26 short-form classes. I did a class at the  
27 University of Michigan from Dr. Donald Katz.  
28 He was kind of the father of Natural Gas

1 Engineering and had a large hand in some of  
2 the early underground gas storage reservoir  
3 work; a couple of other seminars and whatnot,  
4 so that was part of my training, plus this  
5 engineer in Bakersfield, working hand-in-hand  
6 with him.

7 Q Okay. So I think you talked about  
8 it -- an exam, but I want to clarify, if you  
9 could tell me, are you familiar with an  
10 Engineer-in-Training exam?

11 A Yes.

12 Q Okay. And if I refer to that  
13 Engineer-In-Training exam using the shorthand  
14 EIT, will you understand that?

15 A Yes.

16 Q Did you pass the EIT exam?

17 A Yes, I did.

18 Q Okay. Let's see. And did you take  
19 the professional engineering exam for the  
20 Oregon registration?

21 A Yes.

22 Q What year was that?

23 A 1982.

24 Q Okay. And do you have to take any  
25 continuing education courses to maintain your  
26 registration as a Petroleum Engineer?

27 A Yes, I do. I have to document, I  
28 believe now the requirement is 40 hours every

1 two years. I have to renew my license every  
2 two years.

3 Q Okay. Thank you. Let's -- if I  
4 could explore your background, Mr. Stinson,  
5 and how it relates to certain particulars in  
6 this proceeding.

7 So, on the same page, if we scroll  
8 up to Areas of Expertise, you talk about  
9 management and executive roles with  
10 operational and fiscal responsibilities for  
11 activities related to Underground Storage  
12 Development and Ops. You see? Would you  
13 agree?

14 A Yes.

15 Q What did that work entail at a high  
16 level?

17 A Well, over the course of my career,  
18 as I mentioned, we made a natural gas field  
19 discovery in Oregon of the Mist Gas Field in  
20 1979. That, subsequently starting in about  
21 1982, the -- a couple of those reservoirs  
22 were purchased by my company from the -- from  
23 their partners and we started the development  
24 process for underground storage in those two  
25 reservoirs, went through a fairly long  
26 permitting process, since there wasn't an  
27 underground storage in Oregon. That included  
28 establishment of regulations and we were able

1 to get those two reservoirs permitted,  
2 constructed and in service in 1989.

3 Since that time, and prior to my  
4 retirement from Northwest Natural, in 2011 we  
5 developed actually a total of seven separate  
6 underground gas storage reservoirs in that  
7 same gas field.

8 Also, part of my leaving Northwest  
9 Natural's family of companies, we did a  
10 fairly exhaustive reservoir evaluation in the  
11 state of California. We identified a  
12 reservoir called Gill Ranch Gas Field and  
13 were able to over, from the period of about  
14 2007 to 2010, able to design, permit,  
15 construct and start operation of that field,  
16 as well. ]

17 Q Okay. Let me ask you some  
18 specifics about that background and just your  
19 areas of expertise in general, but I thought  
20 that background might be applicable here.

21 Have you done failure analysis on  
22 wells?

23 A I have not.

24 Q And have you ever examined how or  
25 why a leak on natural gas storage wells  
26 happened?

27 A We have certainly had leaks on  
28 natural gas wells and, yeah, those -- we've

1 investigated those and repaired or plumbed  
2 those wells. So, yes, we've -- I've been  
3 involved in that.

4 Q And I noticed you answered that  
5 question with the word "we." When you say  
6 that word here, what do you mean?

7 A Yeah, myself and the engineers I  
8 had working for me at the time at Northwest  
9 Natural.

10 Q I see. Okay. And you in  
11 particular, not your team necessarily, but  
12 you in particular, did you have a role in  
13 examining how or why a given leak happened in  
14 a natural gas storage facility well?

15 A Yeah, from a management standpoint.  
16 I certainly had qualified engineers working  
17 for me. I was directing their activity.

18 Q Okay. And have you personally  
19 recommended what to do about those leaks?

20 A Yes.

21 Q How many times?

22 A I can recall at least on two  
23 occasions where we had to take some action  
24 based on the analysis.

25 Q Okay. Have you reviewed and  
26 recommended well designs?

27 A Certainly.

28 Q Have you evaluated reservoirs?

1           A    Yes, I have.

2           Q    Have you ever modeled a well kill?

3           A    I have not.

4           Q    In terms of your review and  
5 recommendation of well designs, can you  
6 estimate approximately over your career how  
7 many times you've done that?

8           A    Yeah, many, many times. It goes  
9 back to the very early days of gas storage  
10 development in Oregon. We -- I personally  
11 made a visit to other storage field operators  
12 looking at their well design, and we ended up  
13 settling on a design based on what we felt  
14 was sort of the best technology at the time.

15           We -- and then subsequent to that,  
16 we upgraded that design as technology  
17 improved to include different downhole  
18 completions, horizontal technology, different  
19 well screens, different gravel pack  
20 arrangements. We also in 2010, when we  
21 constructed the Gill Ranch storage facility,  
22 we applied that same technology there. Those  
23 wells were designed on the same basis.

24           Q    Okay. And, again, just to parse  
25 out, when you use the term "we" there, can  
26 you tell me who you mean.

27           A    Yeah, so I had a team of geologist  
28 engineers working for me and, you know, I

1 certainly didn't do all this work on my own.  
2 I was -- I was -- at Gill Ranch I was in  
3 charge of the overall project development, I  
4 was (inaudible) engineering and operations  
5 for Gill Ranch storage, so I had engineers  
6 working for me. Those same engineers had  
7 worked for me in the design of the gas  
8 storage wells in the Mist gas field, so we  
9 had a good common understanding of what those  
10 wells should look like.

11 Q Let me see if I can just parse it.  
12 In that case those engineers were doing the  
13 design work and you were managing them.

14 Am I tracking that right?

15 A That's correct.

16 Q Okay. How about the evaluation of  
17 reservoirs? Approximately in your tenure how  
18 many have you evaluated?

19 A Well, we've done that on multiple  
20 occasions. As I mentioned in the Mist gas  
21 field, those individual reservoirs had to be  
22 evaluated as to their suitability for  
23 development for storage. There are  
24 approximately -- I think over the -- since  
25 its discovery, there have been about 40  
26 individual reservoirs in the -- that approves  
27 gas in this field. Some are suitable for  
28 storage development; some are not.

1           We've evaluated each one of those  
2 reservoirs as to its suitability for storage.  
3 And, as I mentioned, at this point in time,  
4 eight of those have been developed, seven  
5 while I was at Northwest Natural, one since  
6 then. We also did a fairly exhaustive search  
7 of reservoirs here in California looking for  
8 an opportunity to develop underground gas  
9 storage. We probably looked at 50  
10 reservoirs. We came up with a short list and  
11 then boiled that down to ultimately  
12 developing the Gill Ranch gas storage  
13 reservoirs. I also was involved --

14           Q   (Inaudible) -- I'm sorry to  
15 interrupt. Go ahead.

16           A   I was also involved in a project  
17 with Pacific Gas and Electric. This was an  
18 underground air storage project. We  
19 evaluated multiple reservoirs to -- this was  
20 more of a research and development project,  
21 but we had to do the same kind of reservoir  
22 evaluation for that project so I was --

23           Q   Okay.

24           A   -- involved in that as well.

25           Q   And I think you mentioned 40,  
26 approximately 40, reservoirs if I -- did I  
27 track that right?

28           A   Yeah. I would say 40 at Mist, and

1 then we have -- we looked at probably another  
2 50 in California. I would say overall I  
3 probably looked at the date on a hundred  
4 reservoirs looking for underground storage  
5 opportunities.

6 Q Within how many fields?

7 A Well, the ones in California are  
8 all individual fields, you know, single  
9 reservoirs in a single field. The ones in  
10 Oregon are all -- all those reservoirs are in  
11 one field.

12 Q And I just want to clarify, the  
13 background that we're talking about -- just  
14 to understand -- that's not relating  
15 specifically to failure analyses; is that  
16 right?

17 A The development of reservoirs is  
18 not related to failure analysis, that's  
19 correct.

20 Q Any of the others? Any of the  
21 other pieces of your background, are any of  
22 those related to failure analyses?

23 A I don't understand what you're  
24 saying.

25 Q Let me ask it this way: Do you  
26 have any background working on failure  
27 analyses?

28 A I've been involved from a

1 management standpoint where we had a failure  
2 and had to have an analysis done, but I have  
3 not done firsthand failure analysis.

4 Q Understood. Okay. Thank you,  
5 Mr. Stinson. I appreciate that.

6 Mr. Hower, if you could turn to  
7 your background and do a similar exercise if  
8 we could and actually just at a higher level.  
9 This is going to be slightly different, but,  
10 Mr. Hower, I'd like to understand your  
11 familiarity with SoCalGas' leak records and  
12 failure analyses.

13 So with that introduction, one of  
14 the things I wanted to ask is my sense is the  
15 utility would typically rely on its own  
16 employees who may have more access and  
17 familiarity with the records and analyses.  
18 So maybe just at a high level if we could  
19 turn to Mr. Hower's.

20 I think it's just the prior page,  
21 Mr. Zarchy. If we could turn to that.

22 And you can guide us anywhere you'd  
23 like, Mr. Hower, but if you could identify  
24 how your experience shown here qualifies you  
25 to testify about SoCalGas' records -- their  
26 well records in particular, excuse me.

27 WITNESS HOWER: Probably the best place  
28 would be the fourth bullet point from the

1 bottom on that page starting with "Evaluation  
2 and optimization."

3 Q Okay.

4 A Keeping in mind, this is a CV of a  
5 few pages describing 40 years of experience  
6 so I didn't put a whole lot of narrative in  
7 here, but the way that I typically worked  
8 with my clients over the years in gas storage  
9 is that I was the outside consultant that  
10 worked with them year on year essentially  
11 parachuting in, working with someone like  
12 Mr. Neville and sitting down and going  
13 through the well records, the field  
14 performance, workovers that were done, plans  
15 for work the following year and essentially  
16 working with them as part of the team to  
17 review what happened in the field previously  
18 and make plans for what we wanted to do in  
19 the field going forward.

20 Q I appreciate that, and I appreciate  
21 the difficulty of explaining the amount of  
22 experience in a short CV, so I understand.  
23 Thank you for that elaboration. When did you  
24 first look at the well files that are  
25 referenced in your testimony?

26 A I would have to guess. I don't  
27 know. I'm not supposed to guess. I'm  
28 thinking through -- I believe it would be in

1 the summer in 2018 I think.

2 Q Okay. Let me just ask you more  
3 specifically -- and maybe we're at the right  
4 line here of your CV -- can you tell me about  
5 your expertise as it relates to natural gas  
6 leaks and their causes at a high level.

7 A Specific to wells?

8 Q Yes, specific to wells in natural  
9 gas storage facilities.

10 A Well, similar to the work I've done  
11 on this project with SoCalGas, when I worked  
12 with my other clients working on those fields  
13 year after year, we would look at well  
14 performance, we would look at the results of  
15 temperature logs, noise logs, any workovers  
16 that were done, and we would evaluate if  
17 there were leaks, look at what the causes of  
18 those leaks were, were they mechanical, were  
19 they corrosion related, were there patterns,  
20 were there hot spots in the field, so just  
21 trying to analyze and understand what the  
22 cause and effect is of leaks when they  
23 occurred.

24 Q Okay. You mentioned there cause  
25 and effect so maybe if I could just probe  
26 that. When you talk about cause there, are  
27 you talking about causes in a strict  
28 metallurgical sense or were you looking also

1 at environmental factors that had to do with  
2 the cause of leaks?

3 A Not necessarily environmental  
4 factors. I was thinking more along the lines  
5 of would a leak be caused by corrosion or  
6 would a leak be caused by a failure in the  
7 mechanical portion of a well. And also there  
8 can be -- we've just been talking about  
9 wells, we would also look at leaks, if you  
10 will, or gas losses in the reservoir due to  
11 potential geologic breaches.

12 Q Okay. Let me ask you, have you  
13 ever modeled a well kill?

14 A No.

15 Q Have you reviewed and recommended  
16 well designs?

17 A Yes.

18 Q Have you evaluated reservoirs?

19 A Yes.

20 Q Are you familiar with the models  
21 that -- by the way, let me just back up on  
22 this. When I use the term "Boots & Coots,"  
23 do you know who I mean?

24 A Yes, I do.

25 Q And for the record, those are the  
26 well-kill contractors that Southern  
27 California Gas Company hired to attempt to  
28 and ultimately to kill Well SS-25.

1                   Is that your understanding as well?

2                   A     That's correct.

3                   Q     Are you familiar with the models  
4 Boots & Coots said that they developed to  
5 kill Well SS-25?

6                   A     No, I'm not.

7                   Q     Okay.

8                   A     Let me clarify that. I guess to  
9 the extent that they were discussed in the  
10 Blade report, I have familiarity with -- that  
11 they exist and that that work was done, but  
12 the specific details of the modeling itself,  
13 no.

14                  Q     So your familiarity is limited to  
15 your reading of the Blade report?

16                  A     Insofar as we're talking about the  
17 well-kill models that Boots & Coots used,  
18 yes.

19                  Q     Understood. Are you familiar with  
20 the gas reservoir inventory reduction that  
21 SoCalGas performed after SS-25 failed?

22                  A     Do you mean the drawdown of the  
23 gas?

24                  Q     I think that would be an accurate  
25 way to put it. And maybe just for the  
26 record, if you could clarify what your  
27 understanding is of drawdown.

28                  A     Well, by drawdown, I meant

1 essentially producing the gas to draw down  
2 the reservoir pressure.

3 Q Or producing or perhaps withdrawing  
4 it from the reservoir?

5 A Correct.

6 Q Yeah. Okay. I think we're on the  
7 same page there. And it sounds like, based  
8 on your response, it would be fair to say  
9 that you are familiar with the drawdown as  
10 you described it?

11 A Well, I guess I would qualify that  
12 in that really the focus of my work and  
13 Mr. Stinson's work was preceding the incident  
14 at the SS-25 well. Am I aware that there  
15 were attempts made or there was a process  
16 done to lower the reservoir pressure to try  
17 and reduce any gas losses after the leak?  
18 Yes.

19 Q But not with the details of how the  
20 drawdown was done or what SoCalGas was doing  
21 in order to do the drawdown?

22 A That is correct, not with those  
23 details.

24 Q Okay. Understood. Let me just ask  
25 you just based on your experience. Should  
26 reducing reservoir pressure in your opinion  
27 be an immediate response when the initial  
28 well kill fails like it did in the case of

1 Well SS-25?

2 MR. LOTTERMAN: Objection, I believe  
3 that's outside the scope of Mr. -- actually  
4 either Mr. Hower's or Mr. Stinson's  
5 testimony.

6 ALJ HECHT: Is there a way to rephrase  
7 that question so that it applies directly to  
8 these witnesses' testimony? If so, please do  
9 so.

10 MR. GRUEN: I'll certainly try, your  
11 Honor.

12 Q Just based on your experience,  
13 Mr. Hower, should reducing reservoir pressure  
14 be an immediate response when a well-kill  
15 operation fails, do you know?

16 A Well, I think you're simplifying a  
17 very complicated process that was going on.  
18 I'm not certain that there was a direct  
19 connect-the-dots link between well-kill  
20 number one and trying to lower the reservoir  
21 pressure.

22 But to answer your question, I  
23 think lowering the reservoir pressure, or  
24 attempting to lower the reservoir pressure,  
25 when you have a gas leaking like the SS-25,  
26 would be a good course of action.

27 Q Okay. Understood. Maybe I can  
28 clarify -- get a little bit of -- with that

1 understanding.

2           Mr. Hower, if you're able to maybe  
3 say at a high level just with regards to  
4 Chapter 1, your sur-reply testimony, I know  
5 you said at the outset in direct that you  
6 look the lead on preparing the testimony, but  
7 are you able to share with us, if possible,  
8 what parts of Chapter 1 you are sponsoring  
9 today?

10           A    I believe I already attested to the  
11 fact that I'm sponsoring both my  
12 reply testim -- both our reply testimony and  
13 the sur-reply. But if you want me to look  
14 specifically -- you're asking me to look at  
15 Chapter 1 of the sur-reply?

16           Q    Correct. Yeah. So this may be  
17 adequate to cut through this. It sounds  
18 like, Mr. Hower, that you're prepared to  
19 answer questions about the entirety of  
20 Chapter 1.

21                    Am I tracking that correctly?

22           A    I'm prepared to answer questions  
23 about the entirety of our reply and our  
24 sur-reply.

25           Q    Fair enough.

26                    And, Mr. Stinson, would the same go  
27 for you as well; you're prepared to answer  
28 questions about the entirety of both?

1           WITNESS STINSON: To the extent of my  
2 knowledge, yes.

3           Q Fair enough. We'll work with that.

4                   Okay. Let's go to the corrected  
5 redline version of the reply testimony then.  
6 It's Exhibit SoCalGas-4R. There's a table  
7 that begins on page 4 there.

8                   Mr. Zarchy, if you would, when we  
9 get a chance, let's see if we can go to that  
10 table. We'll just go to the top.

11                   I'll wait for both of you gentlemen  
12 to tell me when you're there if you're using  
13 a hard copy as well.

14           WITNESS HOWER: I am there now.

15           Q Okay. And this is both -- I'll  
16 just specify for the record, both of you are  
17 welcome to answer questions on this.

18                   So going to the corrected redline  
19 version of your reply testimony and the table  
20 there --

21                   Let's scroll down a little bit, if  
22 we could, Mr. Zarchy. Keep going to the  
23 bottom page number. I want to be sure we're  
24 there. Yeah. If we scroll to the top one  
25 more time.

26                   There in the fourth column you talk  
27 about the heading there. It says, "Industry  
28 standard practice as of 10-23-2015."

1 Do you see where I am?

2 A Yes.

3 Q Okay. Just a clarity there. What  
4 do you mean there by the term "Industry  
5 standard practice" as used in that column  
6 heading?

7 A It's defined immediately below the  
8 table, Footnote 15, "For purposes of this  
9 testimony, industry standard practice means  
10 prevailing practice within the industry."

11 Q So when you say "prevailing  
12 practice within the industry," you're talking  
13 about industry standard practice that applies  
14 to natural gas storage operators as of the  
15 date of the Aliso Canyon incident, as of the  
16 date that it began?

17 Am I understanding that correctly?

18 A As we've defined industry standard  
19 practice, yes, that's correct.

20 Q Okay. And natural gas storage  
21 operators in California include SoCalGas, as  
22 well as Pacific Gas and Electric Company, or  
23 PG&E.

24 Is that your understanding as well?

25 A Yes.

26 Q Okay. Let's go to Footnote 19. If  
27 we could just -- I see -- we're at the right  
28 spot, but if -- I believe Footnote 19 --

1           Your Honors, I can enlarge this if  
2 it would be helpful. Maybe we should.

3           Mr. Zarchy, if you could enlarge  
4 this a little bit. I want to be able to see  
5 the footnotes.

6           ALJ HECHT: Thank you.

7 BY MR. GRUEN:

8           Q    Just for the record -- if you  
9 scroll up a little bit -- Footnote 19 is  
10 referenced by the column heading there,  
11 "Industry standard practice as of  
12 10-23-2015." If we go to Footnote 19 at the  
13 bottom where it says, "Based on personal  
14 knowledge and experience of Tim Hower and  
15 Charlie Stinson" -- do you see where I am  
16 there?

17           A    Yes, I do.

18           Q    So I have some questions about some  
19 of the entries in this table and in  
20 particular in this column. I'll rely on both  
21 of you to answer the questions that are based  
22 on your particular knowledge and experience  
23 given this footnote; okay?

24           A    Yes.

25           Q    Okay. Can you explain how your  
26 personal knowledge and experience informs  
27 your discussion of PG&E's industry standard  
28 practices.

1           A     Well, yeah, it -- first of all,  
2     there would be Charlie's experience in  
3     working with the American Gas Association's  
4     underground storage committee, as well as  
5     working directly with PG&E.  There's -- you  
6     know, both of us, Charlie and I -- sorry --  
7     Mr. Stinson and I have significant experience  
8     working with other operators, attending  
9     workshops, attending conferences where  
10    there's a lot of discussion.

11                 The way the gas storage industry  
12    works is there's typically a lot of  
13    discussion regarding operating practices of  
14    different companies.  It's not something that  
15    gets published quite often.  It's more of a  
16    communication between operators and engineers  
17    and staff that work for those companies, and  
18    PG&E is one of them.

19           Q     Okay.

20                 And, Mr. Stinson, since Mr. Hower  
21    referred to you about your work on working  
22    with PG&E and your exposure, I wonder if you  
23    could speak to that.

24                 WITNESS STINSON:  Certainly.  Yeah,  
25    I've -- as I mentioned in my direct  
26    testimony, I've done some work early on in  
27    the 1980s with PG&E, using them in helping  
28    with well design for what we had as a pending

1 storage business in Oregon. That was sort of  
2 my first exposure of PG&E.

3           During my course on the AGA  
4 committee, PG&E was a very active member and  
5 certainly provided their input. I also  
6 worked with PG&E on the Gill Ranch storage  
7 development. As it turns out, PG&E is a  
8 25 percent owner of that facility. So I got  
9 to know, you know, their -- certainly their  
10 engineers and their management as we went  
11 about that development.

12           PG&E has been a client of mine  
13 working on this -- I mentioned this  
14 underground air storage project. That  
15 project went on for about three years, and I  
16 worked with their storage staff, some of  
17 their storage engineers as it relates to that  
18 project, so I'm fairly familiar with PG&E.

19           Q    Okay. And when you talk about air  
20 storage, that's -- just for my lay  
21 understanding -- not the same thing as  
22 natural gas storage; right?

23           A    No, it's not the same as a natural  
24 gas storage, but it uses the same principles.  
25 In this particular case, it was using a  
26 depleted gas reservoir for the injection and  
27 removal of air. So well designs, reservoir  
28 evaluation and development, are --

1 (Coughing interruption.)

2 WITNESS STINSON: -- the same as for an  
3 underground gas storage project.

4 BY MR. GRUEN:

5 Q Okay. And I think maybe if you  
6 could help explain, since this is an industry  
7 standard practice we're talking about,  
8 there's really no qualification to it,  
9 meaning could -- this is an industry standard  
10 practice to natural gas storage operators  
11 outside of California as well; is that right?

12 WITNESS HOWER: That's correct.

13 Q Both nationally and international?

14 A We only focused on nationally.

15 Q Okay. Let's go to the entries now  
16 under this column, and if we could go -- bear  
17 with me. Actually just to clarify, to better  
18 understand the basis of the entries under  
19 the -- oh, that's right. Let's go to the  
20 fifth column and it's the heading "Practice  
21 at Aliso Canyon as of 10-23-2015."

22 So with each row in the table, just  
23 to get clarity on the meaning of these column  
24 headings, you're comparing the practice at  
25 Aliso as of 10-23-2015 with what you're  
26 calling the industry standard practices of  
27 10-23-2015.

28 Am I tracking that correctly? ]

1           A    Yes, you are. That is correct.

2           Q    Okay. With that understanding now,  
3 let's go to the next page and get to an  
4 entry.

5                    So if we look at the entry "Well  
6 casing design," as -- towards the middle of  
7 the page as shown on the screen here --

8                    Do you see where I am?

9           A    Yes. How we are --

10          Q    Okay. I want to unpack how you  
11 were using the terms in that row. Because  
12 I'm not clear exactly how the description of  
13 industry practice fits with what SoCalGas was  
14 doing at Aliso at the time of incident.

15                    So there, in the case of well  
16 casing design, first we see "Dual barrier not  
17 required," "Dual barrier not required," under  
18 the first two columns there. And then we get  
19 to "Single barrier" in the third column.

20                    So I just want to clarify, maybe if  
21 you could explain the difference between dual  
22 barrier and single barrier as used in that  
23 row?

24          A    Sure. No problem.

25                    Single barrier would be a situation  
26 where there's essentially one string of  
27 steel, one string of casing or steel, between  
28 the gas, the storage gas, and the reservoir

1 -- or the earth outside of the wellbore.

2 Dual barrier, you would have two --  
3 two concentric steel barriers between the gas  
4 that was either being produced or injected  
5 and getting outside the well.

6 Q Okay. If I could use -- maybe this  
7 is slightly using lay terms. But could we  
8 say that the gas is running -- there's one  
9 pipe that's surrounding the gas in the case  
10 of single barrier. And then there are two  
11 pipes around the gas in the case of dual  
12 barrier -- well -- where the gas is only  
13 running through the inner pipe.

14 Is that a fair characterization?  
15 Or perhaps you have a correction to that.

16 A No. I think that's fair.

17 Q Okay. So here in the well casing  
18 design, we've talked about the Aliso wells,  
19 like SS-25, most of wells at Aliso are dual  
20 barrier; is that right?

21 A They were not operated as dual  
22 barrier, no.

23 Q I'm sorry. Thank you. I  
24 appreciate the clarification.

25 Most of them have been operated as  
26 single barrier?

27 A That is correct.

28 Q But they -- but they have -- even

1    though they are operated as single barrier,  
2    the wells have two, and in some cases more  
3    than two, pipes running into the ground; is  
4    that right? -- running downhole, if you  
5    will?

6           A    That's correct.

7           Q    Okay.  And in the -- in the fourth  
8    column that we were -- the column heading  
9    that we were talking about before, the fourth  
10   column here, you say:

11                   87 percent of all gas storage  
12                   wells are single barrier.

13                   Do you see that?

14           A    I do.

15           Q    And the fifth cell, you say,  
16   "single barrier operation."  So you were just  
17   talking about that.

18                   And it also says in that cell, I  
19   want to get to this, "Packer installed";  
20   correct?

21           A    Correct.

22           Q    So what does "Packer installed"  
23   mean in terms of well casing inside?

24           A    It means you have a tubing string  
25   inside the casing.

26           Q    Okay.  It means that "you have a  
27   tubing string," meaning -- just to unpack  
28   this in terms as a non-engineer so I can

1 understand this -- meaning, that you have got  
2 a tubing or a smaller pipe, a kind of smaller  
3 pipe, that's running inside the casing, or  
4 the outer pipe, all that way down to the  
5 bottom of the well. And the two pipes are  
6 supposed to be one inside the other and  
7 separated from one another; is that correct?

8 A That is correct.

9 Q And maybe you can help me  
10 understand, then you've got the term "packer"  
11 there.

12 So you're familiar with the term  
13 "packer"?

14 A Yes.

15 Q And what does that term mean?

16 A Well, a packer is a device that is  
17 installed to anchor the tubing at the base of  
18 the well. And, also, it provides a barrier  
19 for gas to be able -- for gas to get in the  
20 annulus between the tubing and the casing.  
21 So the gas would have to go up the tubing.  
22 And it cannot get past the packer and the  
23 annulus.

24 Q Okay. And just to unpack a couple  
25 of terms there -- I appreciate that answer.

26 The annulus is the space between  
27 the outside of the tubing pipe, if you will,  
28 and the inside of the casing pipe?

1           A    That is correct.

2           Q    Okay.  Okay.

3                   And if I'm tracking your answer  
4 correctly, it's to say that where the packer  
5 is installed, it's blocking gas from running  
6 up above it -- from running from the  
7 reservoir past it in the annulus.

8                   Am I tracking that correctly?

9           A    That is correct.

10          Q    Okay.  And it's possible, I  
11 think -- and I think this is tracking what  
12 you're saying -- to have a storage well with  
13 a dual barrier -- or two pipes -- maybe  
14 that's a better way to put it.  Let me  
15 restate.

16                   It's possible that a storage well  
17 with two pipes, such as a tubing and a  
18 casing, operating as a single barrier well;  
19 is that right?

20          A    That is correct.

21          Q    And that's what you mean here; is  
22 that right, in this cell?

23          A    Yes.

24          Q    Okay.  So this is to say that  
25 SoCalGas operates wells with dual -- two  
26 pipes, a tubing and a casing, as single  
27 barrier wells in Aliso.

28                   Am I tracking you?

1           A    Yes.  In those cases, and almost  
2 all the cases, the wells are configured with  
3 tubing on packer.  And the wells are operated  
4 using both the tubing and the casing tubing  
5 annulus.

6           Q    Understood.  Okay.

7                        So because wells are -- have the --  
8 at Aliso have the tubing and the casing, if  
9 you will, does that mean that SoCalGas  
10 intentionally injected and withdrew gas  
11 through both the tubing inside the tubing, as  
12 well as in the annulus inside the casing?

13          A    Is your question did they  
14 intentionally operate on --

15          Q    Yes.

16          A    Yes.

17          Q    Okay.  And are there any entries in  
18 your table that discuss the percentage of  
19 natural gas storage wells in the industry  
20 that are both dual barrier, where the  
21 operator injected and withdrew gas through  
22 both the tubing and the casing?

23                        Is that possible?

24          A    That's a contradiction.

25          Q    Okay.

26          A    If you have dual barrier, you're  
27 not operating the well that way.

28          Q    Let me restate it then.

1           Are there entries in the table that  
2 discuss the percentage of natural gas storage  
3 wells in the industry that are single  
4 barrier, but with two pipes, and where the  
5 gas -- the operator injected and withdrew  
6 through both pipes?

7           A    No, not in this table.

8           Q    Okay.

9           A    I can tell you that most of the --  
10 most of the -- in the figure that says  
11 87 percent of all gas storage wells are  
12 single barrier, most of those are not going  
13 to have tubing and packer. Most of those  
14 will just be producing -- many of those will  
15 just be producing up the casing without  
16 tubing.

17          Q    Okay. Understood.

18                   Let's go to the citation that's  
19 Footnote 22 in the fourth cell. And if we  
20 could scroll down -- actually, just for the  
21 record, if we could go back to the cell. I'm  
22 sorry.

23                   If we go back and say:

24                           87 percent of all gas storage  
25                           wells are single barrier, Footnote  
26                           22.

27                   And then if we go down to Footnote  
28 22 -- excuse me. And there you reference

1 Exhibit I-6 Entitled "Underground natural gas  
2 storage operators, tubing -- quote:

3           Tubing and packers in underground  
4           natural gas storage safety and  
5           reliability considerations, end  
6           quote. AGA/API/INGAA underground  
7           natural gas storage joint industry  
8           task force September 16th, 2016.

9           This is -- did I read that  
10 correctly?

11           A Yes, you did.

12           Q And I wanted to emphasize the date.  
13 That's a publication after October 23rd,  
14 2015, the date that the incident began;  
15 correct?

16           A Yes.

17                   (Audio interruption.)

18 BY MR GRUEN:

19           Q Okay. And just the terms "AGA,"  
20 "API," and "INGAA," those are industry  
21 groups; is that right?

22           A That is correct.

23           Q Do you know if SoCalGas  
24 communicated with these industry groups  
25 regarding the publication of this document?

26           A I do not.

27           Q Okay. Let's go to the Exhibit I-6  
28 that you referenced in Footnote 22. And I

1 will give you both a chance to look at that.

2 And, Mr. Zarchy, if you could go to  
3 the exhibit I-6 in the supporting attachments  
4 of Mr. Hower and Stinson.

5 Your Honor, may we go off the  
6 record?

7 ALJ HECHT: Yes. Actually, it's a good  
8 time to go off the record because I think we  
9 are approaching our afternoon break.

10 Off the record.

11 (Off the record.)

12 ALJ HECHT: We'll be back on the  
13 record. We are going to take our afternoon  
14 break now until 2:30. And we will resume at  
15 2:30. We'll be off the record.

16 (Off the record.)

17 (Recess taken.)

18 ALJ HECHT: All right. We are coming  
19 back from our afternoon break.

20 All right. We'll be back on the  
21 record. We are getting back from our  
22 afternoon break on Friday. And we are  
23 resuming cross-examination of the panel  
24 Mr. Hower and Mr. Stinson.

25 Mr. Gruen, you may proceed.

26 MR. GRUEN: Pardon me, your Honor. I  
27 seem to have developed a habit.

28 Q So we have on the screen share

1 Exhibit I-6, and Mr. Hower and Mr. Stinson,  
2 if you're following along and using a hard  
3 copy, if you will just let me know when  
4 you're there as well?

5 WITNESS HOWER: I'm there.

6 Q Okay. So if we go to the next --  
7 the page that's SoCalGas5.00097, it should be  
8 just below. Okay. We'll just go here.

9 And we see here the title page of  
10 the reference from your footnote, the  
11 September 16th, 2016 document from AGA/API  
12 and INGAA, the natural gas joint industry  
13 task force.

14 Am I saying that correctly?

15 A Yes.

16 Q Okay. And I see the word draft  
17 marked here. So my -- do you see where I'm  
18 looking where it's showing "draft" in the big  
19 red letters?

20 A Yeah. It's hard to miss.

21 Q It's hard to miss.

22 So this was not a finalized  
23 document almost one year after the October  
24 23, 2015 incident; correct? -- at the end,  
25 that date?

26 A Those dates are correct. Yes.

27 Q Okay. And I assume having a draft  
28 document here, there wasn't a final document

1 by the date your testimony was published; is  
2 that also correct?

3 A Not that we were able to locate.

4 Q Okay. So I just -- since Footnote  
5 22 didn't provide a specific page number to  
6 this document, I couldn't find the  
7 information in this document that shows what  
8 you provide in the entry of the table that's  
9 the basis for that 87-percent number.

10 So I'm wondering if you could point  
11 me to where in this document it states that  
12 87 percent of all gas storage wells are  
13 single barrier?

14 A It would be page 5, or  
15 SoCalGas5.0101.

16 Q Okay. And let's see if we can  
17 follow him, Mr. Zarchy.

18 If you want to tell us where to go  
19 on the document, we can follow you.

20 A Bullet point 4.

21 Q Bullet point 4 --  
22 (Crosstalk.)

23 THE WITNESS: Slide five.

24 BY MR. GRUEN:

25 Q Go ahead. Slide five. Understood.

26 I think it's one more. I see --  
27 that looks like it might be slide four. So  
28 we've got slide five here.

1           Are we on the right slide?

2           A    That is correct.

3           Q    Okay.  And what's that basis for  
4 your stating that there's 80 -- that 87  
5 percent of all gas storage wells are single  
6 barrier based on this page?

7           A    Well, the fourth bullet point  
8 states that:

9                   13 percent of existing gas storage  
10                   wells have tubing on packer  
11                   completions.

12           And you can't --

13           Q    So you're -- go ahead.  I'm sorry  
14 to you interrupt you.  Go ahead.

15           A    So you -- you cannot -- you cannot  
16 have dual barrier flow without a tubing  
17 packer completion.  Therefore, if you don't  
18 have a tubing packer completion, you have  
19 single barrier flow; 1 minus 13 percent is  
20 87 percent.

21           Q    Okay.  So you're extrapolating that  
22 because this document states that  
23 approximately 13 percent of existing gas  
24 storage wells have tubing and packer  
25 installed in the well, the remaining 87  
26 percent must be single barrier.

27                   Am I tracking the logic?

28           A    Yeah.  And it would actually be

1 higher than 87 percent. Because you -- like  
2 the SoCalGas wells, you can have a tubing and  
3 packer completion and operate it single  
4 barrier.

5 Q I appreciate that perspective. So  
6 -- but let's --- speaking to this for a  
7 second, the point would be SS-25 -- the point  
8 the of SS-25 in this context, if we look at  
9 your -- if we bear in mind your reference to  
10 SS-25, SS-25 is one of the wells among the 13  
11 percent that's shown on this slide; is that  
12 right?

13 A Yes --

14 Q That contain -- and I'm sorry for  
15 interrupting.

16 A That's all right.

17 Q I think I may have jumped in front  
18 of you. I think -- for the court reporter, I  
19 think your answer was "yes" to that last  
20 question.

21 Did I hear you right?

22 A Yes, you did.

23 Q Okay. And that's because SS-25 has  
24 a tubing and packer like those other  
25 13 percent; right?

26 A Correct.

27 Q Okay. Well, what -- let me ask you  
28 just about the numbers in this table.

1           If we go to the bottom of page 13  
2 of this document -- so if we could scroll  
3 down. Okay.

4           And so here, based on looking at  
5 this, would you agree that there's some error  
6 built into the numbers and the table that's  
7 accounted for here based on what the  
8 information that's provided in -- on page 13  
9 of this document?

10          A    I'm not sure if I would call it  
11 error. I would call it uncertainty.

12          Q    Uncertainty; fair enough.

13                So if you counted -- accounted for  
14 the uncertainty, the percentage of wells that  
15 are single barrier, in fact, could be  
16 significantly lower than the 87 percent that  
17 you identify in your table -- in your  
18 testimony; is that right?

19          A    I think that would be unlikely;  
20 but, yes, it's possible.

21          Q    Okay. And that's because if we  
22 look here, it's -- there's an 80 -- estimated  
23 80-percent response rate on the number of  
24 reported wells; correct?

25          A    Correct.

26          Q    Okay. If we could go back to your  
27 testimony so that we can see the table again;  
28 and, Mr. Zarchy, if you would, Chapter 1.

1           And I just wanted to clarify at the  
2 top, if we could go to the top, just with  
3 regards to the term "Industry standard  
4 practice."

5           Do you -- in -- at the heading on  
6 column four, does the term "Industry standard  
7 practice" mean the same thing as "Industry  
8 standard"?

9           A    No.

10          Q    Okay.

11          A    As I said earlier, we defined  
12 industry standard practice as we mean it in  
13 the first footnote under that table --

14                   (Crosstalk.)

15 BY MR. GRUEN:

16          Q    Pardon me for interrupting. Go  
17 ahead. I wanted to be sure that your answer  
18 -- you defined industry practice, I  
19 understood you to say, in the footnote of the  
20 table -- I think it's Footnote 15. I think  
21 that was your answer, but I wanted to be sure  
22 I got it right.

23          A    That's correct. But when we use  
24 the term "Industry standard practice," we  
25 mean prevailing practice within the gas  
26 storage industry.

27          Q    Okay. What's your understanding of  
28 the term "Industry standard"?

1           A    I would interpret that to mean a  
2 formal documented standard.  But it -- you  
3 could also use that term in other ways, I  
4 suppose.  It could be a -- well, I guess you  
5 could use it to be a shorthand for industry  
6 standard practice, as we've defined it.  But  
7 I would use it -- I would tend to consider it  
8 as a formal documented standard.

9           Q    Formal documented standard that  
10 prescribes certain things, would that be  
11 fair?

12          A    Sure.  Yes.

13          Q    Okay.  Whereas, this is what the  
14 industry standard practice is, prevailing  
15 practice within the industry; your suggestion  
16 is that's what the industry is doing?

17          A    Correct.

18          Q    Okay.  Do you know how many wells  
19 at Aliso have gas injection and extraction  
20 through both tubing and casing?

21          A    The exact number, no, I don't.

22          Q    Approximately?

23          A    I think most of them; but I don't  
24 know the number.

25          Q    Okay.  And approximately how many  
26 wells at Aliso?

27          A    116 -- sorry -- 116.

28          Q    Okay.  Just to switch to a slightly

1 different line of questions, do you -- are  
2 you aware that all the violations in this set  
3 of hearings are safety violations pursuant to  
4 Public Utilities Code Section 451?

5 A Yes, I believe that's the case, to  
6 the best of my knowledge.

7 Q Okay. Do you know that Safety and  
8 Enforcement Division did not identify any  
9 violations in industry standards?

10 A I'll take your word for that. I'm  
11 not aware -- I don't have them all  
12 identified, no.

13 Q And in your view, does SoCalGas  
14 have an independent duty to operate its  
15 natural gas storage facility safely,  
16 regardless of what others in the industry are  
17 doing?

18 A Does it have an independent duty?  
19 Is that how you characterized it?

20 Q Yes, sir.

21 MR. LOTTERMAN: Your Honor, I'm going  
22 to object to that on legal grounds. I  
23 believe that calls for a legal conclusion.

24 ALJ HECHT: I believe that it does.  
25 Objection sustained.

26 MR. GRUEN: I'll rephrase.

27 Q Based on your engineering judgment,  
28 does SoCalGas have an independent duty to

1 operate its natural gas storage facility  
2 safely, independently, and regardless of what  
3 others in the industry are doing?

4 MR. LOTTERMAN: Same objection, your  
5 Honor.

6 ALJ HECHT: We'll be off the record.

7 (Off the record.) ]

8 ALJ HECHT: We'll be back on the  
9 record.

10 While we were off the record, we  
11 discussed a little bit of the boundaries of  
12 the meaning of the word "duty" and of what is  
13 a legal versus an engineering question of  
14 judgment.

15 The SED attorney is going to  
16 rephrase his question and we will continue  
17 from there.

18 Please go ahead, Mr. Gruen.

19 BY MR. GRUEN:

20 Q Let me back up and ask a  
21 foundational question, if I can. This is  
22 directed to both of you.

23 Based on your experience and your  
24 engineering background, do you have an  
25 understanding of safe operation?

26 WITNESS HOWER: Yes.

27 WITNESS STINSON: Yes.

28 Q And in your view, should SoCalGas

1 operate its natural gas storage facility  
2 safely, regardless of what others in the  
3 industry are doing?

4 WITNESS HOWER: Yes.

5 Q Mr. Stinson.

6 WITNESS STINSON: Yes.

7 Q Including the wells at Aliso  
8 Canyon?

9 WITNESS HOWER: Yes.

10 WITNESS STINSON: Yes.

11 Q Understood. Let's go to a  
12 different line. So let's go to the corrected  
13 testimony, SoCalGas-4R, Exhibit SoCalGas-4R.  
14 Excuse me. And this is your Prepared Reply  
15 Testimony. And if we go to page -- the page  
16 identified as 8 here, you state -- there's  
17 page 8, and if you could scroll up slightly,  
18 Mr. Zarchy. Great. Just right there,  
19 line 10:

20 SoCalGas act reasonably in  
21 investigating prior, quote  
22 unquote, "leaks" -- the quote ends  
23 there -- at the facility.

24 Do you see where I am?

25 WITNESS HOWER: Yes.

26 Q So, I'd like to understand why  
27 exactly you chose to use that word in your  
28 testimony and whether someone told you to

1 write the word "reasonable" in that heading.

2 WITNESS HOWER: I used that word -- I  
3 interpret "reasonable" to mean using sound  
4 judgment.

5 Q Okay. And did someone instruct you  
6 to write that word in your testimony?

7 A Not that I recall.

8 Q Do you have any communications with  
9 anyone at SoCalGas about the use of that word  
10 in your testimony?

11 A Not that I recall.

12 Q Let me ask you just in terms of  
13 your review of SoCalGas' investigation of  
14 prior leaks at Aliso, how many Aliso Canyon  
15 well files did you review?

16 A All of them, for every well.

17 Q Okay. And I think we may have  
18 asked, but I just want to be sure in this  
19 context, when did you first look at the well  
20 files?

21 A Again, I'm going on memory here and  
22 I can, if I go back to my records and my  
23 computer and look, I can get to an exact  
24 time. I am thinking it was summer of 2018.  
25 Let me, if I may, Charlie, do you have a  
26 better recollection than me?

27 WITNESS STINSON: No. I don't. I  
28 haven't looked.

1 WITNESS HOWER: So I --

2 Q Go ahead. I'm sorry.

3 (Crosstalk.)

4 WITNESS HOWER: Go ahead.

5 Q That's adequate. That answer is  
6 sufficient.

7 WITNESS HOWER: Okay.

8 Q If you're satisfied with the  
9 answer, then so am I.

10 ALJ HECHT: And a reminder to please  
11 not talk over one another. It's often a good  
12 idea to take a breath after the previous  
13 speaker finishes. Thank you very much.

14 MR. GRUEN: Understood, your Honor. I  
15 appreciate her Honor's instructions. And  
16 this is just for clarity of the record. So  
17 I'll do my best to give you a chance to  
18 finish, Mr. Hower and Mr. Stinson.

19 Q So just moving on from that, did  
20 you review the hard copy and electronic well  
21 files?

22 WITNESS HOWER: Yes.

23 Q All of them?

24 A All of the hard copy well files,  
25 not all of the electronic well files.

26 Q Okay. And did you clarify with  
27 SoCalGas whether these well files were in the  
28 same state, comparing the date that you

1 reviewed them with the date they existed at  
2 the time of the incident?

3 A I don't believe I asked that  
4 question, no.

5 Q Okay. In your experience, about  
6 how many pages, give or take, were in each  
7 well file?

8 A It varied. Some are as big as  
9 phone books and others are not. It really  
10 depends on the history of the well.

11 Q Okay. Do you recall what the title  
12 of standard folders are in the Aliso well  
13 files?

14 A What do you mean "standard?"

15 Q What the title of different  
16 folders, the organizational structure of the  
17 given well file is?

18 A Well, there were -- my recollection  
19 there were three different collection of well  
20 files. Some dealt with well histories. Some  
21 dealt with surveys, tests, logs, and others  
22 dealt with or contained invoices.

23 Q And you're familiar with the term  
24 "casing failures" as it relates to the casing  
25 of a well of an underground natural gas  
26 storage facility such as Aliso; is that  
27 right?

28 A Yes.

1 Q And also casing failure analysis,  
2 right?

3 A Yes.

4 Q What does the term "casing failure  
5 analysis" mean to you?

6 A To do an evaluation and determine  
7 why the casing failed.

8 Q Okay. And I think, just to  
9 clarify, I think you've seen a casing failure  
10 analysis for participating in this proceeding  
11 but you haven't done one; is that right?

12 A No. I've done plenty of them.

13 Q Okay. My mistake. Okay. So,  
14 wells that had casing failures, would you  
15 expect to find an analysis of the failure,  
16 such as a failure analysis in the well file?

17 A Well, Mr. Gruen, I think it depends  
18 on what you mean by "analysis." You said  
19 would I expect to find an analysis. I think  
20 what you're looking for or asking about is a  
21 document, but by doing a workover,  
22 identifying the leak and repairing the leak,  
23 that's also an analysis and a solution to the  
24 casing failure.

25 Q Okay. So that is to say that -- I  
26 think just to be sure that we're getting an  
27 answer to the question, if we use the term  
28 "document," I appreciate your distinction, we

1 use the term "document" to -- and we've  
2 identified whether documents capture a  
3 failure analysis in the well file, would you  
4 expect to see documents that show failure  
5 analysis, a failure analysis in a well file?

6 A Not all the time, no. I think and  
7 just to expand, some casing -- some casing  
8 leaks are easily explained, easily fixed,  
9 easily mitigated and really require nothing  
10 more than an entry in the well file showing  
11 the activity.

12 Q Okay. Let me just parse that view  
13 for a second. So if you've done a workover  
14 and you don't show a failure analysis and  
15 let's say that some or all of the people who  
16 did the work, for whatever reason, no longer  
17 become available, can't ask questions of them  
18 anymore about what happened or why, is that a  
19 concern for you?

20 A Again, it depends upon the  
21 situation. If it's a simple casing leak,  
22 with a simple easily-explained cause and it's  
23 mitigated, any engineer that is familiar with  
24 the wells and the operations can go to that  
25 and look at the work that was done and he or  
26 she will know what the cause was, why the  
27 casing failed and how it was fixed.

28 Q Just so we're clear on the term

1 "cause" as you're using it in that answer,  
2 are you talking about a cause from a strict  
3 metallurgical perspective then or are you  
4 considering environmental factors as well?

5 A Again, similar to the last time we  
6 talked about that, it could be something like  
7 corrosion. It could be a mechanical issue.  
8 It could be something to do with  
9 environmental. It depends.

10 Q So your view is that it's not  
11 necessary to document the environmental  
12 factors that caused a leak, or excuse me,  
13 caused the failure.

14 A That's not what I said. You keep  
15 using the term "document" and you want to see  
16 a report I am guessing. Maybe I'm putting  
17 words in your mouth, but it seems like what  
18 you want is there to be an entry in that well  
19 file that's a written report, and I am  
20 telling you that that is quite often not the  
21 case. But it's just as good of a  
22 documentation to do the well work and clearly  
23 explain why the well work was done or the  
24 work that was done to understand why it was  
25 done and what the cause was that necessitated  
26 the work.

27 Q Without having a document to  
28 capture that?

1           A    I consider the workover history of  
2 a well a document.

3           Q    When you say "workover history,"  
4 you consider it a document, what would  
5 explain in the workover history -- which  
6 documents would explain the workover history  
7 that was done?

8           A    The daily workover records.

9           Q    Okay. So you would -- it would be  
10 your understanding that the daily workover  
11 records should be included, in order to, at a  
12 minimum, in order to be part of the document  
13 of failure analysis; is that right?

14          A    Yes. I think that the workover  
15 records that would describe the work that was  
16 done, the type of leak that it was and how it  
17 was repaired, yes, I think that would be  
18 important.

19          Q    Okay. If I could turn to a new  
20 line now. I want to ask you some questions  
21 regarding your description of SoCalGas  
22 practices regarding investigation and  
23 assessment of well casing failures.

24                    So with that introduction, if you  
25 would refer to page 10 of your reply  
26 testimony, and Mr. Zarchy, if you would, and  
27 if we go to lines 11 through 14, and there it  
28 says:

1                   Based on information collected  
2                   from the casing inspection log and  
3                   other tests and observations made  
4                   in the course of the workover,  
5                   SoCalGas was often able to assess  
6                   the probable cause or causes of  
7                   the issue.

8                   Do you see that?

9                   A    I do.

10                  Q    Your testimony is not to provide  
11 any specific examples to support that  
12 statement though, correct?

13                  A    There are no specific examples  
14 cited in the paragraph that we're looking at,  
15 correct.

16                  Q    Okay. Did you write that sentence?

17                  A    I honestly don't recall. I think I  
18 did because I drafted most of this report,  
19 but I don't recall if I wrote this specific  
20 sentence.

21                  Q    Okay. Did you see this inspection  
22 log?

23                  A    Which inspection log?

24                  Q    Pardon me. I think I misstated  
25 that. Let me ask you about another part of  
26 the passage that we just read.

27                               The other tests, based on  
28 information collected from the casing

1 inspection log and other tests, what do you  
2 mean by "other tests" there?

3 A Other work that would have been  
4 done to identify the location of the leak or  
5 the -- confirm the leak; for example, a  
6 pressure test to determine if there was  
7 indeed a leak. So generally mechanical tests  
8 that would have been done at the time of the  
9 workover.

10 Q Okay. Have you seen or have you  
11 observed a workover at Aliso before?

12 (Audio recording interference.)

13 ALJ HECHT: We will be off the record.

14 (Off the record.)

15 ALJ HECHT: We will be back on the  
16 record.

17 There was a strange noise on the  
18 line and I wanted to acknowledge that and ask  
19 about it. I am not going to worry about it.  
20 We are going to continue with the  
21 cross-examination, noting that we have  
22 another 40 minutes or so today before we  
23 break for the weekend.

24 Mr. Gruen, you may proceed.

25 MR. GRUEN: Thank you.

26 Q Okay. Let's go back to the  
27 passage, gentlemen, both of you.

28 Mr. Hower, I know you have been

1 taking the lead, but of course you're still  
2 welcome to input, Mr. Stinson, and I am  
3 assuming when you're not replying, it's  
4 because you have nothing to add. Am I  
5 correct in that?

6 WITNESS STINSON: That's correct.

7 Q Okay. Continuing on then, based on  
8 information collected from where you say in  
9 your -- the passage we've indicated in your  
10 testimony, "based on information collected  
11 from the casing inspection log, other tests  
12 and observations made in the course of the  
13 workover," do you see where I am looking?

14 WITNESS HOWER: Yes.

15 Q That's what I am referring to.  
16 When I use the term "inspection log" I am  
17 referring to that reference specifically. So  
18 what -- when you use "inspection log" there,  
19 what is the casing inspection log?

20 A It would have been a casing  
21 inspection log that was run at the time of  
22 the workover to identify the location of the  
23 leak.

24 Q Would have been. Did you see this  
25 inspection log?

26 A Do you mean actually being run in  
27 the field or do you mean the end product, the  
28 log itself, no. I mean. Well, as to the

1 first one, seeing the log being run, no, some  
2 of these logs were run in the '90s and  
3 historically. So we weren't present for any  
4 of those logs being run, but the casing --  
5 the logs themselves were available for us to  
6 review, yes.

7 Q Okay. Do you see a noise log  
8 related to this?

9 A Again, related to what?

10 Q Did you see a noise log related to  
11 the information collected from the casing --  
12 oh, I see. Bear with me. Let me restate.

13 Are you -- let me just say, when  
14 you talk about a casing inspection log, are  
15 you specifically referring to a noise log or  
16 are you making a more general statement about  
17 the log here?

18 A When I say a casing inspection log,  
19 I am not talking about a noise log. We're  
20 talking about the temperature logs or surveys  
21 are run, noise logs are run, and then if a  
22 workover is done to go in and remedy a leak,  
23 a casing -- many times a casing inspection  
24 log would be run. So that's a separate tool.

25 Q Okay. Let's go to another line.  
26 If we go to page 12 of your corrected redline  
27 reply testimony, and starting at page -- at  
28 line 4 there. So, there -- underneath there,

1 you're disputing I think, if I am reading  
2 this right, you dispute SED's testimony that:  
3 SoCalGas failed to perform failure  
4 investigations, failure analyses  
5 or root cause analyses on failed  
6 Aliso Canyon wells, despite more  
7 than 60 well casings experiencing  
8 leaks, four having parted casings.

9 You know. I think we're on the --  
10 can we go off the record a moment, your  
11 Honor?

12 ALJ HECHT: Yes. We'll be off the  
13 record.

14 (Off the record.)

15 ALJ HECHT: All right. We'll be back  
16 on the record. Please go ahead.

17 MR. GRUEN: Thank you, your Honor.  
18 Pardon me.

19 Q Let's start at line 7, so where you  
20 say:

21 SED alleges that SoCalGas failed  
22 to perform failure investigations,  
23 failure analyses or root cause  
24 analyses on failed Aliso Canyon  
25 wells, despite more than 60 well  
26 casings experiencing leaks, four  
27 having parted casings and several  
28 wells having casing corrosion

1 identified. Therefore, SoCalGas  
2 lacked important information and  
3 background to properly anticipate  
4 the extent and consequences of  
5 corrosion in its other wells,  
6 including Well SS-25.

7 Do you see where I am reading?

8 WITNESS HOWER: Yes, I do.

9 Q Okay. And on line 13, you  
10 recognize that SED's testimony is based on  
11 the Blade report, correct?

12 A Correct.

13 Q And at line 23, if we scroll down  
14 and onto the next page, you identify leaks  
15 you believe Blade incorrectly included within  
16 its list of casing failures; is that right?

17 A That's correct.

18 Q Okay. So on page 13 at line 1, you  
19 talk about Blade's list of 63 casing  
20 failures. Do you see that?

21 A Yes.

22 Q Did you personally review the well  
23 files for each of these wells that you  
24 identify in these sections -- in this  
25 section? Excuse me.

26 A Yes.

27 Q Okay. And I think you said you  
28 looked at the well files. When did you say

1 you looked at them again?

2 A It was over a period. We -- again,  
3 I believe the starting point was somewhere  
4 around the summer of 2018, but Mr. Stinson  
5 and I made, I believe, three, possibly four  
6 trips where we spent a significant amount of  
7 time with the well files going through them  
8 one at a time, individually.

9 Q Okay. And just these particular  
10 documents, these well files, excuse me, that  
11 are referencing the wells that you note here  
12 that relate to the wells that you note here,  
13 were these -- was your review of these  
14 particular files in hard copy form or  
15 electronic?

16 A We had access to both, but  
17 Mr. Stinson and I, not being as young as we  
18 used to be, we're old school and we prefer  
19 using the hard copy.

20 Q So you looked at the hard copy well  
21 file for SS-25, as well?

22 A That's correct.

23 Q Do you recall was it in a four-part  
24 folder?

25 A I don't recall.

26 Q Okay. For the others that are  
27 listed here, four-part folder?

28 A They were multi-part folders, yes.

1 I don't -- I don't have a count as far as how  
2 many each. Three or four parts, sorry, my  
3 apologies. But three or four parts would  
4 have been my recollection for almost every  
5 one, yes.

6 Q Understood. And I will do my best  
7 not to jump in as well. I recognize you may  
8 need some time to think through to complete  
9 your answer. So, understood.

10 Okay. Let's go to the first bullet  
11 then, starting on line 2. And there you say:  
12 Eleven casing leaks -- and you  
13 list them -- identified by Blade,  
14 were actually discovered in wells  
15 before SoCalGas operated the field  
16 or during initial conversion of  
17 the field underground gas storage.  
18 One of these leaks, SS-17,  
19 happened in 1952 and occurred  
20 during the original drilling of an  
21 oil and gas production well by  
22 SoCalGas' predecessor. This leak  
23 occurred 20 years before the  
24 conversion of the field to gas  
25 storage and cannot be attributed  
26 to SoCalGas storage operators  
27 (sic) and need not have been  
28 investigated by SoCalGas.

1                   Do you see that?                   ] (  
2           A    I do.  
3           Q    Okay.  And so here, just the 11  
4 casing leaks in this bullet include  
5 Wells P-12, SS-14, SS-17, P-47, P-25R -- and  
6 I think the "4x" means four times for P-25R.  
7 You can correct me at the end -- FF-35E, also  
8 twice, and SF-2.  
9                   Did I capture that correctly?  
10          A    Yes.  
11          Q    And at line 11 there, you state:  
12                   SoCalGas' identification and  
13                   remediation of these casing  
14                   failures simply validates the  
15                   process that SoCalGas used to  
16                   inspect and repair, if necessary,  
17                   all wells prior to putting them  
18                   into service for gas storage.  
19                   Do you see that?  
20          A    Yes.  
21          Q    Can you tell me if SoCalGas  
22 conducted failure investigations on these  
23 wells?  
24          A    Yeah, I believe they did.  
25          Q    And that's based on your  
26 clarification that we're not necessarily  
27 talking about documents but workovers; is  
28 that right?

1           A     Right.  I guess let me clarify my  
2 previous answer.  I mean these wells, as I  
3 stated, were wells that were identified as  
4 having leaks, casing leaks, when SoCalGas  
5 began -- before storage operations when they  
6 were converting the well to storage.

7                     So at that stage, what I'm getting  
8 at is, SoCalGas did not have a history with  
9 this field so all previous operations would  
10 have been part of the original operation of  
11 the field as an oil reservoir.  But to the  
12 extent I answered your question as far as  
13 casing failure analysis, these wells were --  
14 the casing leaks were identified, the casing  
15 leaks were located, and they were repaired.  
16 And, yes, through that process, you gain an  
17 understanding of what caused the leak and  
18 what needs to be done to manage that in the  
19 future.

20           Q     But you're not seeing documents  
21 that show these failure analyses, you're not  
22 talking -- you're not understanding failure  
23 analysis to refer to the term "documents"  
24 other than -- what was the term you used --  
25 was it daily history?  You're not talking  
26 about a specific type of failure analysis  
27 that showed the kind of detail that the Blade  
28 root cause analysis did for SS-25 for these

1 other wells; is that right?

2 A That is correct.

3 Q I just want to be sure because your  
4 answer had a little bit in there. You're  
5 talking really about documentation that's  
6 showing the workovers instead of more than  
7 that; is that right?

8 A It's documentation showing  
9 workovers, it's compiling information about  
10 which wells had leaks, at what depth those  
11 leaks were, where the well was located in the  
12 field, what was the cause of the leak, was it  
13 corrosion, was it mechanical, it's that kind  
14 of information.

15 Q Okay. Do you know, did the  
16 predecessors of who owned these wells before  
17 SoCalGas conduct failure investigations?

18 A I do not know.

19 Q Okay. Would you agree that  
20 SoCalGas should have reviewed -- and maybe it  
21 did -- but would you agree that SoCalGas  
22 should review the history of the wells that  
23 it acquired in the case of Aliso?

24 A Yes.

25 Q And specifically in assessing the  
26 quality and value of the wells that SoCalGas  
27 was intending to acquire, should SoCalGas  
28 have considered records that showed previous

1 casing failures in particular?

2           A    I don't think I can say that  
3 that -- I can't agree with that because --  
4 and the reason why is that when SoCalGas came  
5 in and went through the process of converting  
6 the field to storage, that's a big  
7 undertaking. At that point you're looking at  
8 every well in the field. They went -- when  
9 they went through the process of  
10 converting -- when SoCalGas went through the  
11 process of converting the field to storage,  
12 they looked -- they evaluated every well.  
13 They pressure tested every well.

14                       So they essentially did a  
15 field-wide study and analysis and evaluation  
16 to determine which wells had compromised  
17 casing, which wells didn't, and the general  
18 condition of all of the wells that were in  
19 the field at the time. So I think that  
20 exercise really is a large study and  
21 evaluation in itself and would give them the  
22 understanding they needed that would be  
23 appropriate in going forward.

24           Q    I think the gist of what I'm  
25 understanding from that is once SoCalGas  
26 pressure tested wells, that was sufficient in  
27 your view, even if they didn't see the  
28 history of failure analyses, documented

1 failure analyses, from the predecessor from  
2 which they acquired Aliso.

3 Am I tracking right?

4 A No. First of all, I didn't mean to  
5 imply -- if I did, I didn't mean to -- imply  
6 that pressure testing was the only thing they  
7 did. They got on every well. They inspected  
8 every well. You don't do that without  
9 looking at the well records.

10 You would never go out into a field  
11 and get on a well and enter that well to  
12 inspect it, to pressure test it, to test its  
13 suitability for gas storage operations -- you  
14 would never do that without reviewing the  
15 well records.

16 (Crosstalk.)

17 BY MR. GRUEN:

18 Q What's your basis -- I'm sorry for  
19 interrupting. I didn't realize you weren't  
20 done.

21 A I was just going to add, unless for  
22 some reason if there were a well that the  
23 records were lost or unavailable, then you'd  
24 have no choice. But if the records were  
25 available, I'm relatively certain that they  
26 would have been looked at prior to ever going  
27 out on the well.

28 Q What's your basis for saying that

1 SoCalGas got on every well if you will?

2 A I -- that's what's required when  
3 you convert a field to storage. You need to  
4 inspect every well. You -- the regulatory  
5 authorities, not just in California, but in  
6 my experience, any time I've worked on a  
7 storage field where we're converting an  
8 existing oil or gas field to storage, you  
9 have to physically inspect and mechanically  
10 test every well that you want to use going  
11 forward in storage operations.

12 Q Okay. So it's based on your  
13 understanding of the regulations, not your  
14 review of what -- or not your personal  
15 observation clearly -- and '72 was a long  
16 time ago when they acquired -- but it's based  
17 on -- you're talking about what you would  
18 expect based on regulatory requirements at  
19 this point. I just want to be clear for the  
20 record.

21 Am I tracking right?

22 A No. It's based on what I would  
23 expect, but it's also based on many  
24 conversations that Mr. Stinson and I had with  
25 Mr. Neville and other staff at SoCalGas  
26 because we -- looking at and evaluating the  
27 practices that SoCalGas used to convert the  
28 field was part of our scope.

1           Q    Okay.  Let's look.  I believe  
2  you've got -- to support your assertion that  
3  Blade incorrectly listed 11 casing leaks, you  
4  cite to various supporting exhibits I see.  
5  In your recollection, if I could ask you, are  
6  these exhibits daily reports of the Division  
7  of Oil, Gas and Geothermal Resources?

8           A    I think -- I'd have to look, but I  
9  believe a lot of them are the actual workover  
10 records that I was talking about, and so  
11 those would have been maintained by SoCalGas  
12 but probably also submitted to DOGGR.

13          Q    To DOGGR.  Okay.  Both workover  
14 records and submissions to DOGGR then.  I  
15 appreciate the correction.

16                   Am I tracking right?

17          A    Yes.  And, again, I'd have to  
18 refresh my memory and go through all the  
19 exhibits.  There's quite a bit.  But I would  
20 generally refer to them as the workover  
21 records.

22          Q    Okay.  I'll see if I can work with  
23 that term as you've described it.  Thank you.  
24 And the workover records describe actions  
25 done to fix the well casings; is that right?

26          A    That's correct.

27          Q    Okay.  So let's take a look at one  
28 of the well casings, one of the workover

1 records, rather. Do you see the reference to  
2 Well P-25R?

3 A Yes.

4 Q Okay. And I noted this one in  
5 particular because the four times it leaked,  
6 so it might be a particularly informative  
7 one. P-25R was the one that had four casing  
8 leaks; is that right?

9 A Yes.

10 Q Okay. And in P-25R then, I think,  
11 if my vision is good enough, we're looking at  
12 Footnote 54.

13 And so that's Exhibit I-20, if  
14 you'll scroll down on the page, Mr. Zarchy.  
15 And maybe if we could enlarge slightly so  
16 everyone can see.

17 And so Footnote 54 is referring us  
18 to I-20 at the pages 138 to 144 and 149, if  
19 I'm tracking right.

20 Gentlemen, does that look correct  
21 to you?

22 A Sorry. I was trying to get ahead  
23 of you and find the exhibit. I'll take your  
24 word for it.

25 Q Okay. Let's go to the exhibit  
26 then.

27 (Crosstalk.)

28 MR. GRUEN: Your Honor, if we could go

1 off the record.

2 ALJ HECHT: We will be off the record.

3 (Off the record.)

4 ALJ HECHT: We'll be back on the  
5 record.

6 Please continue.

7 MR. GRUEN: If we could turn to  
8 Exhibit I-20, Mr. Zarchy, if you would.

9 ALJ HECHT: And we'll be off the  
10 record.

11 (Off the record.)

12 ALJ HECHT: We'll be back on the  
13 record.

14 BY MR. GRUEN:

15 Q Exhibit I-20 you see on the screen  
16 share? I assume you're both there,  
17 gentlemen?

18 WITNESS HOWER: Yes.

19 WITNESS STINSON: Yes.

20 Q If we scroll down to the Bates --  
21 the page with Bates stamp 50748. Okay. I  
22 believe this version does not have the Bates  
23 stamp. We don't have a Bates number on this  
24 one so I'll endeavor to identify it another  
25 way. This is a DOGGR Notice of Intention to  
26 Rework Well.

27 Do you see that?

28 WITNESS HOWER: Yes.

1 Q And the rework of the well is for  
2 Porter 25; correct?

3 A Correct.

4 Q And the stamp, to the best I can  
5 see, is April of 1970 -- and I can't make out  
6 the last year. Can we tell what year is  
7 shown in the upper right corner of the  
8 document? Maybe it's 1977.

9 A It appears that, but I can't be  
10 certain.

11 Q Under "The proposed work" heading  
12 toward the bottom, there are five steps if we  
13 could scroll down.

14 Do you see those?

15 A Yes.

16 Q The first one discusses moving in  
17 and killing the well.

18 Do you see that?

19 A I do.

20 Q Doesn't the phrase "Return to Gas  
21 Storage" mean that P-25 is already operating  
22 to serve gas storage prior to this well kill?

23 A I don't think you can say that, no.  
24 I -- returned the well to operations and at  
25 that time it was gas storage. I don't know  
26 that it tells us anything about what the well  
27 was being used for before that.

28 Q Okay. But here we see that the

1 bottom of this document, the operator is  
2 SoCalGas Company; correct?

3 A Yes, that's correct. That's who  
4 did the workover.

5 Q Do you know when this workover was  
6 done?

7 A Based on the page we're looking at,  
8 no. I can't read that date as we discussed.  
9 It might be 1977. But based on this page, I  
10 cannot.

11 (Crosstalk.)

12 BY MR. GRUEN:

13 Q I'm sorry to interrupt. Go ahead,  
14 Mr. Stinson.

15 WITNESS STINSON: There appears to be  
16 more than one document in this particular  
17 exhibit. Page 2 shows the operation by  
18 Pacific Lighting Service Company dated 1973,  
19 and that's where the work occurred that we're  
20 referring to here. You can see the first  
21 activity is pull the sucker rods, which means  
22 it was an oil well, it's now being converted.  
23 So that's the specific reference for the work  
24 that's in this -- in our testimony.

25 Q Thank you. If we could follow you  
26 just on the screen share. So, Mr. Stinson,  
27 just if you'd look up at the screen so we can  
28 show others looking on.

1                   Mr. Zarchy, if you could scroll  
2 down to the next page.

3                   Is this the page that you're  
4 referring to?

5                   A    Yes.

6                   Q    And in this case, Mr. Stinson, the  
7 operator is Pacific Lighting Service Company;  
8 correct?

9                   A    Correct.

10                  Q    So is this the same workover then  
11 as the prior one where the operator is shown  
12 to be SoCalGas?

13                  A    My understanding is Pacific  
14 Lighting Service Company was a predecessor  
15 for this underground storage development to  
16 SoCalGas.

17                  Q    I appreciate that and I understand  
18 that, but wouldn't it also -- for the same  
19 workover, wouldn't the same company name have  
20 been used, not the predecessor's name?

21                  ALJ HECHT: Can we hear from Mr. Hower  
22 since he seems to have a response.

23                  MR. GRUEN: I appreciate that. Thank  
24 you, your Honor.

25                  WITNESS HOWER: If we go back to the  
26 page you were on with me, 50748.

27                  MR. GRUEN: Okay. If you could follow,  
28 Mr. Zarchy.

1           WITNESS HOWER: That is a workover that  
2 was done presumably after the fact, after the  
3 one you're looking at with Mr. Stinson, and  
4 if you look at the proposed work that we were  
5 discussing at the bottom of the page, it  
6 looks like the work was running tubing and a  
7 subsurface safety system.

8           MR. GRUEN: And if I can, Mr. Zarchy,  
9 just if we could follow you on the screen  
10 share.

11           Q    Mr. Hower, I know you're using your  
12 own document, but just so we're consistent,  
13 do you want us to scroll down on the screen  
14 share so we can see where you're referencing?

15           A    Yes, please.

16           Q    And just tell us, if you would,  
17 where to go on the screen share.

18           A    Keep going down a little bit more.  
19 Okay. Stop right there, please.

20                    So right in the center there it  
21 says, "The proposed work is as follows: Move  
22 in, kill well, install blowout prevention  
23 equipment, recover the packer."

24                    And you see that the work in No. 5  
25 is "Run tubing and safety system" and then  
26 "Return to Gas Storage." So the way this  
27 data looks like to me, if we combine this  
28 page and the page that you and Mr. Stinson

1 were talking about, this work was done  
2 apparently in 1977 and it has nothing to do  
3 with the casing leaks discussed in our reply  
4 report. It had to do with running a  
5 subsurface safety system in and putting the  
6 well back in storage service.

7 Q Let's go to the next page if we  
8 could scroll down. This is the one where,  
9 Mr. Stinson, you were just referencing from  
10 October 24, 1973, done by Pacific Lighting.

11 You see where I'm looking?

12 WITNESS STINSON: Yes.

13 Q If we go toward the middle of the  
14 page, it says --

15 Mr. Zarchy, if you could scroll  
16 down slightly.

17 Do you see the entry? I believe  
18 it's January 22nd. It says "filled hole"?

19 A Yes.

20 Q And the entry toward the middle of  
21 the page with regards to that, would this  
22 document show leak No. 2 on P-25 then?

23 A Leak No. 2. I'm not following you.

24 Q The second leak. Didn't P-25 have  
25 four leaks according to your testimony?

26 A No. I believe this whole set of  
27 work from January 19, 1973, for the next  
28 three months was the testing and conversion

1 of this well for underground storage. It  
2 involved isolating those and then repairing  
3 those leaks that we documented in our  
4 testimony.

5 Q Okay. Let me just back up for a  
6 second. Mr. Hower, I think you mentioned  
7 that the prior document doesn't have to do  
8 with the leaks that are referenced in your  
9 testimony.

10 Did I track that right?

11 WITNESS HOWER: That's how I  
12 interpreted it, yes.

13 Q Why is it provided as a supporting  
14 exhibit then when it's referenced there by  
15 your testimony? Do you know?

16 A I don't. I don't know that.

17 Q Let's go to the next document here  
18 in Exhibit I-20. I believe if we scroll down  
19 to the next one --

20 ALJ HECHT: This is Judge Hecht. I'm  
21 going to point out that I would like to wrap  
22 up in about five to seven minutes. Is this a  
23 line that can be done in that time?

24 MR. GRUEN: Your Honor, I think we can  
25 wrap up here. We could end for the day and  
26 perhaps adjourn slightly early for the  
27 weekend if you'd like --

28 ALJ HECHT: I do want to --

1 MR. GRUEN: -- or do housekeeping.

2 ALJ HECHT: I do want to do some  
3 housekeeping before the end, so if you think  
4 that this can be done in about five to seven  
5 minutes, let me know and you should go ahead.  
6 Otherwise, I would prefer to stop for today.  
7 We will be having Mr. Hower and Mr. Stinson  
8 back Monday morning.

9 MR. GRUEN: Understood, your Honor. In  
10 that case, why don't we end it here for the  
11 day.

12 ALJ HECHT: Thank you.

13 Thank you very much to witnesses  
14 Hower and Stinson. I appreciate your time.  
15 This has been very helpful going through this  
16 information. Among other things, I've  
17 learned a little bit about the history of  
18 Southern California Gas Company and that it  
19 had a predecessor that was Pacific Lighting.  
20 I'm sure that the Commission has records of  
21 transfers of control and all kinds of stuff  
22 that I am not familiar with but must be out  
23 there.

24 With that, I'd like to do any  
25 housekeeping. I'm going to go off the record  
26 to identify whether there is anything to  
27 discuss and ask a couple of questions and  
28 then we'll come back on to adjourn. We'll be

1 off the record.

2 (Off the record.) ]

3 ALJ HECHT: We'll be back on the  
4 record.

5 Thank you, everybody. This is the  
6 end of the day on Friday. We'll be  
7 reconvening on Monday morning at 10:00 a.m.  
8 We will resume cross-examination of this  
9 witness panel, Witness Hower and Witness  
10 Stinson.

11 While we were off the record, we  
12 discussed that we do not yet have an update  
13 on the Boots and Coots witnesses and their  
14 appearances. And we confirmed that things  
15 seem to be remaining on the time schedule  
16 that was last presented to us by SED.

17 With all of that, if there are no  
18 other housekeeping items, I'm going to  
19 adjourn.

20 (No response.)

21 ALJ HECHT: All right. Let's adjourn  
22 for the day. We'll be off the record.

23 (Whereupon, at the hour of 3:45  
24 p.m., this matter having been continued  
25 to May 10, 2021, Commission then  
adjourned.)

26 \* \* \* \* \*]

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STATE OF CALIFORNIA

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CSR NO. 7896

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I, KARLY POWERS, CERTIFIED SHORTHAND REPORTER  
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HEREBY CERTIFY THAT THE PAGES OF THIS TRANSCRIPT  
PREPARED BY ME COMPRISE A FULL, TRUE, AND CORRECT  
TRANSCRIPT OF THE TESTIMONY AND PROCEEDINGS HELD IN  
THIS MATTER ON MAY 7, 2021.

I FURTHER CERTIFY THAT I HAVE NO INTEREST IN THE  
EVENTS OF THE MATTER OR THE OUTCOME OF THE PROCEEDING.  
EXECUTED THIS MAY 14, 2021.

  
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KARLY POWERS  
CSR NO. #13991

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