

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
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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-feet 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 Q Could a -- could reviewing the sort
2 of the historical temp log versus the one
3 that was just run also have the opportunity
4 to see where an older temp log showed an
5 anomaly but the current one did not?

6	A	Oh, yes. Yes.
---	---	---------------

7 Q And you mentioned seeing anomalies
8 at the depth of the shoe from time-to-time.
9 Why would SoCalGas not assume that every
10 anomaly was a shoe leak?

11 A Well, it would -- if it assumed
12 just based on a temperature anomaly that
13 there was a shoe leak, there would be
14 workovers done on the well and casing
15 perforated unnecessarily.

16 Q What else can cause an anomaly and
17 a temp log at the shoe level?

18 A I think I mentioned possibly the --
19 well, small movement of gas through valves at
20 the surface could give a noise level near the
21 shoe because there's a small amount of gas
22 flowing out of the reservoir. The other
23 thing that could occur would be cross flow
24 within the top sand sections, such as the S1
25 and S2 and S4.

26 Q I guess my question was a little
27 bit different, Mr. Neville. Let me restate
28 it. What else can cause temperature drops at

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 barely. Let's assume that a gas is leaking
2 from the bottom of the well and it's actually
3 working its way through that cement and going
4 sort of above the caprock into the MP area
5 there as we talked about earlier.

6 Where would that gas go?]

7 A It would go into, potentially, most
8 likely, the Del Aliso zone. That's the first
9 tan section above the storage zone of cap
10 rock; potentially, the Del Aliso zone or the
11 Porter zone, yes.

12 Q Okay. And in your experience, Mr.
13 Neville, in those instances where there
14 actually was a shoe leak at a well at Aliso
15 Canyon, and so -- and it made its way, sort
16 of, through the cement and showed up just
17 above the cap rock, have you ever seen that
18 gas make its way up a mile and a half of
19 formation and come out at the surface of that
20 well?

21 A No.

22 Q And what, in your professional
23 view, is the likelihood that something like
24 that could happen?

25 And when I say "that," I mean gas
26 leaking around a shoe at a well like SS-25,
27 at 8,500 feet, roughly, making its way to the
28 surface at the Aliso Canyon facility?

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 get 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
3 into evidence.)
4 (Exhibit No. SED-267 was received
5 into evidence.)
6 (Exhibit No. SED-268 was received
7 into evidence.)
8 (Exhibit No. SED-269 was received
9 into evidence.)
10 (Exhibit No. SED-274 was received
11 into evidence.)
12 (Exhibit No. SED-275 was received
13 into evidence.)
14 (Exhibit No. SED-277 was received
15 into evidence.)
16 (Exhibit No. SED-279 was received
17 into evidence.)
18 (Exhibit No. SED-280 was received
19 into evidence.)
20 (Exhibit No. SED-283 was received
21 into evidence.)
22 (Exhibit No. SED-284 was received
23 into evidence.)
24 (Exhibit No. SED-285 was received
25 into evidence.)
26 (Exhibit No. SED-286 was received
27 into evidence.)
28 (Exhibit No. SED-287 was received
29 into evidence.)
30 (Exhibit No. SED-294 was received
31 into evidence.)
32 (Exhibit No. SED-R-295 was received
33 into evidence.)
34 (Exhibit No. SED-R-296 was received
35 into evidence.)
36 (Exhibit No. SED-R-297 was received
37 into evidence.)
38 (Exhibit No. SED-R-298 was received

1 into evidence.)

2 (Exhibit No. SED-299 was received

3 into evidence.)

4 ALJ POIRIER: Did I miss anything?]

5 MS. PURCHIA: You got it. Thank you.

6 ALJ POIRIER: Great. Thank you.

7 Now we'll move on to Ms. Bones.

8 MS. BONE: Yes, your Honor, Cal

9 Advocates would like to move into the record

10 CalPA-407 and CalPA-411. And we understand

11 that SoCalGas has stipulated to the entry of

12 these exhibits into the record.

13 MS. PURCHIA: I heard earlier that you

14 did stipulate to that, Mr. Stoddard.

15 MR. STODDARD: That's correct, your

16 Honor.

17 ALJ POIRIER: Ms. Purchia, anything?

18 MS. PURCHIA: No objection from SED.

19 ALJ POIRIER: Thank you.

20 Cal Advocates' request to move

21 CalPA-407 and CalPA-411 is granted and those

22 are moved onto the record.

23 (Exhibit No. CalPA-407 was received

24 into evidence.)

25 (Exhibit No. CalPA-411 was received

26 into evidence.)

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

27 (Off the record.)

28 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.)]

26 * * * * *

27

28

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 * * * * *]

27

28

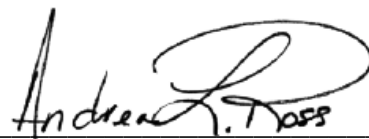
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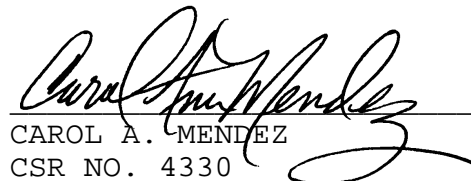
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