

Deposition Testimony of:

Jack Carter Erwin

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Page 265:05 to 270:07

5 Q. Good morning, Mr. Erwin. My name is Paul
6 Collier. I'll be asking you questions today on behalf
7 of BP.
8 You were asked a number of questions yesterday
9 about the inspection that was conducted of the yellow
10 pod while aboard the Q-4000; do you recall that?
11 A. I recall some of them, yes.
12 Q. And I'm not going to go over all of the -- the
13 questions that you were asked previously, but I just
14 have a few questions in relation to that inspection.
15 A. Uh-huh.
16 Q. And you -- we established yesterday that you
17 were aboard the Q-4000 during the yellow pod inspection,
18 correct?
19 A. That's correct.
20 Q. And that was done in May of 2010; is that
21 right?
22 A. That is correct.
23 Q. And I think we discussed a little bit
24 yesterday about who was present during that inspection,
25 and I believe we talked about the fact that both BP and
1 Cameron obviously had representatives there, correct?
2 A. That's correct.
3 Q. The Cameron representatives that were present
4 included yourself, right?
5 A. Yes.
6 Q. And there were other field service technicians
7 who were present on behalf of Cameron; is that correct?
8 A. That's correct.
9 Q. Were those field service technicians that
10 Cameron had present all qualified to perform testing and
11 maintenance on a BOP?
12 A. Yes, I believe so.
13 Q. Okay. And -- and you, yourself, are qualified
14 to perform maintenance and testing on a BOP, correct?
15 A. On a blowout preventer, yes.
16 Q. Okay. Transocean was also present during the
17 yellow pod inspection; is that right?
18 A. Yes.
19 Q. And I believe one of the gentlemen from
20 Transocean was Ray Picard; is that correct?
21 A. That's correct.
22 Q. And prior to the yellow pod inspection, did
23 you know Ray Picard?

24 A. I did.
25 Q. And do you know what Ray Picard's role was
1 with Transocean at that time?
2 A. Subsea engineer.
3 Q. And to your understanding, was Ray Picard
4 knowledgeable about blowout preventers?
5 A. To the best of my knowledge.
6 Q. And he had -- Mr. Picard had worked with
7 Cameron during the yellow pod inspection; is that
8 correct?
9 A. That is correct.
10 Q. And did Mr. Picard actually perform any of
11 the -- the testing or the -- the maintenance associated
12 with the yellow pod?
13 A. At the time to get it back functioning again?
14 Q. Correct.
15 A. I don't recall a specific task that he may
16 have performed.
17 Q. Apart from Mr. Picard, was there anyone else
18 present from Transocean during the yellow pod
19 inspection?
20 A. Tim Williams.
21 Q. And did you know Tim Williams prior to the
22 yellow pod inspection?
23 A. Briefly. I knew -- I met him once or twice
24 before.
25 Q. Do you know what his role was with Transocean
1 at that time?
2 A. I believe he was the rig manager.
3 Q. Do you know if Mr. Williams had any knowledge
4 regarding BOPs?
5 A. I -- I don't know.
6 Q. Did MMS have a representative at the yellow
7 pod inspection?
8 A. There -- there was somebody. I can't
9 remember -- I remember his name.
10 Q. Do you recall that there was -- there was --
11 A. Yes.
12 Q. -- an MMS representative?
13 A. Yes.
14 Q. And did the Coast Guard have a representative,
15 also?
16 A. Yes, they did.
17 Q. And do you recall who the Coast Guard
18 representative was?
19 A. I believe his name was Darren, but I -- I

20 don't recall his last name. I -- I believe I have it
21 written down somewhere.

22 Q. Okay. Now, we talked that Transocean had
23 representatives present at the yellow pod inspection.
24 Were they present when you and other members of the
25 Cameron team performed the tests on solenoid 103?

1 A. Yes.

2 Q. And did they raise any disagreement as to how
3 Cameron was performing the tests on Solenoid 103?

4 A. I don't recall any disagreements being --
5 being made at the time.

6 Q. Were the Transocean representatives aware of
7 the results that you obtained from the testing of
8 Solenoid 103 at that time?

9 A. Yes.

10 Q. And did they raise any dispute about the
11 results that were received about the Solenoid 103
12 testing?

13 A. Not that I recall.

14 Q. Now, yesterday I think you were shown the --
15 the field service report that you generated while on the
16 Q-4000 during the yellow pod inspection, correct?

17 A. The daily report?

18 Q. (Nodding head.)

19 A. Yes, sir.

20 Q. And this detailed the -- the daily activities
21 that were being performed on the Q-4000; is that right?

22 A. To the best of my understanding at the time.

23 Q. And this is the -- the type of report that
24 Cameron generally creates during field service calls; is
25 that right?

1 A. Well, in this -- this instance, I felt it was
2 necessary to document as much information as I could.
3 So this is the method I used to -- to generate that.

4 Q. Okay. And to the best of your knowledge, the
5 information that was contained in the field service was
6 accurate; is that right?

7 A. To the best of my knowledge.

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16 MR. COLLIER: And why don't we go ahead
17 and mark this as -- this will be Deposition
18 Exhibit 7017. Can you do me a favor? Can you put that

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20 And for the record, Deposition Exhibit 7017 was
21 previously marked as CAM_CIV_0080398 through 407.

Page 270:24 to 271:08

24 MR. COLLIER: Yeah, 7017.
25 Q. (BY MR. COLLIER) Is that a document you're
1 familiar with, Mr. Erwin?
2 A. It is.
3 Q. And the first page of this document is an
4 e-mail that you sent to Jason Van Lue; is that correct?
5 A. That is correct.
6 Q. And the date on this e-mail is May 9th, 2010;
7 is that right?
8 A. Yes.

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19 Q. Okay. Yeah. It says, "I wish to terminate my
20 daily as being a combination between Cameron and
21 Transocean as I'm unable to put everything I need to say
22 due to offending." Do you see that?
23 A. I do.
24 Q. And -- and can you explain what you meant by
25 that statement?
1 A. At -- at the time, we were asked to do a -- a
2 joint report, and apparently at this point in the
3 process, I felt it necessary to have the liberty to say
4 anything that I felt appropriate. So I wished at that
5 point in time to ensure that I was submitting a report
6 based on what Cameron was seeing and not dependent on
7 anybody else's input at the time.

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24 Q. Sure. And -- and, in fact, if you can turn to
25 the attachment to your e-mail.
1 A. (Witness complies.)
2 Q. Is this a -- a -- a version of the daily
3 report that you were generating while on the Q-4000?
4 A. It appears to be.
5 Q. And if you can turn to -- well, actually, if
6 you look at the first page on the 6th of May, you see
7 that, that -- that provides a time log of the events on
8 the 6th of May, correct?

9 A. Yes.
10 Q. And then if you turn to the third page, at --
11 at the top of the page, that's still a time log for the
12 events on May 6th; is that right?
13 A. That is correct.
14 Q. And -- and then if you look at the -- the last
15 but one bullet point of 2146; do you see that?
16 A. I do.
17 Q. And that discusses the -- the testing that was
18 conducted on solenoid valve 103; is that right?
19 A. That is correct.
20 Q. And so at the time that you sent the e-mail to
21 Mr. Van Lue, the -- the testing of Solenoid 103 had --
22 had been conducted; is that right?
23 A. That's correct.

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14 Q. If you could turn to the -- the field service
15 report that's attached to your e-mail, and Page 3
16 specifically.
17 A. Okay.
18 Q. And, again, turning to that bullet point of
19 2146.
20 A. Okay.
21 Q. And this again references Solenoid Valve 103,
22 correct?
23 A. That's correct.
24 Q. And the last sentence -- well, let me take a
25 step back. These are words that you drafted; is that
1 right?
2 A. That is correct.
3 Q. And the last sentence in that bullet point
4 reads, "This valve was rebuilt in February 2010 by
5 unknown person. It appears this was done on the rig as
6 the date was written in paint pen." Do you see that?
7 A. I do see that.
8 Q. And -- and why did you write that the -- or
9 why did you believe at that point in time that the
10 Solenoid Valve 103 had been rebuilt?
11 A. To the best of my recollection, I recall the
12 solenoid had been marked with a date and an initial
13 of -- of somebody in paint pen. So that led me to a
14 understanding that it had been rebuilt by somebody other
15 than Cameron, as there was no work order number
16 stencil -- stenciled on it.

17 Q. So if this would have been a -- a Cameron
18 rebuild of the solenoid valve, there would have been a
19 work number printed on there?
20 A. That's correct.
21 Q. So Cameron does perform rebuilding of solenoid
22 valves; is that right?
23 A. That is correct.
24 Q. Does Cameron do that work itself?
25 A. Yes.
1 Q. Are -- are any third parties qualified to do
2 rebuilds of solenoid valves?
3 A. I'm not aware of any certification or
4 authority provided to a third party for that process.
5 Q. Do you know if Transocean itself was doing
6 rebuild of solenoid valves prior to April of 2010?
7 A. From my understanding, they did their -- their
8 maintenance on their vessels, so -- to include solenoid
9 valves, amongst other things.
10 Q. Had Transocean subsea supervisors gone through
11 any training with Cameron about the rebuilding of
12 solenoid valves?
13 A. I'm not aware of any specific training that
14 they may have or may not have gone through.

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22 Q. Now, the date that's stamped on the -- or the
23 date that was written in paint pen on Solenoid 103 was
24 February of 2010; is that right?
25 A. As I recall.
1 Q. And to your knowledge, did Cameron have any
2 field service technicians on the Deepwater Horizon in
3 February of 2010?
4 A. Not to my knowledge.

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18 Q. Prior to April of 2010, had you heard about
19 Transocean conducting rebuilds of solenoid valves
20 themselves?
21 A. I understood that they did, as stated before,
22 quite a bit of their maintenance and worked on solenoid
23 valves, pod valves. Most of -- most of their equipment
24 they, from what I understand, repaired and -- on the --
25 on the pods themselves on the rigs.
1 Q. Okay. Did that raise any concerns for Cameron

2 that Transocean was performing maintenance of the
3 solenoid valves themselves?

4 A. Most customers in -- in this industry do quite
5 a bit of their own maintenance. So I -- I wouldn't say
6 it caused concern, but it's understood that they --
7 these guys work on their equipment.

8 Q. Okay. But that's a service that Cameron
9 offers to its customers is the rebuilding of the
10 solenoid valve?

11 A. That is correct.

12 Q. Now, there was discussion yesterday about the
13 fact that c- -- certain wires in solenoid 103 were found
14 to be switched; do you recall that?

15 A. I do recall that.

16 Q. Does Cameron have any quality checks in place
17 when it rebuilds solenoid valves to ensure that the --
18 the wires are not crossed in the coils?

19 A. I'd have to look at the assembly and FAT
20 document, but there is a assembly test procedure, as it
21 go -- as well as the components go through our quality
22 control department before they leave the facility, so...

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5 Q. You can put that document to the side.

6 Thanks.

7 Now, during the solenoid 103 testing, I think
8 you testified yesterday that you used a PETU, correct?

9 A. That's correct.

10 Q. And the PETU is a -- a specially-configured
11 laptop; is that right?

12 A. That's correct.

13 Q. And -- and Cameron uses these PETUs in the
14 factory acceptance tests for control pods; is that
15 right?

16 A. That's correct.

17 Q. And the PETUs are configured in order to
18 simulate the conditions that a control pod would
19 experience during operation, correct?

20 A. Can -- can you repeat the question?

21 Q. Sure. The PETUs that Cameron uses, those are
22 configured in order to simulate certain of the
23 conditions that the control pods will experience during
24 operation?

25 A. Not experience during operation. It
1 simulates -- or it turns on and off a function within

2 the pod. It has a communication modem as used on the
3 control pod. It just -- it just turns on -- on and off
4 commands.
5 Q. Was there anything unusual or different about
6 the PETU that was used on the Q-4000 than the PETUs that
7 Cameron uses during FAT testing?
8 THE REPORTER: During what testing?
9 MR. COLLIER: F-A-T testing.
10 THE REPORTER: Okay.
11 A. It was one of the -- as I recall, I believe it
12 was one of the PETUs that is used during -- from the
13 facility. We took it from one of our facilities.
14 Q. (BY MR. COLLIER) To your knowledge, were
15 there any problems with the PETU that was used on the
16 Q-4000?
17 A. Not that I recall.

Page 282:24 to 283:13

24 And for the record, Exhibit 7018 has previously
25 been identified as CAM_CIV_0079689 through 95.
1 Q. (BY MR. COLLIER) And the -- the first page on
2 this document is an e-mail exchange between yourself and
3 Michael Fry; is that correct?
4 A. That is correct.
5 Q. And it was sent on April 21, 2010; is that
6 right?
7 A. That's correct.
8 Q. And so it's your understanding this was one
9 day after the April 20th incident, correct?
10 A. That's correct.
11 Q. And who is Michael Fry?
12 A. He was the Transocean employee. He was a
13 field technical support.

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20 Q. This was before any of the control pods were
21 pulled from the -- the Deepwater Horizon BOP, correct?
22 A. That is correct.
23 Q. And if you could turn to the second paragraph
24 in your e-mail and specifically the sentence which is
25 about in the second paragraph four or five lines down.
1 It reads, "The Deadman should then fire, if the
2 Batteries are good and the AMF was enabled." Do you see
3 that?

4 A. That's correct.

5 Q. And what was the reason for saying "if the
6 batteries are good" in that sentence?

7 A. I was just stating that those parameters must
8 be met in order for what they're trying to execute to
9 actually fire.

10 Q. Did you have any reason to believe that the
11 batteries in the -- the Deepwater Horizon control pod
12 would not be good at that point?

13 A. I had no reason to believe that.

14 Q. Had you experienced any other issues where the
15 control pod batteries had been depleted in a Cameron
16 BOP?

17 A. I don't recall any specifics, but I -- I
18 know -- I -- I recall having discussions about it
19 before, but not specifically -- specific instances.

20 Q. And what about those discussions do you
21 recall?

22 A. Discussions with customers over the years
23 regarding when to change batteries out, frequency, those
24 types of things. So, you know, everybody in the
25 industry understood that that was something that had to
1 be done, so I was, I guess, for lack of better terms,
2 stating the obvious.

3 Q. Okay. And Transocean was aware of the
4 frequency that the batteries needed to be changed?

5 A. Yes.

6 Q. The frequency for changing out the control pod
7 batteries was once a year; is that correct?

8 A. There was -- the engineering bulletin
9 specifies, I think, three or four parameters, as best I
10 recall without looking at it, once a year or after 33
11 activations. I think it's one year in -- in operation
12 and/or five years from date of purchase, whichever comes
13 first, if I recall.

14 Q. Well, and -- and to give you some help with
15 that, let me turn your attention to tab 1.

16 A. Okay.

17 Q. And -- and for the record, tab 1 is EB891D,
18 correct?

19 A. That is correct.

20 Q. And I think this is a document we talked about
21 yesterday; is that right?

22 A. Yes, sir.

23 Q. And this is the -- EB891D provides the
24 parameters for the deadman battery placement, correct?

25 A. That's correct.
1 Q. And just so that -- on the second page of
2 EB891D, it provides the parameters for changing out
3 the -- the deadman batteries, correct?
4 A. It does.
5 Q. And that's consistent with what you just
6 discussed as far as the parameters; is that right?
7 A. It appears to be.
8 Q. And this EB891D would be a document that
9 Transocean would have available to it; is that right?
10 A. Yes, to my understanding, it would.

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3 Q. Cameron had visited the Deepwater Horizon on
4 several occasions; is that right?
5 A. That's correct.
6 Q. And I think you testified yesterday that you,
7 yourself, had visited the -- the Deepwater Horizon,
8 right?
9 A. That's correct.
10 Q. Were you aware of where the -- the MUX cables
11 traveled through the moon pool?
12 A. I was.
13 Q. And did you raise any concerns with -- with
14 Transocean about the location of the MUX cables going
15 through the -- the moon pool?
16 A. At the time I don't recall making any comments
17 regarding that.
18 Q. Do you know if anyone from Cameron had raised
19 any concerns with Transocean about the -- the location
20 of the MUX cables traveling through the moon pool?
21 A. I'm not aware of Cameron making any comments
22 along those lines.
23 Q. Are you aware -- aware of any rigs that have
24 any kind of blast-proof devices that are provided for
25 protecting the MUX cables through the moon pool?
1 A. Not that I can recall.
2 Q. Have any customers made a request to have any
3 type of class -- blast-proof device provided to protect
4 the MUX cables?
5 A. I have -- I haven't been asked that, that I
6 can recall.

Page 289:13 to 289:25

13 Q. (BY MR. COLLIER) And Exhibit 7019, that's an
14 e-mail exchange between you and Jason Van Lue; is that
15 right?
16 A. That's correct.
17 Q. Yeah. And I believe all of these e-mails took
18 place on the dates of May 6th and May 7th; is that
19 right?
20 A. Yes, that's correct.
21 Q. Okay. And the -- the first -- or the earliest
22 e-mail in this chain was an e-mail from you to Jason
23 Van Lue that just had the subjects "Solenoid valve 103
24 did not fire via the deadman"; is that right?
25 A. Yes, that is correct.

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25 Q. And then if you -- if you go to the -- the
1 last e-mail in the chain, the e-mail at the very top of
2 the page.
3 A. Uh-huh.
4 Q. And this is an e-mail from Jason to you, and
5 in the body of the e-mail it reads, "You told me last
6 night that you had 18 volts on the 27 volt batteries,
7 the minimum Voltage to pull in a -63 is around
8 20 volts."
9 Did I read that correctly?
10 A. Yes, you did.
11 Q. And a dash 63 that's referenced in that
12 sentence, that refers to the -- the type of solenoid
13 valve that solenoid 103 was; is that right?
14 A. That's correct.
15 Q. And that is -- is that the -- the name that's
16 used internally at Cameron for referencing those
17 solenoid valves?
18 A. There -- at one point in time there was a dash
19 15 as a base -- the base number, and then the -- the
20 dash 15, and I guess it's ref- -- commonly referred to
21 as a dash 63 now.

Page 292:06 to 292:22

6 Q. Now, during the -- the testing that you
7 conducted of the yellow control pod on the Q-4000 did
8 you take a reading of the 27-volt batteries?
9 A. Yes, we did.
10 Q. And the -- the reading that you took was

11 18 volts; is that right?
12 A. I believe it's documented in the daily report.
13 That seems to be about right.
14 Q. And is Mr. Van Lue here stating that 18 volts
15 would not have been enough in order to activate the
16 solenoid valve 103; is that right?
17 A. It appears he's saying that the minimum
18 voltage would be 20 volts.
19 Q. So 18 volts would not have been enough; is
20 that right?
21 A. According to what he's saying, that's what
22 he's saying, 18 volts wouldn't be enough.

Page 296:09 to 296:17

9 Q. Was the solenoid -- was -- was the e-connector
10 that was on solenoid 103 at the time of the yellow pod
11 inspection, was that the -- the -- the type of SEA CON
12 connector that's referenced in this e-mail?
13 A. Not -- it is not, no.
14 Q. Did Transocean receive any kind of cost
15 savings by using SEA CON connectors over the Cameron pie
16 connectors?
17 A. Cameron --

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21 Q. Did -- did Transocean receive any cost savings
22 by using the SEA CON connectors over the -- the Cameron
23 pie connectors?

Page 296:25 to 297:08

25 A. The SEA CON connector is a pie connector, so
1 are you...
2 Q. (BY MR. COLLIER) The -- the SEA CON
3 connectors that Transocean was looking to use --
4 A. Uh-huh.
5 Q. -- with the solenoid valves --
6 A. Uh-huh.
7 Q. -- was that a -- were there any cost savings
8 to Transocean associated with that?

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10 A. If the -- if Tran- -- Transocean would have

11 gone directly to SEA CON, it would have saved them --
12 saved them money.
13 Q. (BY MR. COLLIER) And do you know if
14 Transocean ever started to buy directly from SEA CON --
15 A. Yes --
16 Q. -- for the e-connectors?
17 A. -- Transocean did purchase them directly.
18 Q. And when did that start?
19 A. I -- I don't recall. It's been quite -- a
20 number of years ago.
21 Q. The -- the e-connector that was on the
22 solenoid 103, was that a SEA CON connector that
23 Transocean would have purchased directly from SEA CON?
24 A. To the best of my knowledge, it -- it was.
25 There was no Cameron marking on it.

Page 299:10 to 300:06

10 Q. Now, you were familiar with the -- the stack
11 configuration for the Deepwater Horizon BOP, correct?
12 A. Yes.
13 Q. It was a 5-RAM stack?
14 A. That's correct.
15 Q. And one casing shear RAM, right?
16 A. That's correct.
17 Q. And one blind shear RAM?
18 A. That's correct.
19 Q. And two variable-bore RAMs; is that right?
20 A. Yes.
21 Q. And then one test RAM; is that --
22 A. Yes --
23 Q. -- correct?
24 A. -- that's correct.
25 Q. And you're aware that the -- the lower
1 variable-bore RAM was converted to a test RAM around
2 2004, 2005; is that right?
3 A. As I recall, that sounds about right.
4 Q. And Cameron was hired by Transocean to perform
5 the conversion of the lower variable-bore RAM to a test
6 RAM; is that right?

Page 300:08 to 300:18

8 A. Cameron was asked to come out to perform the
9 modification to the bonnet to convert it.
10 Q. (BY MR. COLLIER) Now, what do you mean by

11 "the modification to the bonnet"?
12 A. The bonnet has to -- there's a pin that holds
13 the RAM block on. It must be modified in order to
14 accept the RAM in the upside down position.
15 Q. And Cameron sent a field sec- -- a field
16 service technician to the Deepwater Horizon to conduct
17 that modification; is that right?
18 A. That's correct.

Page 301:09 to 301:14

9 Q. (BY MR. COLLIER) And are you familiar with
10 Exhibit 7021?
11 A. Yes, I am.
12 Q. And Exhibit 7021 is a Cameron field service
13 order; is that right?
14 A. That is correct.

Page 303:07 to 303:17

7 Q. I'd like to turn your attention then to the
8 "Work Performed" --
9 A. Uh-huh.
10 Q. -- section of the field service order and
11 the -- on the second line it has a statement that reads,
12 "Converted lower pipe RAM to test RAMs"; do you see
13 that?
14 A. I do see that.
15 Q. And this indicates that the field service
16 technician for Cameron did convert the -- the lower pipe
17 RAM to test RAMs during this time frame; is that right?

Page 303:19 to 303:21

19 A. It appears that he went out to perform a task
20 that Transocean asked, and that was modify the bonnet to
21 accept a test RAM.

Page 305:06 to 305:08

6 Q. Did Cameron raise any concerns with Transocean
7 about the conversion of the lower pipe RAM to a test
8 RAM?

Page 305:10 to 306:07

10 A. We just came out to perform the task that --
11 they were wanting to convert it, so we went out to
12 convert the bonnet.
13 Q. (BY MR. COLLIER) Did Cameron raise any safety
14 concerns to Transocean about converting the lower pipe
15 RAM to a test RAM?
16 A. Not -- not that I'm aware of.
17 Q. Are you aware of other rigs that have
18 converted the -- converted a pipe RAM to a test RAM?
19 A. There -- to the best of my recollection, there
20 are some other rigs out there configured with a test
21 RAM.
22 Q. And are those 5-RAM BOPs, to your knowledge?
23 A. I don't recall the configurations, but I
24 understand there are other rigs with test RAMs.
25 Q. Do you know if those other rigs are Transocean
1 rigs or other rig owners?
2 A. I couldn't specify specifically. I'd have to
3 see the specific stack configuration to -- and talk to
4 the client to -- to see what -- the status of the BOP.
5 Q. It's not unusual, though, to include a test
6 RAM on a BOP stack, correct?
7 A. I wouldn't say it's unusual.

Page 309:05 to 310:17

5 Q. Now, if you can turn to tab 30, please; and if
6 you could go ahead and mark that with the next exhibit
7 sticker, which I think is 7023; is that --
8 A. That's correct.
9 MR. COLLIER: For the record, Exhibit 7023
10 has previously been marked as CAM_CIV_0080104 through
11 05.
12 Q. (BY MR. COLLIER) And this is an e-mail
13 exchange between you and Jason Van Lue, dated May 3rd;
14 is that right?
15 A. That is correct.
16 Q. Okay. And I'd like to draw your attention to
17 the earliest e-mail in this chain on the second page,
18 and that's an e-mail from Jason Van Lue to you; is that
19 right?
20 A. Yes, it is.
21 Q. And again dated May 3rd, 2010. And the text
22 of the e-mail reads, "Hey don't say anything yet, but
23 the whole time we have been functioning the middle pipe
24 ram from the RV. It is actually plumbed to the lower

25 test RAM," and then there are several exclamation
1 points, correct?

2 A. Yes.

3 Q. And was that a surprise to Cameron that the --
4 the ROV intervention panel was plumbed to the -- the
5 lower test RAM?

6 A. At the time, I wasn't -- Jason was in the
7 crisis center, I was offshore. So he'd sent me an
8 e-mail. I'm not sure what -- what the reaction was. It
9 appears that my reaction was, "You have to be kidding
10 me."

11 Q. So that was a surprise to you that the ROV
12 intervention panel had been attached to the lower test
13 RAM, right?

14 A. It appears that I took it as such.

15 Q. Okay. And that means someone hadn't done
16 their job; is that right, as far as converting the --
17 the lower test RAM?

Page 310:20 to 312:11

20 A. It appears that there was a hose connected to
21 the wrong location. That's -- that's what it was
22 telling us.

23 Q. (BY MR. COLLIER) Who was responsible for --
24 who would have been responsible for ensuring that the --
25 the ROV intervention panel was connected to the middle
1 pipe RAM and not the lower test RAM?

2 A. Well, the -- the BOP would have been tested
3 numerous times prior to deployment by a subsea engineer
4 aboard the rig. So it's a common practice. For
5 pre-deployment tests, my understanding, they function
6 everything on the control system to assure it's working
7 properly before it goes subsea.

8 Q. That would have been the -- the Transocean
9 subsea supervisors that would have tested the BOP before
10 deployment?

11 A. That is my understanding.

12 Q. Would that have been something that Cameron
13 would have been involved with, the testing of the BOP
14 prior to deployment?

15 A. I was not aware of a technician being on board
16 prior to deployment at this time.

17 Q. Where Cameron has conducted conversion of pipe
18 RAMs to test RAMs --

19 A. Uh-huh.

20 Q. -- is there any checklist that Cameron uses to
21 ensure that it's done correctly?

22 A. In this case, as I recall the technician went
23 out just to convert the bonnet itself. In not all cases
24 when we go out to do a conversion are we asked to do the
25 complete -- the complete thing. Sometimes we're just
1 asked to do specific tasks.

2 Q. Yeah, and in this case, it's your
3 understanding that Cameron was asked just to do a
4 specific task associated with the conversion; is that
5 right?

6 A. As I recall, my und- -- my -- my recollection,
7 I recall us going out just to convert the bonnet.

8 Q. And the Transocean subsea team then was the
9 ones responsible for convert- -- for completing the --
10 the entire conversion of the lower test RAM?

11 A. My understanding.

Page 312:15 to 312:17

15 Q. (BY MR. COLLIER) Are you aware of any impact
16 that the connection of the ROV intervention panel to the
17 lower test RAM have with respect to the response effort?

Page 312:19 to 313:06

19 A. The only thing I understand is that it would
20 have closed the -- the test RAM as opposed to the one
21 other -- any other RAM.

22 Q. (BY MR. COLLIER) And do you know after they
23 found out that the ROV intervention panel was attached
24 to the lower test RAM, that the response team had to
25 spend time re-plumbing the ROV intervention panel?

1 A. I understand there were some efforts made
2 to -- to try to remedy that subsea, but I -- that was
3 taking place in the crisis center. I was on board the
4 Q-4000.

5 Q. You don't know how -- how long that took?

6 A. I don't.

Page 314:24 to 315:07

24 Q. MMS only requires that you -- that a
25 blowout -- subsea blowout preventer only have one
1 annular; is that right?

2 A. I'm not sure of MMS's specific recommendation

3 requirements on that.

4 Q. You don't -- as a Cameron employee you've
5 never reviewed the -- the Federal regulations associated
6 with blowout preventers?

7 A. I don't recall that specific requirement.

Page 318:13 to 318:16

13 Q. (BY MR. COLLIER) Were there any specific
14 maintenance activities associated with the Deepwater
15 Horizon blowout preventer that Transocean was conducting
16 in more recent years than it had been doing previously?

Page 318:18 to 318:18

18 A. I can't think of any specifics.

Page 319:20 to 320:16

20 Q. What impact does proper well control practices
21 have on the ability for a blowout preventer to secure a
22 well?

23 A. Again, I'm not a well control expert, so I
24 don't know all the -- the possibilities when it comes to
25 well control or what the different options are. But
1 my -- to the best of my recollection, my understanding
2 is a typical well control, you're closing a set of pipe
3 RAMs, make sure you locate your tool joint, closing a
4 set of pipe RAMs as soon as you can to -- to start
5 pushing the kick-back.

6 Q. And you would agree that the sooner that you
7 activate the BOP after detection of a kick, the more
8 likely the BOP is to secure the well?

9 A. Again, I'm not a well control expert, but
10 that's my understanding. You -- you want to activate
11 whatever means of well control you have at your disposal
12 at its -- at the earliest possible time.

13 Q. Is there anyone at Cameron, to your knowledge,
14 that does have knowledge regarding well control
15 practices?

16 A. Not that I'm aware of.

Page 321:05 to 322:07

5 Q. And R & B Falcon was the predecessor to
6 Transocean; is that right?

7 A. From my understanding.
8 Q. Do you know if the specifications would have
9 provided the configuration for the blowout preventer?
10 A. I suspect it would.
11 Q. And by "configuration" I'm referring to the
12 number of RAM type preventers and the number of annular
13 preventers, correct?
14 A. Yes, that would be customer -- customer
15 requirement.
16 Q. The specific design of the annular preventers,
17 would that be something that Cameron would provide?
18 A. Yes, the design -- the design itself is
19 Cameron's design.
20 Q. The Deepwater Horizon was equipped with
21 Cameron SBR blind shear RAMs; is that right?
22 A. I believe that's correct.
23 Q. The design of the SBR blind shear RAMs, that
24 would be provided by Cameron; is that correct?
25 A. That's correct.
1 Q. Cameron designed and engineered the control
2 pods for the Deepwater Horizon blowout preventer; is
3 that right?
4 A. That is a Cameron design, yes.
5 Q. And Cameron designed and engineered the -- the
6 AMF deadman system that was used with the Deepwater
7 Horizon blowout preventer; is that right?

Page 322:09 to 322:19

9 A. The -- the -- the function of the sequence of
10 events is customer specific. The -- I guess the
11 hardware and the circuitry would be Cameron's.
12 Q. (BY MR. COLLIER) So the customer could
13 indicate how that would be performed; is that right?
14 A. That is correct, that is customer driven.
15 Q. But the way it would actually be performed,
16 that would be a Cameron design; is that correct?
17 A. Well, the -- the method -- I guess the
18 technology, and it is Cameron's technology. The
19 sequence of events is a customer-specific requirement.

Page 323:07 to 324:13

7 Q. Whether the AMF deadman system used batteries
8 to power the system, that would be a decision that was
9 made by Cameron; is that right?

10 A. That is correct.

11 Q. And you'd agree with me that Cameron has
12 expertise in the design and manufacture of BOPs,
13 correct?

14 A. I would -- I would agree with that Cameron has
15 intellectual property and has designed several component
16 within the BOP and controls.

17 Q. And the engineers that Cameron employs to
18 design and manufacture the BOPs, you'd agree with me
19 that they are experts in the field of BOPs, correct?

20 A. I would agree that they manufacture and per
21 the requirements outlined by API.

22 Q. You'd agree that Cameron has more expertise in
23 the design and manufacture of BOPs than Transocean,
24 correct?

25 A. I think that's a fair statement.

1 Q. When Cameron sells a -- a BOP to a customer
2 are there certain conditions that are specified as to --
3 well, let me rephrase the question.

4 When Cameron sells a BOP to a customer, does
5 it specify the conditions under which the -- the BOP
6 will work and operate?

7 A. The customer provides the specifications to us
8 by which they want to use the equipment, so at that
9 point then we provide the equipment to meet those
10 specifications.

11 Q. Now, and it's understood when Cameron designs
12 and engineers BOPs that a BOP is intended to secure a
13 well in an emergency situation, correct?

Page 324:15 to 324:24

15 A. I think a BOP is intention -- is what -- one
16 of the many, many things that the rig has to -- for well
17 control purposes at the time.

18 Q. (BY MR. COLLIER) And you'd agree with me that
19 the -- a blowout preventer is a well control device,
20 correct?

21 A. It is one of many well control devices on the
22 rig.

23 Q. (BY MR. COLLIER) The blowout preventer is the
24 primary well control device on a rig?

Page 325:01 to 325:06

1 A. I don't -- I don't know if I would qualify it

2 as the primary well control, but it is, like I said, one
3 of many devices.

4 Q. (BY MR. COLLIER) Yeah, a blowout preventer is
5 designed to secure a well in an emergency situation,
6 correct?

Page 325:08 to 325:12

8 A. The BOP is -- from my understanding is used
9 to -- to close in and secure a kick, and that's my
10 understanding of the equipment.

11 Q. (BY MR. COLLIER) And that could be under
12 emergency situations, correct?

Page 325:14 to 325:15

14 A. I suppose it could be under emergency
15 situations.

Page 328:16 to 328:18

16 Q. Has Cameron conducted any testing to evaluate
17 whether its BOPs will secure a well in a dynamic flow
18 condition?

Page 328:20 to 328:23

20 A. I'm not aware of any testing.

21 Q. (BY MR. COLLIER) The testing that Cameron
22 conducts on its BOPs, that's in conformance with API 16;
23 is that right?

Page 328:25 to 329:02

25 A. From my understanding it's in accordance --
1 the BOPs specification required at the time is per API,
2 then it's per API 16, whichever one drives that one.

Page 330:25 to 331:10

25 For the record, 7024 has previously been
1 designated CAM_CIV_0130520. And this is a Cameron
2 safety alert; is that right?

3 A. This is the alert I was referring to.

4 Q. Okay. Apart from this safety alert, has
5 Cameron made any other representations about what may

6 have caused the Macondo well incident?
7 A. Not to my knowledge.
8 Q. Has Cameron drawn a conclusion that the -- the
9 Deepwater Horizon BOP did not secure the well during the
10 Macondo well incident because of operator error?

Page 331:12 to 331:13

12 A. There is no -- there are no conclusions that I
13 have heard regarding that incident.

Page 332:15 to 332:20

15 Q. Has Cameron had any internal discussions,
16 non-privileged discussions about why the blowout
17 preventer did not work?
18 A. The only discussion that was -- I've heard was
19 regarding the -- some -- some statement in the DNV
20 report regarding buckling of -- of pipe.

Page 334:12 to 334:17

12 Q. Prior to the April 20th incident, were you
13 aware of Transocean using non-OEM parts on the Deepwater
14 Horizon BOP?
15 A. I was aware that they were purchasing solenoid
16 valve e-connectors, but beyond that I'm not aware of any
17 other components.

Page 334:19 to 335:12

19 in front of you. And if you could mark that with the
20 next deposition sticker, which is -- I think it's
21 Exhibit 7025.
22 A. That's correct.
23 Q. For the record, this has been previously
24 designated as CAM_CIV_0079410 through 13. And the --
25 there is a cover e-mail on this document; is that right?
1 A. That is correct.
2 Q. And the -- the cover e-mail is dated
3 November 18th of 2009; is that correct?
4 A. That's correct.
5 Q. And the subject matter for the e-mail is
6 Transocean meeting minutes, and the -- the top e-mail in
7 this chain is an e-mail from you to Corey Dautrerive; is
8 that right?

9 A. Dautrerive.
10 Q. Okay. And there is an attachment, Transocean
11 meeting report November 11th, 2009; is that correct?
12 A. That's correct.

Page 337:12 to 339:06

12 Q. The -- the body of the -- the document, there
13 is a heading that reads, General BOP recertification
14 discussions, slash, feedback. Do you see that?
15 A. I do.
16 Q. And the first bullet point reads, "EB902D
17 presentation was well received and the EB902D element
18 fully supported by attendees. However, they advise that
19 they were self-certifying and were successfully
20 maintaining equipment by using both OEM and non-OEMs as
21 well as performing their own inspections and
22 maintenance." Do you see that?
23 A. I do.
24 Q. And do you know what was meant by that
25 statement?
1 A. It appears they're referring to the
2 recertification practice used in that region at the
3 time.
4 Q. And what region was that; do you know?
5 A. The North Sea.
6 Q. And was it your understanding it was
7 Transocean's position that the -- that it was
8 self-certifying in order to be in compliance with the
9 recertification plans?
10 A. I'm not sure about the term self-certifying.
11 I just know that Transocean was using OEM and non-OEM to
12 repair their equipment.
13 Q. Do you know if Transocean was using non-OEM to
14 repair their equipment in the Gulf of Mexico?
15 A. I'm not aware.
16 Q. The next bullet point reads, "In response to
17 the Cameron statement that Cameron equipment was not
18 performance tested with non-OEM elastomers and that
19 Cameron elastomers were not warranted in non-OEM copycat
20 products, Transocean confirmed that they used non-OEM
21 elastomers and that they have generated life expectancy
22 information on them." Do you see that?
23 A. I do.
24 Q. Were you aware of Cameron using non-A --
25 non-OEM elastomers with blowout preventers in the Gulf

1 of Mexico?

2 A. Cameron using them?

3 Q. Sorry, let me ask the question again. Were
4 you aware of Transocean using non-OEM elastomers with
5 blowout preventers in the Gulf of Mexico?

6 A. Not that I'm aware.

Page 341:25 to 343:07

25 Q. And so in your role as the service manager for
1 Cameron your customer was Transocean; is that right?

2 A. That's correct.

3 Q. And Transocean owned the Deepwater Horizon; is
4 that right?

5 A. That's correct.

6 Q. And the Deepwater Horizon was Transocean --
7 was Transocean's rig, correct?

8 A. To my understanding.

9 Q. And Transocean owned the well control
10 equipment on the Deepwater Horizon?

11 A. That is correct.

12 Q. And that would have included the Deepwater
13 Horizon blowout preventer, correct?

14 A. That is correct.

15 Q. Transocean was responsible for maintenance of
16 the Deepwater Horizon blowout preventer?

17 A. That is Transocean's responsibility.

18 Q. And they would hire Cameron on occasion to
19 perform certain maintenance activities; is that right?

20 A. They would hire Cameron on occasion to perform
21 specific tasks outlined in their purchase order.

22 Q. But it was Transocean that was responsible for
23 maintaining the blowout preventer in proper operating
24 condition?

25 A. That is correct.

1 Q. Transocean had a subsea team who had
2 responsibility for maintaining the blowout preventer?

3 MR. WILLIAMS: Object; form.

4 A. Aboard the rig, subsea department?

5 Q. (BY MR. COLLIER) Correct.

6 A. From my understanding, it had the subsea --
7 group of subsea engineers on the rig.

Page 344:07 to 344:12

7 Q. In your time as service manager did you ever

8 raise any concerns with Transocean as to the way that
9 they were maintaining the Deepwater Horizon blowout
10 preventer?

11 A. We -- Cameron wasn't aware of the maintenance
12 procedures outlined for maintaining that equipment.

Page 345:05 to 345:13

5 Q. Now, Cameron is not involved in the -- the
6 operation of the blowout preventer in an emergency
7 situation, correct?

8 A. That is correct.

9 Q. And that's Transocean's responsibility; is
10 that right?

11 A. From my understanding, it's the responsibility
12 of somebody on the rig, tool pusher or somebody, to
13 operate that equipment.

Page 345:17 to 346:09

17 Q. Does Cameron conduct any test -- or, I'm
18 sorry. Does Cameron conduct any training of its
19 customers as to the proper operation of a blowout
20 preventer?

21 A. We do have training classes to familiarize our
22 customers with the -- how to use the equipment.

23 Q. And can you explain what you mean by "how to
24 use the equipment"?

25 A. How to operate the panels and what the --
1 if -- if you push a button, what the end -- the end
2 result is going to be.

3 Q. In that train -- in those training sessions do
4 you discuss at all proper well control procedures?

5 A. Not that I'm aware of.

6 Q. This is just show -- purely how to push the
7 right buttons in order to operate certain functions of
8 the blowout preventer?

9 A. That's correct.

Page 352:08 to 352:24

8 Q. (BY MR. COLLIER) Did you or anyone at Cameron
9 raise any concerns with Transocean about the fact that
10 the Deepwater Horizon blind shear RAM design was a DVS
11 design and not an SBR design? I'm sorry, let me -- let
12 me strike that and ask a better question.

13 Did you or anyone at Cameron raise any
14 concerns with Transocean about using an SBR blind shear
15 RAM design with the Deepwater Horizon BOP?

16 A. It was commonly understood in the industry
17 that we had multiple RAM designs available. Again, at
18 any given time Cameron is not privy to the specific
19 stack configuration of RAMs on any given well.

20 Q. So to answer my question is you've not had any
21 discussions with Transocean about the -- the SBR blind
22 shear RAM design and switching it to a DVS blind shear
23 RAM design?

24 A. Not that I recall.

Page 359:05 to 360:04

5 Q. And then next to that there's a heading that
6 reads hydraulic deadman; do you see that?

7 A. That's correct.

8 Q. Can you identify what that's referring to?

9 A. That's another form of automatic mode function
10 deadman that's -- just uses hydraulics, and, again, this
11 was specifically referring to the new systems that were
12 being sold. I didn't go all the way back.

13 Q. And so that's a -- an AMF deadman system that
14 does not use batteries; is that correct?

15 A. That's correct.

16 Q. That was available on the -- the Cameron newer
17 systems; is that right?

18 A. It was available to the -- hydraulic deadman
19 was available to any system we had in the field.

20 Q. Okay. When was the hydraulic deadman system
21 first available with Cameron products?

22 A. I don't recall, but it has been used in
23 various systems for years in the industry.

24 Q. And are you aware of other manufacturers, BOP
25 manufacturers that use a hydraulic deadman system?

1 A. I believe some of the other ones do. I also
2 understand that some of the drilling contractors
3 themselves have -- have made that design, but I don't --
4 I don't recall the specifics.

Page 361:23 to 363:13

23 Q. When Cameron would have had one of the control
24 pods at its facility from the Deepwater Horizon
25 blowout -- blowout preventer would it have changed out

1 the AMF deadman batteries?

2 A. It would have performed the scope of work

3 outlined to an agreement to begin with, with the client.

4 Q. And if that scope of work had included the

5 changing of batteries, that's what Cameron would have

6 performed?

7 A. If the scope would have outlined it, then we'd

8 have performed that task.

9 Q. Just because Cameron had the control pods at

10 their facility does not necessarily mean that you would

11 have changed out the AMF deadman batteries?

12 A. That's correct, it would have been a prede- --

13 pre-agreed upon scope of work.

14 Q. Have you -- are you familiar with the marine

15 board inquiry that's being conducted relating to the

16 Deepwater Horizon investigation?

17 A. The BOME, I guess is that --

18 Q. Right, BOEM.

19 A. BOEM, I'm aware that that organization exists.

20 Q. Have you seen any of the testimony that's been

21 conducted --

22 A. I have not.

23 Q. Are you aware of the testimony that Mark Hay,

24 Transocean's subsea superintendent provided?

25 A. I am not.

1 Q. Have you heard that Mark Hay testified that

2 Cameron was responsible for maintenance of the control

3 pod batteries for the Deepwater Horizon blowout

4 preventer?

5 A. I have not heard that.

6 Q. Would that testimony surprise you?

7 A. I would say that, as with all the other

8 equipment on the rig, that Transocean maintains their

9 equipment and we're called out to do specific tasks.

10 Q. Do you know when was the last time that

11 Cameron changed out the AMF deadman batteries for the

12 control pods of the Deepwater Horizon blowout preventer?

13 A. I do not know.

Page 363:25 to 364:11

25 Q. Were you aware that Transocean subsea

1 supervisors changed out the AMF deadman batteries on the

2 Deepwater Horizon?

3 A. I'm not aware of who changed out the

4 batteries, if it was subsea or the electrical

5 department. I don't -- I don't know.

6 Q. Are you aware that Transocean, though,
7 would -- would change out and replace the deadman AMF --
8 AMF deadman batteries?

9 A. Not specific -- specific of who would do it,
10 but I would have assumed part of their maintenance, they
11 would -- they would do that as a routine maintenance.

Page 365:06 to 366:03

6 Q. The **subject** is "Horizon coil faults on surface
7 now." Do you see that?

8 A. Yes.

9 Q. And the sub -- first line in the e-mail says,
10 "Carter, you may already know about the latest with the
11 Horizon stack coil faults." Do you see that?

12 A. Uh-huh.

13 Q. Do you know what Mr. Kirkland is referencing?

14 A. This e-mail is from 2007. I don't recall the
15 specifics.

16 Q. Does this refresh your recollection as far as
17 coil faults that were found?

18 A. On this rig at this time it does not.

19 Q. You identified yesterday, I believe, that coil
20 faults did not necessarily mean that the solenoid does
21 not functioning, correct?

22 A. From my understanding the coil fault is an
23 indication that there is higher than normal resistance,
24 and it's indicating something should be done.

25 Q. And so if there is a coil fault, that would
1 indicate that you should replace the solenoid valve, is
2 that right?

3 A. That is my understanding.

Page 367:02 to 371:14

2 Q. And this is a quotation that Cameron provided
3 to Transocean; is that right?

4 A. Appears to be a budgetary quote that was
5 provided.

6 Q. Okay. And it's for a Mark III model 80
7 multiplex BOP control pod; is that right?

8 A. That is correct.

9 Q. And it was generated by you; is that right?

10 A. It was generated by our quotes department and
11 then -- was then provided to Transocean.

12 Q. And the date -- the date on this is
13 January 21, 2009; is that right?
14 A. That is correct.
15 Q. And the -- the Deepwater Horizon BOP had a
16 Mark II control pod system; is that right?
17 A. I believe that yes, that's correct.
18 Q. And the Mark III control pod system was a
19 subject of this quotation. Am I correct that that
20 provided rechargeable batteries; is that right?
21 A. The battery -- electro- -- electronic deadman
22 of the Mark III, from my understanding is rechargeable.
23 Q. And if you can turn to the -- the last page on
24 the document, there is a total quotation value. Do you
25 see that?
1 A. That's correct.
2 Q. And the total quotation value is just under
3 \$4.9 million; is that right?
4 A. That is correct.
5 Q. Do you know if Transocean purchased a Mark III
6 control pod system in response to this quotation?
7 A. They have not.
8 Q. Have they purchased at any time the Mark III
9 BOP control system?
10 A. They have not.
11 Q. And if you can turn to the next tab, tab 15.
12 And for the record this is Exhibit 7029 and previously
13 marked as CAM_CIV_0043027 through 82. And is this a
14 document that you're familiar with?
15 A. I am.
16 Q. And what is Exhibit 7029?
17 A. This was a presentation I put together for
18 Transocean to upgrade their Mark I and II control
19 systems to Mark III.
20 Q. And who gave that presentation?
21 A. I did.
22 Q. Who at Transocean was present?
23 A. As I recall, Billy Stringfellow, Geoff
24 Boughton, Mike Fry, Dana Burkett. I don't recall the --
25 all of the attendees at the time.
1 Q. And if you can turn to the page and it's got
2 the -- if you look at the lower right-hand corner, it's
3 got the last three digits 030. It's got the heading
4 "Cameron MUX Systems."
5 A. Yes.
6 Q. Can you identify what that page shows?
7 A. That indicates the current as of that date a

8 fleet of Transocean Cameron control systems and what
9 version Cameron control systems.

10 Q. And it's your understanding that none of those
11 yet have been upgraded to the Mark III; is that right?

12 A. That is correct.

13 Q. And if you can turn to the last -- the page
14 that has the last three digits 034.

15 A. Okay.

16 Q. And there is a -- under the bullet point
17 surface communications.

18 A. Uh-huh.

19 Q. And then under the -- the second bullet point
20 under that, underneath that that begins Mark III; do you
21 see that? There is a parentheses that reads --

22 A. Yes.

23 Q. -- robust network management; do you see that?

24 A. Yes.

25 Q. It reads robust network management for
1 increased up time with enhanced diagnostics.

2 A. Yes.

3 Q. In parentheses.

4 A. Yes.

5 Q. What's meant by "enhanced diagnostics"?

6 A. I don't recall what that was implying. Give
7 me a second to review this. I just believe this is
8 making reference to the -- the newer offering of the way
9 the system works, but specifics I don't -- I don't know.

10 Q. Okay. Do you know if that included a -- an
11 option of -- or the ability to monitor the AMF deadman
12 batteries?

13 A. I don't recall if it does or not.

14 Q. And then, lastly, if you can turn to the page
15 that's identified as 067, and it has a heading "Solenoid
16 Valve Features."

17 A. Yes.

18 Q. And for the Mark III control pod system did
19 that use a -- a different solenoid valve than the dash
20 63?

21 A. It does.

22 Q. And does this -- these bullet points identify
23 the differences within the new solenoid valve?

24 A. That is correct.

25 Q. And one of the changes is that the -- the new
1 solenoid valve has a single coil design with higher
2 pulling force; do you see that?

3 A. That is correct.

4 Q. So the new -- and that's different from the
5 two coil design of the dash 63 model; is that right?
6 A. Yes, it is.
7 Q. And has Cameron done any testing to evaluate
8 whether the -- the new solenoid valve is more reliable
9 than the -- the dash 63 solenoid valve?
10 A. There has been testing performed on the -- on
11 the solenoid valve.
12 Q. And has that testing shown that the -- the new
13 solenoid valve is more reliable than the old solenoid
14 valve?

Page 371:16 to 371:19

16 A. As -- as I recall -- I don't recall the
17 reliability being addressed. I'd have to review the
18 report. But I do recall it stating it has a higher
19 pulling force.

Page 372:20 to 374:18

20 Q. You had visited the Deepwater Horizon about
21 five times; is that correct?
22 A. I believe that's correct.
23 Q. That was during your time as a service
24 technician?
25 A. That's correct.
1 Q. How did you find the rig crew? Were they
2 professional?
3 A. Yes, I found them to be professional.
4 Q. And did you receive a safety briefing when you
5 arrived?
6 A. Yes, I did.
7 Q. Was it your impression that the rig crew was
8 focused on safety?
9 A. My understanding, before every job we had job
10 safety analysis and hazard assessment. So, yes, my
11 understanding is they were focused on safety.
12 Q. And have you visited other Transocean rigs?
13 A. I have.
14 Q. About how many? Or how many times have you
15 visited a Transocean rig?
16 A. I can't -- I don't recall times, but it's been
17 quite a few of -- of their rigs I've visited.
18 Q. And has your experience been the same, that
19 the rig crew was professional and focused on safety?

20 A. Yes, it has.
21 Q. Did you ever have any concerns about safety
22 while you were on a Transocean rig?
23 A. Not that I can recall.
24 Q. Now, as an account manager am I correct that
25 your job was to assist Transocean with parts or services
1 that they needed for Cameron equipment?
2 A. That's correct.
3 Q. And that's true with the Deepwater Horizon, I
4 mean, that's what your role was with respect to the
5 Deepwater Horizon?
6 A. With -- yes, that's correct, with all -- with
7 the entire fleet of Transocean.
8 Q. Sure. And speaking just about the Deepwater
9 Horizon, how often did Transocean contact you with needs
10 for parts or service with respect to the Deepwater
11 Horizon blowout preventer?
12 A. I'd received -- I can't say specifically for
13 the Horizon, but I've received frequent phone calls with
14 technical questions, and most of the parts would -- were
15 handled directly with our warehouse.
16 Q. Is it fair to say that Transocean contacted
17 you as often as they needed to?
18 A. I think there --

Page 374:20 to 375:11

20 A. (Continued) I think they contacted me when
21 they required assistance or if they didn't understand
22 something that they needed clarification on.
23 Q. (BY MR. WILLIAMS) And that's true with
24 respect to the Deepwater Horizon blowout preventer as
25 well as other rigs?
1 A. I think it's true with all Transocean rigs.
2 Q. Sure. From your perspective was Transocean
3 proactive with respect to addressing any questions or
4 concerns they had regarding the Deepwater Horizon
5 blowout preventer?
6 A. Can you be more specific?
7 Q. Did you ever feel that they were reluctant to
8 call you if they had a question or concern with the
9 Deepwater Horizon blowout preventer?
10 A. No, they were -- they were never reluctant to
11 call.

Page 375:16 to 377:04

16 Q. Do you know how frequently Transocean changed
17 elastomers on the Deepwater Horizon blowout preventer?

18 A. I do not have that information.

19 Q. Would you characterize it as regularly?

20 A. I wouldn't be able to characterize it. I
21 wasn't aware of the number of times they pulled the
22 stack or the number of closures or the maintenance
23 records.

24 Q. Do you know how often Transocean disassembled
25 major components of the Deepwater Horizon blowout
1 preventer to inspect?

2 A. I'm not -- I don't know.

3 Q. Would it surprise you if -- if Transocean
4 changed elastomers between each well?

5 A. No, it wouldn't surprise me.

6 Q. And would it surprise you that they
7 disassembled major components to inspect and repair
8 between each well?

9 A. My understanding, there is some -- some
10 maintenance program they have. What all that consists
11 of, I'm not sure, but I suspect they would be performing
12 some sort of disassembly and inspection.

13 Q. From your perspective was Transocean a good
14 customer of Cameron?

15 A. In which -- in which regard are you --

16 Q. A frequent, you know, purchaser of -- of parts
17 and service.

18 A. Yeah, they -- they definitely -- they were a
19 good customer, best to my recollection.

20 Q. And you don't know the specifics of
21 Transocean's maintenance program with respect to blowout
22 preventers; is that correct?

23 A. That's correct.

24 Q. So you really can't state whether it was
25 possibly more or less than OEM recommendations?

1 A. Yeah, again, I'm not -- I'm not aware of what
2 their maintenance practices or, you know, requirements
3 were to compare it to what our stated documentation
4 says.

Page 377:08 to 377:09

8 Q. Do you know what Cameron's position was with
9 respect to API RP 53 as of April 20th, 2010?

Page 377:11 to 379:23

11 A. From my understanding, I'd have to pull the
12 document, but I believe it makes reference to -- do you
13 have a copy of that?

14 Q. (BY MR. WILLIAMS) Let's take a look -- I
15 think tab 4, if you still have BP's binder in front of
16 you. And I believe you testified if someone wanted to
17 know Cameron's position, they should look to EB902D.

18 A. That's correct.

19 Q. Okay. And is tab 4 a copy of EB902D?

20 A. Yes, it is.

21 Q. And let's go ahead and mark that as the next
22 exhibit, which I believe is 7030.

23 And for the record the Bates range of this
24 document is CAM_CIV_0012825 to 29.

25 This appears to me, just based on the date of
1 the document, that this has an effective date in
2 February 2009; is that -- is that correct?

3 A. It looks like this first release of A2 was
4 2009.

5 Q. Okay. And so do you believe that this is the
6 version of EB902D that would have been in effect on
7 April 20th, 2010?

8 A. To the best of my knowledge. I'd have to look
9 at the -- as the revision history goes up to understand
10 when the other ones were released.

11 Q. Sure. But you have no reason to believe this
12 wasn't the effective version as of the date of the
13 incident?

14 A. Based on the information I have at hand I
15 don't see why it wouldn't be.

16 Q. Okay. And I wanted to draw your attention to,
17 I believe it's page 5. I'm sorry, page 4. Do you see
18 where it says "Certificate of compliance, slash,
19 conformity"?

20 A. Yes, I do.

21 Q. And there is a position statement with respect
22 to compliance with a API RP 53; is that correct?

23 A. That's correct.

24 Q. All right. Now, the second paragraph of the
25 position statement states, "API RP 53 is not considered
1 to be an industry standard." Do you see that?

2 A. I do.

3 Q. Is that, to your knowledge, what Cameron's
4 position was at the time of the April 20th, 2010

5 incident on the Deepwater Horizon?

6 A. According to this document that appears to be
7 the position at the time.

8 Q. Okay. And that paragraph continues, "It is a
9 recommended practice and as such is intended to be a
10 guideline, providing advice for operation and
11 maintenance of well control and drilling equipment."
12 Did I read that correctly?

13 A. That's correct.

14 Q. And so this document makes it appear that
15 Cameron thought API RP 53 was a -- a guideline and not a
16 requirement; is that correct?

17 A. It -- it just states that it's not -- it's an
18 industry -- not considered an industry standard, and if
19 you were going to recertify, it would have to be per API
20 6A or API 16A. That's my understanding of the document.

21 Q. Okay. In general, do you agree that EB902D
22 allows customers to design their own maintenance
23 programs for log runners?

Page 379:25 to 380:14

25 A. I think it states in the beginning that period
1 of authority and customer-specific maintenance programs
2 may be set by those -- those variables.

3 Q. (BY MR. WILLIAMS) Do you agree that EB902D
4 allows for field inspections or on-rig inspections of
5 certain major components of block runners?

6 A. There is a section regarding interim field
7 inspection, but it -- it provides for interim field
8 inspection, but it does not provide a recertification as
9 outlined and recommended in RP 53.

10 Q. But it would allow, you know, customers such
11 as Transocean to inspect and impair -- inspect and
12 repair blowout preventer components on the rig versus
13 shipping them back to Cameron every time you had a -- a
14 need to make a repair?

Page 380:16 to 382:03

16 A. I think the repair or replacement of
17 components is a big difference, from my understanding,
18 in that process. So I think it outlines in the interim
19 field inspection that says these inspections can be
20 performed at the rig or remote site that was adequate,
21 mechanical -- it goes on to explain everything. So, you

22 know, it kind of outlines what is acceptable.
23 Q. (BY MR. WILLIAMS) On the last paragraph on
24 Page 4 under the position statement section we were
25 looking at, what is your --
1 A. Okay.
2 Q. Do you see where I'm looking at?
3 A. Yes.
4 Q. The sentence that starts, "Field inspection
5 and/or repair drilling and/or well control equipment may
6 be conducted and stated to be in accordance with the
7 intent of RP 53." Do you see that?
8 A. I do.
9 Q. And what does that mean?
10 A. I'm not certain of what the -- in accordance
11 with the intent. I don't -- I don't recall what that
12 was referring to.
13 Q. Okay. On the statement that RP 53 was not
14 considered to be industry standard -- is that something
15 you had a personal opinion on based on your work with
16 other customers besides Transocean?
17 A. I didn't have a personal opinion regarding
18 that position.
19 Q. Okay. Do you know who determined the
20 specifications for the Deepwater Horizon blowout
21 preventer?
22 A. At the time of the purchase, tender?
23 Q. Time of purchase, let's start there.
24 A. I'm not sure. I wasn't privy to that part of
25 the process.
1 Q. In your experience is that -- is the decision
2 of the design of a BOP stack something that an operator
3 has a role in?

Page 382:05 to 382:09

5 A. From my experience the configuration of and --
6 and use of the -- how the equipment is stacked up and
7 control system configuration, from my understanding is
8 heavily -- or influenced by both the owner of the
9 equipment and the well it's going to go on.

Page 382:16 to 384:01

16 Q. I believe you testified earlier that Cameron
17 basically makes blowout preventers to the specifications
18 of their customer.

19 A. That's correct.
20 Q. Would surprise you if Transocean used blowout
21 preventers in a configuration specified by their
22 operator?
23 A. It would -- I understand that on different
24 wells the configuration can change at the operator's
25 request.
1 Q. But you don't have personal knowledge that
2 Transocean is the entity that decided what should go on
3 the blowout preventer for the Deepwater Horizon?
4 A. From my understanding as -- as -- in instances
5 where Transocean was my customer they -- they
6 apparent -- to me made the decision because they came --
7 approached me on cases, you know, make changes. How
8 they arrived to that understanding is a cumulative
9 effort, but it directly comes from -- from the drilling
10 contractor to myself.
11 Q. Sure. Transocean is the one placing the
12 order --
13 A. Yes.
14 Q. -- with Cameron?
15 A. That's correct.
16 Q. But you don't know the background between
17 Transocean and BP in this case?
18 A. That is correct.
19 Q. Or any other operator?
20 A. That is correct.
21 Q. And I believe you testified yesterday with
22 respect to the test RAM modification that Transocean
23 specified, you know, what they wanted done. Is it
24 possible that they were doing that at the direction of
25 BP?
1 A. Yes, it is.

Page 384:03 to 385:05

3 Q. (BY MR. WILLIAMS) You -- you don't know one
4 way or another that it was Transocean itself that
5 decided they needed to convert the lower variable bore
6 RAM into a test RAM?
7 A. That is correct, I don't know for certain if
8 it was just Transocean. I just know there was a request
9 came from Transocean.
10 Q. Let me hand you a document which is an
11 October 11th, 2004 agreement between Transocean
12 identified as the contractor and Vastar Resources

13 identified as the company. Have you seen this document
14 before?

15 A. I have not.

16 Q. Do you see the subject is "Letter agreement
17 for conversion of VBR to a test RAM"?

18 A. I do see that.

19 Q. Do you see that BP America Production is
20 identified in the subject line or the re line as the
21 company?

22 A. I do see that.

23 Q. Does this appear to be an agreement between
24 Transocean and BP regarding converting the lower
25 variable bore RAM to a test RAM?

1 A. I have not reviewed the whole document, but
2 it -- it appears to be that.

3 Q. And would that suggest to you that BP was
4 involved in that decision and that it was not a purely
5 Transocean decision?

Page 385:07 to 385:25

7 A. It appears that it is a request to have that
8 changed by BP.

9 Q. (BY MR. WILLIAMS) The conversion was done
10 when you were the account service manager; is that
11 correct?

12 A. The service manager.

13 Q. Service manager. And there has been some
14 testimony regarding re-plumbing the ROV hot stack?

15 A. Yes.

16 Q. Do you know if the middle variable bore RAM
17 functioned on April 20th, 2010?

18 A. At the time my understanding -- from the ROV
19 or from the --

20 Q. Prior to ROV intervention, do you know if that
21 RAM closed?

22 A. I -- I'm not aware of if it did or didn't.

23 Q. If it had closed prior to ROV intervention,
24 would having a hot stack allowing ROV intervention to
25 that RAM have made a difference?

Page 386:03 to 386:07

3 A. If it was closed, then the hot stack would
4 have just -- in that same RAM would have just applied
5 additional close pressure. So I -- it would have -- it

6 would have applied additional close pressure to that
7 RAM.

Page 386:16 to 388:05

16 Q. Is it necessary to apply additional close
17 pressure to a RAM that's already closed?

18 A. I guess it's not necessary in -- I guess
19 any -- every -- there are multiple variables. I can't
20 say if it is or isn't necessary to apply that pressure
21 to something again at a given time. But if it's closed,
22 it wouldn't close it again. It would already be closed.

23 Q. And if it were already closed, if the middle
24 variable bore RAM were already closed by the rig crew or
25 at some point prior to an attempt at ROV hot stack, then
1 it wouldn't matter if you had the ability to do an ROV
2 hot stack; is that correct?

3 A. If it was already -- again, if it was already
4 closed, it would just apply additional close force
5 pressure until the point that the -- up to the point the
6 ROV's pressure -- relief valve was set to. So --

7 Q. But it can't close it again if it's already
8 closed?

9 A. That's correct, it would already be closed.

10 Q. Who makes e-connectors for Cameron?

11 A. SEA CON.

12 Q. So if Transocean purchases a SEA CON
13 e-connector from SEA CON, are they getting the same
14 product they would get from Cameron?

15 A. To my understanding, it is the same product.

16 Q. Have you done anything since the yellow pod
17 testing you were involved in post-incident to
18 investigate the Deepwater Horizon blowout preventer?

19 A. I haven't been involved with any
20 investigation. I do understand that Cameron has several
21 people assisting when called upon by the government to
22 provide technical support.

23 Q. You did not participate in any of the forensic
24 testing at Michoud?

25 A. I have not.

1 Q. The testing on the yellow pod solenoid was
2 beginning of May 2010; is that correct?

3 A. That's correct.

4 Q. Does that testing provide conclusive evidence
5 of the condition of that solenoid 103 on April 20th?

Page 388:07 to 388:20

7 A. The testing of the solenoid performed was at
8 the time enough -- we were trying to gain enough
9 information without doing any -- what's the word I'm
10 looking for -- disassembly beyond what needed to happen
11 to get the pod up and running and run subsea. So we
12 were just trying to get the pod back to the fully
13 functioning operation before we ran it subsea. It
14 wasn't -- it wasn't intended for any investigation for
15 failure mode analysis.

16 Q. (BY MR. WILLIAMS) It wasn't part of a root
17 cause analysis or designed to give you conclusive
18 results of what that valve condition was on April 20th,
19 2010?

20 A. That's correct, it was not designed for that.

Page 391:02 to 391:22

2 Q. All right. You have talked about the fact
3 that you were on the Q-4000, that you were involved in
4 testing some of the BOP components, things such as that.
5 So you've obviously been involved somewhat in activities
6 following the Deepwater Horizon incident, correct?

7 A. That is correct.

8 Q. Have any of the activities that you have been
9 involved with been in any way related to any work that
10 Halliburton did on the Deepwater Horizon?

11 A. Not to my knowledge.

12 Q. Okay. Have you done any work or had any
13 assigned responsibilities that related in any way to the
14 cement job or jobs that Halliburton provided on the
15 Deepwater Horizon?

16 A. I did not.

17 Q. Have you had any job assignments or any
18 responsibilities or any activities associated with any
19 mud logging activities that were performed by
20 Halliburton Energy Services, Inc., on the Deepwater
21 Horizon?

22 A. I have not.

Page 392:11 to 392:24

11 Q. All right. So is it fair to say -- and -- and
12 I ask this as a fairly broad question, and if you need
13 to stop me, that's fine, but I'm trying to shortcut

14 things a little bit. Is it fair to say that if someone
15 were to ask you generally with regard to the Deepwater
16 Horizon what information you have relating to cementing
17 or mud logging activities, that your answer would be
18 none?

19 A. That is correct.

20 Q. And more specifically, would your answer be
21 the same with regard to any cementing or mud logging
22 activities specifically related to the incident that
23 occurred on April 20th, 2010?

24 A. I would have no knowledge of that.

Page 396:25 to 397:07

25 Q. Okay. I'm going to show you what has been
1 marked as tab 27, and we'll mark as exhibit -- if you'll
2 mark -- put the next exhibit on, as 7032. And this is
3 an e-mail dated August 26th, 1999, and I will admit to
4 you you're not listed on the e-mail, but I want to ask
5 you a question about a couple of particulars in the
6 e-mail.

7 A. Okay.

Page 397:19 to 397:23

19 Q. Okay. So is it a fair reading of this e-mail
20 to say that at least in part R & B Falcon -- excuse me,
21 Cameron was telling R & B Falcon that some of the
22 engineering for the Nautilus could be used for the
23 Deepwater Horizon. Is that what it appears to say?

Page 397:25 to 398:06

25 A. It appears it's making a reference towards the
1 engineering associated -- the similarities between the
2 two rigs, the best I can tell.

3 Q. (BY MR. YORK) Okay. And it -- and it says
4 most of the engineering done for RBS8M can be utilized
5 for this stack, correct?

6 A. That's what it says, yes.

Page 399:21 to 400:02

21 Q. Okay. With regard to the specifications, the
22 client-driven specifications of the BOP stack, I'm going
23 to refer to what has been previously marked as

24 Exhibit 1488, and I'm going to give you and your counsel
25 each a copy of a couple of pages of it. And I will tell
1 you that Exhibit 1488 is the BP-Transocean contract that
2 I believe Mr. Collier was testifying to.

Page 400:06 to 400:14

6 Q. (BY MR. YORK) And if I can get you to look at
7 the second page of this, Mr. Erwin, this purports to be
8 amendment No. 38 to drilling contract No. 980249,
9 correct?
10 A. That -- that's what it says.
11 Q. All right. And does the first line thereafter
12 say that: "This amendment is made effective on this 28th
13 day of September 2009"?
14 A. Yes, it does.

Page 400:21 to 400:24

21 Q. (BY MR. YORK) Okay. And it says, following
22 that, that it's by and between BP America Production and
23 Transocean Holdings, correct?
24 A. Yes, it does.

Page 401:04 to 401:22

4 Q. All right. Let me ask you if this stack
5 configuration that is listed under E.2.4, if you know,
6 comports with your understanding of the stack
7 configuration on the Deepwater Horizon?
8 A. I cannot speak about the position of the side
9 outlet of the kill valves, but the RAM configuration
10 appears to be accurate.
11 Q. Okay. Now, do you know whether -- when this
12 amendment to the contract was executed in 2009 whether
13 Cameron was consulted in any way with regard to the
14 stack configurations contained in the contract?
15 A. Not to my knowledge.
16 Q. Okay. At the time -- let's -- and just assume
17 with me for a moment, if you would, that 2009 is the
18 date that this contract was the amendment to the
19 contract was executed and this stack configuration was
20 included. At that time, based on your testimony
21 yesterday, is it correct that double V RAMs were in
22 fairly consistent use by deepwater rigs?

Page 401:24 to 401:25

24 A. At that time I believe DVS RAMs were in wide
25 use at the time.

Page 403:05 to 403:15

5 Q. Okay. Given that context, in 2009 --
6 A. Uh-huh.
7 Q. -- would it have been an uncommon event for a
8 stack configuration for a deepwater rig in the Gulf of
9 Mexico to have included double blind shear RAMs?
10 A. Again, it would be difficult to say common or
11 uncommon, as I'm not always privy to when these vessels
12 enter and leave and go on contract. So, I mean, in the
13 industry my understanding it was becoming more and more
14 common for that to happen, but how common it was in the
15 Gulf, I can't -- I don't think I could speak to.

Page 404:07 to 404:19

7 Q. Okay. So if, for example, a request had been
8 made in this amendment --
9 A. Uh-huh.
10 Q. -- to include in the stack configuration
11 double V RAMs --
12 A. Uh-huh.
13 Q. -- acoustic trigger system --
14 A. Uh-huh.
15 Q. -- double blind shear RAMs --
16 A. Uh-huh.
17 Q. -- is there anything that would have prevented
18 Cameron, if asked to do so, from having accomplished
19 that stack configuration for the Deepwater Horizon?

Page 404:21 to 405:06

21 A. The -- the -- as I stated, I believe
22 yesterday, there was many variables to consider.
23 Sitting here today I -- I can't say definitively. We'd
24 have to do an engineering review. But just -- just the
25 idea of it doesn't seem to be something that couldn't be
1 overcome, but I can't say certainly without doing a
2 field engineering investigation.
3 Q. (BY MR. YORK) But I -- as I understand you're
4 saying conceptually all of those things would have been

5 available?

6 A. Conceptually, yes.

Page 405:08 to 405:12

8 You mentioned yesterday that the deadman
9 switch or the AMF is activated when three criteria are
10 met; loss of hydraulic supply, loss of electrical power,
11 and loss of communications.

12 A. That's correct.

Page 406:01 to 406:23

1 Q. Certainly. Assuming that there's no hydraulic
2 supply, no electrical power or no communications --

3 A. Uh-huh.

4 Q. -- would battery power be required for the
5 deadman to activate?

6 A. Yes.

7 Q. Okay. And I believe you testified yesterday
8 that Cameron now has a system that monitors battery.

9 A. I'm -- I don't recall the monitoring, but we
10 have a system that recharges the battery.

11 Q. That recharges the battery. Can you tell me
12 when that system became available?

13 A. It -- it was available in the present -- at --
14 at the time I gave this presentation in 2009 for sure,
15 but I don't remember -- I don't remember specifically.
16 It -- it was the same time our Mark III system went to
17 market, so 2005, '6, somewhere in there, I think.

18 Q. So if we go back to the context of our
19 previous questions, that would have also been something
20 that was available in 2009 when the amendment -- the
21 date of the amendment to the contract we just talked
22 about?

23 A. I believe that's correct.

Page 407:06 to 408:11

6 Q. Okay. And assume with me for a moment that
7 there's a battery malfunction such that the battery
8 doesn't work in the SEM.

9 A. Okay.

10 Q. Okay. And that there is a solenoid valve
11 failure either based on the miswiring or some other
12 issue.

13 A. Uh-huh.
14 Q. Would it be possible for the deadman function
15 to operate?
16 A. If -- if there were no battery supply and the
17 solenoid valve associated with firing the high pressure
18 shear failed, then there would -- there would be no way
19 to fire the high pressure shear closed at that time.
20 Q. Okay. And with regard to solenoid 103, I
21 believe your testimony was that you did do some
22 examination of that solenoid while on the Q-4000 --
23 A. Uh-huh.
24 Q. -- but that you did not participate in
25 actually taking it apart and examining it, correct?
1 A. That's correct.
2 Q. But when a solenoid from another pod was
3 replaced into its place then the deadman functioned,
4 correct?
5 A. That is correct.
6 Q. So would you agree with me that it's a fair
7 conclusion that solenoid 103 failing to function would
8 have prevented that deadman switch -- the deadman from
9 operating?
10 A. Solenoid 103 not firing would prohibit it
11 from -- from executing its task.

Page 409:16 to 410:06

16 You did testify earlier today that to your
17 understanding the only way for the BOP stack to be
18 recertified was for Cameron to do the work; is that
19 correct?
20 A. That is my understanding, for Cameron to
21 recertify it, it has to come to us.
22 Q. Okay. So you testified that, for example, you
23 weren't familiar with what was referred to in a prior
24 document as the Transocean recertification program,
25 correct?
1 A. That's correct.
2 Q. All right. Let me see, tab 36 -- 38, I'm
3 sorry, 38. I want to mark this as the next exhibit,
4 which is 7033, I believe. Do you have that in front of
5 you, Mr. Erwin?
6 A. Yes, sir.

Page 411:07 to 412:19

7 Q. "Not sure of the best way of making the push
8 on this with Transocean, but I believe it needs to start
9 from the top down and needs the Houston sales force to
10 make the EB902D presentation. See the e-mail below from
11 TO, which is very interesting. Somehow we need to get
12 the statement in the e-mail confirmed from TO corporate.
13 I removed some of the e-mail trail, but it shows TO are
14 not clear on what they should or need to do."

15 Did I read that correctly?

16 A. Yes, you did.

17 Q. All right. And if you'll turn to the next
18 page, the top e-mail, second paragraph says, "Not a
19 clean way of doing business and our well control manual
20 states we allow RP 53 every three to five years. In my
21 opinion, this is a gray area in our system until a
22 company like BP asks for the inspection reports."

23 Did I read that correctly?

24 A. Yes, you did.

25 Q. All right. Now, you were -- on the first
1 page, you were copied on this e-mail, correct?

2 A. Yes, I was.

3 Q. And you asked Mr. Guiraud to call you
4 regarding the trailing e-mails?

5 A. Yes, I asked him to call me.

6 Q. Okay. Do you remember having a conversation
7 with Mr. Guiraud about this string of e-mails?

8 A. I'd have to review the --

9 Q. Sure.

10 A. Okay. I don't recall the specifics behind --
11 behind this one.

12 Q. Do you remember any conversations or e-mail
13 exchanges, obviously, this one, but in which it was a
14 subject of discussion with -- among Cameron personnel as
15 to whether Transocean understood what was required by
16 the BOP recertification process?

17 A. Yes, we've had quite a few discussions with
18 people regarding Transocean's understanding of the -- of
19 the EB902D.

Page 413:15 to 413:15

15 MR. JONES: 7025 is 27.

Page 413:18 to 414:15

18 Q. (BY MR. YORK) So those are some meeting notes

19 reflecting a meeting between Cameron and Transocean
20 about, at least in part, different understandings on the
21 recertification process, correct?

22 A. That's correct.

23 Q. I want to point you to point 3 in those
24 notes -- or bullet point 3.

25 A. This one, yes.

1 Q. Yes. And would you read that into the record,
2 please.

3 A. Are you talking about where it says
4 "Transocean confirmed that they expect"?

5 Q. Yes.

6 A. "And do pay premium of 15 to 20 percent to get
7 repair -- repairs done by OEM. They advised that
8 putting up -- operational critical work to Cameron was
9 too risky due to poor delivery and extended lead times
10 being quoted, and often we are not given a chance to --
11 to quote. Kenny Coutts referred to a set of bonnets
12 that had just been in the shop since 2009. On checking
13 this SCI P/O not received until July. We will clarify
14 this with Transocean although delivery is still not
15 acceptable.

Page 415:02 to 415:23

2 Q. Okay. Did you ever hear any follow-up
3 directly regarding the concern that Transocean
4 apparently raised about not wanting to use Cameron
5 because of the difficulties in timing issues?

6 A. Yes, I have had discussions with them in my
7 current position.

8 Q. Okay. Can you tell us what has been done to
9 address those concerns by Transocean, if anything?

10 A. We have increased head count in the location
11 I'm located. We're investing money in additional
12 machines and resources to -- to increase that throughput
13 time.

14 Q. Okay. Were these issues that are reflected in
15 this -- these meet- -- meeting notes restricted to a
16 specific geographic area?

17 A. It appears that this is regarding -- in
18 reference to all participants or the North Sea. So I
19 would say the North Sea area.

20 Q. Have you ever heard those same concerns raised
21 with regard to work done by Cameron for Transocean in
22 the Gulf of Mexico region?

23 A. We have had those discussions in the past.

Page 420:19 to 421:04

19 Q. So I guess my question is there was a process
20 of sort of affirmative marketing of these upgrades to
21 the rig owners; is that correct?

22 A. Well, I think it's fair to say, I -- I
23 presented the guys with the presentation on some of
24 those possibilities. So I was actively pursuing that.

25 Q. Okay. Did -- and -- and I believe you
1 testified yesterday, and just to clarify for me, those
2 presentations would have been to Transocean as the rig
3 owner, correct?

4 A. That's correct.

Page 423:24 to 424:17

24 Q. Okay. Second bullet point says: "The
25 condition of critical components in the yellow and blue
1 control pods on the BOP very likely prevented activation
2 of another emergency method of well control, the
3 automatic mode function, AMF, which was designed to seal
4 the well without rig personnel intervention upon loss of
5 hydraulic pressure, electrical power -- excuse me,
6 electric power, and communications from the rig to the
7 BOP control pods. An examination of the BOP control
8 pods following the accident reveal that there was a
9 fault in a critical solenoid valve in the yellow control
10 pod and that the blue control pod AMF batteries had
11 insufficient charge. These faults likely existed at the
12 time of the accident."

13 Same question, based on your personal
14 knowledge --

15 A. Uh-huh.

16 Q. -- do you have any reason that would make you
17 agree or disagree with that conclusion?

Page 424:20 to 425:01

20 THE WITNESS: Okay.

21 A. All I understand was at the time that we
22 pulled the yellow pod, when we tested it, that -- that
23 valve did not fire. Other than that, I stated before,
24 we put a new one on to run the pod. Everything else in
25 this -- I was not privy to until we -- after the facts.

1 I -- I don't know -- I can't make a position on that.

Page 426:01 to 426:25

1 we're -- we really are just about done. In all the
2 conversations we've had regarding stack configuration --
3 A. Uh-huh.
4 Q. -- regarding upgrades to the stack
5 configuration --
6 A. Uh-huh.
7 Q. -- in your experience as -- in sales, as an
8 account representative, as after-market person --
9 A. Uh-huh.
10 Q. -- would it be highly unusual for a service
11 contractor who provides, for example, cementing and mud
12 logging services to be included in any of those
13 conversations?
14 A. Yes, it -- it would be unusual for that to --
15 that party to be involved in that conversation process.
16 Q. And do you have any information whatsoever in
17 this case that Halliburton was in any way involved with
18 discussions regarding stack configuration?
19 A. Not to my knowledge.
20 Q. Any conversations regarding upgrades to the
21 BOP stack?
22 A. Not to my knowledge.
23 Q. Any conversations regarding repair and
24 maintenance of the BOP stack?
25 A. Not to my knowledge.

Page 427:17 to 428:25

17 Q. You're almost done. My name is Robert
18 Stillwell. I'm with the firm of Bingham McCutchen, and
19 I represent Anadarko Petroleum Corporation. My first
20 question, before the blowout and explosion on
21 April 20th, 2010 did you ever personally speak with
22 anyone from Anadarko or any entity which you knew to be
23 affiliated with Anadarko regarding the Deepwater Horizon
24 or the Macondo well?
25 A. I did not.
1 Q. To the best of your knowledge did anyone from
2 Anadarko play a role in the design of the Macondo well?
3 A. Not -- not to my knowledge.
4 Q. To the best of your knowledge, did anyone from
5 Anadarko play a role in the operations of the Deepwater

6 Horizon?
7 A. Not to my knowledge.
8 Q. Are you personally aware of any pre-blowout
9 communications between anyone at Cameron and anyone at
10 Anadarko regarding the Macondo well?
11 A. Not to my knowledge.
12 Q. Okay. Did you have any discussions with any
13 Anadarko representative after the blowout?
14 A. Yes.
15 Q. With whom did you have a discussion?
16 A. John Christiansen.
17 Q. And what did you and Mr. Christiansen discuss?
18 A. He -- just the fact that the incident had
19 occurred.
20 Q. Okay. But it wasn't in any way related to the
21 operations to kill the well?
22 A. No.
23 Q. Okay. Are you aware of any role Anadarko
24 played with regard to cap and containment?
25 A. I am not.

Page 483:24 to 484:05

24 Q. Okay. To finish we'll switch gears entirely.
25 I'm handing you an e-mail and an attachment. It will be
1 Exhibit 7045. The cover e-mail is Bates-stamped
2 BP-HZN-BLY00056043, attachment is Bates-stamped
3 BP-HZN-BLY00056045. And if you see the bottom e-mail,
4 the first e-mail in the chain, right here.
5 A. Yes.

Page 485:06 to 485:10

6 Q. But may I just have you read -- may I have you
7 read the second paragraph, please, up until the last
8 sentence. This -- the paragraph beginning, "The
9 Horizon's BOP."
10 A. The Horizon's BOP --

Page 485:12 to 486:03

12 A. (Continuing) The Horizon's BOP was designed
13 with three variables VBRs for redundancy in deep water.
14 If one VBR did not test for any reason, the MMS would
15 not require that we pull the BOP for repairs. We
16 understand that converting one VBR to a test RAM saves

17 BP time and money testing the BOP in deepwater, and we
 18 certainly want to make -- help make the rig as efficient
 19 as possible. However, reducing the redundancy built
 20 into the BOP significantly increases our risk profile
 21 and corresponding call structure.

22 Q. (BY MR. STILLWELL) Wonderful, thank you. And
 23 having read that and recalling that this was described
 24 by a Transocean employee as a letter agreement
 25 reflecting my understanding of your offer, does this
 1 letter influence you're opinion as to whom -- as to
 2 between BP and Transocean want to convert the variable
 3 bore RAM into a test RAM?

Page 486:05 to 486:10

5 A. Are you asking my opinion based on this letter
 6 who was asking to do it? Who's -- who's asking the
 7 conversion?

8 Q. (BY MR. STILLWELL) Yeah.

9 A. From this letter it appears that BP is asking
 10 to make the conversion.

Page 487:08 to 487:23

8 requested such information from Cameron, do you believe
 9 based on your experience that the industry understands
 10 that severe flow through a blowout preventer can
 11 adversely affect blowout preventer performance?

12 MR. COLLIER: Object to form.

13 A. Yes, sir, I believe the industry is aware of
 14 what goes on inside a BOP at any given time in -- in
 15 well operations.

16 Q. (BY MR. JONES) And that what -- that severe
 17 flow can adversely affect BOP performance?

18 A. I believe that's commonly understood within
 19 the industry.

20 Q. And you believe that's well-known within the
 21 industry?

22 MR. COLLIER: Object to form.

23 A. I would agree with that.

Page 495:19 to 495:23

19 When we talk about a component of the BOP
 20 having a pressure, there is the pressure that's needed
 21 to move the piston in order to function that particular

22 component, correct?
23 A. That's correct.

Page 496:09 to 498:04

9 Q. All right. I want to focus on the annulars
10 for a moment, all right?
11 A. Yes, sir.
12 Q. With respect to -- and you remember on this
13 particular we looked at a document yesterday. The lower
14 annular was a 5,000 psi stripping annular sold by
15 Cameron, you remember that? We looked at the document
16 yesterday.
17 A. Yes, sir.
18 Q. Okay. Normally the regulated pressure on
19 that's approximately 1500 psi; does that sound right?
20 A. That's -- that's about the normal regulated
21 pressure.
22 Q. But what you're telling me is that if someone
23 wants to activate the lower annular, okay, and you're a
24 driller and you're sitting there and you make a decision
25 to activate the lower annular, you can actually increase
1 that regulator pressure and get more than 1500 psi?
2 A. That is correct.
3 Q. Okay. Now, I want you -- is there a regulator
4 down in the control room, the blowout preventer room
5 whereby you can set that regulator for the lower
6 annular?
7 A. The regulator is located on the pod, but the
8 increased function is located at the panel.
9 Q. Can you increase or decrease at the panel?
10 A. Yes, you can.
11 Q. What about on the drillers floor? You're on
12 the rig floor. You want to activate the lower annular.
13 Can you increase the pressure and get more than
14 1500 psi, if you want to?
15 A. Yes, the increase and decrease are on both
16 panels.
17 Q. All right. If a subsea supervisor -- you know
18 what subsea supervisors are, right?
19 A. Yes.
20 Q. They're the employees who go around and
21 maintain and check on the BOP?
22 A. Yes, sir.
23 Q. Right?
24 A. Yes, sir.

25 Q. If a subsea supervisor comes in and sets the
1 regulator on the lower annular to 1500 psi, then that's
2 what the pressure will be until somebody changes it,
3 right?
4 A. That is correct.

Page 503:17 to 505:16

17 Q. Okay. Where were you with the auto shear when
18 they cut the rod and simulated the effect of the auto
19 shear? Were you watching that?
20 A. I was.
21 Q. Okay. Did the flow appreciably change after
22 the auto shear fired?
23 A. -- I recall an observation of somebody saying
24 they thought they saw a change in flow.
25 Q. Okay. Did you see a change in flow?
1 A. I don't recall --
2 Q. Okay.
3 A. -- seeing a change in flow.
4 Q. All right. And, of course, it definitely did
5 not stop the flow, we all know that now, right?
6 A. That's correct.
7 Q. Okay. Did you think the auto shear fired when
8 you saw it as you were watching the ROV action?
9 A. I recall at the time that we cut the pin there
10 was some movement on the camera, but we weren't sure
11 what it was. There was no definitive way that we could
12 tell if it had fired or not, so it was difficult to draw
13 a conclusion. We were -- we were hoping to see a
14 slow-down in hydrocarbon release.
15 Q. All right. Did you notice some -- there is
16 another witness who testified that after the auto shear
17 was fired that it was noticed that there was a leak on
18 the ST lock. Did you notice that?
19 A. I didn't notice a leak on the ST lock until
20 some point several days later when the ROV plugged into
21 the hot stab and injected the fluid with dye in it, and
22 then we could see the fluorescent dye coming up off the
23 fitting.
24 Q. Okay.
25 A. Indicating there was a leak.
1 Q. Okay. So there was a leak in the ST lock, you
2 saw that physically yourself?
3 A. Yes.
4 Q. We're talking about the ST lock on the blind

5 shear RAM, do I have that right?
6 A. Yes, sir.
7 Q. Okay. Now, before you had said under perfect
8 circumstances you have 4,000 psi available to deliver to
9 the piston of the blind shear RAM?
10 A. That is correct.
11 Q. Whether it's firing off EDS or whether it's
12 firing off AMF or whether it's firing off auto shear;
13 does that sound right?
14 A. Auto shear and the AMF, yes. I -- I would
15 have to look at the schematic, but I believe the EDS
16 might come from the surface.

Page 506:19 to 507:12

19 Q. Okay. All right. If they're firing off the
20 AMF system or the auto shear system, they're using this
21 accumulator bank that's on the ocean floor?
22 A. That's correct.
23 Q. And that accumulator bank in perfect
24 circumstances has 4,000 psi available?
25 A. That's correct, if it's charged properly, yes.
1 Q. Okay. If it holds a complete charge and if it
2 doesn't have any leaks, you would have 4,000 psi
3 available, correct?
4 A. That's correct.
5 Q. Okay. We know in this case there was a leak
6 because we observed at least one EST leak, correct?
7 A. One ST lock fitting was leaking, that's
8 correct.
9 Q. So we know we do not have 4,000 psi available
10 subsea, we have some number less than that?
11 A. Based on there being a leak, yes, there would
12 be some pressure below 4,000.

Page 509:14 to 510:08

14 Q. Does Cameron make a system where you get more
15 than 4,000 psi subsea from your accumulators for an
16 emergency activation?
17 A. We have bonnets now that are rated for
18 5,000 psi pressure from the accumulators. So, yes, we
19 can provide a system that provides 5,000 psi from the
20 accumulators directly to a shear RAM.
21 Q. Okay. So that would be another upgrade that
22 would help your safety profile; namely, to have bonnets

23 that would accept 5,000 psi pressure to the piston on --
24 to provide shearing force, correct?

25 A. That is an upgrade that's available, yes.

1 Q. Okay. How long has that upgrade been
2 available where you can get 5,000 psi from your subsea
3 accumulator instead of 4,000 psi from your subsea
4 accumulator?

5 A. Since 2005, I believe.

6 Q. Sure. Did BP ever order that so that they got
7 a better accumulator bank subsea?

8 A. Not to my knowledge.

Page 512:02 to 512:03

2 Q. Okay. I'm going to hand you an exhibit that's
3 been marked as 7037. I don't have my copy because it

Page 512:10 to 512:12

10 Q. They're the two e-mails where BP says that
11 they will accept responsibility for not changing the
12 annulars; do you see that?

Page 512:14 to 513:07

14 A. Accept liability, yes.

15 Q. (BY MR. WILLIAMSON) Right. Why in the world
16 would -- by the way, if you change the annulars, you get
17 new rubber on your sealing elements, correct?

18 A. That is correct.

19 Q. And if you stripped through one of the
20 annulars accidentally, changing the rubbers is probably
21 a good idea, isn't it?

22 A. After stripping you definitely should
23 investigate for wear and tear of the annular element.

24 Q. Sure. And if you've had the annular subsea
25 where you've had to open and close them several times in
1 real well kick situations changing the annulars is a
2 good idea, isn't it?

3 A. I think it would be prudent to investigate the
4 ability for that RAM to do its job, absolutely.

5 Q. Sure. Okay. So if Transocean wanted to
6 change the annular rubbers, that's probably a good idea,
7 isn't it?

Page 513:09 to 513:15

9 A. I would say it would be a good idea.

10 Q. (BY MR. WILLIAMSON) Sure. Give me one safety
11 reason, safety reason that BP would say do not change
12 these annulars that we've accidentally stripped through
13 and that have been closed several times on real well
14 kick situations, give me one good safety reason that BP
15 would say we don't want those annulars changed.

Page 513:17 to 513:17

17 A. I can't think of a reason.

Page 516:25 to 517:03

25 Q. (BY MR. WILLIAMSON) Okay. Once you read this
1 is there any question that BP knew, not just Transocean,
2 BP knew that those RAM bonnets were not within five
3 years of recertification?

Page 517:05 to 517:06

5 A. It appears to indicate that BP was aware of
6 that.

Page 517:14 to 517:19

14 Q. Sure. Even though Mr. Thierens says they
15 shouldn't rely so much on their contractors and they
16 should figure out a way to close this out, to your
17 knowledge did BP do anything to try to get those RAM
18 bonnets recertified between October 2009 when Mr. Wong
19 told his management about it and the explosion?

Page 517:21 to 517:21

21 A. Not to my knowledge.

Page 521:13 to 521:14

13 THE WITNESS: 7046.
14 MR. WILLIAMSON: Thank you.

Page 523:14 to 523:25

14 Q. Okay. February 10th, 2006, it's an e-mail

15 that goes out to several people, correct?

16 A. Yes, sir.

17 Q. Okay. And then it says, Mark, thanks for the
18 info. Looks like the 6 and 5/8s 40-pound DP needs to be
19 sheared with the casing shear RAMs. What about the
20 6 and 5/8s 32-pound DP, right?

21 A. Yes, sir.

22 Q. Okay. So somebody in 2006 recognizes, some BP
23 person recognizes that they have drill pipe on the
24 Horizon that needs to be sheared with the casing shear
25 RAMs, right?

Page 524:02 to 524:08

2 A. It appears that way, yes, sir.

3 Q. (BY MR. WILLIAMSON) Okay. Now, what that
4 means is that EDS-1, the emergency disconnect system
5 that has been programmed into the Deepwater Horizon, is
6 not going to work if they're running that non-shearable
7 pipe across the blind shear RAMs during this time
8 period, correct?

Page 524:10 to 524:13

10 A. It appears that if EDS-1 were to comply with
11 that configuration, they would have -- I don't know the
12 psi, but I assume it would have difficulty executing a
13 shear.

Page 525:01 to 525:18

1 Q. Sure. I'll ask it this way: If I want to
2 sever the pipe and seal the well and I have a piece of
3 drill pipe in the hole that exceeds the capacity of the
4 blind shear RAMs -- do you understand my question?

5 A. Yes, sir.

6 Q. -- then what I need to do is re-program the
7 blowout preventer to be set to EDS-2, correct?

8 A. Yes, that is correct.

9 Q. Because the EDS-2 will activate the casing
10 shear RAMs, cut the pipe, and then activate the blind
11 shear RAMs, which allows them to act as a blind RAM and
12 seal the hole, correct?

13 A. That is my understanding of the -- the way the
14 program is set up.

15 Q. But the Deepwater Horizon on April 20th, 2010

16 was not programmed for EDS-2; it was programmed for
17 EDS-1; is that right?
18 A. That's my understanding.