

Deposition Testimony of:

Michael Byrd

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Page 7:08 to 7:17

8 MICHAEL L. BYRD,
9 having been first duly sworn, testified as
10 follows:
11 E X A M I N A T I O N
12 BY MR. WILLIAMSON:
13 Q. Please state your name for the
14 record.
15 A. Michael Lewis Byrd.
16 Q. Who do you work for?
17 A. BP.

Page 7:22 to 8:02

22 Q. The -- what do you do for BP?
23 A. I manage our global agreement
24 with FMC Corporation.
25 Q. Who is FMC?
1 A. They produce subsea production
2 equipment.

Page 12:02 to 12:05

2 Q. Sure. Did you know Mr. Morel
3 and Mr. Hafle?
4 A. Do not know Mr. Morel. I do
5 know Mr. Hafle.

Page 20:20 to 21:08

20 Q. The -- there's a set of rules
21 that BP should go through before they assign
22 a specific rig to a specific well, correct?
23 A. There are a set of parameters --
24 Q. Okay.
25 A. -- that are reviewed.
1 Q. All right. Well, does BP want
2 those parameters followed?
3 A. Yes.
4 Q. Okay. Because you understand,
5 I'm sure it's been explained to you that
6 today, on with respect to certain topics, you
7 speak for BP?
8 A. That's correct.

Page 21:24 to 22:04

24 Q. Therefore, they should have been
25 followed, these parameters, these guidelines
1 or rules should be followed when the
2 DEEPWATER HORIZON was assigned to the
3 Macondo?
4 A. Yes.

Page 23:01 to 26:03

1 Q. Okay. BP has a set of rules or
2 guidelines. Does that sound right?
3 A. Expectations, guidelines, yeah.
4 Q. Okay. All right. So BP has a
5 set of guidelines they want applied if
6 they're going to assign a rig to a well
7 location, correct?
8 A. Correct.
9 Q. And that was the subject of your
10 conversation with Mr. Bowles -- part of your
11 conversation with Mr. Bowles?
12 A. That was the general subject.
13 We did not talk specifically about --
14 Q. Okay.
15 A. A set of rules or a set of --
16 we -- we talked about three very specific
17 topics.
18 Q. Okay. One was the test ram?
19 A. Yes.
20 Q. One was the set of parameters or
21 guidelines that BP wants to follow if they're
22 going to assign a rig to a location?
23 A. We only talked about a couple
24 parameters, like two actually. We talked
25 about the temperature and the pressure.
1 Q. Okay. So --
2 A. There -- there are a number of
3 guidelines. There are a number of -- of
4 expectations that a wells team would expect a
5 drilling contractor to follow, but I don't --
6 I don't really have knowledge of all of
7 those. So the only ones I can really speak
8 to are the ones that I'm speaking of now.
9 Q. Okay. Which ones -- and
10 maybe -- well, maybe we can approach the

11 subject this way, and we'll jump into it.
12 I'll come back to the other two, okay?
13 You're speaking to -- okay. Tell me what
14 parameters you are speaking to.
15 A. Well, we're speaking about
16 pressure and temperature.
17 Q. As applied to the blowout
18 preventer or as applied to the --
19 A. As applied to the --
20 Q. -- rig in general?
21 A. The blowout preventer.
22 Q. Okay. So you're saying, gee,
23 there's parameters regarding the pressure and
24 the temperature that BP sets when they assign
25 a rig to a location?
1 A. That's correct.
2 Q. Okay. I'm going to use the
3 example of assigning the DEEPWATER HORIZON to
4 the Macondo. So what should happen is BP
5 says, we have a certain set of guidelines we
6 want to follow when we assign the DEEPWATER
7 HORIZON to the Macondo, right?
8 A. We have a set of requirements in
9 terms of pressure, temperature, well
10 characteristics that we make the drilling
11 contractor aware of.
12 Q. Okay.
13 A. And the drilling contractor is
14 responsible to make sure that they can meet
15 those requirements.
16 Q. Okay.
17 A. And, of course, I'm specific
18 talking about the blowout preventer system.
19 Q. Yeah. So, for example, if we
20 were talking about hook load or drill pipe or
21 whether you have sleeping quarters or whether
22 you have a heli -- heliport or supply ships,
23 those are not the subjects you're here to
24 talk about today?
25 A. No.
1 Q. Okay. But you are here to talk
2 about the blowout preventer system?
3 A. Yes, I am.

15 Q. Did the DEEPWATER HORIZON have a
16 blowout preventer?
17 A. Yes, it did.
18 Q. What was it?
19 A. It was a Cameron blowout
20 preventer.
21 Q. Okay. What did it consist of?
22 A. It consisted of sets of rams.
23 Q. How many?
24 A. It had three pipe rams, a casing
25 sheer, a blind sheer, and two annulars.
1 Q. All of those were part of the
2 blowout preventer?
3 A. Yes.
4 Q. Okay. Would you call all of
5 those components of the blowout preventer?

Page 27:07 to 27:07

7 A. Yes, I would.

Page 27:13 to 27:16

13 Q. Any distinction between the
14 annulars?
15 A. They're both located on the
16 LMRP.

Page 27:22 to 28:17

22 Q. Go ahead. Any other distinction
23 between the annulars?
24 A. One was rated at 10,000. One
25 was rated at 15,000 as a stripping annular.
1 Q. Okay. The stripping annular was
2 rated to 15,000 apiece?
3 A. No, 5,000, I'm sorry. I
4 misspoke.
5 Q. Okay. Stripping annular was
6 rated to 5,000?
7 A. That's correct.
8 Q. And the upper annular -- I think
9 the stripping annular was the lower, or do
10 you know?
11 A. I believe that's correct.
12 Q. Okay. What's the upper annular

13 rated to?
14 A. 10,000 psi.
15 Q. Okay. Did BP tell MMS that the
16 lower annular was only rated to 5,000 psi?
17 A. That I don't know.

Page 29:16 to 30:09

16 Q. Okay. Okay. So you don't know
17 who's supposed to tell MMS about the BOP,
18 correct?
19 A. Correct.
20 Q. And you don't know what system
21 exists in order to tell MMS about the BOP?
22 A. Correct.
23 Q. And you don't know what person
24 is responsible for making sure that those
25 jobs get done --
1 A. Correct.
2 Q. -- supervising? And you don't
3 know what supervisory system exists to make
4 sure that MMS is properly --
5 A. Correct.
6 Q. -- informed? And you do not
7 know what BP audit system exists, if any, to
8 ensure that the system's being carried out?
9 A. Correct.

Page 31:21 to 33:08

21 Q. You tell me: Does BP know what
22 reporting requirements it has to MMS?
23 Blowout preventer system, does BP know what
24 reporting requirements it has to MMS?
25 A. Because MMS approved the APD, I
1 would expect that we do.
2 Q. Tell me what they are.
3 A. I don't know.
4 Q. Tell me who does it.
5 A. I don't know.
6 Q. Tell me who supervises to make
7 sure it gets done.
8 A. I don't know.
9 Q. Any good organization surely has
10 supervision in order to ensure that its
11 policies are carried out, right?

12 A. Right.
 13 Q. Okay. Who supervises the
 14 blowout preventer policies?
 15 A. I don't know.
 16 Q. Okay. Who even does it? Do you
 17 know whether Mr. God, the well teams leaders,
 18 reports that to MMS or whether Mr. Morel or
 19 Mr. Hafle, the engineers, report it? Do you
 20 know that?
 21 A. No, I don't know that.
 22 Q. Okay. Who checks on them to
 23 make sure they do it?
 24 A. I don't know.
 25 Q. Who does know?
 1 A. I'm just not quite sure within
 2 the organization who does actually hold that
 3 specific accountability.
 4 Q. Did you make that inquiry of
 5 Mr. Bowles?
 6 A. No.
 7 Q. Why not?
 8 A. I have no good answer for that.

Page 33:21 to 34:04

21 Q. Okay. I will tell you one of
 22 the things -- there's a regulation called --
 23 dealing with "Maximum Anticipated Surface
 24 Pressure." Do you know what that is?
 25 A. Yes.
 1 Q. Okay. Are you supposed to
 2 report that to MMS?
 3 A. I'm not certain, but I believe
 4 so.

Page 34:22 to 35:03

22 Q. Okay. So, the drilling
 23 engineers calculate it. What are they
 24 supposed to do with it then?
 25 A. It's provided as part of the
 1 APD.
 2 Q. What do they do with it other
 3 than provide it in the APD?

Page 35:05 to 36:10

5 A. I'm not a drilling engineer.
6 So, I don't --
7 Q. (BY MR. WILLIAMSON) Okay. Do
8 you know if the drilling engineers utilize
9 MASP as anything other than a number that
10 they put in the APD?
11 A. I don't know the details around
12 that, no.
13 Q. Do you know how they calculate
14 MASP?
15 A. No, I don't.
16 Q. Do you know the parameters or
17 guidelines they uses to calculate MASP?
18 A. I understand the parameters.
19 Q. Okay. What are the parameters?
20 A. It's primarily around bottom
21 hole pressure and water depth and well depth.
22 Q. Okay. Do they use a gas column
23 to surface, or do you know?
24 A. I don't know.
25 Q. What's the rule of BP's on that?
1 A. I don't know.
2 Q. What's BP's rule on whether you
3 should use a gas column to surface?
4 A. Again, I'm not a drilling
5 engineer. So, I don't -- I don't know those
6 details.
7 Q. I know, but I'm asking for BP's
8 statement today, not your individual
9 position.
10 A. And I understand.

Page 36:23 to 37:02

23 Q. Sure. Okay. For BP, who does
24 know how you calculate MASP?
25 A. Well, as I said, the engineer --
1 the drilling engineer who's calculated. So,
2 surely they would know how to calculate it.

Page 37:14 to 37:25

14 Q. Do you know if there's an audit
15 procedure to make sure that MASP is being
16 correctly calculated, correctly reported, and

17 correctly utilized? Is there a system in BP
18 to do that, that you know of?
19 A. Not that I know of.
20 Q. Okay. Is there a person in BP
21 whose job responsibility is to make sure that
22 MASP is correctly calculated, correctly
23 reported, and correctly utilized, that you
24 know of?
25 A. Not that I know of.

Page 38:25 to 39:10

25 Q. Okay. This is a rule that
1 applies to every well drilled in the entire
2 Gulf of Mexico, whether that well is off
3 Texas, Louisiana, Alabama, Mississippi, or
4 Florida. So, I'm not asking about just one
5 well. I'm asking about every well BP has
6 drilled in the Gulf of Mexico.
7 Is there a system to make sure
8 MASP is correctly calculated, that you know
9 of?
10 A. I don't know.

Page 42:07 to 42:12

7 Q. All right. What's the
8 difference in MASP if you're drilling in
9 5,000 feet of water between MASP at the rig
10 floor and MASP at the blowout preventer?
11 A. Again, not being familiar with
12 the calculation --

Page 42:14 to 42:24

14 A. -- I can't say that.
15 Q. (BY MR. WILLIAMSON) You don't
16 know?
17 A. No, I don't know.
18 Q. Who at BP knows?
19 A. The engineers that calculate the
20 MASP.
21 Q. What system exists to make sure
22 those calculations are properly done,
23 properly reported, and properly utilized?
24 A. I don't know.

Page 45:01 to 45:04

1 Q. Is there a policy at BP where
2 the well team leader is supposed to take MASP
3 into consideration when he assigns a rig to a
4 specific well location?

Page 45:06 to 45:08

6 A. I can't say because I don't know
7 what all of the parameters are that they
8 would -- they would consider for the rig.

Page 47:21 to 48:08

21 Q. Okay. All right. So what
22 you're saying is -- do you know -- and you
23 said you don't know the difference between
24 the calculation at the surface and at the mud
25 line?

1 A. In terms of selecting a blowout
2 preventer, the absolute pressure at the mud
3 line is the -- is really the -- excuse me --
4 is really the pressure that we're most
5 concerned about, because that's what the BOP
6 has to contain --

7 Q. Right.

8 A. -- in absolute terms.

Page 50:18 to 51:07

18 Q. Okay. All right. Okay.
19 All right. What does BP say
20 that MASP is at mud line in this document?

21 A. In this document?

22 Q. Uh-huh.

23 A. It's -- apparently, it says it's
24 specifically for the 11 7/8 liner. It's
25 6,153 psi and was rounded up to 6200 psi.

1 Q. Okay. I want to know at mud
2 line.

3 A. I'm sorry?

4 Q. I want to know at mud line.

5 What's the maximum anticipated surface
6 pressure at mud line?

7 A. I don't know.

Page 51:09 to 52:01

9 Q. (BY MR. WILLIAMSON) And is your
10 answer: Oh, gee, it's surface pressure;
11 therefore, MASP does not apply to mud line?
12 Is that your answer?
13 A. No. I said I don't know.
14 Q. Okay. Under "Test Pressure,"
15 would you look down under where it says "Test
16 Pressure" on 7004.
17 A. Uh-huh.
18 Q. It says: "MASP at the wellhead
19 plus 500 psi is P at mud line equals 8404
20 plus 500 equals 8904 psi."
21 A. Okay.
22 Q. Did I read it correctly?
23 A. Yes, you did.
24 Q. Is it true? Is that BP's
25 calculation of, quote, MS -- MASP at the
1 wellhead?

Page 52:03 to 52:20

3 A. I don't know the details behind
4 this calculation so I'm not -- I'm not
5 actually sure what they're saying when they
6 say "MASP at the wellhead." So I really
7 can't speak to exactly what that number is.
8 Q. Okay. What does BP think it
9 means? Speak for BP.
10 A. I don't know what BP thinks it
11 means.
12 Q. How does BP make sure this
13 particular sheet, Exhibit 7004, the document
14 that BP chooses to give to the government of
15 the United States so that they can have
16 permission to go into governmental waters and
17 go on the governmental lease and drill for
18 hydrocarbons, what does BP do to ensure that
19 the piece of information on Exhibit 7004 is
20 true and accurate?

Page 52:23 to 53:14

23 A. Again, my previous answer is: I
24 don't know.
25 Q. (BY MR. WILLIAMSON) Does BP
1 even have a system to verify that the
2 information they give the United States
3 Government is truth -- truthful and accurate?
4 A. I'm sure they do.
5 Q. What is it?
6 A. I don't know.
7 Q. Who knows?
8 A. I don't know.
9 Q. Who is responsible for making
10 sure that the information given to the
11 United States Government so that BP can go
12 onto a governmental lease and drill for
13 hydrocarbons, who makes sure that the
14 information on 7004 is accurate?

Page 53:17 to 53:22

17 A. I can't say.
18 Q. (BY MR. WILLIAMSON) Who makes
19 sure that this information is being correctly
20 calculated? Who at BP makes sure that this
21 information is being correctly calculated?
22 A. I don't know.

Page 57:01 to 57:04

1 In order to be suitable, should
2 the blowout preventer meet the regulatory
3 requirements?
4 A. Yes, it should.

Page 58:02 to 58:16

2 Q. If I'd go through all of
3 Chapter 250, I will tell you, it's 30 CFR
4 250. Do you know what CFR's are?
5 A. Yes.
6 Q. Code of Federal Regulations.
7 If I went down and I started
8 going through 30 CFR Chapter 250, which deals
9 with drilling operations, you are not an
10 expert on regulatory compliance?
11 A. That is correct.

12 Q. So you're not going to be able
13 to tell me whether -- what BP's policies are
14 on regulatory compliance in connection with
15 blowout preventers?

16 A. No.

Page 59:07 to 60:04

7 Q. So whether the Macondo DEEPWATER
8 HORIZON blowout preventer met the regulatory
9 requirements or didn't is not something
10 you're going to be able to help me with?

11 A. If there is a specific question
12 on a specific regulatory item, I may be able
13 to answer it.

14 Q. Well, for example, do you know
15 whether the testing protocols that were set
16 forth in connection with the Macondo met the
17 regulatory requirements of 250 CFR?

18 A. No.

19 Q. Do you know whether the
20 maintenance requirements set forth in the
21 CFR's were complied with in connection with
22 the BOP that was on Macondo with the
23 DEEPWATER HORIZON?

24 A. No.

25 Q. Do you know whether
1 modifications that were done to the DEEPWATER
2 HORIZON blowout preventer complied or did not
3 comply with regulatory requirements?

4 A. I don't know.

Page 63:05 to 63:11

5 Q. So -- so any way in which the
6 blowout preventer, this piece of equipment,
7 is actually utilized -- the policies about
8 how this piece of equipment is actually
9 utilized, that's not something within your
10 knowledge --

11 A. That's correct.

Page 63:20 to 63:25

20 Q. Are you familiar with API 53?

21 A. Yes.

22 Q. Do you know whether this blowout
23 preventer met API 53 or not?
24 A. I don't know if this particular
25 preventer met 53 or not.

Page 65:15 to 66:04

15 Q. Does -- do the rig audits look
16 in to see whether this piece of equipment,
17 the blowout preventer, complies with API 16?
18 A. No. The audits look into the
19 compliance with RP 53.
20 Q. Okay. You mean API?
21 A. API RP 53.
22 Q. RP 53. Okay.
23 A. And when I say -- let me -- let
24 me clarify that, please. The -- RP is a
25 recommended practice. It's not an absolute.
1 As in with any of the recommended practices
2 in API, there's a fair amount of latitude
3 that's given to address issues within the
4 recommended practices.

Page 66:06 to 66:18

6 my question. My question is: Does BP do
7 anything to figure out whether or not API 16
8 is complied with?
9 A. Not that I'm aware of.
10 Q. Does BP do anything to figure
11 out whether API 16A is complied with?
12 A. Not that I'm aware of.
13 Q. Does BP do anything to figure
14 out whether API 17 is complied with?
15 A. Not that I'm aware of.
16 Q. Okay.
17 A. Again, we rely on Transocean and
18 Cameron as the experts on that equipment.

Page 68:09 to 68:15

9 Q. Okay. And by the "inverted
10 ram," you mean the conversion of the bottom
11 variable bore pipe ram to a test ram in
12 approximately 2004, 2005?
13 A. That's correct.

14 Q. A decision that BP made?

15 A. Yes.

Page 68:23 to 69:04

23 Q. Okay. So if we're going to talk
24 about the suitability of the lower annular,
25 whereas -- whether a stripping annular --
1 5,000 psi stripping annular is better or
2 worse or suitable, that's not something you
3 can help me with?

4 A. No. That gets into drilling

Page 71:04 to 71:13

4 Q. Okay. So you can't give us any
5 help today of whether or not this BOP is
6 suitable in design or operation for cutting
7 or shearing off-center pipe?

8 A. No. What I can say is that the
9 requirements for the type of pipe would be
10 used would have been given to Transocean, and
11 that we -- we would have looked at Transocean
12 to ensure that the equipment would shear the
13 appropriate pipe.

Page 77:05 to 77:21

5 Q. Okay. Okay. Did you review the
6 API 53 in order to determine -- in order to
7 determine whether this particular blowout
8 preventer met API 53?

9 A. I looked at API 53 as a general
10 reference. Without the detailed information
11 around the Macondo stack, I wouldn't be able
12 to make that determination.

13 Q. What's BP's policy regarding
14 whether or not they should be in compliance
15 with API 53?

16 A. Our audits are performed against
17 API 53, and as I said, "compliance" is a
18 difficult word to use with a recommended
19 practice because there is a fair amount of
20 latitude that can be used as interpretation
21 and in actually meeting the requirements.

Page 79:02 to 79:18

2 What are BP's policies regarding prep --
3 testing BOP's? Do they have any policies
4 regarding testing BOP's?
5 A. The only policies I'm aware of
6 would be the policies around the -- the
7 required testing by the MMS or BOEM.
8 Q. Oh, I'm sorry. I thought you
9 didn't know about regulatory compliance.
10 A. I didn't say I didn't know about
11 it. I don't know all about it.
12 Q. Okay. Okay.
13 A. I'm not an expert in it.
14 Q. Are you -- are you able to tell
15 me what BP says to do in connection with
16 their regulatory compliance in terms of their
17 testing?
18 A. Not specifically, no.

Page 80:03 to 80:14

3 Q. Well, I'll repeat it for you.
4 You know, I will tell you, there's a
5 regulation that says you have to test to
6 ensure well control. Are you aware of that
7 regulation?
8 A. Yes, I'm aware there's the
9 regulation to test.
10 Q. Okay. What policy does BP have
11 in order to test to ensure well control?
12 A. I can't cite a specific policy,
13 but in general, BP does have the intent to be
14 compliant with regulatory requirements.

Page 81:23 to 82:15

23 Q. Okay. Well, I'm going back to:
24 What policy does BP have regarding pressure
25 testing BOP's to ensure well control?
1 A. I would expect that that
2 policy -- either 10-10 or the DWOP would
3 contain those policies.
4 Q. Okay. So, your testimony is the
5 only policy that BP has on pressure testing
6 BOP's is contained within DWOP, that BP

7 document?
8 A. That's not what I said. I said
9 those are the two that I would know of. They
10 could be somewhere else, but I don't have
11 knowledge of all of BP's policies.
12 Q. You don't even have knowledge of
13 BP's policies regarding testing BOP's?
14 A. Other than the documents I
15 cited.

Page 83:20 to 84:14

20 Q. Okay. All right. Does BOP,
21 once a rig is on location and once a rig
22 is -- the BOP is subsetting, does BP have any
23 policies on what testing protocols should be
24 followed?
25 A. I believe that's in the wells
1 policy manual, which I believe refers to the
2 14 -- I think it's a 14-day requirement.
3 Q. Okay. Other than the policy
4 that you test the BOP every 14 days, is there
5 any other BP policy on testing BOP's?
6 A. Not that I'm aware of.
7 Q. Okay. So, there's no BP policy,
8 for example, to test the blind shear rams
9 once they're subset??
10 A. I didn't say there were none. I
11 said I wasn't aware of a requirement.
12 Q. Who would know?
13 A. Probably one of our subject
14 matter experts in drilling operations.

Page 85:01 to 85:09

1 covered this with you yet. Tell me -- you
2 said your job description right now is you
3 deal with FMC?
4 A. Correct.
5 Q. Does FMC have anything to do
6 with blowout preventers?
7 A. No.
8 Q. What does FMC have to do with?
9 A. Subsea production equipment.

Page 95:09 to 95:19

9 Q. Other than pressure, design
10 envelope, and temperature design envelope,
11 can you speak to any other operational issues
12 regarding the BOP?

13 A. I can speak to the technical
14 issues around the ability of the shear rams
15 to shear certain pipe.

16 Q. Blind shear rams, shearability?

17 A. Correct.

18 Q. Anything else?

19 A. No.

Page 97:03 to 98:22

3 Q. Okay. So you -- the operational
4 issue, you can speak to -- or the only
5 operational you can speak to is whether this
6 piece of equipment on the DEEPWATER HORIZON
7 BOP meets the pressure and temperature
8 parameters on Macondo?

9 A. That's correct.

10 Q. Okay. All right. And what can
11 you tell us about that?

12 A. One of the very first things you
13 do look at is -- is the -- is the BOP system
14 rated for the pressure and the temperature
15 that's anticipated to see throughout the
16 operation.

17 Q. Okay.

18 A. The wells team, in conjunction
19 with the subsurface team, will calculate the
20 wellhead pressures and wellhead temperatures
21 based on data that's available to them from
22 logging, from whatever downhole source they
23 have of obtaining downhole pressure
24 temperature -- pardon me.

25 Those pressures and temperatures
1 then are given to Transocean, and we compare
2 the requirements against the capability of
3 the BOP. Is it suited for that water depth;
4 is it suited -- and that would be another
5 thing is water depth. Is it suited for that
6 pressure? Is it suited for that temperature?
7 And the other aspect would be would -- would
8 be: Can it shear pipe that would be used on

9 the well?
10 Q. Who is supposed to figure that
11 out? Who is supposed to see if it can sheer
12 the well pipe?
13 A. The wells team would work that
14 issue.
15 Q. Who worked it here?
16 A. I don't know who worked it for
17 Macondo.
18 Q. Okay. Do you know whether 5 and
19 a half-inch S 135, 135,000 pounds of yield
20 can be sheered by this particular BOP?
21 A. It's my understanding that it
22 can be.

Page 99:19 to 100:13

19 Q. Does anybody at BP ever looked
20 at any of those?
21 A. We rely on Cameron to be able to
22 tell us whether -- well, Cameron -- we rely
23 on Transocean and their relationship with
24 whoever their BOP supplier is to confirm that
25 that can be done.
1 Q. Well, that's what I'm trying to
2 figure out. I'm trying to figure out: Does
3 BP make an independent determination whether
4 the pipe can be sheared, or are -- you just
5 rely upon Cameron's table?
6 A. We primarily rely on Cameron's
7 table. There have been instances where we --
8 there have been shear tests performed, but
9 it's generally been performed by the drilling
10 contractor.
11 Q. Okay. So in order to determine
12 shearability, what BP does is they rely upon
13 the table that Cameron gave?

Page 100:15 to 100:15

15 A. Yes.

Page 100:21 to 100:25

21 Q. Right. And do you know if
22 that's the most up to date version of

23 shearability that Cameron -- information that
24 Cameron gives, or do you know?
25 A. I don't know.

Page 101:03 to 102:13

3 current information. Who at BP figures that
4 out?
5 A. I would expect that would be
6 someone within the wells team.
7 Q. You don't know?
8 A. No. I don't know.
9 Q. What system exists to make sure
10 the wells team properly figures out that they
11 have Cameron's most recent information?
12 A. I don't know.
13 Q. Okay. So here's what you know:
14 You know that the wells team is supposed to
15 look at pressure information and temperature
16 information on the well that they get from
17 the geologist people --
18 A. Uh-huh.
19 Q. -- the reservoir specialists,
20 correct?
21 A. Correct.
22 Q. And you know that the wells team
23 is supposed to give that information to
24 Transocean, correct?
25 A. That's what I understand, yes.
1 Q. And you know that BP relies on
2 Transocean to take that information into
3 account?
4 A. Correct.
5 Q. And you know that BP relies upon
6 Cameron to give them a table over what pipe
7 can be sheared?
8 A. Well, we rely on Transocean
9 get -- to have that information. BP doesn't
10 own the equipment. Transocean actually owns
11 the equipment. So we would expect Transocean
12 to ensure us that that information was
13 correct.

Page 102:22 to 103:25

22 You know that BP -- I guess, is

23 what you're telling me you expect Transocean
24 to get Cameron's information and utilize it
25 appropriately?

1 A. Yes.

2 Q. Does BP do anything other than
3 that on shearability? You give pressure and
4 temperature to Transocean, and you want
5 Transocean to utilize Cameron's information.
6 Now, here's my question: Does BP do anything
7 over and beyond that?

8 A. What we would look at would be
9 any data that we have from previous wells.
10 If there were any previously done shear tests
11 or any -- any information like that that
12 would be available to us, we would review.

13 Q. Okay. So here's what BP does:
14 They give pressure and temperature
15 information to Transocean, and they expect
16 Transocean to get information from Cameron,
17 right?

18 A. That's correct.

19 Q. And then you look at any
20 previous shear tests that were done on this
21 particular rig, right?

22 A. Yes.

23 Q. Okay. Does BP do anything over
24 and above that?

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

Page 104:10 to 104:13

10 (Marked Exhibit No. 4100.)

11 Q. (BY MR. WILLIAMSON) Mr. Byrd,
12 I'm going to hand you an E-mail chain that's
13 been marked as Exhibit No. 4100.

Page 107:11 to 107:15

11 Q. By the way, did BP ever look
12 into the issue of whether the cutting blades
13 on this particular BOP were not as wide as
14 the wellbore?

15 A. I don't know.

Page 108:01 to 108:13

1 and 2000 -- it's my understanding based on
2 documents I've looked at, Cameron offered the
3 double V blade back in '99 and 2000. Do you
4 recall that?
5 A. I don't recall that, no.
6 Q. Do you recall who decided not to
7 use Cameron's double V blade, but instead
8 decided to use the blade design that's on the
9 DEEPWATER HORIZON?
10 A. No, I don't.
11 Q. Was that a part of the
12 decision-making process you were in?
13 A. No, it wasn't.

Page 108:22 to 108:25

22 Q. I will tell you, when I look at
23 this chart, I do not seem to see five and a
24 half inch string, right?
25 A. Correct.

Page 109:12 to 110:02

12 Q. Okay. What makes you think five
13 and a half inch S-135 is shearable, based on
14 this chart?
15 A. I drew that conclusion because
16 five inch S-135 is shearable and six and
17 five-eighths S-135 is shearable, and the five
18 and a half is between the two.
19 Q. Okay. Could you tell me, when
20 you talk about the six and five-eighths,
21 you're talking about the six and five-eighths
22 at 40 pounds -- 40.9 pounds per foot?
23 A. That's correct.
24 Q. Okay. And it is shearable with
25 what?
1 A. Both the blind shear and the
2 casing shear.

Page 110:06 to 112:15

6 Q. Tell me the column that you're
7 using in order to determine that the six and
8 five-eighths 40 pound is shearable. Just
9 tell me the number in that particular box.

10 A. It's Column 1.
11 Q. So I'll make sure I'm looking at
12 the same box you're looking at.
13 A. That would be Column 1.
14 Q. Okay. Which box? Can you give
15 me a number?
16 A. 18 inch -- 18 inch piston.
17 Q. All right. So you're looking at
18 the place where it has an 18 inch piston with
19 the blind shear rams, six and five-eighths,
20 40.9, S-135, right?
21 A. Correct.
22 Q. And it says, the shear pressure
23 psi at ambient is 4,614, right?
24 A. That's correct.
25 Q. That means if you apply shear
1 pressure of 4,614 pounds per square inch,
2 then the 18 inch blind shear rams will shear
3 that pipe.
4 A. That's correct.
5 Q. Okay. Where are you going to
6 get the 4,614 psi?
7 A. That would be the control line
8 pressure for the actuator.
9 Q. From where? Yeah, that actuates
10 the piston in the blind shear ram.
11 A. Correct.
12 Q. Where do you get the hydraulic
13 fluid that actuates that piston?
14 A. I believe those will come from
15 the accumulators.
16 Q. Which accumulators? There's
17 multiple accumulators.
18 A. I don't know. I can't
19 specifically say which ones. I don't know
20 how it was set up. It would come from
21 accumulators.
22 Q. Okay. So you don't know if this
23 comes from the accumulators on the rig floor,
24 right?
25 A. Correct.
1 Q. And you don't know if it comes
2 from the accumulators on the LMRP or comes
3 from the accumulators on the BOP?
4 A. Correct.
5 Q. You -- you just don't know that

6 detail?
7 A. No, I don't.
8 Q. Okay. And, of course, I assume
9 you also don't know what pressure those
10 accumulators -- respective accumulator stacks
11 can deliver?
12 A. No, I don't.
13 Q. Okay. All right. And this is
14 what BP expects to be used in calculation --
15 calculating shearability?

Page 112:17 to 112:18

17 Q. (BY MR. WILLIAMSON) Exhibit --
18 this chart that's attached to Exhibit 4100?

Page 112:21 to 113:12

21 A. As I said, this wouldn't be the
22 only component they would use. They would
23 look at previous shearing data on that
24 particular rig. May even look at previous
25 shearing data with the same type of stack,
1 from the same manufacturer on another well.
2 They would just -- and whatever shearing data
3 was available.
4 Q. (BY MR. WILLIAMSON) Okay. But
5 the primary documents you would look to is
6 the chart that's attached to Exhibit 4100?
7 A. I don't know it's the primary.
8 It is probably the first place you would look
9 to get started to inquire as to whether it
10 was appropriate. And from that -- from that
11 point, you might look deeper. You might not.
12 I can't really say.

Page 114:09 to 115:17

9 Q. Having said that, did you look
10 to the emergency activation systems that were
11 on the DEEPWATER HORIZON blowout preventer?
12 A. Not in detail.
13 Q. Okay. Can you -- did you look
14 at them generally?
15 A. In general, I looked at them to
16 see that there was an emergency disconnect

17 system and there was a dead man system and an
18 auto shear system. But I didn't look into it
19 in any more detail than that. And just to be
20 clear, that was in preparation. That was not
21 in the actual selection of the equipment.

22 Q. In other words, you didn't look
23 at that back in 2000 when you were working
24 for Vastar?

25 A. Yes. Yeah.

1 Q. Is that what you meant?

2 A. Yeah. In 2001, correct.

3 Q. In 2001, when you were working
4 for Vastar --

5 A. That's correct. We did look at
6 that, yes.

7 Q. -- you all looked at the
8 emergency activation systems at that time?

9 A. That's correct.

10 Q. Okay. But I'm talking -- you
11 were talking about in preparation for this
12 deposition, you reviewed the emergency
13 activation systems?

14 A. Did not -- I did not review the
15 emergency activation systems in detail. Only
16 reviewed that they were, in fact, on the --
17 on the rig or on the BOP system.

Page 119:06 to 119:12

6 Q. (BY MR. WILLIAMSON) So you
7 don't know? You do not know --

8 A. No.

9 Q. -- if BP needs redundant control
10 systems in order to accept a subsea blowout
11 preventer system?

12 A. No, I don't know that.

Page 121:13 to 121:21

13 Q. Okay. So when BP accepts this
14 rig into service, should they be looking for
15 single-point failures?

16 A. I have -- I can't really
17 speculate.

18 Q. Okay. Don't know what BP does
19 when they accept a rig into service?

20 A. Well, we have a rig audit
21 procedure, and I would refer to that.

Page 124:13 to 126:01

13 Q. (BY MR. WILLIAMSON) Okay. Does
14 BP care whether the MUX cable reels are in a
15 hazardous area or not?
16 A. I would say yes.
17 Q. Okay. Why? Why would you care?
18 A. Because a hazardous area, by
19 definition, I mean, there's an area of
20 potential -- a higher potential risk.
21 Q. Okay. And what's the risk if
22 the MUX cables are destroyed?
23 A. You would then have to rely on
24 the -- the Deadman system as opposed to the
25 emergency disconnect.
1 Q. Okay. So if the MUX cable are
2 destroyed, you lose all functionality from
3 the rig?
4 A. That is correct.
5 Q. Did you know that back in 2001,
6 when you were a consultant for Vastar?
7 A. Yes, we did.
8 Q. Okay. Did -- did somebody say
9 this is a problem?
10 A. No. Because they were a
11 redundant system.
12 Q. It's not redundant if you have
13 both of them in the same location that are
14 subject to an explosion. That's not
15 redundant, is it?
16 A. That's why you have the Deadman
17 system.
18 Q. Okay. The Deadman system is
19 your redundancy --
20 A. Correct.
21 Q. -- in case your MUX cables get
22 destroyed --
23 A. That's correct.
24 Q. -- right? That's what you're
25 saying?
1 A. That's right.

Page 126:10 to 128:12

10 Q. Okay. So you don't know how --
11 the mechanics of how the Deadman system
12 works?

13 A. I -- well, in general, I can
14 speak in general. I believe there's a PLC or
15 a printed circuit board that is powered by
16 batteries that were in the system. It then
17 sends the signals. Once it's sent it had
18 lost hydraulic and power and signal, it fires
19 a series of events on the BOP, causing it to
20 close.

21 Q. Okay. Are the batteries
22 chargeable?

23 A. I don't believe --

24 Q. When the unit --

25 A. I don't believe they were, no.

1 Q. Are they monitorable? Can you
2 monitor them?

3 A. No, they're not.

4 Q. Okay. Did you know that in
5 2001?

6 A. Yes, we did.

7 Q. Why didn't you say, that's not a
8 good system. We're relying upon a component
9 we can't monitor and can't charge?

10 A. The -- the conversations we had
11 with Transocean and Cameron, number one, that
12 was Cameron's standard system that they
13 were -- had the highest confidence level in.
14 Transocean felt the same way in that the --
15 any risk can be mitigated through maintenance
16 of the system.

17 Q. Did you think about the fact
18 that the batteries couldn't be monitored and
19 couldn't be charged in 2001?

20 A. We discussed it, but again, we
21 rely on Transocean and Cameron.

22 Q. Who did you discuss it with?

23 A. It would have been Kevin Wink,
24 who was the -- at that time, of course, it
25 was R.B. Falcon.

1 Q. Okay. And you were discussing
2 as a consultant for Vastar?

3 A. Yes.

4 Q. So Vastar knew it?

5 A. Yes.
6 Q. And R.B. Falcon knew it?
7 A. Yes.
8 Q. Okay. And Vastar later became
9 BP?
10 A. Correct.
11 Q. Okay. So BP knew it?
12 A. Correct.

Page 129:08 to 130:03

8 Q. Okay. And the AMF system on the
9 DEEPWATER HORIZON, the way you read this
10 chart and based upon what BP knows about the
11 DEEPWATER HORIZON blowout preventer, the AMF
12 on the DEEPWATER HORIZON is going to shear
13 five and a half inch S 135?
14 A. That's correct.
15 Q. Okay. What about in 5,000 feet
16 of water? Is that going to change, or do you
17 know.
18 A. I really don't have the -- I'm
19 sorry, but I just really don't have the
20 expertise to --
21 Q. Sure.
22 A. -- make that determination here.
23 Q. What about dynamic flow
24 conditions, is that going to change you if
25 the well is flowing?
1 A. Possibly.
2 Q. Okay. You just don't know?
3 A. Don't know.

Page 130:09 to 130:12

9 Q. What if the pipe is off center,
10 do you know what difference, if any, that
11 would make?
12 A. No.

Page 133:02 to 133:12

2 Q. I assume on EDS-1, the EDS
3 program that was set up on the DEEPWATER
4 HORIZON, you don't know whether that fires
5 the casing shear rams, the blind shear rams,

6 or both?
7 A. No, I don't.
8 Q. And there's also a sequence that
9 can be programmed on the DEEPWATER HORIZON
10 called the EDS-2. Have you ever heard of
11 that?
12 A. Not in that vernacular, no.

Page 135:01 to 135:05

1 Q. Do you know what anybody in the
2 Gulf of Mexico operational team knows about
3 BOP's?
4 A. I can't tell you specifically,
5 no.

Page 140:04 to 140:17

4 figure out: Is there a department in BP that
5 deals with BOP's and risers and wellheads and
6 things you have below the ocean and on the
7 ocean floor?
8 A. I do know that there are subject
9 matter experts, but I don't know how that is
10 organized.
11 Q. So, you can't tell me what the
12 organization of BP is -- I'm trying to figure
13 out, gee, is there a place, a room, a
14 division, a department that their
15 responsibility is blowout preventers? Do you
16 know?
17 A. I do not know.

Page 140:21 to 141:08

21 Do you know whether such a place
22 or department or division or office existed
23 before April 20th, 2010, regarding BOP's
24 within BP?
25 A. No, I do not.
1 Q. Do you know whether such an
2 office, department, division, or unit existed
3 after April 20th, 2010, regarding B -- BOP's?
4 A. I do not, or immediately after.
5 I do know that there has been a restructuring
6 to set up subject matter experts and what we

7 would call "engineering authorities," and I
8 believe that BOP system is one of those.

Page 149:21 to 149:24

21 Q. Okay. What happens when you
22 have dynamic flow conditions and the wellbore
23 is pressurized before you start the process
24 of closing the blind shear ram?

Page 150:02 to 150:05

2 A. I can't answer that.
3 Q. (BY MR. WILLIAMSON) Does
4 anybody at BP know?
5 A. I don't know.

Page 151:03 to 151:05

3 Q. Okay. And BP does not know how
4 those components will work under dynamic flow
5 conditions?

Page 151:07 to 151:09

7 A. I would say that there's never
8 been any indication for either Transocean or
9 Cameron that it would not work.

Page 151:14 to 151:17

14 But having said that, I'm asking about BP:
15 Does BP know how those components are going
16 to work under dynamic flow?
17 A. I don't know.

Page 159:03 to 160:07

3 Q. (BY MR. WILLIAMSON) So BP --
4 you don't know of any BP policy on saying,
5 Gee, we need to know whether we have
6 nonshearable tubulars in the hole or we have
7 shearable tubulars in the hole. You don't
8 know of any BP policy on that?
9 A. I can't cite a specific policy,
10 but I can say that that is a -- a matter of

11 discussion in -- within and amongst the -- it
12 is a topic that gets a lot of conversation, a
13 lot of discussion.

14 Q. Okay. Why?

15 A. Because you want to minimize the
16 amount of time anything that is unshearable
17 is across the BOP stack.

18 Q. Why?

19 A. Reduces risk.

20 Q. Why?

21 A. Because when something is
22 unshearable and it's across the BOP stack, it
23 can't be sheared.

24 Q. You cannot protect against the
25 hydrocarbons getting above the riser?

1 A. Well, I said it can't be
2 sheared.

3 Q. So you can't --

4 A. I can't think of any other
5 possible well control methods or -- all I can
6 say is, if it can't be sheared, it can't be
7 sheared. I'm not a well control expert.

Page 162:19 to 163:10

19 Q. Okay. Here's my question to
20 you, the BOP res -- representative, is: Did
21 you look into this to see how much awareness
22 there was on the DEEPWATER HORIZON about the
23 shearability of the different drill strings?

24 A. No, I did not.

25 Q. Okay. Who does? Who knows
1 that? Who looks into that?

2 A. The wells team preparing for a
3 specific well.

4 Q. Well, isn't that part of the
5 suitability of the BOP; namely, whether or
6 not it will shear given drill strings?

7 A. Yes.

8 Q. But you just don't -- can't
9 answer questions on that?

10 A. Well, I can't say who did it.

Page 163:12 to 163:14

12 A. I can't tell you specifically

13 who did it. I can say that the wells team
14 would have been the group to look at that.

Page 166:04 to 166:23

4 slightly different way. What is the proper
5 design for the blowout preventer in Macondo?
6 A. I couldn't answer. I -- I don't
7 know enough of the parameters around the
8 operations, well kill operations.
9 Q. Did BP --
10 A. All I can address --
11 Q. Go ahead. All you can --
12 A. All I can address would have
13 been the pressure temperature, which the
14 Macondo Well was -- certainly didn't have as
15 high of requirements as some of the previous
16 wells, for example, the Tibor Well. So there
17 would have been no expectation based on
18 previous wells that HORIZON -- or the HORIZON
19 stack wouldn't be able to handle that well.
20 Q. Do you know if there's ever been
21 any actual shearing test done with the BOP
22 that's on the DEEPWATER HORIZON?
23 A. I believe there has been.

Page 167:04 to 167:07

4 Q. Okay. Well, do you know what
5 effort BP made to ensure the proper design of
6 the BOP on the DEEPWATER HORIZON?
7 A. No.

Page 167:11 to 167:20

11 A. Sorry. Can I add something to
12 that, please?
13 Q. Sure.
14 A. BP, as I've said before, very
15 heavily relies on Transocean and Cameron to
16 ensure that the design is correct. BP sets
17 requirements, but the manufacturer does the
18 calculations for strength, for pressure
19 containment, for all of those details that --
20 that insure the -- the BOP suitable.

Page 167:24 to 168:12

24 Q. (BY MR. WILLIAMSON) What did BP
25 do to make sure Transocean did its job
1 properly?
2 MR. COLLIER: Object to form.
3 A. I can't really say with a
4 specific -- there was not a specific written
5 set of guidelines or -- so, I really can't
6 say.
7 Q. (BY MR. WILLIAMSON) Tell me one
8 thing BP did to make sure Transocean
9 performed correctly with respect to the
10 blowout preventer, just one thing BP did to
11 make sure Transocean perform its job
12 correctly on the blowout preventer.

Page 168:14 to 169:08

14 A. I can't say.
15 Q. (BY MR. WILLIAMSON) Okay. Tell
16 me one thing BP did to make sure Cameron's
17 information that was given to BP was correct?
18 A. We would have relied on
19 Transocean to make sure that the information
20 we got from Cameron was correct.
21 Q. Yeah, I get it. I get that's
22 what you say. Now I want to know: What did
23 you do to make sure that that reliance was
24 justified?
25 A. I don't know.
1 Q. Okay. You don't know if BP did
2 anything to ensure that its reliance upon
3 Cameron was justified or appropriate?
4 A. I don't know.
5 Q. You don't know what BP did, if
6 anything, to ensure that its reliance along
7 Transocean was justified or appropriate?
8 A. I don't know.

Page 169:10 to 170:13

10 Q. (BY MR. WILLIAMSON) Okay. What
11 efforts did BP make to make sure that the BOP
12 was properly tested other than rely upon
13 Transocean?

14 A. I just can't answer because I
15 don't know what was looked at.
16 Q. Okay. What efforts did BP make
17 to make sure that the BOP on the DEEPWATER
18 HORIZON was properly maintained?
19 A. Part of the rig audits was to
20 look at outstanding items in the -- in the
21 rig maintenance program.
22 Q. Okay. Anything else?
23 A. But I don't know -- no details
24 other than that. That was something that was
25 looked at.
1 Q. Okay. One thing you've said is,
2 gee, the rig audit should have looked at
3 proper maintenance?
4 A. Was to look at maintenance. I
5 can't -- I mean, that's all I can say, is to
6 look at the maintenance records.
7 Q. Surely if you're looking at
8 maintenance, you want to look at proper
9 maintenance?
10 A. To look at maintenance records.
11 Q. Okay. You don't know if you're
12 looking at proper maintenance or not?
13 A. No.

Page 171:02 to 171:05

2 Q. Blowout preventer assembly on
3 the DEEPWATER HORIZON, was it adequate for
4 the job?
5 A. I have no way of knowing that.

Page 173:07 to 173:15

7 Q. Right. I'm trying to figure out
8 who -- this is a "who" question -- what
9 person made the decision: This blowout
10 preventer is adequate for everything we're
11 going to see at Macondo?
12 A. I don't know.
13 Q. And you didn't do any
14 investigation?
15 A. No.

Page 179:11 to 180:02

11 Q. My question was different. My
12 question was: You don't know how --
13 A. Okay.
14 Q. -- once we have this piece of
15 paper that's called an audit, you don't know
16 how those are utilized or enforced or
17 disciplined or mandated or implemented?
18 A. I could say that for -- it's my
19 understanding that for each item that
20 requires a close-out, someone is assigned to
21 assure that that item is closed out.
22 Q. Do you know how long it takes?
23 A. It -- it depends on the item.
24 Q. Well, do you know, is there any
25 policy in place to ensure that those items
1 get closed out?
2 A. I don't know.

Page 180:09 to 180:16

9 Q. Okay. Do you know what
10 enforcement mechanism there is to make sure,
11 to ensure that an audit item gets closed out?
12 A. No, I don't.
13 Q. And I'll limit my question for
14 your purposes specifically to BOP items. But
15 you still don't know?
16 A. Correct.

Page 181:22 to 182:17

22 Q. Okay. So did -- were you
23 involved in the part of the BOP process that
24 would have dealt with the connectors, the ram
25 blocks, the bodies, the bonnets, the
1 accumulators, the pods, the SIMS? Were you
2 involved in those -- that part of the BOP?
3 A. Within the bounds of ensuring
4 that they meet the -- the ultimate operating
5 requirements, but not in the detail design.
6 Q. Okay. What were the operating
7 requirements?
8 A. When the -- for example, the --
9 there was a requirement for EDS. And so --
10 so to ensure that -- we had a process whereby

11 we'd go through and define what the EDS
12 system does. Once that's defined, then
13 ensuring that there's a process to ensure
14 that Transocean and Cameron have addressed
15 whatever, from a technical standpoint or
16 design standpoint, needs to be addressed to
17 ensure that system works.

Page 184:20 to 185:11

20 Q. I'm trying to figure out if you
21 have a position on whether the EDS system
22 that activated the blind shear rams was
23 better or an EDS system that acts --
24 activated the casing shear rams and blind
25 shear rams was better.
1 A. No.
2 Q. Or you didn't have a position?
3 A. No.
4 Q. Okay. Do you have a position on
5 it today?
6 A. No.
7 Q. Does BP have a position on it
8 today?
9 A. I'm not aware if they do.
10 Q. Okay. You don't know?
11 A. Correct. I don't know.

Page 186:03 to 186:14

3 Q. Do you recall any discussions
4 about whether Cameron had available products,
5 such as ram blocks that go the entire width
6 of the wellbore?
7 A. No. I mean, again, we would
8 have relied on Transocean and their -- their
9 expertise in BOP systems as they operate a
10 wide variety of BOP's and rigs across
11 their -- across their fleet. We would have
12 really depended on them to make sure that we
13 understood what was available for Cameron.
14 Q. Is that right?

Page 186:17 to 187:09

17 Q. (BY MR. WILLIAMSON) You all

18 rely upon Transocean to give that
19 recommendation?
20 A. They're the experts.
21 Q. Okay. And, certainly, if
22 they're -- Transocean, the experts, say you
23 need a BOP with a certain configuration, you
24 all would absolutely do that?
25 A. We would take it into
1 consideration.
2 Q. Sure. Then explain to me why
3 the only two Transocean rigs in the Gulf of
4 Mexico that do not have double blind shear
5 rams are the MARIANAS and the DEEPWATER
6 HORIZON, two rigs that are under contract to
7 BP. Go ahead and explain that to me if
8 you-all are following Transocean's
9 recommendations.

Page 187:11 to 187:11

11 A. I can't explain that.

Page 189:14 to 190:04

14 will tell you -- do you know anything about
15 the fact that BP -- BP made an assessment --
16 a risk assessment of this particular blowout
17 preventer in 2007? Did you know that?
18 A. No. Huh-uh. Not aware of that.
19 Q. Okay. If you're going to figure
20 out how suitable the B -- the BOP is,
21 wouldn't you want to know what BP was talking
22 to people about in 2007 regarding the
23 configuration and its adequacy?
24 A. There's an awful lot of
25 documents out there. It would be impossible
1 to review them all.
2 Q. This one is a BOP assessment on
3 the DEEPWATER HORIZON done by BP. Didn't
4 look for that, didn't see it?

Page 190:06 to 190:09

6 A. I think I answered that.
7 Q. (BY MR. WILLIAMSON) Did you
8 look for it?

9 A. No, did not.

Page 190:16 to 190:18

16 You could have looked for it and searched for
17 it yourself. You didn't do that, correct?
18 A. Correct.

Page 193:25 to 194:10

25 Q. How could you possibly know
1 whether a piece of equipment is suitable
2 unless you know how to use that piece of
3 equipment properly?
4 A. Again, we rely -- Transocean
5 owns the equipment and is accountable for
6 operating the equipment. We are not the
7 experts in operating the equipment nor
8 designing the equipment. That is Transocean
9 and Cameron, and we rely, as I said earlier,
10 very heavily on them to do that.

Page 194:13 to 196:01

13 Q. (BY MR. WILLIAMSON) I've heard
14 that answer. I have a slightly different
15 question.
16 A. Okay.
17 Q. How could you know how to use --
18 how -- whether a piece of equipment is
19 suitable for a given job unless you know how
20 to use the equipment?
21 A. That's going to require, I
22 speculate, outside of the knowledge that I
23 have. So I really don't know how to answer
24 that, or can't answer that.
25 Q. Okay. Now, are you saying that
1 BP did nothing with regard to the blowout
2 preventer other than rely upon Transocean and
3 Cameron?
4 A. No, I'm not saying that.
5 Q. You're saying you don't know
6 whether BP did anything with regard to
7 blowout preventers other than rely upon
8 Transocean and Cameron?
9 A. That's correct.

10 Q. And you haven't made such an
11 inquiry?
12 A. I have not.
13 Q. Okay. I'm going to hand you a
14 copy of what's been marked in a previous
15 deposition -- it's been marked in a previous
16 deposition as Exhibit No. 93.
17 A. Okay.
18 Q. Did you refer to this document
19 earlier today?
20 A. Yes, I did.
21 Q. This is a document -- BP
22 document called "Drilling and Well Operations
23 Practice"?
24 A. Uh-huh.
25 Q. Right?
1 A. That's correct.

Page 196:04 to 197:06

4 Q. Tell me when you're there.
5 A. Okay.
6 Q. Exhibit 93, Page B 14, 15.3.36,
7 bottom of the page.
8 A. Okay.
9 Q. "A sealing shear ram shall be
10 required. The limitations of its shearing
11 capacity should be known and understood and a
12 documented risk assessment shall be in place
13 to address any such limitations."
14 A. Okay.
15 Q. I read it correctly?
16 A. Yes, you did.
17 Q. That's a requirement of BP?
18 A. Yes, it is.
19 Q. Did you do anything to determine
20 whether that requirement had been complied
21 with on the DEEPWATER HORIZON?
22 A. The discussion I had with the
23 gentleman I had mentioned earlier, Tom
24 Bowles, the -- it's my understanding that
25 such a -- a risk assessment had been done on
1 previous wells, and that there was a
2 discussion around this topic for the Macondo
3 Well. Because the Macondo Well was of
4 somewhat less severity than the previous

5 well, there was not a formal risk assessment
6 done.

Page 197:20 to 198:08

20 Q. Well, according to this, BP --
21 not Transocean, not Cameron, BP -- is
22 supposed to do a documented risk assessment
23 of the sealing shear ram, correct?
24 A. Correct.
25 Q. Did you look for it?
1 A. I asked about it, or I asked
2 about the -- what was the -- the risk
3 assessment process that was gone through for
4 the Macondo Well, and that process was just
5 described a minute ago.
6 Q. I want to know: Did you look
7 for the document?
8 A. No.

Page 200:07 to 200:08

7 Q. Good afternoon, Mr. Byrd. My
8 name is Bruce Bowman.

Page 200:11 to 200:11

11 questions here. I represent Halliburton,

Page 200:14 to 200:16

14 Q. Now, I've been listening. Why
15 was this particular BOP the right BOP for the
16 Macondo Well?

Page 200:19 to 201:20

19 A. I mean, there's no way I can
20 answer that in its totality. That covers a
21 pretty broad range of -- of requirements.
22 All I can say is that -- or what I can say
23 is: Based on the information that I've
24 obtained in talking to Mr. Bowles and
25 Mr. Skelton and others, is that the Macondo
1 Well was a -- from a temperature and pressure
2 standpoint, a -- what am I trying to say --

3 it was a -- a -- not as difficult of a well
4 as some of the previous wells. So there
5 should be no -- we would have no reason to
6 expect that the BOP would not perform.
7 Q. So these two people told you
8 this well was not all that difficult, and you
9 relied upon that to assume then that the BOP
10 would work?
11 A. No, that's not what I said.
12 What I actually said was: Just based on the
13 conversations I had, they didn't say it was
14 not difficult. They said it was not as
15 difficult, from a pressure and temperature
16 standpoint, as one of the previous wells, and
17 specifically the type of -- which had higher
18 temperatures and higher pressures.
19 Q. That's it. Anything else?
20 A. No.

Page 201:24 to 202:02

24 Q. Did you know at that time that
25 BP personnel had called this "The Well From
1 Hell"?
2 A. No, I wasn't aware of that.

Page 203:06 to 203:09

6 Well, after you were told it was
7 not as difficult as other wells, particularly
8 the Tiber, what did you do to make sure that
9 was true?

Page 203:11 to 204:03

11 A. I had no reason to doubt what I
12 was told.
13 Q. (BY MR. BOWMAN) So you did
14 nothing?
15 A. I didn't follow up, no.
16 Q. Okay. So do you know how many
17 kicks the Macondo Well had prior to the
18 blowout?
19 A. No, I don't.
20 Q. Do you know how many kicks the
21 Tiber Well had?

22 A. No, I don't.
23 Q. Do you know if it had any kicks?
24 A. No, I don't.
25 Q. Do you know if there were any
1 well control events whatsoever on the Tiber
2 Well?
3 A. No, I don't.

Page 209:14 to 210:10

14 Mr. Skelton, what is his
15 background?
16 A. Drilling engineer. I don't --
17 he's worked in a number of different
18 locations --
19 Q. Okay.
20 A. -- countries. He's -- I believe
21 he's worked both land wells and subsea wells,
22 deepwater wells. He's worked both
23 exploration and production. Other than that,
24 I really don't have any details.
25 Q. How did you know to contact him?
1 A. Through the -- some of the
2 documentation that we had.
3 Q. Where did you get the documents
4 from?
5 A. It was during the period in
6 preparation with the attorneys.
7 Q. Okay. So, you had some
8 attorneys -- documents from attorneys, and
9 you saw his name on some of these documents?
10 A. Uh-huh, yes.

Page 210:14 to 211:11

14 Q. Did you ask him if this was the
15 right BOP for this well?
16 A. Yes, I did.
17 Q. And what did he base his opinion
18 on?
19 A. He said that it met the pressure
20 temperature requirements; that it met the
21 known operational requirements; and, again,
22 that the specifics around the Macondo Well
23 were not as difficult as one of the previous
24 type of wells.

25 Q. Okay. He's one of the people
1 that told you this wasn't as difficult a
2 well?
3 A. Right.
4 Q. And he told you this just a week
5 or two ago?
6 A. That was yesterday.
7 Q. Yesterday.
8 Did you question him a little
9 bit about him saying this wasn't as difficult
10 a well?
11 A. I asked why.

Page 211:13 to 211:15

13 Q. (BY MR. BOWMAN) Did you say,
14 Don't you know this was a difficult well?
15 A. Well, the question --

Page 211:17 to 212:08

17 A. -- was specifically around
18 pressure and temperature.
19 Q. (BY MR. BOWMAN) Only pressure
20 and temperature?
21 A. Correct.
22 Q. Did he give you a little piece
23 of paper saying: This is the pressure and
24 this is the temperature, and this is the
25 reason it worked?
1 A. No, but he explained to me how
2 they arrived at those numbers.
3 Q. Explained it.
4 So you don't know for sure if
5 the pressures and the temperatures he was
6 operating on were right or wrong, do you?
7 A. I don't, but I would have no
8 reason to believe they were.

Page 213:07 to 214:02

7 Q. Okay. Did Mr. Bowles or
8 Mr. Skelton do any kind of analysis of the
9 blind shear rams in their capacity on this
10 well?
11 A. They told me that they reviewed

12 the shear capacities based on the --
13 Q. The same thing we look at?
14 A. Right.
15 -- based on the input they had
16 been given from Transocean and Cameron.
17 Q. Did they tell you how much psi
18 pressure it would take to actually shear a
19 pod and what the maximum pressure was that it
20 would shear at?
21 A. No. We didn't discuss that.
22 Q. That -- were you interested in
23 that?
24 A. We didn't discuss it.
25 Q. Well, I understand you didn't
1 discuss it, but did it seem like something
2 you might need to know?

Page 214:04 to 214:05

4 A. Like I said, we didn't discuss
5 it.

Page 214:07 to 214:08

7 Well, sitting here today, do you
8 wish you had discussed it?

Page 214:10 to 214:11

10 A. All I can say is: We didn't
11 discuss it.

Page 214:18 to 214:20

18 Q. Wouldn't you think you -- it
19 would be nice to know what the maximum
20 shearing strength is of the rams?

Page 214:22 to 214:24

22 A. Again, we rely on Cameron and
23 Transocean to provide that information. We
24 don't go in and do calculations.

Page 215:07 to 215:13

7 think -- on behalf of Cameron or TO. You're
8 here testifying on behalf of BP; and you
9 know, one of the topics is the nature, type,
10 and adequacy of the configurations. So, in
11 order to be able to do that, you don't think
12 you need to know what the shearing capacity
13 is?

Page 215:15 to 215:17

15 A. We reviewed the shearing
16 capacity based on the information provided to
17 us by Transocean and Cameron.

Page 215:21 to 215:25

21 Q. (BY MR. BOWMAN) If you've
22 answered this, that's fine; but do you know
23 who it was that ensured the suitability of
24 the original BOP on the HORIZON?
25 A. No, I don't.

Page 221:16 to 222:02

16 Q. Okay. Now, what's the maximum
17 closing pressure on the blind shear rams on
18 the Macondo?
19 A. I don't know.
20 Q. Don't know.
21 Did you know and you've
22 forgotten, or did you just never know?
23 A. I'm certain I knew at one time
24 because I was involved in the discussions. I
25 just don't recall what it is.
1 Q. You think that's an important
2 feature?

Page 222:04 to 222:04

4 A. I think it is important, yes.

Page 228:19 to 229:22

19 Specifically, what tests are you telling me
20 actually show whether the blind shear rams
21 can successfully seal a wellbore?

22 A. If you go all the way back to
23 manufacture, Cameron performs a factory
24 acceptance test.
25 Q. Did you see that?
1 A. No, I don't see that.
2 Q. Did not see that. Okay.
3 Next?
4 A. Then the stack would be
5 tested -- that would be on an individual
6 single- or double-ram cavity.
7 Q. Uh-huh.
8 A. Then once the BOP is assembled
9 into a unitized system, those would be tested
10 again as part of an integration test.
11 Q. Yeah. How do you test them. Do
12 you know?
13 A. You have to use a test plug and
14 pressure up the bore.
15 Q. Have you seen any of those
16 tests?
17 A. No, I have not seen them.
18 Q. Did you ask anyone or try to
19 find out if there were any pressure tests
20 that had been done by Cameron that would
21 show, say, the shearing of pipe but not
22 successful sealing of a wellbore?

Page 229:24 to 229:25

24 A. I never saw any indication of
25 that, no.

Page 231:02 to 231:15

2 Q. Do you know that there are
3 rechargeable batteries that can be used in
4 control pods?
5 A. That's what I understand, yes.
6 Q. And did you have any discussion
7 with anyone from BP as to why rechargeable
8 batteries were not used in this particular
9 BOP?
10 A. No. On those systems, decisions
11 like that are -- design features like that,
12 we would heavily rely on Transocean and
13 Cameron to provide their expertise on what

14 was the best way to accomplish the functional
15 requirements with the BOP.

Page 231:20 to 232:08

20 Q. (BY MR. BOWMAN) Did you have
21 any discussions with anybody on that topic?
22 A. No.
23 Q. The testing that you talked
24 about earlier that was done in early 2001 and
25 any subsequent tests, were those tests done
1 below the water or were they done on the
2 surface, or do you know?
3 A. The tests I was referring to
4 would have been done on the surface.
5 Q. On the surface, okay.
6 Do you know of any testing that
7 had -- was done on the actual BOP on the
8 Macondo that was done subsurface?

Page 232:10 to 232:18

10 A. I'm not personally aware, no.
11 Q. (BY MR. BOWMAN) Okay. Do you
12 think any of the pressures or any of the
13 dynamics would be different subsurface than
14 surface?
15 A. I think the hydrostatic head,
16 the fact -- was the depth -- the pressure and
17 depth would be. But I'm not an expert on
18 that.

Page 233:12 to 233:22

12 Q. (BY MR. BOWMAN) Let me make
13 sure I understand. You're talking to
14 Mr. Skelton and Mr. Bowles, and they both
15 tell you that the temperature and the
16 pressure, basically, they read or something
17 on this BOP, should have made it a good BOP
18 for this well, right?
19 A. That's correct.
20 Q. Well, did you kind of think
21 about asking, "Well, if that's the case, what
22 in the world happened"?

Page 233:24 to 234:02

24 A. I mean, all I can say is I'd
25 refer you to the Bly report into the
1 investigation. I don't have the details
2 around why it didn't work on Macondo.

Page 234:05 to 234:08

5 Q. (BY MR. BOWMAN) Did you ask
6 them why in the world it didn't work, if
7 they're telling you it should work?
8 A. No.

Page 236:08 to 236:15

8 Q. Okay. Prior to your ROV work,
9 did you try to figure out if the blind shear
10 rams had been opened or closed?
11 A. Yes, we did.
12 Q. Okay. Were you able to figure
13 out when they were closed?
14 A. No. I don't recall that we ever
15 figured that out.

Page 238:01 to 238:03

1 Sitting here today, have you had
2 any discussions with anybody about any
3 problems with BOP on the Macondo well?

Page 238:05 to 238:05

5 A. No.

Page 249:16 to 250:01

16 Q. Okay. So now, did you actually
17 ask to see any tests on the HORIZON BOP?
18 A. No, I did not.
19 Q. Have you seen this document
20 prior to today?
21 A. No, I have not.
22 Q. Did you ask Mr. Skelton or
23 Mr. Bowles if they had looked for any of the
24 subsea tests that had been done on the

25 DEEPWATER HORIZON BOP?

1 A. No, I did not.

Page 254:17 to 254:19

17 Q. Okay. Let's go to Tab 52, which
18 has previously been marked as 6145; and this
19 is something about API RP 53.

Page 257:08 to 257:20

8 Q. (BY MR. BOWMAN) Okay. Well, we
9 have in the middle here: "Mike, see below.
10 Re: Mike Byrd's assignment for the rewrites
11 of API RP 53 for BOP's. As Mike is now in
12 your team, I assume you should be involved in
13 his workload. I am not sure how we decided
14 at what function and what person should
15 represent us on this critical role, but Mike
16 certainly has some of the best of the limited
17 experience in BOP's in BP."

18 Now, who wrote that?

19 A. It appears that was David
20 Brookes.

Page 258:14 to 258:16

14 Q. So, you're one -- you're one of
15 the best of the experienced people at BP that
16 talk about BOP's, right?

Page 258:18 to 258:18

18 A. Well, that's what that says.

Page 261:14 to 262:11

14 Q. And did you have any discussions
15 with anybody about what was -- what happened
16 on the rig audits? By that, I'm talking
17 about -- you saw rig audits; did you have any
18 discussions with anybody about, Well, were
19 all these items taken care of? What items
20 were taken care of? What items weren't taken
21 care of? Anything like that?

22 A. I inquired about the process for

23 closing them out, and the information I was
24 given was that the items were listed on a
25 spreadsheet.
1 Q. Did you look at the spreadsheet?
2 A. No.
3 Q. Okay.
4 A. I take that back. I did. Yes,
5 I did see one.
6 Q. Okay. The spreadsheet on the
7 HORIZON?
8 A. Yes.
9 Q. Okay. Did you know some of the
10 items hadn't been closed out?
11 A. I don't recall.

Page 263:18 to 263:24

18 Q. Okay. Let's be fair. Did you
19 look at the rig audits and see if there were
20 any items related to the BOP that had not
21 been taken care of prior to the April 20th,
22 blowout?
23 A. I didn't review it to that level
24 of detail.

Page 264:13 to 264:16

13 Q. My name is Malinda Lawrence. I
14 work at the United States Department of
15 Justice for the Attorney General, and I
16 represent the people of the United States.

Page 267:04 to 267:18

4 Well, let me ask you this for my
5 own edification: What -- from BP's
6 perspective, what makes a particular blowout
7 preventer suitable for use on a particular
8 well?
9 A. I can't speak to all of the
10 aspects. I can speak to the ones that I'm
11 familiar with. And that would primarily be
12 can it contain the maximum pressure that it
13 would seek, can it work within the
14 temperature ranges that it will -- that are
15 required, and does it meet the -- you know,

16 does the configuration of the BOP meet
17 regulatory and BP requirements. That would
18 be a summary.

Page 270:08 to 270:13

8 Q. (BY MS. LAWRENCE) What if BP
9 does not concur or -- or disagrees with
10 Transocean's recommendation of a rig for a
11 well, is it just out of luck, or does BP have
12 some role or some recourse in deciding which
13 rig will be assigned to which well?

Page 270:15 to 270:17

15 A. BP -- I don't believe that BP
16 would knowingly use a rig that was unsuited
17 for a particular well --

Page 270:19 to 270:20

19 A. -- which means we -- we would
20 have veto.

Page 272:03 to 273:05

3 Q. Let me ask you, then: With
4 regard to the DEEPWATER HORIZON, specifically
5 before the DEEPWATER HORIZON's BOP was
6 deployed at the Macondo Well, what, if any,
7 measures did BP take to ensure the
8 suitability and the proper design of that BOP
9 for the Macondo Well?

10 A. Other than -- excuse me. I'll
11 go back again to the mechanical aspects, not
12 the well control aspects.

13 But checking the pressure,
14 temperature, and ability to shear various
15 tubulars that was checked. And then also it
16 was tested against previous wells that were
17 actually of higher pressure and high
18 temperature.

19 Q. Is this analysis that you've
20 described generally, is it recorded in any
21 document?

22 A. I'm not sure.

23 Q. So if BP wants as a matter of
24 procedure to create a paper trail that it can
25 look back to later and say, "This is what we
1 did to ascertain that we got the right BOP
2 for the job," is there -- are you aware of
3 any -- any document or any paperwork that's
4 generated to -- to document that process?
5 A. Not aware, no.

Page 274:19 to 275:04

19 Q. Did BP select or have any role
20 in selecting the particular elastomer
21 elements with which the DEEPWATER HORIZON's
22 BOP was equipped when it commenced drilling
23 on the -- on the Macondo Well?
24 A. BP would have specified the
25 operating temperatures and the -- the
1 pressures to Transocean, and Transocean would
2 have made the recommendations as to the
3 appropriate elastomers to use in their
4 relationship with Cameron.

Page 276:07 to 276:13

7 Q. So is there any standardized
8 procedure by which -- BP documents that keep
9 track of what type of elastomer elements are
10 in use in a particular Transocean BOP?
11 A. Other than the rig audits and
12 reliance on the maintenance system at
13 Transocean, I -- I don't know of any.

Page 278:08 to 278:10

8 Q. And was the blind shear ram a
9 double V design?
10 A. I don't believe it was, no.

Page 278:15 to 278:18

15 Q. Do you know why a double V
16 design was not in use on the DEEPWATER
17 HORIZON BOP?
18 A. No, I don't.

Page 279:12 to 280:01

12 Q. You don't know if that was
13 something they would have been contractually
14 allowed or contractually prohibited from
15 doing?
16 A. No, I don't. May I add
17 something to that?
18 Q. Certainly.
19 A. I mean, I think it's
20 important -- again, I'm -- I'm restating the
21 previous comments -- that we set the
22 requirements for shearing certain pipe,
23 operating at certain pressures, operating at
24 certain temperatures, and we rely on
25 Transocean and Cameron to advise us on the
1 best technology available to do that.

Page 280:04 to 280:07

4 A. We're not -- again, we are -- we
5 are not design -- equipment design engineers.
6 That is what they do every day, so we do rely
7 heavily for that -- that advice.

Page 281:11 to 281:19

11 In this case with regard to the
12 BOP on the DEEPWATER HORIZON, how did Cameron
13 go about ascertaining that the lengths of the
14 shearing surface of the BSR in use on the BOP
15 on the Macondo Well was compatible with the
16 diameter of the wellbore?
17 A. I don't know.
18 Q. Okay. But you know that they
19 did it?

Page 281:21 to 282:01

21 A. I know that we would have wanted
22 Cameron to confirm -- or Transocean or
23 Cameron to confirm that it could shear the
24 tubulars that we had set out as requirements
25 to shear, and if they had confirmed that,
1 then we would have accepted that.

Page 282:16 to 283:07

16 Q. (BY MS. LAWRENCE) Okay. What
17 is -- is -- in -- you know, since it is BP's
18 procedure or process or policy, as you've
19 described, to rely on Cameron, you know, for
20 a function such as this, how does BP ensure
21 that Cameron does so?

22 A. There are a series of tests that
23 are done, factory acceptance tests,
24 integration tests, where the BOP is
25 functioned, and that's to make sure that when
1 certain functions are activated through the
2 various control panels, those functions
3 were -- that the pressure -- the appropriate
4 pressure rating is -- that it seals at those
5 pressures. Then for shearing capability, it
6 would rely on either calculated or test data
7 that's provided by Cameron and Transocean.

Page 285:07 to 285:13

7 Q. And how does BP go about
8 ensuring that the elastomers are changed out
9 with sufficient frequency?

10 A. Part of that would be for the
11 rig audit, and then part of that would be the
12 wells team working with Transocean around
13 their -- their preventive maintenance --

Page 285:16 to 285:24

16 Q. (BY MS. LAWRENCE) What was the
17 temperature rating of the elastomers in use
18 on the DEEPWATER HORIZON's BOP when drilling
19 the Macondo Well?

20 A. I believe for the annular, it
21 was 180 degrees continuous -- 180 degrees
22 Fahrenheit continuous, 200 extreme, and I
23 don't know what the rating was on the pipe
24 rams.

Page 288:10 to 288:21

10 Q. (BY MS. LAWRENCE) And we've
11 talked about what the temperature and

12 pressure ratings were for the BOP on the
13 DEEPWATER HORIZON. What is your
14 understanding of what the anticipated range
15 of temperatures was for the Macondo Well?
16 A. It is my understanding that it
17 was -- at the wellhead or at the BOP, it was
18 less than -- less than the ratings -- less
19 than the 180 degrees.
20 Q. How much less?
21 A. That I'm not sure.

Page 291:17 to 292:23

17 Did the -- did the Wells Team
18 for the Macondo Well play any role in
19 selecting the DEEPWATER HORIZON to drill the
20 Macondo Well?
21 A. It's my understanding that, yes,
22 they did.
23 Q. What role?
24 A. Reviewing the operating
25 requirements for drilling the well and
1 working with Transocean to ensure that the
2 rig was capable of meeting those
3 requirements.
4 Q. And do you know what the Wells
5 Team's position was on whether the rig was --
6 with its BOP was suitable for the Macondo
7 Well?
8 A. I don't believe there was any
9 indication we had that it would not be
10 suitable for this well.
11 Q. And who makes up the Wells Team?
12 What individuals made that determination in
13 this case?
14 A. I can -- I can speak to
15 positions. Wells -- there's a Wells Team
16 leader normally.
17 Q. Okay.
18 A. Then there may be one, two, or
19 three drilling engineers. It just depends on
20 the complexity of the well and the amount of
21 work that has to be done. So, I don't know
22 what the exact constituency of the team was;
23 but that would be typical.

Page 294:05 to 295:03

5 Q. You had said that you -- earlier
6 in your testimony, you said you were advised
7 that this well was anticipated to be not as
8 difficult in terms of anticipated
9 temperatures and pressures as previous recent
10 wells?

11 A. That's correct.

12 Q. And who was it that told you
13 this?

14 A. That would be both Mr. Bowles
15 and Mr. Shelton -- Skelton.

16 Q. And which were the previous
17 wells that they were comparing this one to?

18 A. Specifically the well we were
19 discussing was the Tiber.

20 Q. So, was it based on just
21 comparison with that one well or multiple
22 wells?

23 A. That -- that well is the well we
24 discussed specifically.

25 Q. So, when you say "previous
1 wells," you actually mean previous well, that
2 being the Tiber --

3 A. That's correct.

Page 295:20 to 296:17

20 Q. Yes. What was BP's role -- and
21 I guess I'll clarify, based on what you said.
22 At the time, it was Vastar's role.

23 A. Vastar.

24 Q. That Vastar subsequently --

25 A. Became BP.

1 Q. -- was absorbed into BP.

2 -- the role of BP/Vastar, if
3 any, in the original selection of this BOP
4 for the DEEPWATER HORIZON?

5 A. The project team that was
6 working on that, led by Mr. Weisinger, would
7 have set a specific set of requirements for
8 the -- for the BOP with work with Transocean
9 to -- on their -- Transocean would have
10 suggested the BOP configuration-specific
11 models based on their previous history with

12 various suppliers. Then we would have
13 reviewed that together with the available
14 data that I've been talking about, the
15 pressure and temperature data, to come to a
16 conclusion as to whether that rig was
17 suitable or not or that BOP was suitable.

Page 300:05 to 301:10

5 Q. At some point, was one of the
6 rams -- I think you testified about this a
7 little bit earlier. One of the rams on the
8 DEEPWATER HORIZON's BOP was inverted to
9 convert it from a -- I guess you would say
10 ordinary ram --
11 A. Yeah.
12 Q. -- to a test ram?
13 A. That's correct.
14 Q. Okay. What's your understanding
15 of what happened? What's the conversion
16 mechanically?
17 A. Mechanically, as I understand
18 it, essentially the ram is literally inverted
19 so that it changes the ram from being able to
20 seal from -- from below to sealing from
21 above.
22 Q. Okay. And so, what is it --
23 once it's converted to a test ram -- and
24 what's your understanding of that? Was it,
25 in fact, converted to a test ram?
1 A. It's my understanding that it
2 was.
3 Q. And that's the situation, it was
4 a test ram at the time, on April 20th of
5 2010?
6 A. That's correct.
7 Q. Okay. What -- why -- I mean,
8 why would -- why would anyone do that? Why
9 is it better to have it be a test ram than a
10 ram that would actually close?

Page 301:13 to 302:22

13 A. The -- in order to test the BOP
14 without a test ram, you actually have to
15 retrieve all of the drill pipe and change

16 tools and put a test plug on the end of the
17 drill pipe and then rerun the drill pipe.
18 The -- anytime you retrieve the
19 drill pipe out of the riser, once it gets
20 above the BOP, then you lessen your ability
21 to maintain well control. So by inserting a
22 test BOP for a test ram, it allows you to
23 test the BOP without retrieving the drill
24 pipe and installing that tool.

25 So it allows you a greater
1 safety factor, if you will, or more time
2 to -- that you're able to maintain well
3 control; and in general principle, as a
4 matter of statistics, the less time you're
5 over a well, the better.

6 So it saves -- you know, it
7 reduces the amount of time because you do
8 this 14 times -- every 14 days or so. So
9 every time you -- there's a couple of days
10 that you're not having to have drill pipe
11 above the BOP stack when you're testing it,
12 if you have the inverted ram.

13 Q. (BY MS. LAWRENCE) And who was
14 it -- what person or entity made the decision
15 to convert the -- that ram on the DEEPWATER
16 HORIZON's BOP from an ordinary ram to a test
17 ram?

18 A. I do know that there was a
19 position paper written, but I do not recall
20 who actually approved it.

21 Q. Was it BP or Transocean, or
22 neither BP or Transocean?

Page 302:24 to 303:03

24 A. BP internally had a document
25 that articulated why we would change the test
1 ram. So -- then there was also, I recall, a
2 letter from Transocean that really raised no
3 objection to installing the test ram.

Page 303:06 to 303:08

6 Q. (BY MS. LAWRENCE) Does that
7 mean that it was BP -- BP's decision?

8 A. Yes. BP accepted the -- yes.

Page 303:24 to 304:02

24 Q. (BY MS. LAWRENCE) So your -- so
25 BP's understanding was that Transocean would
1 have ensured that the BOP was, in fact, the
2 most up-to-date technology?

Page 304:04 to 304:07

4 A. We would have expected
5 Transocean to ensure that we were aware of
6 the best technology -- or the most up-to-date
7 technology.

Page 306:18 to 307:02

18 Q. Do you know if recharges -- does
19 BP know if rechargeable batteries were
20 available in April of 2010?

21 A. I don't know if they were aware
22 of that or not.

23 Q. Okay. If they had been and
24 that's an upgrade that BP had wanted to make
25 or wanted to have seen made in the BOP, could
1 it have done that? Did it have the authority
2 to request or demand that?

Page 307:04 to 307:05

4 A. It could have had that
5 conversation with Transocean.

Page 308:03 to 308:16

3 Q. (BY MS. LAWRENCE) Would -- is
4 it BP's position that rechargeable batteries
5 onboard the SEMs would be preferable to non
6 rechargeable batteries?

7 A. I'm not aware of a specific
8 position one way or the other.

9 Q. I think you indicated that BP
10 relied on Transocean and Cameron to choose
11 the equipment for the DEEPWATER HORIZON
12 BOP -- or the design. Does that include --
13 would that -- does that mean that it would

14 have been Cameron's choice to equip the
15 DEEPWATER HORIZON's BOP with non-rechargeable
16 batteries as opposed to BP's?

Page 308:18 to 309:08

18 A. BP set a requirement that we
19 have a dead man system. There are any number
20 of ways a dead man system can be configured.
21 Cameron's preferred choice at the time was
22 the system that was originally put on there.
23 The assurance that we got from
24 both Transocean and from Cameron was that,
25 through proper maintenance, the fact that the
1 batteries were not rechargeable wouldn't be
2 an issue.
3 Q. (BY MS. LAWRENCE) And when you
4 say " at the time," the assurance you got
5 from Cameron at the time, at what time was
6 that?
7 A. That was in 2001 or 2000, that
8 time frame.

Page 312:19 to 313:02

19 Q. What was BP's understanding, as
20 of April 2010, as to whether or not the BOP
21 on the DEEPWATER HORIZON was equipped with an
22 acoustic system?
23 A. It was not equipped with an
24 acoustic system.
25 Q. And BP was aware of that as of
1 April 2010?
2 A. Yes.

Page 314:24 to 315:05

24 Q. Okay. What -- which of
25 Transocean's maintenance records did BP
1 review to ensure that the DEEPWATER HORIZON
2 BOP had been adequately maintained?
3 A. I don't know which specific
4 records. I can't point to a specific
5 document.

Page 318:21 to 319:01

21 it your understanding that in Sep -- in or
22 about late August or September of 2009, BP
23 actually demanded a so-called safety stand
24 down or that Transocean repair certain marine
25 related items found in this audit to be not
1 functioning or not adequately maintained?

Page 319:07 to 319:10

7 Why -- if BP did that with regard to other
8 items, why did BP not require that the BOP
9 maintenance be brought into alignment with
10 RP -- API RP 53?

Page 319:13 to 321:10

13 A. I can't answer why that wasn't
14 done.

15 Q. (BY MS. LAWRENCE) You've
16 testified several times, I think, about
17 the -- the so-called AMF or dead man
18 function --

19 A. Uh-huh.

20 Q. -- for the BOP on the DEEPWATER
21 HORIZON. And does it have components known
22 as control pods? I'm sorry, not the dead man
23 function, but the BOP itself?

24 A. Yes, the BOP does.

25 Q. And are the control pods
1 essential to functioning the AMF?

2 A. I don't -- I honestly don't
3 recall the exact circuitry. So without
4 reviewing the schematic, I -- I can't --
5 can't say for sure.

6 Q. Okay. Are the control pods
7 powered by a power source from the rig or
8 battery power or both?

9 A. I believe the pods are powered
10 by a source from the rig.

11 Q. Do you know if the control
12 pods -- if the power source from the rig was
13 cut off, did the control pods have battery
14 power?

15 A. That's my understanding. That
16 if the power source from the rig is lost,

17 that the -- which is what initiates the dead
18 man system, that that is done by the
19 batteries.

20 Q. Okay. If those batteries are
21 insufficiently charged, could that result in
22 a failure of the AMF to operate?

23 A. It could, yes.

24 Q. And if the solenoid valves that
25 operate the blind shear rams were miswired,
1 could that result in a failure of the AMF to
2 operate?

3 MR. BAAY: Objection; form.

4 A. Yes, it could.

5 Q. (BY MS. LAWRENCE) Did BP
6 undertake any efforts to ensure that the
7 batteries on the blue and yellow control pods
8 were adequately charged before the BOP was
9 set on the Macondo Well?

10 A. I can't --

Page 321:12 to 321:16

12 A. -- can't say specifically. What
13 I can say is that we -- again, as for -- like
14 any other maintenance item, we look towards
15 Transocean to maintain the equipment in a
16 working state.

Page 321:20 to 323:15

20 Q. (BY MS. LAWRENCE) Did BP
21 determine whether Transocean tested the AMF,
22 the dead man function, prior to setting the
23 BOP at the Macondo Well?

24 A. That, I don't know.

25 Q. You indicated that after the
1 explosion, BP engaged in some efforts to
2 activate or function the BOP using ROV's --

3 A. That's correct.

4 Q. -- and that you were involved in
5 that undertaking?

6 A. That's correct.

7 Q. Were your ROV intervention
8 efforts successful?

9 A. Some were, and some were not.

10 Q. Did they function the BOP's to

11 shut in the well?

12 A. Some functions, we were -- some
13 rams were able to function. On one ram, we
14 actually found that it had not been plumbed
15 correctly.

16 Q. Okay. And that's exactly what I
17 wanted to ask you about. What -- what was
18 discovered to be the problem or the -- it
19 was -- the hydraulic system was not plumbed
20 as anticipated?

21 A. Yes. The -- the plumbing that
22 goes to the ROV panel that allows you to
23 function the -- with the ROV hot stab, we --
24 I'm trying to recall exact -- we -- we
25 thought we were pumping in on one ram, and we
1 were actually pumping into another.

2 Q. To your knowledge, is there any
3 connection between the conversion of the test
4 ram into a test ram and the way the hydraulic
5 system was plumbed with a misunderstanding of
6 how the hydraulic system was plumbed when you
7 were attempting to function with the ROV's
8 after the explosion?

9 A. Yes. It's my understanding that
10 when the inverted ram was installed, the
11 plumbing -- the respected plumbing was not
12 changed on the ROV hot stab.

13 Q. And that change, that test ram
14 conversion, was initiated by BP and not
15 Transocean, correct?

Page 323:17 to 323:17

17 A. BP -- yes.

Page 324:18 to 324:19

18 Q. Mr. Byrd, David Baay with
19 Transocean. How are you this afternoon?

Page 324:24 to 327:14

24 Now the first is, I wanted to
25 make sure, as we've discussed at length here
1 today, you understand you're a 30(B)(6)
2 witness, which is another way of saying

3 you're here to speak on behalf of BP.
4 You understand that, don't you?
5 A. That's correct.
6 Q. And you're not here to give
7 testimony as an individual?
8 A. That's correct.
9 Q. So when you give the answer that
10 you don't know to a certain topic, you're
11 saying that you don't know for BP? You
12 understand that?
13 A. Yes, I do.
14 Q. But you understand that on many
15 of the topics you've been asked about today,
16 BP does have a position on those issues? But
17 as I understand it, you don't know the
18 position; is that true?
19 A. Well, that could be true, yes.
20 Q. The other thing I understood you
21 to testify earlier this morning was that BP
22 used API RP 53 as a recommended practice?
23 A. Yes.
24 Q. And as a recommended practice,
25 it's not an absolute and there is a fair
1 amount of latitude that is provided in those
2 recommended practices; is that your
3 understanding?
4 A. Yes.
5 Q. And that's BP's position?
6 A. Yes.
7 Q. Isn't it also true that in
8 familiarizing yourself with Transocean's
9 maintenance, as we've discussed at length,
10 you've looked at audits that BP did on the
11 DEEPWATER HORIZON?
12 A. That's correct.
13 Q. And BP does that to ensure that
14 there is a level of maintenance performed on
15 the BOP for the DEEPWATER HORIZON rig?
16 A. Among other things, yes.
17 Q. What -- what would those other
18 things be?
19 A. There's a -- there's a whole
20 list of items around the BOP. I don't recall
21 exact items, but there are more items than
22 just the maintenance.
23 Q. BP is also aware from the

24 audits -- many audits it performed on the
25 DEEPWATER HORIZON, that Transocean follows a
1 maintenance philosophy for its BOP that
2 relies more on a condition-based monitoring
3 than it does a time-based certification; is
4 that true?

5 A. That's what I understand, yes.

6 Q. Well, is that what BP
7 understands?

8 A. Yes.

9 Q. And BP is also aware that
10 Trans -- Transocean maintains its equipment
11 by using both OEM and non-OEM
12 recommendations, as well as performing their
13 own inspections and maintenance; is that
14 true?

Page 327:16 to 327:16

16 A. Yes.

Page 328:14 to 328:18

14 Q. So what you know is that there
15 is a regulation that applies to BP as the
16 operator setting out certain parameters for
17 subsea testing on the BOP?

18 A. That's correct.

Page 328:20 to 328:25

20 Q. (BY MR. BAAY) And that's BP's
21 position?

22 A. Yes.

23 Q. But you don't know about BP's
24 role in recommending upgrades to the BOP; is
25 that true?

Page 329:02 to 330:22

2 A. I don't know that, no.

3 Q. (BY MR. BAAY) And you don't
4 know about how Transocean's or BP's
5 employees, for that fact, are trained in how
6 to maintain the BOP?

7 A. That's correct.

8 Q. And you don't have specific
9 knowledge about the modifications made to the
10 DEEPWATER HORIZON blowout preventer?

11 A. Other than the inverted ram.
12 That's -- that's the one I'm familiar with.

13 Q. Which is the request that came
14 directly at the -- from BP?

15 A. That's my understanding.

16 Q. And you don't know anything
17 about the leaks that were reported
18 preincident, pre-April 20, 2010, on the
19 DEEPWATER HORIZON blowout preventer; is that
20 true?

21 A. I'm aware of one leak that had
22 something to do with one of the pipe rams.

23 Q. Did you learn about that leak in
24 your preparation for this deposition?

25 A. Yes, I did.

1 Q. And what information did you
2 review that informed you about that leak?

3 A. I believe it was on one of the
4 daily reports.

5 Q. Do you recall John Guide being
6 on that daily report?

7 A. I don't recall a specific name,
8 no.

9 Q. Did that daily report reflect
10 the fact that Transocean consults with BP and
11 BP's company men when it discovers leaks
12 at -- at least as it relates to DEEPWATER
13 HORIZON?

14 A. Yes. I would -- I would agree
15 that that's --

16 Q. That happens?

17 A. Yes. I would agree that
18 happens.

19 Q. All right. So you'd agree that
20 BP is involved in both diagnosing a leak and
21 in determining whether the -- the BOP needs
22 to be pulled as a result of that leak?

Page 330:24 to 335:09

24 A. I can't say, you know, what went
25 on. But, in general, I would say that part
1 of the conversation.

2 Q. (BY MR. BAAY) That BP is part
3 of the conversation?

4 A. Yes.

5 Q. And you've also testified that
6 you don't know about the specifics related to
7 the shearing calculations made for the blind
8 shear ram in the DEEPWATER HORIZON blowout --
9 blowout preventer; is that true?

10 A. That's true.

11 Q. You have a general understanding
12 as to how the process works; but how it works
13 for the Macondo Well, you have no idea?

14 A. That's correct.

15 Q. And you've also stated that you
16 don't know -- don't have any information
17 about the suitability of this BOP for the
18 Macondo Well; is that right?

19 A. That's not what I said.

20 Q. Okay.

21 A. What I said was that the -- in
22 speaking with Mr. Bowles and with
23 Mr. Skelton, that the -- there was no
24 indication that this was not suitable based
25 on the pressure and temperature requirements
1 and based on the shearing capability
2 requirements. And that the Macondo Well was
3 of lower pressure and lower temperature
4 requirements than a previous well. So
5 from -- strictly from -- from that
6 standpoint, there was nothing to indicate the
7 BOP would be unsuitable.

8 Q. But you'd agree that those are
9 the only three factors that you're aware of
10 that made the BOP suitable for the Macondo?

11 A. That's correct.

12 Q. And those came through your
13 discussions with Mr. Skelton and Mr. Bowles?

14 A. That's correct.

15 Q. So my question is: If you don't
16 know generally about these topics we just
17 discussed, how is it that you know that BP
18 relied on Transocean and Cameron for most BOP
19 issues? Is that someone -- some -- some --
20 is that something that someone told you?

21 A. No. It's a -- in any -- any
22 equipment that we lease or purchase, BOP are

23 not design -- I'm sorry, BP is not design
24 engineer -- detail design engineer, nor do we
25 employ detail design engineers. We rely on
1 the expertise of the people that make this
2 equipment every day. So we have to rely on
3 the likes of Cameron -- whether it be Cameron
4 or Hydril or anyone else, that their -- their
5 equipment is designed properly.

6 Q. You understand, excuse me, that
7 Transocean did not manufacture this BOP; you
8 understand that, don't you?

9 A. I do understand that.

10 Q. And so my -- my question -- I
11 don't think you answered it -- is: In saying
12 over and over again that BP relies on
13 Transocean and Cameron, how were you made
14 aware of that? Did someone tell you that
15 information?

16 A. Certainly I was told that
17 information. But in the involvement that
18 I've had with various BOP systems, and
19 whether it be with the Transocean or any
20 other -- any other rig contractor, that we
21 rely on the rig contractor because they own
22 the equipment, number one. We don't. We do
23 lease the equipment. And number two, the
24 hardware supplier that supplies that
25 equipment to them are the experts in
1 designing that equipment.

2 Q. But we've already seen examples
3 of equipment where BP has great input as to
4 what happens to it, and I'm thinking of the
5 test ram. Do you agree that's an example of
6 BP being involved in how the equipment is
7 used?

8 A. Yes.

9 MR. COLLIER: Object to form.

10 Q. (BY MR. BAAY) And you
11 understand, don't you, that BP came in and
12 voiced its opinion that the lower annular for
13 the DEEPWATER HORIZON blowout preventer
14 should be changed to a stripping annular.
15 You know that, don't you?

16 A. I know it was changed. I don't
17 know how it was instigated.

18 Q. Okay. You don't know that that

19 was a BP request also?
20 A. No, I'm not aware of that.
21 Q. Assume with me that it is.
22 Those are two examples where BP influenced
23 how the equipment was used on Transocean's
24 BOP. You agree to that?
25 MR. COLLIER: Object to form.
1 A. I don't know -- what I could say
2 is BP had input to that. I don't know if
3 there was a requirement set and then the
4 inverted ram was the solution or asked for
5 inverted ram. That I'm not sure of.
6 Q. (BY MR. BAAY) But regardless of
7 the context, you understand and know that BP
8 had influence over those pieces of equipment?
9 A. Yes.

Page 335:17 to 335:20

17 Q. Did Mr. Bowles tell you that BP
18 relies on Transocean as it relates to the
19 BOP?
20 A. Yes.

Page 336:01 to 336:14

1 Q. Did he give you specific
2 examples?
3 A. No.
4 Q. He just made the general
5 statement, we rely on Transocean when it
6 comes to the BOP?
7 A. We were talking specifically
8 about the inverted ram and about the actual
9 design of the hardware. So that was the
10 context of our conversation.
11 Q. And once again, he understood
12 and you understand that Transocean doesn't
13 design that hardware?
14 A. That's correct.

Page 337:11 to 338:10

11 Q. Okay. Any other circumstances
12 or occasions on which Mr. Bowles made the
13 comment to you that BP relies on Transocean?

14 A. No.
15 Q. How about Mr. Skelton, did he
16 make that comment to you?
17 A. Yes, he did.
18 Q. And what examples did he
19 provide?
20 A. It was the same. We were
21 talking about the inverted test ram.
22 Q. And was it the design of the
23 inverted test ram?
24 A. It was the overall -- the
25 implementation of a portion of actually
1 putting the test ram in the BOP, ensuring
2 that the -- the change-out was done
3 correctly.
4 Q. Okay. But as we've discussed,
5 you agree that BP requested that change,
6 right?
7 A. I believe that's correct, yes.
8 Q. And do you also know that
9 Cameron helped make the change?
10 A. Yes, I do.

Page 338:15 to 339:07

15 Q. And I believe the second thing
16 you told me was based on your experience in
17 dealing with Transocean's BOP systems -- did
18 I hear that correctly?
19 A. What's the rest of the context?
20 Q. Well, the context is I'm asking
21 you about your -- your continuous statements
22 that BP relies on Transocean.
23 A. Uh-huh.
24 Q. And you told me that you talked
25 to people and that you also are relying on
1 your experience with -- with Transocean's BOP
2 systems.
3 A. I said -- I said regardless of
4 the -- of the rig supplier or the equipment
5 supplier, we would look to the rig -- the rig
6 contractor because the rig contractor
7 actually owns the equipment that we use.

Page 339:25 to 340:22

25 Q. Other than that experience, have
1 you had any other personal experience in
2 where you've personally witnessed BP relying
3 on Transocean as it relates to a BOP issue?

4 A. Yes. On the Transocean Rather
5 in approximately 19 -- let me make sure I get
6 this right -- no, I take that back -- 2000,
7 for the intervention that we were doing on TA
8 6, which was a Trico well, there were certain
9 modifications that had to be made to the BOP
10 stack to get the tubing hanger alignment pin
11 correct, and we looked to Transocean to
12 actually execute that work, which they did,
13 and did a good job.

14 Q. So in that example, it was a
15 modification made to the BOP?

16 A. Yes.

17 Q. And it was a modification that
18 BP asked Transocean to make?

19 A. That's correct.

20 Q. And what was the name of the rig
21 again?

22 A. It was the Rather.

Page 341:04 to 341:13

4 Q. Were there other basis for your
5 statement that BP relies on Transocean other
6 than the people you've talked to and these
7 two experiences you've given me?

8 A. Nothing other than the -- the
9 general principle that we have at BP -- I'm
10 speaking as BP -- that we recognize we are
11 not experts in this -- in this equipment, and
12 that we -- so we rely on the people that
13 supply that equipment --

Page 341:20 to 341:25

20 Q. Did you discover this general
21 principle in preparing for your deposition?

22 A. No.

23 Q. It's something you've known
24 through your experience in working at BP?

25 A. Yes.

Page 345:07 to 345:24

7 Q. You agree -- as we've discussed,
8 you -- you agree that BP took steps to be
9 involved with Transocean's maintenance on its
10 BOP systems, and specifically I'm referencing
11 the audits that BP conducted?
12 A. That's correct.
13 Q. And as you've stated, there are
14 other steps that BP took to ensure that there
15 was a -- a robust maintenance system in place
16 for the HORIZON BOP?
17 A. I think I just referred to the
18 rig audit. I don't recall referring to any
19 other steps.
20 Q. Okay. And you'd agree that as a
21 prudent operator, it makes sense for BP to
22 keep themselves informed and aware of what
23 Transocean does to maintain their BOP's?
24 A. Yes. I'll agree with that.

Page 346:21 to 347:08

21 Q. (BY MR. BAAY) Okay. You know
22 generally that as the operator they have
23 regulations they are required to follow as it
24 relates to subsea testing?
25 A. That's correct.
1 Q. And to satisfy those
2 regulations, BP is involved in the subsea
3 testing?
4 A. BP will certainly be aware of
5 the results, yes.
6 Q. Do you also agree that BP is
7 involved for the HORIZON in the rig move
8 maintenance that is performed on the BOP?

Page 347:10 to 347:15

10 A. I don't know what you mean by
11 "involved."
12 Q. (BY MR. BAAY) Do they offer
13 their recommendations and opinions as to what
14 should be done to maintain the BOP when it's
15 moved between wells?

Page 347:17 to 350:09

17 A. I don't -- I can't say for
18 certain with any specificity of any
19 particular --

20 Q. (BY MR. BAAY) Okay. In
21 preparing for your deposition here today, did
22 you review any documents which indicated that
23 BP provides recommendations and has input as
24 to what is done at rig move time?

25 A. I didn't see anything other than
1 the audits that would indicate that.

2 Q. Well, did the audits give you
3 any information about BP's involvement in rig
4 move maintenance?

5 A. Nothing other than the questions
6 that are asked of Transocean as a part of the
7 audit.

8 Q. I'm going to hand you what's
9 been previously marked as 3338, and I
10 apologize. This is one I don't have a copy
11 of.

12 You see the -- the bottom chain
13 of this exhibit is an E-mail from Owen
14 McWhorter.

15 A. Okay.

16 Q. And he's sending it to
17 DEEPWATER, OIM, and several other E-mail
18 addresses at Transocean at the bottom of the
19 page. Do you see where I'm referencing?

20 A. The -- sent to R.J. Doucet?

21 Q. Right. R.J. is who it's
22 addressed to; but it's also CC'd to James
23 Kent, Paul Johnson, and -- and two other --

24 A. Right. Okay.

25 Q. And the subject there is "Subsea
1 Macondo worklist." Do you agree to that?

2 A. Right. I don't know -- who are
3 these gentlemen?

4 Q. Right. I'm just asking, you
5 agree the subject is "Subsea Macondo
6 worklist"?

7 A. Yes, I do.

8 Q. Okay. And then R.J. Doucet, do
9 you know who he is?

10 A. I do not.

11 Q. Do you know if he works for BP
12 or not?
13 A. I do not.
14 Q. Okay. R.J. then takes that
15 E-mail and he sends it to John Guide. Do you
16 know he's a BP employee?
17 A. Yes.
18 Q. Brett Cocalles, he's a BP
19 employee?
20 A. Yes.
21 Q. Tim Burns, do you know he's a BP
22 employee?
23 A. I don't know Mr. Burns.
24 Q. Okay. Don Vidrine and everyone
25 on the CC list we've discussed today, you
1 know that they're B -- BP employees?
2 A. That's correct.
3 Q. And what R.J. says is: All,
4 this is Transocean worklist proposal for the
5 next rig move. Let's look at it and decide
6 which way BP wants to go."
7 Do you interpret this as BP
8 being provided the opportunity to influence
9 what is done on the rig move maintenance?

Page 350:11 to 351:15

11 Q. (BY MR. BAAY) Do you agree
12 that's what it's saying?
13 A. I can't speculate on the intent.
14 I don't know what their intent was here.
15 Q. But you do agree that there's a
16 work list here related to rig move
17 maintenance that is being sent to several
18 employees at BP?
19 A. That would appear so, yes.
20 Q. And Mr. Cocalles responds at the
21 top, does he not?
22 A. Yes, Brett Cocalles.
23 Q. And he says that -- "Thanks,
24 R.J. We'll discuss this in the office with
25 John and Paul pending the updated schedule.
1 We do have to change out the connector before
2 we go to do the NILE P&A to DWHC, which is
3 tentatively the next operation after Macondo.
4 So the guys will have extra work for that."

5 He also states that, "My initial
6 thoughts are to do the normal stack
7 maintenance before Macondo so it does not get
8 lumped into the connector change-out."
9 Did I read that correctly --
10 A. Yes, you did.
11 Q. -- as you see it?
12 Do you agree that this is
13 statements by Mr. Cocalles reflecting BP's
14 involvement in rig move maintenance?
15 A. Yes.

Page 353:05 to 354:17

5 Q. You testified that the pressure,
6 temperature, well characteristics are all
7 provided by BP -- is all -- is data provided
8 by BP to Transocean.
9 A. That's correct.
10 Q. And it's provided to Transocean
11 to assist with the shearing calculations.
12 A. That's correct.
13 Q. Okay. So, to the extent they
14 are providing data, BP is involved in the
15 shearing calculations that are performed?
16 A. I would distinguish there is
17 a -- there's a difference between providing
18 the calculations and actually -- or providing
19 information and actually performing the
20 calculations.
21 Q. I didn't ask you if there's a
22 difference. All I'm asking you is, is BP
23 involved in the shearing calculation?
24 A. No.
25 Q. They're not?
1 A. No.
2 Q. By providing this data, they're
3 not involved. Is that your testimony?
4 A. I define the shearing
5 calculation as being the act of actually
6 performing the calculations.
7 Q. Okay. And those calculations
8 cannot be performed without the data that BP
9 provides. You agree to that?
10 A. Correct.
11 Q. And BP is in the unique position

12 to obtain that data as the operator?
13 A. Agreed.
14 Q. And that's the reason why they
15 have an obligation to provide the same data
16 to the MMS?
17 A. That's correct.

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9 Q. And who did you learn the
10 process from?
11 A. Speaking with Mr. Skelton,
12 Mr. Bowles.
13 Q. Did they both give you
14 information about how shearing calculation is
15 performed?
16 A. In that we provided the pressure
17 temperature data as you described, yes, we
18 provided that information to Transocean.
19 Q. Are they the ones that told you
20 that Transocean performed this calculation?
21 A. It was my understanding that
22 Cameron actually performs the calculations.
23 Q. Are Mr. Bowles and Mr. Skelton
24 the ones who provided you that information?
25 A. Yes, they are.
1 Q. Do you have any other source for
2 understanding or knowing how shearing
3 calculations are performed?
4 A. Yes.
5 Q. What's the basis?
6 A. During the incident, I was told
7 by Mr. Whitby, Mel Whitby from Cameron, that
8 Cameron provides -- performs those
9 calculations --
10 Q. Okay.
11 A. -- based on a spreadsheet that
12 he had put together.
13 Q. When did he make that comment to
14 you?
15 A. That was in -- probably would
16 have been late April, early May.
17 Q. During the intervention efforts?
18 A. Correct.
19 Q. So, Mr. Whitby made the comment
20 to you that Cameron does the actual

21 calculations?

22 A. That's correct.

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21 Q. You understand that in many
22 cases this is for BOP's that have been in
23 place for many years on a rig?

24 A. Yes.

25 Q. And for the example, we'll look
1 to the HORIZON, that BOP had been there for
2 ten plus years. It had been with the same
3 rig for ten plus years; is that right?

4 A. As far as I know, yes.

5 Q. And do you understand that the
6 drill pipe used for the Macondo may have been
7 the same drill pipe used for a prior well?

8 A. Yes.

9 Q. And that shearing calculations
10 from a prior well -- prior well for that very
11 drill pipe could have been performed before
12 the BOP splashed on the Macondo?

13 A. That's correct. I think in my
14 earlier testimony I actually said that.

15 Q. And I think you did say that BP
16 relies on past shear tests to determine or
17 help make the calculation for a given piece
18 of drill pipe as the rig moves to a new well?

19 A. If the -- if the same pipe as in
20 great weight, et cetera, had there been shear
21 tests performed on that with that stack, then
22 that would have been considered evidence that
23 that would shear that pipe.

24 Q. So, I will go back to my
25 question. If it's your belief that Cameron
1 performs the calculations, then what is your
2 understanding as to why the data is provided
3 to Transocean and not Cameron?

4 A. Because our agreement is with
5 Transocean, not with Cameron.

6 Q. The agreement for what?

7 A. Rig contract.

8 Q. So, it's your testimony that
9 based on the rig contract, that explains the
10 reason why BP provides that data to
11 Transocean?

12 A. It's been my experience in
13 the -- both the HORIZON and with other
14 suppliers or the rig contractors, that they
15 actually prefer that information go through
16 them.

17 Q. Okay. And that's been --

18 A. Because they do have the
19 contract with the hardware suppliers.

20 Q. Your understanding is that
21 Transocean or drillers in general prefer to
22 receive that information?

23 A. Transocean and other general --
24 drillers in general.

Page 360:09 to 360:10

9 Q. Okay. Let me hand you -- it's
10 been previously marked as 215.

Page 360:13 to 364:03

13 Q. (BY MR. BAAY) If you will, turn
14 to Page 14 of 22; and it's Bates Stamp BP HZN
15 2179 MDL 00408018.

16 A. Okay.

17 Q. See where I'm looking? There's
18 a section there, 7.5.3, which begins sealing
19 shear ram. You see where I'm reading?

20 A. Yes.

21 Q. It says: "A sealing shear ram
22 shall be required. Limitations of its
23 sharing capacity should be known and
24 understood and a documented risk assessment
25 shall be in place to address any such
1 limitations."

2 So, here's my question: What
3 does BP do to ensure that the limitations of
4 the shearing capacity are known and
5 understood?

6 A. It relies on information
7 provided by Transocean on either previous
8 shear data or physical shear test and on
9 calculations done by the OEM, the
10 manufacturer.

11 Q. Let me ask you a follow-up to
12 that. I thought you had testified earlier

13 that it's BP who has this past history on
14 shear tests.

15 A. No. That's not what I -- if
16 that's what I said, that's not what I meant.

17 Q. Okay. Do you agree that BP does
18 have a history on shear tests conducted on
19 given drill pipes?

20 A. I have not seen that
21 information. So, I can't say that for
22 certain.

23 Q. You don't know?

24 A. No.

25 Q. Do you know that following the
1 incident, BP put out a publication saying
2 they are going to make concerted effort to
3 begin to store that information in a more
4 organized fashion? Do you recall seeing that
5 document?

6 A. Yes, sir.

7 Q. So, do you know if -- if the
8 effort by BP to store shear test was begun
9 only after April 20, 2010?

10 A. I don't. I can't say that. I
11 don't know.

12 Q. You don't know whether they had
13 it prior to April 20, 2010?

14 A. No.

15 Q. And your answer to me as to how
16 they -- how BP knows and understands the
17 limitations of shearing capacity is they look
18 to Transocean for shear tests?

19 A. Shear tests and/or to provide
20 analytical data, shear calculations.

21 Q. Okay. I thought you told me
22 that those calculations were made by Cameron.

23 A. We would expect them to be
24 provided by Transocean from Cameron or from
25 whoever you're purchasing the equipment from.

1 Q. Okay. Now, what are you basing
2 this answer on? How do you have knowledge
3 that that's the way BP ensures and
4 understands that the shear limitations are
5 met?

6 A. Based on my conversations with
7 Mr. Bowles and Mr. Skelton. That was also
8 the case in 2000 in the original work around

9 the HORIZON when it came to shearing was that
10 Transocean was to provide the data,
11 Transocean and Cameron would provide that
12 data in the same fashion that I just
13 mentioned.

14 Q. Okay. In 2000, it was data for
15 what?

16 A. Just the shear data. I don't
17 remember the pipe sizes.

18 Q. Okay. I thought you -- I
19 understood your testimony earlier to be that
20 a shear test was performed in 2000 for the
21 DEEPWATER HORIZON?

22 A. I said I think it was.

23 Q. You understand that those shear
24 tests or do you agree that those shear tests
25 are often paid for by BP?

1 A. I wouldn't know, no.

2 Q. If I told you that's the case,
3 do you have anything to dispute that?

Page 364:05 to 365:04

5 A. I mean, I wouldn't have any
6 reason to dispute or confirm it.

7 Q. (BY MR. BAAY) All right. You
8 also provided testimony earlier that it's
9 Transocean that pays for the rubber goods
10 that are changed out for the BOP for the
11 DEEPWATER HORIZON. Did I understand that
12 correctly?

13 A. I believe I did say that, yes.

14 Q. If I showed you proof that it's
15 BP that pays for all rubber goods as related
16 to DEEPWATER HORIZON, would you have any
17 basis to dispute that?

18 A. I think the answer is no, I
19 would not; and I think the context of my
20 comment was around the original -- the
21 original acquisition of the system. I do
22 understand that there are potentially other
23 arrangements that are made once the rig is
24 operated or once the system is operated.

25 Q. So, if I told you that BP did
1 pay for the rubber goods for the DEEPWATER
2 HORIZON each time the rig was moved, that

3 wouldn't surprise you?

4 A. No.

Page 366:04 to 366:14

4 The GP 10-10 in Section 7.5.2

5 sets out BP's requirements for both rams and
6 annulars given a certain wellhead pressure.

7 A. In excess of 5,000 psi, yes.

8 Q. Right. In this case, it's in
9 excess of 5,000 psi; is that right?

10 A. Yes.

11 Q. So, BP does have the ability to
12 influence the configuration of a BOP stack in
13 order to comply with their own requirements;
14 is that true?

Page 366:16 to 367:23

16 A. We set the requirements out.

17 Q. (BY MR. BAAY) And if you set
18 the requirements, then you obviously have an
19 interest in making sure that your driller is
20 using a BOP that meets your requirements?

21 A. That's correct.

22 Q. Do you know what Transocean --
23 excuse me. Do you know what BP did for the
24 DEEPWATER HORIZON to make sure that the BOP
25 complied with the requirements of GP 10-10?

1 A. There are -- I can't say
2 specifically. Well, I can say that overall
3 their general assembly drawings were looked
4 at that would indicate the number of rams and
5 the number of annulars. There was a
6 specification provided by Reading & Bates --
7 Falcon at that time -- to Cameron that
8 specified the -- the configuration.

9 Q. Is this in 2000?

10 A. Yeah.

11 Q. Okay.

12 A. And we reviewed that. There
13 were certain tests that were witnessed. So,
14 we would have seen the configuration of the
15 BOP at that point. So, there were numerous
16 opportunities to confirm that the
17 configuration was correct.

18 Q. And at that time, if BP
19 witnessed a configuration that didn't comply
20 with their requirements, they, of course, had
21 the ability to say something at that point to
22 influence and change the configuration?

23 A. Correct.

Page 373:13 to 373:16

13 Q. Do you have any opinion as to
14 whether or not drill pipe is expected to be
15 off-center in the event of a blowout?

16 A. No. I don't.

Page 375:03 to 375:09

3 Q. I think I understood your
4 testimony to be that the test ram conversion
5 was for the purpose, essentially, of saving
6 time in conducting those tests?

7 A. Yes. In the context of keeping
8 the drill strength -- well, without having to
9 trip the drill strength, yes.

Page 376:10 to 376:16

10 Q. And you never performed the
11 shearing calculations specific to the Macondo
12 well for the DEEPWATER HORIZON?

13 A. Correct.

14 Q. Did you ever talk to anyone with
15 BP who performed the calculations?

16 A. No.