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UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF LOUISIANA

IN RE: OIL SPILL BY THE OIL RIG	*	Docket 10-MD-2179
<i>DEEPWATER HORIZON</i> IN THE	*	
GULF OF MEXICO ON APRIL 20, 2010	*	Section J
	*	
Applies to:	*	New Orleans, Louisiana
	*	
Docket 10-CV-02771,	*	March 12, 2013
<i>IN RE: THE COMPLAINT AND</i>	*	
<i>PETITION OF TRITON ASSET</i>	*	
<i>LEASING GmbH, et al</i>	*	
	*	
Docket 10-CV-4536,	*	
<i>UNITED STATES OF AMERICA v.</i>	*	
<i>BP EXPLORATION & PRODUCTION,</i>	*	
<i>INC., et al</i>	*	
	*	
* * * * *	*	

DAY 10, AFTERNOON SESSION
TRANSCRIPT OF NONJURY TRIAL
BEFORE THE HONORABLE CARL J. BARBIER
UNITED STATES DISTRICT JUDGE

Appearances:

For the Plaintiffs:	Domengeaux Wright Roy & Edwards, LLC BY: JAMES P. ROY, ESQ. 556 Jefferson Street, Suite 500 Post Office Box 3668 Lafayette, Louisiana 70502
---------------------	--

For the Plaintiffs:	Herman Herman & Katz, LLC BY: STEPHEN J. HERMAN, ESQ. 820 O'Keefe Avenue New Orleans, Louisiana 70113
---------------------	--

1 Appearances:

2 For the Plaintiffs: Cunningham Bounds, LLC
3 BY: ROBERT T. CUNNINGHAM, ESQ.
4 1601 Dauphin Street
 Mobile, Alabama 36604

5 For the Plaintiffs: Lewis Kullman Sterbcow & Abramson
6 BY: PAUL M. STERBCOW, ESQ.
7 601 Poydras Street, Suite 2615
 New Orleans, Louisiana 70130

8 For the Plaintiffs: Breit Drescher Imprevento
9 & Walker, PC
10 BY: JEFFREY A. BREIT, ESQ.
11 600 22nd Street, Suite 402
 Virginia Beach, Virginia 23451

12 For the Plaintiffs: Leger & Shaw
13 BY: WALTER J. LEGER JR., ESQ.
14 600 Carondelet Street, 9th Floor
 New Orleans, Louisiana 70130

15 For the Plaintiffs: Watts Guerra Craft, LLP
16 BY: MIKAL C. WATTS, ESQ.
17 4 Dominion Drive
 Building 3, Suite 100
 San Antonio, Texas 78257

18 For the Plaintiffs: Williams Law Group, LLC
19 BY: CONRAD "DUKE" WILLIAMS, ESQ.
20 435 Corporate Drive, Suite 101
 Houma, Louisiana 70360

21 For the Plaintiffs: Thornhill Law Firm
22 BY: TOM THORNHILL, ESQ.
23 1308 Ninth Street
24 Slidell, Louisiana 70458
25

1 Appearances:

2 For the Plaintiffs: deGravelles Palmintier Holthaus
3 & Frugé, LLP
4 BY: JOHN W. DEGRAVELLES, ESQ.
618 Main Street
Baton Rouge, Louisiana 70801

5 For the Plaintiffs: Williamson & Rusnak
6 BY: JIMMY WILLIAMSON, ESQ.
4310 Yoakum Boulevard
7 Houston, Texas 77006

8 For the Plaintiffs: Irpino Law Firm
9 BY: ANTHONY IRPINO, ESQ.
2216 Magazine Street
10 New Orleans, Louisiana 70130

11 For the United States U.S. Department of Justice
12 of America: Torts Branch, Civil Division
BY: R. MICHAEL UNDERHILL, ESQ.
13 450 Golden Gate Avenue
7-5395 Federal Bldg., Box 36028
14 San Francisco, California 94102

15 For the United States U.S. Department of Justice
16 of America: Environment & Natural Resources
Environmental Enforcement Section
17 BY: STEVEN O'ROURKE, ESQ.
SCOTT CERNICH, ESQ.
18 DEANNA CHANG, ESQ.
RACHEL HANKEY, ESQ.
19 A. NATHANIEL CHAKERES, ESQ.
Post Office Box 7611
20 Washington, D.C. 20044

21 For the United States U.S. Department of Justice
22 of America: Torts Branch, Civil Division
BY: JESSICA McCLELLAN, ESQ.
23 MICHELLE DELEMARRE, ESQ.
JESSICA SULLIVAN, ESQ.
24 SHARON SHUTLER, ESQ.
MALINDA LAWRENCE, ESQ.
25 Post Office Box 14271
Washington, D.C. 20004

1 Appearances:

2
3 For the United States
4 of America:

U.S. Department of Justice
Fraud Section
Commercial Litigation Branch
BY: DANIEL SPIRO, ESQ.
 KELLEY HAUSER, ESQ.
 ELIZABETH YOUNG, ESQ.
Ben Franklin Station
Washington, D.C. 20044

7
8 For the State of
9 Alabama:

Attorney General of Alabama
BY: LUTHER STRANGE, ESQ.
 COREY L. MAZE, ESQ.
 WINFIELD J. SINCLAIR, ESQ.
500 Dexter Avenue
Montgomery, Alabama 36130

11
12 For the State of
13 Louisiana:

Attorney General of Louisiana
BY: JAMES D. CALDWELL, ESQ.
1885 North Third Street
Post Office Box 94005
Baton Rouge, Louisiana 70804

15
16 For the State of
17 Louisiana:

Kanner & Whiteley, LLC
BY: ALLAN KANNER, ESQ.
 DOUGLAS R. KRAUS, ESQ.
701 Camp Street
New Orleans, Louisiana 70130

18
19 For BP Exploration &
20 Production Inc.,
21 BP America Production
22 Company, BP PLC:

Liskow & Lewis, APLC
BY: DON K. HAYCRAFT, ESQ.
701 Poydras Street, Suite 5000
New Orleans, Louisiana 70139

23 For BP Exploration &
24 Production Inc.,
25 BP America Production
26 Company, BP PLC:

Kirkland & Ellis, LLP
BY: J. ANDREW LANGAN, ESQ.
 HARIKLIA "CARRIE" KARIS, ESQ.
 MATTHEW T. REGAN, ESQ.
300 N. LaSalle
Chicago, Illinois 60654

1 Appearances:

2
3 For BP Exploration & Covington & Burling, LLP
4 Production Inc., BY: ROBERT C. "MIKE" BROCK, ESQ.
BP America Production 1201 Pennsylvania Avenue, NW
5 Company, BP PLC: Washington, D.C. 20004

6 For Transocean Holdings Frilot, LLC
7 LLC, Transocean Offshore BY: KERRY J. MILLER, ESQ.
Deepwater Drilling Inc., 1100 Poydras Street, Suite 3700
8 Transocean Deepwater Inc.: New Orleans, Louisiana 70163

9 For Transocean Holdings Sutherland Asbill & Brennan, LLP
10 LLC, Transocean Offshore BY: STEVEN L. ROBERTS, ESQ.
Deepwater Drilling Inc., RACHEL G. CLINGMAN, ESQ.
11 Transocean Deepwater Inc.: 1001 Fannin Street, Suite 3700
Houston, Texas 77002

12 For Transocean Holdings Munger Tolles & Olson, LLP
13 LLC, Transocean Offshore BY: MICHAEL R. DOYEN, ESQ.
Deepwater Drilling Inc., BRAD D. BRIAN, ESQ.
14 Transocean Deepwater Inc.: LUIS LI, ESQ.
355 S. Grand Avenue, 35th Floor
15 Los Angeles, California 90071

16 For Transocean Holdings Mahtook & Lafleur
17 LLC, Transocean Offshore BY: RICHARD J. HYMEL, ESQ.
Deepwater Drilling Inc., 600 Jefferson Street, Suite 1000
18 Transocean Deepwater Inc.: Post Office Box 3089
Lafayette, Louisiana 70501

19 For Transocean Holdings Hughes Arrell Kinchen, LLP
20 LLC, Transocean Offshore BY: JOHN KINCHEN, ESQ.
Deepwater Drilling Inc., 2211 Norfolk, Suite 1110
21 Transocean Deepwater Inc.: Houston, Texas 77098

22 For Cameron International Stone Pigman Walther Wittmann, LLC
23 Corporation: BY: PHILLIP A. WITTMANN, ESQ.
546 Carondelet Street
24 New Orleans, Louisiana 70130

25

1 Appearances:

2
3 For Cameron International
4 Corporation:

Beck Redden & Secrest, LLP
BY: DAVID J. BECK, ESQ.
DAVID W. JONES, ESQ.
GEOFFREY GANNAWAY, ESQ.
ALEX B. ROBERTS, ESQ.
1221 McKinney Street, Suite 4500
Houston, Texas 77010

7 For Halliburton Energy
8 Services, Inc.:

Godwin Lewis, PC
BY: DONALD E. GODWIN, ESQ.
BRUCE W. BOWMAN JR., ESQ.
FLOYD R. HARTLEY JR., ESQ.
GAVIN HILL, ESQ.
1201 Elm Street, Suite 1700
Dallas, Texas 75270

11 For Halliburton Energy:
12 Services, Inc.:

Godwin Lewis, PC
BY: JERRY C. VON STERNBERG, ESQ.
1331 Lamar, Suite 1665
Houston, Texas 77010

14 For M-I, LLC:

Morgan Lewis & Bockius
BY: HUGH E. TANNER, ESQ.
DENISE SCOFIELD, ESQ.
JOHN C. FUNDERBURK, ESQ.
1000 Louisiana Street, Suite 4000
Houston, Texas 77002

18 Official Court Reporter:

Toni Doyle Tusa, CCR, FCRR
500 Poydras Street, Room HB-406
New Orleans, Louisiana 70130
(504) 589-7778
Toni_Tusa@laed.uscourts.gov

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1 AFTERNOON SESSION

2 (March 12, 2013)

13:11 3 **THE COURT:** Please be seated, everyone.

13:17 4 Any preliminary matters?

13:17 5 **MR. O'ROURKE:** Yes, Your Honor. Steve O'Rourke for
13:17 6 the United States, moving in some exhibits.

13:17 7 For Mr. Glen Bengé we have a list we circulated
13:17 8 to the defendants. Nothing on the list has any objections.

13:17 9 There was one, we withdrew it, for Dr. Rory
13:17 10 Davis. Same story. We've given a copy to Mr. Allums.

13:17 11 **THE COURT:** These are the U.S.'s exhibits in relation
13:18 12 to Dr. Bengé?

13:18 13 **MR. O'ROURKE:** Mr. Bengé.

13:18 14 **THE COURT:** Mr. Bengé and Dr. Davis. Any objections?

13:18 15 **MR. JONES:** Your Honor, David Jones on behalf of
13:18 16 Cameron.

13:18 17 We just have two objections to TRES-7661 and
13:18 18 TRES-22737, which are Dr. Davis's report and rebuttal report.
13:18 19 We object for the reasons set forth in our *Daubert* motion.

13:18 20 **THE COURT:** I don't think you need to repeat that
13:18 21 every time, frankly, because that's a generic. I've said long
13:18 22 before this trial started we were going to admit all the
13:18 23 reports. I do that routinely in bench trials. Okay?

13:18 24 **MR. JONES:** Understood.

13:18 25 **THE COURT:** Reports go in subject to any objections

13:18 1 that you all make.

13:18 2 **MR. O'ROURKE:** We actually believe the objection on
13:18 3 the *Daubert* motion was overruled once you accepted him as a
13:18 4 qualified expert in that regard. So there's a dispute about
13:18 5 whether that objection is accurate.

13:18 6 **MR. DOYEN:** Mike Doyen, for Transocean. There was an
13:19 7 objection on two of the Davis exhibits. I'm sorry, Your Honor,
13:19 8 if I'm simply not clear on this or swimming against the tide.

13:19 9 Two of the exhibits, 03591 and 03592, are really
13:19 10 in the nature of PowerPoints, statements by counsel. We
13:19 11 certainly are fine with those coming into the record so that we
13:19 12 all know exactly what was said and what is referred to.

13:19 13 We don't believe those are properly admitted as
13:19 14 evidence. They are more like the opening statements of
13:19 15 counsel. So that's our only objection; not evidence, but fine
13:19 16 for the record.

13:19 17 **THE COURT:** I don't recall what you are talking
13:19 18 about.

13:19 19 **MR. DOYEN:** Counsel put up some PowerPoint slides for
13:19 20 Mr. Davis and summarized -- listed in very brief bullet form
13:19 21 some opinions, some issues, things like that, and called that a
13:19 22 demonstrative, which is fine for the record. But it's a
13:19 23 summary of statements by the lawyer versus any evidence in the
13:19 24 case, and we would object to it being admitted into evidence;
13:19 25 that it should have an identifying number and should be part of

13:19 1 the record, to make sense.

13:19 2 **THE COURT:** I thought it was a summary of the
13:19 3 witness's opinions. Was that what it was, Mr. O'Rourke?

13:20 4 **MR. O'ROURKE:** It's a PowerPoint summary of the
13:20 5 witness's opinions. It was labeled with a D number, so it was
13:20 6 a demonstrative. And I think we are opening a can of worms
13:20 7 here about all demonstratives. You have been accepting them
13:20 8 all, and that's been the pattern so far.

13:20 9 **THE COURT:** We had what you were talking about during
13:20 10 opening statements, but that's different. This was -- I don't
13:20 11 recall any statements of lawyers being flashed up on a board --
13:20 12 on the screens during the witness's examination. Maybe I'm
13:20 13 wrong about that, but I don't recall that.

13:20 14 **MR. DOYEN:** When I say "statement of lawyers,"
13:20 15 Your Honor, all I mean, it's not a quote from the report. It's
13:20 16 something a lawyer has prepared and signed, posting for the
13:20 17 examination, "important to specify the time of -- AMF time,"
13:20 18 and we don't find that lifted from the report.

13:20 19 It was useful to the examination, but it's a
13:20 20 signed posting written by the lawyer; perfectly appropriate to
13:21 21 say -- I just don't think it's evidence.

13:21 22 **THE COURT:** Well, it's been said, and I'm going to
13:21 23 admit it. Okay?

13:21 24 **MR. O'ROURKE:** Thank you, Your Honor.

13:21 25 **THE COURT:** I understand what it is. So the

13 : 2 1 1 government's exhibits are admitted.

13 : 2 1 2 MR. O'ROURKE: Thank you.

13 : 2 1 3 MR. GODWIN: Good afternoon, Your Honor.

13 : 2 1 4 THE COURT: Yes.

13 : 2 1 5 MR. GODWIN: This morning, Judge, we offered the
13 : 2 1 6 exhibits that Halliburton used in its cross of Dr. Rory Davis.
13 : 2 1 7 Transocean said they wanted to take a look at it. I'm now
13 : 2 1 8 informed they are fine with it. We've circulated it. We are
13 : 2 1 9 not informed of any objections. We would offer at this time
13 : 2 1 10 the exhibits we used in cross for Dr. Davis.

13 : 2 1 11 THE COURT: Halliburton's exhibits regarding
13 : 2 1 12 Dr. Davis are admitted.

13 : 2 1 13 MR. GODWIN: Thank you, Judge.

13 : 2 1 14 MS. KARIS: Good afternoon, Your Honor. Hariklia
13 : 2 1 15 Karis on behalf of BP.

13 : 2 1 16 I want to renew an issue that I raised this
13 : 2 1 17 morning with respect to Mr. Perkin and seek guidance from the
13 : 2 1 18 Court specifically. Mr. Perkin, as I indicated, is entirely --

13 : 2 2 19 THE COURT: Let's see where his examination goes and
13 : 2 2 20 what's included and what's excluded. And if you all want to
13 : 2 2 21 redact that out of his report you can do that.

13 : 2 2 22 MS. KARIS: That's the guidance I was seeking; that
13 : 2 2 23 is, whether plaintiffs are going to actually strike from his
13 : 2 2 24 report the parts that are cumulative.

13 : 2 2 25 THE COURT: Well, I don't know where their exam is

13 : 2 2 1 going to go yet until I hear it.

13 : 2 2 2 **MS. KARIS:** Thank you.

13 : 2 2 3 **THE COURT:** Okay. Thank you.

13 : 2 2 4 **MR. JONES:** Your Honor, David Jones for Cameron
13 : 2 2 5 again. I have here the list of exhibits from Rory Davis's
13 : 2 2 6 testimony that we would like to admit into evidence. We have
13 : 2 2 7 circulated it, and we have not received any objections.

13 : 2 2 8 **THE COURT:** This is Cameron's exhibits relating to
13 : 2 2 9 Mr. Davis?

13 : 2 2 10 **MR. JONES:** Yes, Your Honor.

13 : 2 2 11 **THE COURT:** Or Dr. Davis.

13 : 2 2 12 **MR. JONES:** Yes.

13 : 2 2 13 **THE COURT:** I'm getting confused between the misters
13 : 2 2 14 and the doctors in this trial.

13 : 2 2 15 Without objection, those are admitted.

13 : 2 2 16 **MR. JONES:** We also, Your Honor, on the thumb drive,
13 : 2 2 17 have a copy of TREX-75568, which was the ROV video.

13 : 2 2 18 **THE COURT:** Hearing no objection, that's admitted.

13 : 2 2 19 **MR. IRPINO:** Good afternoon, Your Honor. Anthony
13 : 2 3 20 Irpino for the PSC.

13 : 2 3 21 We have our list of PSC exhibits and
13 : 2 3 22 demonstratives used and offered in connection with the
13 : 2 3 23 examination of Dr. Rory Davis on March 7, 2013. We sent the
13 : 2 3 24 list around. We have received from Transocean one objection.

13 : 2 3 25 **MR. DOYEN:** Consistent with your suggestion to

13:23 1 Mr. Jones for Cameron, Your Honor, why don't we just take a
13:23 2 standing objection to the lawyers' PowerPoints coming into
13:23 3 evidence, and then we won't have to say that every time. We
13:23 4 otherwise have no problem.

13:23 5 **THE COURT:** Very well. Thank you. Those are
13:23 6 admitted.

13:23 7 **MR. IRPINO:** I will hand a copy to Stephanie.

13:23 8 **THE COURT:** Any other preliminary matters?

13:23 9 **MR. WILLIAMSON:** No.

13:23 10 **THE COURT:** Ben, did you give counsel what I gave you
13:23 11 during the lunch hour?

13:23 12 **MR. ALLUMS:** Yes.

13:23 13 **THE COURT:** Mr. Langan, I ruled on your issues
13:23 14 relating to the video. You all should have gotten that so that
13:23 15 can be edited before tomorrow.

13:24 16 **MR. WILLIAMSON:** May it please the Court, Your Honor.
13:24 17 Jimmy Williamson for the PSC, and we call Gregg Perkin.

13:24 18 **GREGG PERKIN,**
13:24 19 having been duly sworn, testified as follows:

13:24 20 **DIRECT EXAMINATION**

13:24 21 **BY MR. WILLIAMSON:**

13:24 22 **Q.** Please state your name for the record.

13:24 23 **A.** Gregg Perkin.

13:24 24 **Q.** You are a mechanical engineer and a registered
13:24 25 professional engineer?

GREGG PERKIN - DIRECT

13:24 1 A. Yes. I'm a registered professional engineer in Louisiana
13:24 2 and 12 other states.

13:24 3 Q. You have had occasion to see and review documents,
13:24 4 exhibits, depositions, and materials related to the blowout
13:24 5 preventer on the *Deepwater Horizon*?

13:24 6 A. I have.

13:24 7 Q. You were in court during some of the testimony, including
13:24 8 that of Rory Davis, correct?

13:25 9 A. Yes, I was.

13:25 10 Q. You formed opinions and conclusions regarding the blowout
13:25 11 preventer in terms of its operational use and how it was
13:25 12 utilized --

13:25 13 A. I have.

13:25 14 Q. -- or failed to be utilized and how it was configured?

13:25 15 A. Yes.

13:25 16 MR. WILLIAMSON: Please let me have Exhibit 1741.

13:25 17 This is the direct examination for the PSC.

13:25 18 Call-out 1. The next page of 1741. That one.

13:25 19 BY MR. WILLIAMSON:

13:25 20 Q. Have you seen this document before?

13:25 21 A. The risk register? Yes, I have.

13:25 22 Q. This is called the risk register for the project Macondo,
13:25 23 which is a BP document, correct?

13:25 24 A. Yes.

13:25 25 MR. WILLIAMSON: May I have the next call-out.

GREGG PERKIN - DIRECT

13:25 1 BY MR. WILLIAMSON:

13:25 2 Q. You have here that they have put one of the -- on the risk
13:26 3 register for the Macondo, they have listed the blowout
13:26 4 preventer, correct?

13:26 5 A. Yes.

13:26 6 Q. What is the risk that has been identified with regard to
13:26 7 the blowout preventer by BP with respect to the Macondo well?

13:26 8 A. As I understand it, it's right here: "Potential for the
13:26 9 BOP stack to cause nonproductive time, NPT, on the well."

13:26 10 Q. The exhibit says "NPT." What do you understand NPT to
13:26 11 mean?

13:26 12 A. In this case, nonproductive time.

13:26 13 Q. All right. Is the fact that the blowout -- is it possible
13:26 14 for the blowout preventer to cause nonproductive time?

13:26 15 A. Sure.

13:26 16 Q. Is that the risk that should be associated with the
13:26 17 blowout preventer when it's drilling a well like Macondo?

13:26 18 A. No.

13:26 19 Q. What risks should be identified by BP if they were doing a
13:26 20 risk register for Macondo and they wanted to talk about issues
13:27 21 regarding the blowout preventer?

13:27 22 A. If they were talking about risks, they would identify
13:27 23 modes of failure, they would talk about repair issues. There
13:27 24 would be other testing issues, those kinds of things.

13:27 25 Q. In fact, should they be -- should BP, as the operator, be

GREGG PERKIN - DIRECT

1 concerned with the issue of the blowout preventer limitations
2 and how it works and under what circumstances it works and how
3 it should be operated?

4 A. They should always be concerned for that when they are
5 drilling.

6 Q. Why?

7 A. It's the last line of defense. It's one of those things
8 that you have to engineer, assemble, maintain, and test
9 properly. If I doesn't work when it's called upon to do so,
10 you can have catastrophic consequences.

11 MR. WILLIAMSON: Would you show me Exhibit 31886.

12 BY MR. WILLIAMSON:

13 Q. This is a paper that was written by Melvyn Whitby. Do you
14 know who Mr. Whitby is?

15 A. I've met Mr. Whitby.

16 Q. He's one of the Cameron engineers who works in the
17 drilling division, right?

18 A. It's my understanding, yes.

19 MR. WILLIAMSON: May I see the call-out?

20 BY MR. WILLIAMSON:

21 Q. He wrote a paper called "The Design Evolution of a Subsea
22 BOP," right?

23 A. He did.

24 MR. WILLIAMSON: The next call-out.
25

GREGG PERKIN - DIRECT

13:25 1 BY MR. WILLIAMSON:

13:25 2 Q. It says: "However, when the BOP is called upon to
13:28 3 function in an emergency situation, it is the main barrier
13:28 4 protecting human life, capital equipment, and the environment.
13:28 5 Therefore" --

13:28 6 MR. WILLIAMSON: Next call-out, please.

13:25 7 BY MR. WILLIAMSON:

13:25 8 Q. "Therefore, it must function without fail."

13:28 9 Does Mr. Whitby's opinion on this regarding blowout
13:28 10 preventer emergency use correspond with yours?

13:28 11 A. It does.

13:28 12 Q. In fact, the blowout preventer has multiple uses, correct?

13:29 13 A. The blowout preventer can be used in many ways.

13:29 14 Q. Today we are going to function on what is going to be used
13:29 15 when you have an emergency, you have a well control emergency.
13:29 16 That's the use that I'm directing my questions to. Is that
13:29 17 fair?

13:29 18 A. Correct. There's basically a control mode and then
13:29 19 there's emergency mode.

13:29 20 Q. In an emergency mode what should we be concerned with?

13:29 21 A. In emergency mode you have a well control situation that's
13:29 22 imminent and you have to take emergency steps to protect the
13:29 23 well, the environment, and the people on the rig.

13:29 24 Q. Who has to take those steps?

13:29 25 A. Who has to take those steps? It would be the drilling

GREGG PERKIN - DIRECT

13:29 1 contractor and the operator.

13:29 2 Q. And, of course, we know that to be TO and BP?

13:29 3 A. Yes. When you say "TO" I presume you are talking about
13:29 4 Transocean.

13:29 5 Q. Correct.

13:29 6 MR. WILLIAMSON: Could I have Exhibit 93, Call-out 1.
13:29 7 Do you have the cover page, Carl, of the
13:29 8 document?

13:25 9 BY MR. WILLIAMSON:

13:25 10 Q. This is a document called "Drilling Well Operations
13:30 11 Practice," sometimes called the DWOP.

13:30 12 A. Yes.

13:30 13 Q. Have you had a chance to review it?

13:30 14 A. I have.

13:30 15 MR. WILLIAMSON: Call-out 1, please.

13:25 16 BY MR. WILLIAMSON:

13:25 17 Q. "This document and related engineering technical practices
13:30 18 replace the BP drilling and operations policy."

13:30 19 MR. WILLIAMSON: Next call-out, please.

13:25 20 BY MR. WILLIAMSON:

13:25 21 Q. "This document contains the practices that have been
13:30 22 agreed by BP management as current and relevant for drilling
13:30 23 and well operations. These practices are considered critical
13:30 24 for achieving the company's goal of no accidents, no harm to
13:30 25 people, and no damage to the environment."

GREGG PERKIN - DIRECT

13:30 1 MR. WILLIAMSON: Call-out 3, please.

13:25 2 BY MR. WILLIAMSON:

13:25 3 Q. "This practice applies to all drilling and well operations
13:30 4 comprising well construction" -- and we'll go back to the last
13:30 5 sentence.

13:30 6 "This practice shall form part of the contractual
13:31 7 relationship between BP and its service providers."

13:31 8 Have you seen all those?

13:31 9 A. I have.

13:31 10 MR. WILLIAMSON: Please go to Call-out 13.

13:25 11 BY MR. WILLIAMSON:

13:25 12 Q. This is 15.3.25. "As arranged from top to bottom, the
13:31 13 minimum BOP configuration," and it says that, right?

13:31 14 A. Correct. I think it's 15.3.35. I think you said 15.2.35.

13:31 15 Q. My mistake. Here's the part I'm interested in, the last
13:31 16 paragraph.

13:31 17 "A sealing shear ram shall be required. The
13:31 18 limitations of its shearing capacity should be known and
13:31 19 understood and a documented risk assessment shall be in place
13:31 20 to address any such limitations."

13:31 21 Did you read that in BP's drilling well operation
13:31 22 practice that they say for -- is part of their relationship
13:31 23 with their providers?

13:31 24 A. Yes. It speaks for itself.

13:31 25 Q. Did you ever see a documented risk assessment for the

GREGG PERKIN - DIRECT

13:31 1 *Deepwater Horizon* BOP that dealt with its use on the Macondo
13:32 2 well?

13:32 3 A. Only the risk register, is the only thing I can remember.

13:32 4 Q. Not counting the formation documents of the BOP that were
13:32 5 permed in '99 and 2000, did you ever see any risk assessment on
13:32 6 the *Deepwater Horizon* blowout preventer from 2001 forward, all
13:32 7 the way up until the time the rig sank?

13:32 8 A. No.

13:32 9 Q. Should there have been one, in your opinion?

13:32 10 A. The BOP DWOP certainly says there should be.

13:32 11 Q. What about you? What about Gregg Perkin? Do you believe
13:32 12 there should be one?

13:32 13 A. Gregg Perkin says there should be one.

13:32 14 Q. Why?

13:32 15 A. And it should be updated for each well.

13:32 16 Q. Why?

13:32 17 A. Because, as Mr. Whitby pointed out, it's the last line of
13:32 18 defense. If you have an emergency situation, the blowout
13:32 19 preventer is your blowout stopper.

13:32 20 **MR. WILLIAMSON:** Would you pull up for me Call-out 6
13:32 21 of the same document. It says: "Significant Risk Section:
13:33 22 Refer to an engineering technical practice GP10-10. All well
13:33 23 control activity shall conform to engineering technical
13:33 24 practice GP10-10, well control."

13:33 25 Did you look at GP10-10?

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13:33 1 A. I did. GP is "group practice."

13:33 2 Q. Right. As BP uses it?

13:33 3 A. Correct.

13:33 4 Q. By the way, a well site leader, the technology that -- the
13:33 5 terminology that BP uses, what does that mean? Or what is that
13:33 6 the historical word for? How is that person's job described
13:33 7 historically in the oil field?

13:33 8 A. Historically, it's referred to as the company man or the
13:33 9 company representative.

13:33 10 MR. WILLIAMSON: Please pull up GP10-10, which is
13:33 11 Exhibit 215. Carl, Call-out 2 -- I'm sorry, the cover page
13:33 12 first. I apologize.

13:33 13 BY MR. WILLIAMSON:

13:33 14 Q. This is GP10-10, "Well Control Group Practice"?

13:34 15 A. Yes, sir.

13:34 16 Q. For BP?

13:34 17 A. Yes, sir.

13:34 18 MR. WILLIAMSON: Please, Call-out, should be, No. 5.

13:34 19 BY MR. WILLIAMSON:

13:34 20 Q. "A sealing shear ram shall be required. The limitations
13:34 21 of the shearing capacity should be known and understood, and a
13:34 22 documented risk assessment shall be in place to address any
13:34 23 such limitations."

13:34 24 MS. KARIS: Your Honor, I apologize for interrupting,
13:34 25 Hariklia Karis on behalf of BP.

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1 Mr. Perkin has not been tendered as an expert in
2 risk assessment. He has not been tendered as an expert even in
3 well control. For him to basically read from documents and
4 tell us what his point of view is without having established
5 any expertise in terms of conducting risk assessments for the
6 oil and gas industry for deepwater wells --

7 MR. WILLIAMSON: I will clear it up.

8 BY MR. WILLIAMSON:

9 Q. Mr. Perkin, do you have experience in connection with
10 design engineering?

11 A. I do. I have been a design engineer for most of my
12 career.

13 Q. I thought I'd made this clear, but let me repeat it. My
14 questions are directed to the use and operational use of the
15 blowout preventer and its limitations.

16 A. Correct. That's as I understand it.

17 Q. Right. Do you understand this paragraph to be -- there's
18 lots of stuff in here about well control, isn't there, in this
19 document?

20 MS. KARIS: Your Honor, I'm going to renew my
21 objection.

22 MR. WILLIAMSON: I'm trying to lay the predicate.

23 MS. KARIS: Having served as a design engineer
24 certainly doesn't speak to Mr. Perkin's experience in the oil
25 and gas industry specifically with respect to risk assessments.

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13:35 1 The plaintiffs --

13:35 2 MR. WILLIAMSON: Judge --

13:35 3 MS. KARIS: Please.

13:35 4 The plaintiffs have already brought in Dr. Bea,
13:35 5 who they told us was a process safety expert, who offered hours
13:35 6 of testimony on risk assessments and what should have and
13:35 7 shouldn't have been done in all areas.

13:35 8 MR. WILLIAMSON: Your Honor, Gregg --

13:35 9 THE COURT: I thought you wanted to respond to her.

13:36 10 MR. WILLIAMSON: I do, but I can respond best by just
13:36 11 going into an area I'm going to ask questions on that I think
13:36 12 takes care of it, and then respond.

13:36 13 THE COURT: All right. Let's see where it goes.

13:36 14 MR. WILLIAMSON: Sure.

13:36 15 BY MR. WILLIAMSON:

13:36 16 Q. When did you become a professional engineer?

13:36 17 A. I became licensed as a professional engineer in 1978 in
13:36 18 the state of California.

13:36 19 Q. I'm going to put up on the ELMO what is marked as D-3200.

13:36 20 Gregg, is this something that you've typed up in
13:36 21 order to try to go through some of your qualifications?

13:36 22 A. It appears to be, yes. It's pretty bright, but I can see
13:36 23 it.

13:36 24 THE COURT: You can change the contrast on that
13:36 25 thing.

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13:36 1 MR. WILLIAMSON: On here?

13:36 2 MR. REGAN: Your Honor, we tried to do that
13:36 3 yesterday. It won't -- we can try turning the light off on it.

13:37 4 THE WITNESS: I can see it.

13:37 5 THE COURT: Hold on a minute.

13:37 6 Stephanie --

13:37 7 Maybe if we turn the big light off in the
13:37 8 courtroom. Let's see if that helps.

13:37 9 BY MR. WILLIAMSON:

13:37 10 Q. Let's go through your background and qualifications,
13:37 11 please.

13:37 12 Are these papers -- for example, you coauthored a
13:37 13 paper?

13:37 14 THE COURT: Well, I don't know what happened there.

13:37 15 MR. WILLIAMSON: Does that look better?

13:37 16 THE COURT: That reads better.

13:37 17 BY MR. WILLIAMSON:

13:37 18 Q. These are papers that you presented.

13:37 19 "Well Control Safety Concerns: Validating Used
13:37 20 Equipment Competency," correct?

13:37 21 A. Yes. I coauthored a paper entitled "Well Control Safety
13:37 22 Concerns: Validating Used Equipment Competency." It was
13:37 23 directed to blowout preventers.

13:37 24 Q. Did you present that paper somewhere?

13:37 25 A. I presented it at the IADC well control conference in

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13 : 37 1 Singapore.

13 : 37 2 Q. Can anybody just walk up and present -- what's the IADC?

13 : 38 3 A. The IADC is the International Association of Drilling
13 : 38 4 Contractors.

13 : 38 5 Q. Can anybody just walk up and submit a paper and get up on
13 : 38 6 the podium and give a paper to the IADC?

13 : 38 7 A. No. The way it works is you basically draft an abstract.
13 : 38 8 You submit it to the -- to a committee that basically vets it
13 : 38 9 and determines whether or not the paper is viable to be
13 : 38 10 presented.

13 : 38 11 Q. You have presented several papers to the IADC?

13 : 38 12 A. I have presented -- yes, sir.

13 : 38 13 Q. On each of those occasions, have you had to submit an
13 : 38 14 abstract on that issue and get approval before you gave your
13 : 38 15 paper?

13 : 38 16 A. I have.

13 : 38 17 Q. Have you given IADC presentations in Amsterdam?

13 : 38 18 A. Previous to 2005, I have given -- I gave a paper in
13 : 38 19 Amsterdam.

13 : 38 20 Q. Where else?

13 : 38 21 A. Bakersfield, California.

13 : 38 22 Q. Where else?

13 : 38 23 A. Ventura, California.

13 : 38 24 Q. Where else?

13 : 38 25 A. After -- if you just go down the list, I've given -- the

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13:38 1 second paper, "A Preventable" -- I'm sorry, "Offshore
13:39 2 Catastrophes: Lessons Learned," that was in Amsterdam again.
13:39 3 In 2006, again, I presented a paper in two places, "A
13:39 4 Preventible Shallow Gas Blowout." It was given at the IADC
13:39 5 well control conference in Abu Dhabi, and I presented it again
13:39 6 in Galveston. It was also published in the IADC magazine,
13:39 7 *Drilling Contractor* -- or *Drilling*, excuse me.

13:39 8 Q. The same thing for the publication -- and all of these
13:39 9 papers, do they deal with the oil and gas and energy industry?

13:39 10 A. They deal with oil and gas and they deal with -- in
13:39 11 particular, a couple of them deal with blowout preventers and
13:39 12 blowouts.

13:39 13 Q. The last thing on the list, Coauthored *Fundamentals of*
13:39 14 *Petroleum, Fifth Edition*, please tell me what that is.

13:39 15 A. I was an instructor at the University of Texas for about
13:39 16 15 years. They had a number of publications. That is one that
13:39 17 I helped author.

13:39 18 Q. When you say the "University of Texas," there's something
13:39 19 called PETEX?

13:39 20 A. Yes. It's the Petroleum Extension Service. It's a
13:40 21 division of the University of Texas. It's been around since
13:40 22 about the mid -- it's been around since about World War II.

13:40 23 Q. What did you teach?

13:40 24 A. PETEX, I taught courses in drilling, completion, well
13:40 25 control, safety, engineering. I also teach the course

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13 : 40 1 "Offshore Catastrophes" at PETEX.

13 : 40 2 Q. How long did you teach there?

13 : 40 3 A. I taught there from roughly 1996 or 1995 -- through 2010.
13 : 40 4 2010, a group of instructors with PETEX and I formed another
13 : 40 5 training company.

13 : 40 6 Q. Any other instructors with PETEX who are experts in this
13 : 40 7 case?

13 : 40 8 A. There's one.

13 : 40 9 Q. Who?

13 : 40 10 A. His name Greg McCormack.

13 : 40 11 Q. Who are the people who go to courses at PETEX?

13 : 40 12 A. Well, it's -- PETEX serves the public, but we have -- we
13 : 40 13 have taught courses for operators, drilling contractors,
13 : 41 14 service companies, attorneys, the insurance market,
13 : 41 15 accountants. I have given a number of speeches at special
13 : 41 16 forums for accountants, attorneys, and so on.

13 : 41 17 Q. Let's leave attorneys and accountants out and let's talk
13 : 41 18 about engineers.

13 : 41 19 Do engineers from Shell -- have they ever attended
13 : 41 20 your courses?

13 : 41 21 A. They have.

13 : 41 22 Q. Have engineers from Chevron ever attended your courses?

13 : 41 23 A. They have.

13 : 41 24 Q. Have engineers from Apache ever attended your courses?

13 : 41 25 A. They have.

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13 : 41 1 Q. Have engineers from Transocean ever attended your courses?

13 : 41 2 A. They have.

13 : 41 3 Q. Have engineers from BP ever attended your courses?

13 : 41 4 A. They have.

13 : 41 5 Q. Who else?

13 : 41 6 A. We have specialized courses for Baker Hughes. I did a
13 : 41 7 course, an offshore -- a deepwater course for FMC and also
13 : 41 8 National Oilwell Varco -- at the time, Varco.

13 : 41 9 Q. Let's go to the next page. This next page is patents.

13 : 42 10 We were talking your capabilities as a design
13 : 42 11 engineer. Do you have any patents?

13 : 42 12 A. I have 13 patents, as I recall.

13 : 42 13 Q. Are you the sole inventor or sometimes the co-inventor?

13 : 42 14 A. For the most part, I am the inventor. There are a couple
13 : 42 15 of them that I am the co-inventor.

13 : 42 16 Q. Where were you working when you got most of them?

13 : 42 17 A. Most of the them I obtained when I was employed in
13 : 42 18 industry, Smith International, where I was employed for about
13 : 42 19 10 years. I went to work for Newpark Resources and then
13 : 42 20 Oilpatch Group. So most of my patents occurred with those
13 : 42 21 companies.

13 : 42 22 Q. Let's talk about Smith. You worked for them for 10 years.
13 : 42 23 What is the business of Smith International?

13 : 42 24 A. Smith International is --

13 : 42 25 Q. Insofar as it relates to your employment. I'm sorry. Go

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13 : 42 1 ahead.

13 : 42 2 A. Well, I was hired at Smith when I was in college. I
13 : 42 3 worked for Smith during my college years. I worked in the oil
13 : 42 4 field with Smith in my summers.

13 : 42 5 When I graduated from college, Smith hired me. They
13 : 42 6 put me on a drilling rig for about six to eight months. I
13 : 43 7 worked as a roughneck and a derrickman. I then went to the
13 : 43 8 Gulf coast -- I was working in California at the time. I went
13 : 43 9 to the Gulf coast. I worked tools and equipment, both onshore
13 : 43 10 and offshore.

13 : 43 11 Q. When you say "tools," what do you mean?

13 : 43 12 A. Mainly, downhole tools, fishing tools, directional
13 : 43 13 tools --

13 : 43 14 Q. Very briefly -- we are going to get to blowout preventers,
13 : 43 15 but what's a fishing tool?

13 : 43 16 A. A fishing tool is a device used to go down and retrieve
13 : 43 17 equipment that's left in the hole. They call that typically
13 : 43 18 the "fish."

13 : 43 19 Q. When you were working on fishing tools, did you have
13 : 43 20 occasion to visit rigs?

13 : 43 21 A. All the time.

13 : 43 22 Q. Surface or offshore?

13 : 43 23 A. Both.

13 : 43 24 Q. Shallow water or deep water?

13 : 43 25 A. Mostly shallow water. I don't recall ever going into deep

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13 : 43 1 water.

13 : 43 2 Q. Were you on the rig when company men were working?

13 : 43 3 A. All the time. There's always a company man on the rig.

13 : 43 4 Q. Did you work with company men when you were running
13 : 43 5 fishing tools?

13 : 43 6 A. Yes. Yes.

13 : 43 7 Q. Did you work with toolpushers?

13 : 43 8 A. Yes, I did.

13 : 43 9 Q. Did you work with rig crew?

13 : 44 10 A. Yes. We needed the rig crew's help.

13 : 44 11 Q. Did you work with drillers?

13 : 44 12 A. Yes, we did.

13 : 44 13 Q. Go ahead. So you had 10 years with Smith. Did you do
13 : 44 14 anything else with Smith that would be relevant to the --
13 : 44 15 bringing expertise to this project?

13 : 44 16 A. Well, when I was with Smith and I finished my training
13 : 44 17 program, I came back to Smith and I became a design engineer.
13 : 44 18 Some of the patents you see up there are tools and equipment
13 : 44 19 that I designed, built, manufactured, and took to the field.

13 : 44 20 I became manager of standard product engineering for
13 : 44 21 a number of years. Then I became manager of field engineering.

13 : 44 22 Q. I want to ask you about one in particular. The oil field
13 : 44 23 equipment identification apparatus, RIFD, what is that?

13 : 44 24 A. That's a typo. It should be RFID.

13 : 44 25 Q. What is RFID?

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13 : 44 1 A. RFID stands for "radio frequency identification."

13 : 44 2 Q. What were you using it for?

13 : 44 3 A. I had conceived of a way to use radio frequency
13 : 44 4 identification. It's like a bar code that you would use on a
13 : 44 5 loaf of bread in a grocery store. I think people are familiar
13 : 45 6 with how items are scanned using a bar code.

13 : 45 7 You can't use a bar code on oil field equipment or
13 : 45 8 equipment used in a harsh environment. So I worked with
13 : 45 9 Motorola on the West Coast to develop what they call a radio
13 : 45 10 frequency identification tag for use in a harsh environment.
13 : 45 11 And the idea was to take this RFID tag and attach it in some
13 : 45 12 way to oil-centric tubular goods and other equipment used in
13 : 45 13 the oil field, for traceability.

13 : 45 14 Q. Now, did this -- this invention, you tried to make it
13 : 45 15 commercially developable?

13 : 45 16 A. We did.

13 : 45 17 Q. Commercially developed?

13 : 45 18 A. We did develop it commercially.

13 : 45 19 Q. Where did it take you in terms of your work experience?
13 : 45 20 Where did you have to go in order to work on this project?

13 : 45 21 A. Well, the project was conceived in Houston, and the need
13 : 45 22 for a drilling contractor to assist us became rather apparent.
13 : 45 23 We developed a tag. We wanted to attach it to drill pipe,
13 : 46 24 primarily, and see if it would survive downhole. We went to
13 : 46 25 Global Marine and we discussed our invention with Global

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13 : 46 1 Marine, and Global Marine signed on to assist us.

13 : 46 2 Q. Global Marine later merges with what company?

13 : 46 3 A. Global Marine merged with Santa Fe Drilling and became
13 : 46 4 GlobalSantaFe.

13 : 46 5 Q. GlobalSantaFe Company merged with what company?

13 : 46 6 A. Transocean.

13 : 46 7 Q. Okay. So Global Marine, how long did you have a working
13 : 46 8 relationship on an offshore basis with GlobalSantaFe?

13 : 46 9 A. Well, the project that we worked on -- this RFID project
13 : 46 10 we worked on with GlobalSantaFe was about a two-year running
13 : 46 11 project, maybe a little longer.

13 : 46 12 Q. During that period of time, how long were you offshore on
13 : 46 13 the drilling rigs?

13 : 46 14 A. Just about every time the string came out of the hole.

13 : 46 15 We had worked with Global Marine. They had put -- we
13 : 46 16 had actually tagged pipe in the yard in Houston, a drill string
13 : 46 17 of pipe. It was sent offshore, and we followed that pipe
13 : 47 18 through a --

13 : 47 19 Q. Here's the part I'm trying to get to: Were you actually
13 : 47 20 working on the rig floor of offshore rigs when you were doing
13 : 47 21 this project?

13 : 47 22 A. Sure.

13 : 47 23 Q. While the pipe was coming in and out of the hole?

13 : 47 24 A. While it was coming in and out of the hole and while it
13 : 47 25 was on the pipe deck.

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13:47 1 Q. Have you been hired by various drilling contractors or
13:47 2 well servicing companies?

13:47 3 A. That's a list I put together of the people we have worked
13:47 4 for over the years.

13:47 5 Q. Over the years, you have been hired by Global Marine,
13:47 6 GlobalSantaFe, and Transocean?

13:47 7 A. I have.

13:47 8 Q. Transocean itself has hired you as an expert witness?

13:47 9 A. Transocean has hired me as an expert witness. They've
13:47 10 also hired me as an engineer.

13:47 11 Q. What about Pride, Diamond, Ensco, Rowan, Reading & Bates?
13:47 12 Are those drilling companies?

13:47 13 A. Those are all drilling contractors, yes.

13:47 14 Q. What have they hired you for?

13:47 15 A. They have hired me as an expert witness. They have also
13:47 16 hired me to look at equipment.

13:48 17 Q. What kind of equipment?

13:48 18 A. Basically mechanical equipment, surface equipment and
13:48 19 subsurface equipment.

13:48 20 Q. Failure analysis, or is that not the right word? What's
13:48 21 the right word?

13:48 22 A. It's probably more aligned with failure analysis. We also
13:48 23 do a lot of design evaluation.

13:48 24 Q. Every one of these companies is involved in either the
13:48 25 drilling or the well servicing business?

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13 : 48 1 A. Yes.

13 : 48 2 Q. Some are surface and some are offshore?

13 : 48 3 A. Yes.

13 : 48 4 Q. There are some on here that you have worked for multiple
13 : 48 5 times?

13 : 48 6 A. There are some in there that I've worked for multiple
13 : 48 7 times, yes.

13 : 48 8 Q. Complete Production Services, for example, how many times
13 : 48 9 have you worked for them? And very briefly describe what you
13 : 48 10 have done for them.

13 : 48 11 A. Well, Complete Production Services owns a number of other
13 : 48 12 companies. One of them is Felderhoff Drilling. Recently I was
13 : 48 13 retained by Felderhoff. A rig was being erected on a location
13 : 48 14 in West Texas. During the operation of rigging up the rig, the
13 : 48 15 mast fell. We were asked to go out and evaluate the operation
13 : 49 16 as well as the failure of the mast.

13 : 49 17 Q. By the way, speaking of that, you recently worked on a BOP
13 : 49 18 case where you testified in court?

13 : 49 19 A. Just prior to the deposition I gave in this case, I was in
13 : 49 20 Reeves County, Texas, giving testimony on a blowout that
13 : 49 21 occurred in West Texas that cost an operator his well.

13 : 49 22 Q. Was there a *Daubert* motion made against you in that case
13 : 49 23 heard by the Court?

13 : 49 24 A. There was a *Daubert* motion. I understand there was
13 : 49 25 10 items on that motion, but when I arrived in court, the

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1 10 items went down to three.

2 Q. Did the Court allow you to give expert opinion testimony
3 in that case?

4 A. It did.

5 Q. Have you testified in Judge Barbier's court before today?

6 A. I've testified in Judge Barbier's court before, yeah.

7 Q. Have you testified in other courthouses in here -- in
8 New Orleans, Louisiana, as an expert witness before?

9 A. I have. I have been in many courtrooms in this building.

10 Q. Give me a couple of examples.

11 A. The last time I was in court, as I recall, I was here on a
12 personal injury on an offshore platform. There was some
13 maintenance issues relative to the platform; there were some
14 management issues relative to the platform; there was design
15 issues relative to the platform.

16 Q. Do you remember the name of any of the judges here in the
17 courthouse?

18 A. Judge Shushan. Judge Africk, I think was the judge in
19 that particular case.

20 Q. On any case -- I notice there's been a couple of motions
21 where the Courts have entered orders striking you, and those
22 have been mentioned in this case?

23 A. They have.

24 Q. Have you ever been stricken on any case where you showed
25 up, testified, and explained your credentials, explained the

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13:50 1 basis for your opinion? Have you ever done that?

13:50 2 A. No. Every time I have showed up in court, I have not been
13:50 3 excluded or denied testifying.

13:50 4 Q. On those occasions that the Court orders -- that the Court
13:50 5 probably has either seen or read -- or will, if he hasn't yet.
13:50 6 On any of those, did you show up in court and go through the
13:50 7 process of telling the Court your qualifications and the basis
13:50 8 for your opinions?

13:50 9 A. That's been my experience every time I have shown up in
13:50 10 court at a *Daubert* or a *Robinson* hearing.

13:50 11 Q. No, I'm talking about the ones where there was an order
13:50 12 entered saying you couldn't testify for some reason. Did you
13:50 13 show up in any of those courts and testify to the judge
13:51 14 himself?

13:51 15 A. No, I did not. I was not invited.

13:51 16 Q. Whatever attorney hired you didn't invite you?

13:51 17 A. Correct.

13:51 18 Q. Next page. "Operators," those would be the -- analogous
13:51 19 to BP in this case, right?

13:51 20 A. They are.

13:51 21 Q. Have you ever been hired by multiple operators?

13:51 22 A. I have.

13:51 23 Q. Are these some of them? You have been hired by Chevron,
13:51 24 Shell, Petroplex, Seneca, Phillips, Unocal, Mobil, Apache?

13:51 25 A. Yes.

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13:51 1 Q. What have you been hired by operators for?

13:51 2 A. Operational issues, mainly issues that deal with their
13:51 3 operations specifically. It could be downhole problems. It
13:51 4 could be equipment problems. It could be any number of things.

13:51 5 Q. PEMEX, I want to make sure I cover that one particularly.
13:51 6 What did PEMEX, the national oil company of Mexico, hire you
13:51 7 for?

13:51 8 A. Petróleo Mexicano, PEMEX, hired us to look at safety
13:52 9 systems all over the world. They had offshore platforms in the
13:52 10 Gulf of Mexico that they wanted to upgrade, so we were hired to
13:52 11 do a worldwide survey of other operators who operated offshore
13:52 12 facilities and basically do safety surveys on their completed
13:52 13 wells.

13:52 14 Q. Approximately when was that?

13:52 15 A. It was mid to late '90s, as I recall.

13:52 16 Q. The next, service companies, people who actually provide
13:52 17 service. People like Schlumberger, Halliburton, Baker Hughes,
13:52 18 right?

13:52 19 A. Right.

13:52 20 Q. You have been hired by Shaffer. What does Shaffer do?

13:52 21 A. Shaffer builds blowout preventers.

13:52 22 Q. What did Shaffer hire you to do?

13:52 23 A. They hired me for blowout preventers. Worked with them on
13:52 24 blowout preventer design, blowout preventative maintenance,
13:52 25 use, application, testing, failures. I have looked at a number

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13:52 1 of blowout preventer issues with Shaffer.

13:52 2 Q. Shaffer later has now merged, I guess, with National
13:52 3 Oilwell Varco, or sometimes called NOV?

13:52 4 A. Well, Shaffer -- as I understand it, Shaffer was part of
13:52 5 Varco and then Varco merged with National Oilwell and became
13:53 6 National Oilwell Varco, NOV.

13:53 7 Q. By the way, somewhere I remember -- did you ever work for
13:53 8 Wild Well Control -- or Superior? Did you ever work for
13:53 9 Superior?

13:53 10 A. I have worked for Superior.

13:53 11 Q. Superior is the company that now owns Wild Well Control,
13:53 12 the company that BP uses for well control management, including
13:53 13 well control management on the Macondo?

13:53 14 A. That's true. I do work for Superior. In fact, I have a
13:53 15 couple of matters that I'm working on with Superior.

13:53 16 Q. Okay. Can you give me the general nature of those
13:53 17 matters?

13:53 18 A. One has to do with a fracking operation, well fracking
13:53 19 operations up in the Northeast, in the Marcellus Shale. The
13:53 20 other one has to do with downhole logging tools.

13:53 21 Q. Speaking of that, while I'm on this, I know you have
13:53 22 worked for numerous attorneys, including some that are in this
13:53 23 room. Right?

13:53 24 A. I have.

13:53 25 Q. Let me use one example. Has Liskow & Lewis, counsel of

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13:53 1 record for BP, ever hired you as an expert witness?

13:53 2 A. They have, many times.

13:54 3 Q. Halliburton has -- I notice Halliburton is on this list.

13:54 4 Has Halliburton ever hired you?

13:54 5 A. Halliburton hired me on some of their patent cases.

13:54 6 Q. What were you doing -- very briefly, what were you doing
13:54 7 with respect to their patent cases?

13:54 8 A. I don't recall if they were challenging a patent or they
13:54 9 were being challenged; but it had to do with downhole tools, as
13:54 10 I recall.

13:54 11 Q. Now, we have talked about some of this. You have training
13:54 12 in instructional teaching background, correct?

13:54 13 A. Correct. This is a list of where I conducted training.

13:54 14 Q. You're a member of the API, the SPE, the IADC, right?

13:54 15 A. I have been for years, yes.

13:54 16 Q. In fairness, most of those organizations are organizations
13:54 17 that you can send in and apply for membership and get in?

13:54 18 A. That's true.

13:54 19 Q. Why do you belong?

13:54 20 A. Well, number one, they are a good information source.

13:54 21 They have a tremendous knowledge base. You have access to a

13:54 22 lot of the information that their membership provides. I'm

13:55 23 probably more active in the IADC from the standpoint of doing

13:55 24 the work that we do and developing papers and giving papers in

13:55 25 the IADC.

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13:55 1 Q. Let's focus a little bit real briefly so we can finish.

13:55 2 Blowout preventer issues, have you ever been hired in
13:55 3 connection with blowout preventer issues?

13:55 4 A. Yes, a number of them.

13:55 5 Q. For example, just as a list, one is a blowout at Diamond
13:55 6 that was a drilling operation. You were evaluating the BOP?

13:55 7 A. Correct.

13:55 8 Q. With Ensco, you were evaluating the BOP?

13:55 9 A. Correct.

13:55 10 Q. Pick out an example, we're not going to go through them
13:55 11 all. Pick out an example of where you were evaluating BOP
13:55 12 components so the Court will have some idea of what you have
13:55 13 been hired and have done going down.

13:55 14 A. Well, if you go to the Petroplex one, I think that's
13:55 15 applicable here, wherever Petroplex is.

13:55 16 Q. It may be on the next page.

13:55 17 A. That had to do with off-center pipe.

13:55 18 Q. There you go.

13:55 19 A. Yeah. It was Petroplex versus Nabors Well versus Smith
13:55 20 International. And that had to do with non-OEM parts being
13:56 21 utilized in the blowout preventer. There was an off-centered
13:56 22 pipe problem. The BOP could not center the pipe, the well blew
13:56 23 out and unloaded.

13:56 24 Q. Do you feel like you have expertise in connection with the
13:56 25 evaluation of blowout preventers?

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13:56 1 A. I think I do.

13:56 2 Q. Do you think you have expertise in the evaluation of use
13:56 3 and limitations of mechanical equipment like blowout preventers
13:56 4 when they are being used in drilling operations?

13:56 5 A. I believe I do.

13:56 6 Q. Do you believe you have expertise as a result of what?
13:56 7 Beyond your education -- not just your education but, I assume,
13:56 8 this body of experience?

13:56 9 A. Yes.

13:56 10 **MR. WILLIAMSON:** Your Honor, we would tender
13:56 11 Mr. Perkin as an expert witness in connection with the blowout
13:56 12 preventer issues of the Macondo and in connection with the
13:56 13 design engineer issues. And we would offer into evidence his
13:56 14 reports, which is 75 -- TRES-0735 and TRES-0736.

13:56 15 **MS. KARIS:** Your Honor, my objection remains to the
13:56 16 cumulativeness, first of all.

13:56 17 **THE COURT:** We'll deal with that separately.

13:57 18 **MS. KARIS:** Then with respect to certain -- we have
13:57 19 submitted a *Daubert* motion. I'm happy to take it up on
13:57 20 cross-examination. But while we heard Mr. Perkin's extensive
13:57 21 experience in these various industries, we continue to assert
13:57 22 that with respect to some of his opinions in his report
13:57 23 regarding BAST, or best available and safest technology, based
13:57 24 on his own admissions in his deposition, he is not qualified to
13:57 25 render those opinions.

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13:57 1 THE COURT: I'm going to allow him to testify, and
13:57 2 you can make your objections as we go along and/or cover it on
13:57 3 cross-examination. Okay?

13:57 4 But I may limit the testimony at some point,
13:57 5 Mr. Williamson.

13:57 6 MR. WILLIAMSON: I understand completely, Your Honor.

13:57 7 THE COURT: For sure, I don't want it to be
13:57 8 cumulative. Okay?

13:57 9 MR. WILLIAMSON: I agree. I completely and -- don't
13:57 10 intend to go down there, and I'm sure the Court will correct me
13:57 11 if I accidentally do.

13:57 12 MR. JONES: Your Honor, David Jones. On behalf of
13:57 13 Cameron, we also have a *Daubert* motion on Mr. Perkin, and it
13:57 14 relates to the methodology and his analysis to arrive at
13:58 15 certain design opinions. We can handle that on
13:58 16 cross-examination as well.

13:58 17 THE COURT: Thank you.

13:58 18 MR. WILLIAMSON: Your Honor, we can have the lights
13:58 19 back because I think I've got the rest of the stuff on
13:58 20 computer. And we can switch back to the computer instead of
13:58 21 the ELMO.

13:58 22 THE COURT: Okay.

13:58 23 BY MR. WILLIAMSON:

13:58 24 Q. Gregg, we were talking about what I believe is
13:58 25 Exhibit 215, which was the group -- GP10-10 well control group

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13:58 1 practice. And it says: "A sealing shear ram shall be
13:58 2 required. The limitations of its shearing capacity should be
13:58 3 known and understood, and a documented risk assessment shall be
13:58 4 in place to address any such limitations."

13:58 5 Is that consistent with your opinion as to what BP
13:58 6 should do when they are drilling oil wells, particularly in the
13:58 7 Gulf of Mexico?

13:58 8 A. Yes, sir.

13:58 9 Q. In fact -- same question. Did they comply with their own
13:59 10 group practice 10-10, or did they comply with their own group
13:59 11 practice 10-00, Exhibit 93?

13:59 12 A. I don't think they did.

13:59 13 Q. We are going to come back to those documents. But have
13:59 14 you seen evidence that, in fact, BP admits that their conduct
13:59 15 does not match their policies?

13:59 16 A. I have seen documents like that.

13:59 17 MR. WILLIAMSON: Please put up Exhibit 5513. And
13:59 18 whatever -- I need it enlarged.

13:59 19 BY MR. WILLIAMSON:

13:59 20 Q. This is June 11, 2009, to Jonathan Sprague and Jake
13:59 21 Skelton from John Shaughnessy. I will tell you all those
13:59 22 people work in the Gulf of Mexico drilling.

13:59 23 It says: "Attached is what I would propose to roll
13:59 24 out as our STP. The group practice is very perscriptive [*sic*]."

13:59 25 We go down to about the third line: "As is, we

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13:59 1 routinely operate outside the GP rules."

13:59 2 Have you seen that?

13:59 3 A. I do. If you translate that, it's outside the general
14:00 4 practices rules.

14:00 5 Q. In fact, with regard to trying to document the blowout
14:00 6 preventer issues, was that true? Was Mr. Shaughnessy telling
14:00 7 the truth? The operators operated outside their own group
14:00 8 practice rules?

14:00 9 A. I think they do.

14:00 10 Q. Now, let's go back to the blowout preventer issue.

14:00 11 Oh, two more. We were talking about the important --
14:00 12 I want to focus first -- there's multiple components on blowout
14:00 13 preventers: annulars, VBRs, blind shear rams, casing shear
14:00 14 rams, correct?

14:00 15 A. Yes.

14:00 16 Q. The Court has already heard testimony the bottom ram was a
14:00 17 test ram, the lower annular was converted to a stripping
14:00 18 annular. Right?

14:00 19 A. Right.

14:00 20 Q. My first group of questions is going to deal with the
14:00 21 blind shear rams and the blind shear rams issues. Fair?

14:00 22 A. Okay.

14:00 23 Q. Were the blind shear rams activated soon enough, in your
14:01 24 opinion?

14:01 25 A. They should have been, yes.

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14:01 1 Q. Why? One, should they have been activated sooner?

14:01 2 A. Well, yeah, they should have been activated sooner, based
14:01 3 upon the information that I reviewed.

14:01 4 Q. Did they activate before the rig sank approximately noon
14:01 5 April 22nd?

14:01 6 A. No, I don't think they did.

14:01 7 Q. When you say "activate," what are you meaning by that
14:01 8 term, Gregg?

14:01 9 A. In terms of the events that were preceding the blowout
14:01 10 when gas and fluids were coming out of the riser --

14:01 11 MR. DOYEN: Your Honor, I object to this. The
14:01 12 witness explained in his deposition he has no opinion as to
14:01 13 when the blind shear rams activated, and there's no opinion
14:01 14 expressed on this issue in his report.

14:01 15 THE COURT: Is this in his report, Mr. Williamson?

14:01 16 MR. WILLIAMSON: Yes, Your Honor. It's in his
14:01 17 report --

14:01 18 THE COURT: Where is it in his report?

14:01 19 MR. WILLIAMSON: Let me see if I can hand it to the
14:01 20 Court, Your Honor.

14:01 21 THE COURT: That's -- what I have heard so far sounds
14:01 22 very cumulative to what Dr. Davis testified to. He talked
14:02 23 about when the blind shear rams were activated or not, didn't
14:02 24 he?

14:02 25 MS. KARIS: Your Honor, he did; and this is one of

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14:02 1 the areas that we contend is cumulative.

14:02 2 MR. WILLIAMSON: Finding 4: "A single BOP component,
14:02 3 the BSR, was incapable of being" --

14:02 4 THE COURT: Where are you reading from?

14:02 5 MR. WILLIAMSON: I'm sorry. Finding 4.

14:02 6 THE COURT: What page?

14:02 7 MR. WILLIAMSON: Page 6. I think they misstated his
14:02 8 testimony, Your Honor.

14:02 9 THE COURT: Well, I don't have his deposition in
14:02 10 front of me. But your question was, were they activated --
14:02 11 were the blind shear rams activated soon enough, in his
14:02 12 opinion. That's somewhat different from what Opinion 4 is.

14:02 13 MR. WILLIAMSON: The other thing is, Your Honor, in
14:02 14 finding --

14:03 15 THE COURT: The primary issue, though, is, why isn't
14:03 16 that cumulative of what Dr. Davis testified to?

14:03 17 MR. WILLIAMSON: It is, and --

14:03 18 THE COURT: Well, if it is, then why are we going
14:03 19 into it?

14:03 20 MR. WILLIAMSON: Because it's a predicate to why.
14:03 21 It's a predicate to why did this blind shear ram fail. It's
14:03 22 undisputed, Your Honor, that the blind shear ram failed to
14:03 23 shear and seal. I'm tendering Mr. Perkin on the question of
14:03 24 why it failed to shear and seal.

14:03 25 THE COURT: I thought Dr. Davis went through all of

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14:03 1 that in his testimony.

14:03 2 MS. KARIS: He did, Your Honor.

14:03 3 MR. WILLIAMSON: No. Dr. Davis went through
14:03 4 off-center pipe. That was Dr. Davis's opinion.

14:03 5 THE COURT: He went through why the blind shear rams
14:03 6 failed to cut the pipe and seal it.

14:03 7 MR. WILLIAMSON: I apologize. I didn't mean to
14:03 8 interrupt you, Judge.

14:03 9 THE COURT: Go ahead.

14:03 10 MR. WILLIAMSON: Dr. Davis's opinion was off-center
14:03 11 pipe was the reason that the blind shear rams failed to shear
14:03 12 and seal. Mr. Perkin's opinion -- as stated on page 9,
14:04 13 Mr. Perkin's Finding 19, was: "The BSR failed because of the
14:04 14 inability of the accumulator to provide sufficient force, the
14:04 15 inability of the blind shear rams to shear off-center pipe" --

14:04 16 THE COURT: Which is what Dr. Davis said.

14:04 17 MR. WILLIAMSON: That is an opinion shared by many.
14:04 18 By the way, Mr. Chao (phonetic), through Transocean, said it
14:04 19 failed to shear because of off-center --

14:04 20 THE COURT: All right. So why do we need -- I'm not
14:04 21 questioning -- putting aside Mr. Perkin's qualification, why do
14:05 22 we need another expert if all these other experts have said the
14:05 23 same thing?

14:05 24 MR. WILLIAMSON: Because I've got to propose a
14:05 25 solution. I've got to -- Dr. Davis did not address that. What

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14:05 1 is the solution for making this blind shear ram so that it
14:05 2 would not fail? That is the purpose of this. I will go right
14:05 3 to that question, Judge.

14:05 4 **THE COURT:** I'm going to sustain the objection.

14:05 5 **MS. KARIS:** Thank you, Your Honor.

14:05 6 **MR. DOYEN:** Your Honor, I would ask the last two
14:05 7 questions and answers be stricken on the same grounds --

14:05 8 **THE COURT:** I sustain the objection.

14:05 9 **MR. DOYEN:** Thank you, Your Honor.

14:05 10 **BY MR. WILLIAMSON:**

14:05 11 **Q.** Gregg, once the blind shear rams failed, was there
14:05 12 anything that could have been done that would have assisted or
14:05 13 made it so that the blind shear rams could have been
14:05 14 successful?

14:05 15 **A.** I think there was a couple of things.

14:05 16 **Q.** Please tell me what they are.

14:05 17 **A.** The blowout preventer could be programmed to -- in
14:05 18 emergency mode to go to EDS-1, which is the emergency dispatch
14:06 19 sequence 1, which goes through a number of steps to basically
14:06 20 disconnect the LMRP from the blowout preventer; but it also
14:06 21 solely fires or engages the blind shear rams.

14:06 22 **Q.** So EDS-1, one of the emergency activation systems,
14:06 23 activates the blind shear rams and only the blind shear rams?

14:06 24 **A.** Correct. It operates other valves to prepare the LMRP to
14:06 25 come off the blowout preventer stack, but as far as the blowout

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14:06 1 preventer being operated is the blind shear rams.

14:06 2 MR. WILLIAMSON: Please let me have D-3096.

14:06 3 BY MR. WILLIAMSON:

14:06 4 Q. This was a chart that was used yesterday. Okay?

14:06 5 A. Correct.

14:06 6 Q. To talk about EDS -- EDS, AMF, and autoshear. All of
14:06 7 these lead to the blind shear rams, and they activate the blind
14:07 8 shear rams?

14:07 9 A. Correct.

14:07 10 Q. Were there any alternatives?

14:07 11 A. Yes.

14:07 12 Q. What would be the alternative for -- we'll take EDS first.
14:07 13 What would be the alternative way to operate or activate EDS?

14:07 14 A. If EDS was going to be used in an emergency mode, I
14:07 15 believe EDS-2 would have been a better choice.

14:07 16 Q. Tell the Court what EDS-2 is.

14:07 17 A. Well, as we heard yesterday, the casing shear rams are
14:07 18 directly below the blind shear rams. Casing shear rams are
14:07 19 basically large shears that can cut heavy pipe, and they have
14:07 20 large actuators attached to them.

14:07 21 If there were issues with off-centered pipe, say, for
14:07 22 example, buckling from below, the issue -- or engaging the
14:07 23 casing shear rams first in a well control event where you have
14:07 24 flow through the annulus, casing shear rams would have cut the
14:07 25 drill pipe in two and essentially would have eliminated the

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14:08 1 buckling, say, between the VBRs and the upper annular.

14:08 2 That being said, with the casing shear rams not
14:08 3 sealing but in essence covering the wellbore, it is blocking a
14:08 4 substantial amount of flow. That helps the erosion problem and
14:08 5 also takes out any inherent pressure or helps relieve any
14:08 6 inherent pressure -- high pressure flows to low pressure out of
14:08 7 the drill pipe. That gives the BSR a fighting chance to shut
14:08 8 in the well and seal it.

14:08 9 Q. So, for example, have you read where Cameron's experts
14:08 10 opine that there was pressure inside the drill pipe and that
14:08 11 when it was released, that pressure helped destroy the
14:08 12 elastomeric elements in the blind shear ram?

14:08 13 A. Yes. I believe Mr. O'Donnell talked about.

14:08 14 Q. Your solution, using the casing shear rams first and
14:08 15 followed by closing the blind shear rams, would they help solve
14:08 16 the problem that Cameron claims happened?

14:08 17 A. It would help reduce the erosion problem with what we call
14:09 18 "explosive decompression."

14:09 19 If you've got high pressure inside the drill pipe and
14:09 20 the blind shear rams come in and cut the pipe, that high
14:09 21 pressure is going to explode out of the drill pipe, and you
14:09 22 could potentially damage your seals. That's a well-known fact
14:09 23 in the blowout preventer business.

14:09 24 Q. What would -- the CSR-then-BSR solution, what effect would
14:09 25 that have on that?

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14:09 1 A. As I said, the casing shear rams, when they cut the pipe,
14:09 2 will basically shut off the flow. Not all of it; you will
14:09 3 still have well flow, but you diminish it substantially. So
14:09 4 the flow above the CSRs, the casing shear rams, is going to be
14:09 5 drastically reduced. That will help protect the blind shear
14:09 6 rams.

14:09 7 Q. By the way, later, during a later time, April 29, the
14:09 8 casing shear rams actually were activated on this blowout
14:09 9 preventer, weren't they?

14:09 10 A. They were.

14:09 11 Q. Were they -- on April 29, nine days when the well was
14:09 12 flowing later, were the casing shear rams successful in cutting
14:10 13 the pipe?

14:10 14 A. Yes.

14:10 15 Q. Do you know that from looking at all of the pipe put back
14:10 16 together at Michoud, the work DNV did, and your own
14:10 17 examination?

14:10 18 A. Yes. I have been out at Michoud a number of times, and I
14:10 19 have looked at the casing shear rams. And the pattern on the
14:10 20 casing shear rams indicate that they, number one, were closed
14:10 21 and they were subjected to flow.

14:10 22 Q. And what impact does that have -- the fact that the casing
14:10 23 shear rams were significantly -- were successful in cutting the
14:10 24 pipe on April 29, what impact does that have on your opinion
14:10 25 that the casing shear rams should have been utilized first on

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14:10 1 April 20?

14:10 2 A. If the casing shear rams would have been activated first
14:10 3 on April 20, you would have had a much better chance of getting
14:10 4 the blind shear rams to shear the pipe, not suffer from
14:10 5 explosive decompression from the drill pipe; and the ram blocks
14:10 6 would come together, shut in the well, and be able to energize
14:11 7 the seals.

14:11 8 Q. With respect to the off-center pipe issue, would it help
14:11 9 with the off-center pipe issue?

14:11 10 A. Once the casing shear rams cut, say, a buckled pipe, if
14:11 11 the pipe was buckled from forces from below, once you cut it,
14:11 12 you eliminated the column, the column becomes no more. What
14:11 13 you have got is a small stem sticking below the annulus.

14:11 14 Q. Are there documents in the case that support your opinion
14:11 15 that closing the bottommost ram will help protect the sealing
14:11 16 capacity of the uppermost ram?

14:11 17 A. That's true.

14:11 18 MR. WILLIAMSON: Would you please let me have BP's
14:11 19 well control manual, TRES-2390, Call-out 8.

14:11 20 THE COURT: Let me ask the witness a couple
14:11 21 questions. I want to make sure I understand.

14:11 22 You're talking about strictly an operational
14:11 23 decision as to what is activated first?

14:11 24 THE WITNESS: Correct.

14:11 25 THE COURT: You're not talking about redesigning or

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14:11 1 reprogramming the BOP in any way?

14:11 2 THE WITNESS: No. Well, you are reprogramming
14:11 3 somewhat. You're activating another BOP element before --

14:12 4 THE COURT: Well, when I say "reprogram" -- that's
14:12 5 probably a bad word. What I meant was you are not changing the
14:12 6 design of any of the annulars or shearing rams or anything
14:12 7 else?

14:12 8 THE WITNESS: No.

14:12 9 THE COURT: You are saying this could have been done
14:12 10 with the same exact blowout preventer and the same -- but it
14:12 11 would be programmed differently? That's what I'm trying to
14:12 12 understand. Or was it just a decision that the people on the
14:12 13 rig would make when this occurs?

14:12 14 THE WITNESS: Well, true. If you are going into an
14:12 15 emergency mode, the people on the rig have to decide which mode
14:12 16 they are going to use. Are they going to use EDS-1.

14:12 17 THE COURT: This is preprogramming. Is that what
14:12 18 you're saying?

14:12 19 THE WITNESS: Right, it's preprogrammed.

14:12 20 THE COURT: Two options that are programmed?

14:12 21 THE WITNESS: Correct.

14:12 22 THE COURT: You're saying 2 should have been used
14:12 23 instead of 1?

14:12 24 THE WITNESS: Yes. 2 will fire the casing shears,
14:12 25 which are just below the blind shear rams. The casing shear

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14:13 1 rams are -- as Dr. Davis pointed out --

14:13 2 THE COURT: Should have just reversed the order in
14:13 3 which they were activated. Is that what you're saying?

14:13 4 THE WITNESS: Correct. The casing shears were
14:13 5 activated separately, like nine days later.

14:13 6 THE COURT: I understand that. But you're just
14:13 7 saying -- your opinion is they should have been activated
14:13 8 before there was an attempt to activate the blind shear rams?

14:13 9 THE WITNESS: Correct.

14:13 10 THE COURT: On the night of April 20.

14:13 11 THE WITNESS: Yes. If EDS or AMF had been such that
14:13 12 they could use the casing shear rams first, that would be
14:13 13 protection for the blind shear rams.

14:13 14 THE COURT: But what I'm still not a hundred percent
14:13 15 clear on is, was that already programmed in on the rig, where
14:13 16 it was a matter of whoever pressed the control pressed 1 of 2,
14:13 17 or would it have had to have been programmed differently before
14:13 18 that event?

14:13 19 MR. WILLIAMSON: May I assist?

14:13 20 THE COURT: Wait, wait. No. I would like the
14:13 21 witness to answer.

14:13 22 THE WITNESS: It can be done at the control panel.
14:14 23 You can go 1 or 2.

14:14 24 THE COURT: I think that answers my questions.

14:14 25 Go ahead, Mr. Williamson.

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14:14 1 MR. WILLIAMSON: Sure. Let me follow up with the
14:14 2 Court's inquiry.

14:14 3 Put back up D-3096.

14:14 4 BY MR. WILLIAMSON:

14:14 5 Q. "Gregg, in order to go, use the casing shear rams first
14:14 6 and then the blind shear rams."

14:14 7 What would Transocean have to do if they were
14:14 8 activating the EDS system?

14:14 9 A. My understanding, as I told the Judge, would be to change
14:14 10 from EDS-1 to EDS-2.

14:14 11 Q. So push a button?

14:14 12 A. My understanding is you push a couple of buttons.

14:14 13 Q. So EDS was programmed so that they could do CSR then BSR
14:14 14 if they wanted to?

14:14 15 A. Yes. They could do it in an emergency mode, or they could
14:14 16 do it in a manual mode. They would have a control disconnect
14:14 17 sequence or an emergency disconnect sequence. Control is done
14:14 18 manually.

14:14 19 Q. Let me go to the second system, AMF, the one that's
14:14 20 sometimes called a "deadman system" because it's supposed to
14:14 21 work independent of human intervention.

14:14 22 A. Correct.

14:14 23 Q. Was AMF programmed so that it would go to casing shear
14:15 24 first, then blind shear?

14:15 25 A. No. And it --

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14:15 1 Q. What would have to be done to make the AMF system operate
14:15 2 casing shear first, then blind shear?

14:15 3 A. You would probably have to make some adjustments in the
14:15 4 plumbing as well as the SEM cards, the POCs.

14:15 5 Q. Was it done? I mean -- I'm sorry. Is that feasible to be
14:15 6 done?

14:15 7 A. I believe it is.

14:15 8 Q. Third system: "Autoshear." Was autoshear set up -- could
14:15 9 autoshear be programmed or set up so that it would fire the
14:15 10 casing shear rams, then the blind shear rams?

14:15 11 A. I believe -- autoshear is strictly a hydraulic function.
14:15 12 When we saw the pin being cut yesterday on the video, that
14:15 13 triggers the blind shear rams to basically shut in and seal the
14:15 14 well. The LMRP then would separate from the blowout preventer
14:15 15 stack.

14:15 16 I believe autoshear, using hydraulic principles, you
14:15 17 could actually do it such that it was similar to EDS-2.

14:15 18 **MR. WILLIAMSON:** Could I see Exhibit 1300, Fly-out 5?

14:16 19 I guess first we need to see the cover page. I
14:16 20 apologize.

14:14 21 **BY MR. WILLIAMSON:**

14:14 22 Q. This is the shear ram capability study by West
14:16 23 Engineering?

14:16 24 A. It is.

14:16 25 Q. Fly-out 5.

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1 **MR. WILLIAMSON:** I'm sorry, Your Honor. This is
2 September 2004.

3 **BY MR. WILLIAMSON:**

4 **Q.** "Automatically actuated shear sequences where the operator
5 does not have the opportunity to ensure no tool joint is in the
6 shear path pose additional risk. It is for this reason, among
7 others, that newer-generation rigs with casing shear rams plan
8 to shear with the casing shears, lift up the drill pipe, and
9 then close the sealing shear rams to seal the bore."

10 Did West Engineering -- is that consistent with your
11 opinion today, the opinion they rendered in September 2004?

12 **A.** Yes, it generally is.

13 **MR. WILLIAMSON:** Can I see the same document,
14 Fly-out 9, same exhibit.

15 **BY MR. WILLIAMSON:**

16 **Q.** "Note: The second sealing shear increases probability of
17 sealing after shear. The casing shear ram increases the
18 probability of shearing all varieties of tubulars. The vast
19 majority of rigs with casing shears place them below the
20 sealing shear rams. The belief is that there is a higher
21 probability of being able to pick up or remove the drill pipe
22 fish than for the lower drill pipe fish to be able to go
23 downhole to clear the sealing rams. This approach seems the
24 most reasonable."

25 The opinion that West Engineering rendered for the

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14:17 1 USMMS in September 2004, is that consistent or inconsistent
14:17 2 with your opinion?

14:17 3 A. No, it's very consistent. And it also speaks to how
14:17 4 capping stacks are used where you have one ram below another
14:17 5 ram.

14:17 6 MR. WILLIAMSON: Let's turn to 4115, please. I
14:18 7 forget which fly-out it is. Let's see what paper that is.

14:14 8 BY MR. WILLIAMSON:

14:14 9 Q. 4115, I don't have a copy of it. These are handwritten
14:18 10 notes when the *Deepwater Horizon* blowout preventer was being
14:18 11 put together. These related specifically to the
14:18 12 *Deepwater Horizon* blowout preventer.

14:18 13 And this is -- someone is putting down: "The casing
14:18 14 rams closed in the BSRs, the BSRs closed only."

14:18 15 Do you see that?

14:18 16 A. I do.

14:18 17 Q. And the pros and cons on there. What's the pros and cons
14:18 18 of doing the casing shear rams first?

14:18 19 A. If I can read this, it says: "Nondamage to the BSR seal."
14:18 20 That's a pro.

14:18 21 A con is they are going to need more bottles, more
14:18 22 accumulator bottles for volume and pressure.

14:18 23 Another pro is cut additional tubulars, drill pipe
14:19 24 casing up to 6 -- I think that's 6 1/2-inch drill collars, DCS.

14:19 25 Cons is 100 percent redundancy versus 400 percent.

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1 Do you want me to continue reading?

2 Q. No, I think that's enough to get the drift. My only point
3 is the issue of whether to use CSR first, then BSR was actually
4 discussed when the *Deepwater Horizon* BOP was being put
5 together.

6 MS. KARIS: Your Honor, I'm going to object to the
7 relevance of this line of questioning. Mr. Davis testified
8 that the blind shear rams did, in fact, shear the pipe and did
9 seal the well. He explained then, following the explosion,
10 what happened to release that seal.

11 But given that the plaintiffs have already put
12 on an expert who said the blind shear rams, in the sequence
13 they were activated, did shear the pipe and did seal the well.

14 This alternative approach for operating the BOP,
15 I don't see what relevance it has here.

16 MR. WILLIAMSON: Your Honor, it completely is
17 relevant because they didn't seal the well. The blind shear
18 rams, when they fired, which was clearly before the rig sank,
19 did not seal the wellbore. That's been conceded by all.

20 The BOP experts are disagreeing over what
21 modality caused the failure to seal.

22 One theory is erosion. That's Cameron's theory.

23 One theory is off-center pipe. That's
24 Dr. Davis's theory.

25 One theory is multifactorial. That's

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14:20 1 Mr. Perkin's theory. There's other theories All I'm proving is
14:20 2 this solves the problem, and I think that's relevant to the
14:20 3 very issue of whether or not this catastrophe could have been
14:20 4 prevented.

14:20 5 **MS. KARIS:** Your Honor, if I may.

14:20 6 **THE COURT:** What is this document, the handwritten
14:20 7 notes? You gave us a number, but I'm not sure where this came
14:20 8 from or whose notes.

14:20 9 **MR. WILLIAMSON:** These are notes that were written
14:20 10 when they designed the -- when they ordered the blowout
14:20 11 preventer in 1998, BP, through a company called Vastar,
14:21 12 Transocean -- which at that time was a company named R&B
14:21 13 Falcon -- and Cameron.

14:21 14 **THE COURT:** Whose notes are these? Are these from
14:21 15 somebody at Cameron? Somebody at Vastar?

14:21 16 **MR. WILLIAMSON:** These are meeting minutes from
14:21 17 Cameron, BP, Transocean. I'll switch to another exhibit to
14:21 18 make it clearer.

14:21 19 **MR. JONES:** There's no foundation of that at all,
14:21 20 Your Honor. In fact, if he shows the whole document, it will
14:21 21 show exactly where these notes came from.

14:21 22 **THE COURT:** Well, that's what I've been trying to get
14:21 23 to.

14:21 24 Where do these notes come from? What's the
14:21 25 whole document?

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14:21 1 MR. WILLIAMSON: It's a Vastar document, Your Honor,
14:21 2 where Vastar -- which would be BP -- is making notes about the
14:21 3 pros and cons.

14:21 4 THE COURT: Is there some other evidence or testimony
14:21 5 about this document?

14:21 6 MR. WILLIAMSON: Yes.

14:21 7 THE COURT: As to when this occurred, who was at the
14:21 8 meeting, or whatever is going on?

14:21 9 MR. WILLIAMSON: Mr. Byrd addressed -- I'm 99 percent
14:21 10 sure that Mr. Mike Byrd, who was BP's 30(b)(6) --

14:21 11 THE COURT: He talked about this in a deposition that
14:21 12 is in evidence?

14:22 13 MR. WILLIAMSON: Yes, Your Honor.

14:22 14 THE COURT: That's all I want to know.

14:22 15 MS. KARIS: Your Honor, we are in the process of
14:22 16 confirming it. My colleague, Mr. Collier, was at that
14:22 17 deposition and does not believe that's accurate. But I can't
14:22 18 represent to the Court --

14:22 19 THE COURT: Well, we'll figure that out. I was just
14:22 20 trying to get some idea of where these notes came from.

14:22 21 MR. WILLIAMSON: I will move on to another document
14:22 22 that will be clearer.

14:22 23 THE COURT: Go ahead.

14:22 24 MR. WILLIAMSON: Put up 4114, the cover, first.
14:22 25 4114.

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1 Please let me see the title for that.

2 **BY MR. WILLIAMSON:**

3 **Q.** This is "Vastar Resources, Inc., *Deepwater Horizon*
4 Technical Position Paper," dated September 13, 1999, and it's
5 Mike Byrd.

6 **MR. WILLIAMSON:** Can you please show me -- can you
7 please go to the last page, page 7, on this document.

8 Please blow that up so we will see who signed
9 off on it.

10 **BY MR. WILLIAMSON:**

11 **Q.** This is signed off on by Vastar subsea consultant Mike
12 Byrd, September 1999; Kevin Wink, *Deepwater Horizon* rig
13 manager, signed off in 2000; and Don Weisinger, Vastar project
14 manager, December '99.

15 **MR. WILLIAMSON:** Go back out to the first page,
16 please.

17 Go to the paragraph so we can see what the paper
18 is about.

19 **BY MR. WILLIAMSON:**

20 **Q.** "Issue: Initiation of either the emergency disconnect
21 system or deadman system requires certain functions on the
22 stack to execute within a certain amount of time."

23 **MR. WILLIAMSON:** Go down below to what should be
24 Fly-out 1, the next fly-out.

25

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14:22 1 BY MR. WILLIAMSON:

14:22 2 Q. "There will be three possible modes of disconnecting the
14:24 3 LMRP from the lower stack: controlled disconnect, emergency
14:24 4 disconnect, and deadman system disconnect."

14:24 5 MR. WILLIAMSON: Go to the next fly-out. Go to
14:24 6 Fly-out 5. I apologize.

14:22 7 BY MR. WILLIAMSON:

14:22 8 Q. "In the casing mode the casing shears will close first to
14:24 9 enable shearing of the pipe; then the SBRs will close,
14:24 10 effecting the wellbore seal. This will minimize potential
14:24 11 damages to the SBRs from closing on something which they cannot
14:24 12 cut."

14:24 13 MR. WILLIAMSON: Then Fly-out 7.

14:22 14 BY MR. WILLIAMSON:

14:22 15 Q. "The DMS will close only the SBRs using the dedicated
14:25 16 shear bottle circuit. The casing shears will not be closed due
14:25 17 to accumulator volumetric constraints."

14:25 18 So when you look at technical position
14:25 19 paper 4114, the subject of whether to close the casing shear
14:25 20 rams first, then the blind shear rams, was that a subject of
14:25 21 discussion?

14:25 22 MS. KARIS: Your Honor, I'm going to object now to
14:25 23 cumulateness. This exact document and this precise language
14:25 24 that we just saw was the subject of examination with Dr. Davis.

14:25 25 THE COURT: This document?

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14:25 1 MS. KARIS: This document, this question, this issue.

14:25 2 THE COURT: I don't recall that, frankly.

14:25 3 I'm going to let him answer. Go ahead.

14:25 4 THE WITNESS: Yes, sir.

14:25 5 MR. DOYEN: Can I make a somewhat different
14:25 6 cumulateness objection? The EDS is interesting, but I think
14:25 7 we are all in agreement that after the explosion there was no
14:25 8 way to activate it. So whether it was EDS-1 or EDS-2 is
14:26 9 interesting philosophically but of no conceivable relevance to
14:26 10 causation in this case. I didn't mind it earlier, when we were
14:26 11 just trying to understand it, but I think going into it in
14:26 12 depth at this point is serving no purpose.

14:26 13 MR. WILLIAMSON: Can I --

14:26 14 THE COURT: That's a very good question for
14:26 15 cross-examination.

14:26 16 MR. DOYEN: Thank you.

14:26 17 THE COURT: Go ahead.

14:26 18 BY MR. WILLIAMSON:

14:26 19 Q. Should there have been a way to activate it after the
14:26 20 explosion?

14:26 21 A. Yes.

14:26 22 Q. How?

14:26 23 A. It should have been activated by -- the MUX cables being
14:26 24 gone, they had no communication electronically with the blowout
14:26 25 preventer stack. They didn't use the acoustic trigger.

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14:26 1 Q. Did Cameron sell an acoustic trigger in 1998?

14:26 2 A. My understanding was that they did.

14:26 3 Q. Does Cameron claim that their acoustic trigger works?

14:26 4 A. It does.

14:26 5 MR. WILLIAMSON: Please pull up Mr. Gaude's
14:27 6 deposition, page 76.

14:22 7 BY MR. WILLIAMSON:

14:22 8 Q. TREX-25199:

14:27 9 "QUESTION: If you push buttons anywhere, you would
14:27 10 no longer have the ability to control or operate the BOP
14:27 11 if you the lose both MUX cables?

14:27 12 "ANSWER: That's correct."

14:27 13 Q. Do you agree with that, Gregg?

14:27 14 A. Correct.

14:27 15 Q. Did that happen here?

14:27 16 A. It did.

14:27 17 Q. "Is there an alternative?"

14:27 18 And Mr. Gaude is a hydraulic systems expert for
14:27 19 Cameron in this case, right?

14:27 20 A. Yes.

14:27 21 Q. "Is -- there's an alternative, isn't there? You can have
14:27 22 an acoustic system, for example, can't you?"

14:27 23 His answer was what?

14:27 24 A. "Correct."

14:27 25 Q. (Reading):

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14:27 1 "QUESTION: "Acoustic system can be installed on the
14:27 2 stacks. Cameron sells one, right?

14:27 3 "ANSWER: "We offer that and can quote that to
14:27 4 customers.

14:27 5 "QUESTION: Have you put any on?

14:27 6 "ANSWER: Yes, sir.

14:27 7 "QUESTION: Have you had good luck with them?

14:27 8 "ANSWER: As far as I know. I don't know of any
14:28 9 problems with it."

14:28 10 So was there a way that -- should Transocean and BP
14:28 11 have chosen to purchase an acoustic trigger, was there a way to
14:28 12 activate the BOP stack the way you think it should be activated
14:28 13 in order to try to seal this well?

14:28 14 A. MUX cables being a single point of failure, and they were
14:28 15 in this explosion, an acoustic trigger may have been -- or
14:28 16 probably would have been a way to activate the BOP after the
14:28 17 MUX cables were --

14:28 18 Q. Sure. And every rig that Transocean and BP have in the
14:28 19 North Sea, do they have acoustic triggers?

14:28 20 A. My understanding is that they do.

14:28 21 Q. Every well and rig that Transocean and BP have off Brazil,
14:28 22 do they have acoustic triggers?

14:28 23 A. My understanding is they do.

14:28 24 MS. KARIS: Your Honor, I object. Beyond the scope.
14:28 25 None of these documents, none of these other references, are in

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14:28 1 Mr. Perkin's reliance materials. And I believe the record will
14:28 2 show that in his deposition, when we asked him to identify
14:28 3 other rigs that had these features that he's telling us about
14:28 4 now, he was unable to do that.

14:29 5 **MR. WILLIAMSON:** What he responded was: "It's a
14:29 6 requirement in his reliance materials. It was a requirement in
14:29 7 Norway. And it was a requirement under NORSOK. So everything
14:29 8 drilling in the North Sea has an acoustic trigger. It's a
14:29 9 requirement under Petrobras, which is Brazil. And everything
14:29 10 in Brazil has an acoustic trigger."

14:29 11 It is not a requirement in the Gulf of Mexico.
14:29 12 And there is a paper, and I can put it up, whereby they discuss
14:29 13 purchasing an acoustic trigger for this well. And Transocean
14:29 14 and BP made the decision not to purchase that piece of
14:29 15 equipment. So -- and that is in his reliance materials. I'm
14:29 16 pretty sure it's Exhibit 1166. I will be happy to go to it
14:29 17 now, with the Court's permission.

14:29 18 **MS. KARIS:** I'm happy to defer to cross-examination.
14:29 19 But I think, while Mr. Williamson may have knowledge of these
14:29 20 facts, I'm not sure Mr. Perkin, at his deposition or in his
14:29 21 report, identified any of these facts.

14:29 22 But I can defer to cross.

14:29 23 **THE COURT:** Well, are these facts otherwise in
14:30 24 evidence, Mr. Williamson?

14:30 25 **MR. WILLIAMSON:** Yes, Your Honor. I believe what I

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1 just told the Court -- I will have to check, because I don't
2 want to get caught. I haven't had the privilege of being in
3 here much, and I don't my first experience to be telling you
4 something that isn't true.

5 But having said that, I believe it's in
6 Exhibit 1166, the secondary intervention article by West
7 Engineering.

8 **THE COURT:** If it's in evidence, I mean, I can read
9 it, you can read it. It's not very productive to have
10 Mr. Perkin tell me what it says.

11 **MR. WILLIAMSON:** All I was trying to do is prove --

12 **THE COURT:** I just read the testimony you put up on
13 the screen. We can all understand that, I think.

14 **MR. WILLIAMSON:** Sure. Let me finish with that
15 particular line of questioning.

16 Could I have exhibit -- since we are on this
17 line, Your Honor -- could I have Demonstrative 2077.

18 That's not 2077. That's 2177.

19 **BY MR. WILLIAMSON:**

20 **Q.** Gregg, please tell the Court what they are looking at.

21 **A.** They are looking at the top portion of the riser and the
22 rig floor. Up here is the rig floor. Here is the telescopic
23 joint. Here are the MUX cables.

24 Let me see if I'm doing this right, because I can't
25 see that very well.

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14:31 1 These are the MUX cables.

14:31 2 **THE COURT:** You can also touch the screen.

14:31 3 **THE WITNESS:** Oh, I can? Okay. Well, I can do it

14:31 4 this way.

14:31 5 There's the MUX cables, blue, yellow.

14:31 6 These are hydraulic hose connectors.

14:31 7 This is the moon pool area here.

14:31 8 There's the top of the telescopic joint, the

14:31 9 packer housing, and so on.

14:31 10 Then the ocean is down here.

14:31 11 **BY MR. WILLIAMSON:**

14:31 12 **Q.** Here's my point. When you configure the MUX cables, where

14:32 13 they meet at the top of the riser, what have you created?

14:32 14 **A.** My understanding, that the moon pool is a hazardous area

14:32 15 because you can have gas in that area and you create a single

14:32 16 point of failure.

14:32 17 **Q.** What is a single point of failure?

14:32 18 **A.** A single point of failure is, if you have that failure

14:32 19 occur to that system, you have no backup.

14:32 20 **Q.** Is the whole purpose of having the yellow and blue

14:32 21 systems -- what's the purpose of that?

14:32 22 **A.** Well, the purpose is to have redundancy. If the yellow

14:32 23 pod doesn't work, as Dr. Davis talked about yesterday, you have

14:32 24 the blue pod, and vice-versa.

14:32 25 But you have their communications from the seafloor

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14:32 1 to the rig going through a single point of failure, which is
14:32 2 the moon pool area.

14:32 3 Q. Given that, does this support your opinion there should
14:32 4 have been an acoustic trigger?

14:32 5 A. If this was truly a single point of failure, which I
14:32 6 believe it was and it was identified in other documents, then
14:33 7 an acoustic trigger would have probably -- well, in my opinion
14:33 8 would have been a good backup to this single point of failure.

14:33 9 MR. WILLIAMSON: Please let me have Exhibit 7581.

14:33 10 BY MR. WILLIAMSON:

14:33 11 Q. This is a Global Maritime, GlobalSantaFe document. Have
14:33 12 you reviewed it?

14:33 13 A. Yes.

14:33 14 Q. Let me see if I can figure out what fly-out to go to.

14:33 15 MR. WILLIAMSON: The date on this, Your Honor, is, on
14:33 16 TREN-7581, June 2002, April 2003.

14:33 17 Please go to Fly-out 1.

14:33 18 BY MR. WILLIAMSON:

14:33 19 Q. By the way, GlobalSantaFe is the company that you say was
14:33 20 merged with Transocean?

14:33 21 A. Yes, sir.

14:33 22 Q. As of 2002 and 2003, GlobalSantaFe did this report that's
14:33 23 called "BOP Failure Modes Effects Analysis"?

14:34 24 A. Yes.

14:34 25 MR. WILLIAMSON: Fly-out 1. Go to the next fly-out.

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1 I'm sorry.

2 **BY MR. WILLIAMSON:**

3 **Q.** Does it say, "A fire could disable the blue or yellow
4 network cable; however, if the cable routes were separate, it
5 is unlikely that both channels would be affected"?

6 **A.** Correct.

7 **Q.** Did GlobalSantaFe, now Transocean, recognize this as a
8 problem?

9 **A.** Evidently.

10 **MR. WILLIAMSON:** Please go to the next fly-out,
11 Fly-out 2.

12 **BY MR. WILLIAMSON:**

13 **Q.** It says: "The proposed sequence is based on using the
14 casing shear rams to perform all cutting operations and the
15 blind shear rams for securing the wellbore."

16 Is this another document from GlobalSantaFe that
17 supports your CSR/BSR theory?

18 **MR. JONES:** Your Honor, could we have nonleading
19 questions?

20 **MR. WILLIAMSON:** I'm sorry, Your Honor.

21 **THE COURT:** What's the significance of this?

22 **THE WITNESS:** It discusses the use of the casing
23 shear rams first to cut the pipe, whatever is in the hole, and
24 use that followed by the blind shear rams.

25 **MR. WILLIAMSON:** Next fly-out, please.

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14:35 1 Next fly-out, please. The numbers are off.

14:35 2 **BY MR. WILLIAMSON:**

14:35 3 **Q.** "A fire could disable the blue or yellow network cabling;
14:35 4 however, if the cable routes were separate, it is unlikely that
14:35 5 both channels would be affected."

14:35 6 **MR. WILLIAMSON:** Next fly-out, please.

14:35 7 **THE COURT:** You're not identifying these by number
14:35 8 for the record, you know, Mr. Williamson. You're just saying
14:35 9 "next fly-out." When you go to put these in the record, we
14:35 10 need to have numbers. They have numbers on each of these, I
14:35 11 believe.

14:35 12 **MR. WILLIAMSON:** Yes, Your Honor. I think this
14:35 13 was --

14:35 14 **THE COURT:** It looks like it's 043. I'm going by
14:35 15 that number at the top, 7581. Is that a TREX number or
14:36 16 demonstrative number?

14:36 17 **MR. WILLIAMSON:** That is a TREX number, Your Honor.

14:36 18 **THE COURT:** 043 is the specific page, for example,
14:36 19 right?

14:36 20 **MR. WILLIAMSON:** Right.

14:36 21 Let's go back one from this one to Fly-out 4. The
14:36 22 next fly-out after that should be Fly-out 5.

14:36 23 **THE COURT:** Wait. I want to make sure that the
14:36 24 record is kept straight. You are referring to -- and I think
14:36 25 other people have done the same thing -- Fly-out 1, Fly-out 2,

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1 etc. That's not the exhibit number or the page number. So
2 shouldn't we be identifying these as to what -- not only what
3 exhibit number they are from, but what page in that exhibit
4 they are from?

5 **MR. WILLIAMSON:** Right. Your Honor, could I go to --

6 **THE COURT:** For example, right now you are on
7 Exhibit TREX-7581, page 41, paragraph 9.3.1. That's what we
8 are talking about, right?

9 **MR. WILLIAMSON:** Yes, Your Honor.

10 **THE COURT:** I think it would be helpful if you
11 identify these so-called fly-outs like that. That way
12 everybody will understand what we are talking about and whoever
13 has to read this record later will understand what document we
14 are talking about.

15 **MR. WILLIAMSON:** You are correct, Judge.

16 **THE COURT:** Go ahead.

17 **BY MR. WILLIAMSON:**

18 **Q.** TREX-7581, paragraph 9.3.1, what is marked page 40 on the
19 document: "A fire could disable the blue or yellow network
20 cabling; however, if the cable routes were separate, it is
21 unlikely that both channels would be affected. In the event of
22 failure of the blue and yellow CCUs, it would be necessary to
23 deploy the ROV to close the stack rams; however, the use of the
24 ROV could be limited by environmental conditions preventing the
25 launch of the vehicle. However, the control system is

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14:37 1 configured for the installation of an acoustic backup if
14:37 2 required by a client and this would provide additional
14:37 3 contingency."

14:38 4 Did I read it correctly, Mr. Perkin?

14:38 5 A. Almost, but yes.

14:38 6 Q. GlobalSantaFe's analysis in 2003, how does that impact
14:38 7 your opinion that you have given the Court about an acoustic
14:38 8 trigger?

14:38 9 A. An acoustic trigger would be -- could be used on this
14:38 10 stack.

14:38 11 Q. Would that have been a good oil field practice?

14:38 12 A. It would have eliminated the single point of failure, and
14:38 13 for this well it probably would have been a good idea.

14:38 14 Q. I want to go to the issue of worst possible case. Do you
14:38 15 have an opinion as to the worst possible case that this well
14:38 16 could deliver in terms of wellbore pressures to the BOP?

14:38 17 A. I do.

14:38 18 Q. What does it matter? What does wellbore pressure have to
14:39 19 do with whether the BOP can correctly operate?

14:39 20 A. Wellbore pressure in a subsea BOP can work against the
14:39 21 actuators that are allowing the ram blocks to come together.
14:39 22 The rods that are connected to the ram blocks are sealed and on
14:39 23 one side you have the actuator, which is subject to the
14:39 24 hydraulic pressure being provided by the accumulator. On the
14:39 25 other side you have the wellbore pressure.

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1 Wellbore pressure is going to push against those
2 rods, and the accumulator pressure is going to push against the
3 actuator. So they fight each other. So wellbore pressure can
4 be -- it has to be taken into consideration when you are
5 dealing with designing the stack for worst possible case.

6 Q. Should you design the stack for worst possible case?

7 A. Yes.

8 Q. What do you think, in your engineering opinion, is the
9 worst possible case at Macondo?

10 MS. KARIS: Your Honor, I'm going to object to this
11 as cumulative. This was the MASP, if you recall me asking
12 Dr. Davis about maximum anticipated surface pressure. That's
13 what this very subject is. Dr. Davis already spoke to it. I
14 went through the permit with him. We looked at the
15 calculations. This is cumulative.

16 MR. WILLIAMSON: It's definitely not cumulative. BP
17 has a theory of MASP whereby they use a certain type of MASP
18 and they are arguing about MMS regulations. I'm not going to
19 be talking about MMS regulations. I'm going to be talking
20 about the laws of chemistry and the laws of physics, what could
21 it produce on this blowout preventer at this place.

22 And it's definitely relevant because it's one of
23 the reasons this blowout preventer failed. Okay? And it has
24 not been discussed with -- as I can demonstrate through the use
25 of the exhibits it was not discussed with Dr. Davis and it has

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1 not been discussed in this case so far.

2 MS. KARIS: Your Honor, I respectfully disagree that
3 it was not discussed. Mr. Davis spoke to what the maximum
4 pressure was, used a different methodology for calculating it;
5 but it was precisely for this issue. And then I walked him
6 through --

7 THE COURT: You're right, he did talk about the
8 subject. It sounds like what I'm hearing from Mr. Williamson
9 is that his expert is going to have a different opinion?

10 MR. WILLIAMSON: Yes. Well, I don't think --

11 THE COURT: I'm just trying to figure this out.
12 Because if that's the case, even though they are all on the
13 same side of the courtroom here, we do have different parties.
14 We have -- the United States brought Dr. Davis in, as I recall,
15 right?

16 MR. WILLIAMSON: Yes.

17 THE COURT: This is the private individual and
18 business, I guess, plaintiffs, PSC, that the PSC represents?

19 MR. WILLIAMSON: Yes.

20 THE COURT: They are entitled to have their own
21 expert. I can't stop them from having their own expert, as
22 long as it doesn't get cumulative. If it's a different opinion
23 about the same subject, that's not cumulative. So I'm going to
24 overrule the objection. Until and unless I think it gets
25 cumulative.

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14:42 1 MR. WILLIAMSON: Fair, Your Honor. For the record --
14:42 2 just for the record, the United States has now resolved their
14:42 3 differences with Transocean. So our interests are not
14:42 4 necessarily a hundred percent aligned with respect to that
14:42 5 specific issue.

14:42 6 THE COURT: Let's go.

14:42 7 BY MR. WILLIAMSON:

14:42 8 Q. What is the worst possible case in your opinion that the
14:42 9 Macondo well can deliver in terms of wellbore pressures?

14:42 10 A. It's unloading the mud from the well, because you have a
14:42 11 gas column to surface. It's literally taking the drilling
14:42 12 mud -- the fluid in the well, your primary blowout preventer,
14:42 13 and basically expelling it out of the well.

14:42 14 Q. When that happens, when you expel all liquids from the
14:42 15 well, are you going to maximize the wellbore pressure that you
14:43 16 will see at the BOP?

14:43 17 A. That's the definition.

14:43 18 Q. Is that going to make the job of the BOP blind shear rams
14:43 19 closing more difficult?

14:43 20 A. It is, as I explained in an earlier answer.

14:43 21 Q. Have you done that calculation on Macondo?

14:43 22 A. I have done a number of calculations on Macondo.

14:43 23 Q. On that issue?

14:43 24 A. On that issue.

14:43 25 Q. I am going to turn to page 78 of your report, which is

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14 : 43 1 marked as Demonstrative 2661.

14 : 43 2 MR. WILLIAMSON: Your Honor, for the record, this is
14 : 43 3 out of page 78 out of TREN-7536. It is Demonstrative 2661.

14 : 43 4 BY MR. WILLIAMSON:

14 : 43 5 Q. The first chart up above, Gregg, you use 8904 psi to
14 : 43 6 calculate shearability?

14 : 43 7 A. That's what the chart says. There's a typo there. This
14 : 43 8 chart got put into the report. This is for the conditions at
14 : 44 9 the time of the incident, the blowout, more like 6100,
14 : 44 10 6500 psi, as I recall. It's a typo.

14 : 44 11 Q. So when we look at the pressures that were needed, if we
14 : 44 12 have that much pressure in the wellbore, about 6100 psi, that's
14 : 44 13 the amount of pressure we are going to need to apply to the
14 : 44 14 piston?

14 : 44 15 A. Correct.

14 : 44 16 Q. Am I doing it right or am I not?

14 : 44 17 A. You're doing it right. Forget this 8904. That's the
14 : 44 18 number that I calculated and BP calculated for MASP with
14 : 44 19 50 percent gas, 50 percent liquid. These numbers were
14 : 44 20 calculated using the Cameron shear charts, the engineering
14 : 44 21 bulletin, for about 6100, 6500 psi, as I recall. But you can
14 : 44 22 see there -- here's what they are. This is the 5 1/2 inch,
14 : 44 23 21.9 pounds per foot, S-135 drill pipe, and up to 6 5/8, 27.7.

14 : 44 24 Q. We'll come back to this in just one second so the Court
14 : 45 25 will understand how we derived this.

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14:45 1 MR. WILLIAMSON: Please go to TREN-1199.

14:45 2 BY MR. WILLIAMSON:

14:45 3 Q. Are you familiar with this engineering bulletin by
14:45 4 Cameron?

14:45 5 A. I am.

14:45 6 Q. TREN-1199 is an engineering bulletin called "Shearing
14:45 7 Capabilities of Cameron Shear Rams," put out on January 21,
14:45 8 2008, correct?

14:45 9 A. Correct.

14:45 10 Q. Does this engineering bulletin address the formulas you
14:45 11 are going to need to use to calculate what Cameron considers to
14:45 12 be shearability?

14:45 13 A. Yes.

14:45 14 Q. Let's quickly go through it.

14:45 15 MR. WILLIAMSON: Fly-out 4, please, which is on
14:45 16 page 2 out of 10 of TREN-1199.

14:45 17 BY MR. WILLIAMSON:

14:45 18 Q. "The presence of any wellbore pressure at the time of the
14:45 19 shearing taking place will exert a resisting force against the
14:45 20 piston and that shall reduce the effective closing force to the
14:46 21 shear ram assembly."

14:46 22 Is that true?

14:46 23 A. That's true. I just explained that to Judge Barbier.

14:46 24 Q. Does this -- by the way, does this shearing bulletin
14:46 25 address the use of DVS rams, CDVS rams, and SBR rams?

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14:46 1 A. All three, yes.

14:46 2 MR. WILLIAMSON: Go to Fly-out 6, please. It's on
14:46 3 page 4 out of 10 on Exhibit TRES-1199.

14:46 4 BY MR. WILLIAMSON:

14:46 5 Q. Is this the formula you were using when we go back to
14:46 6 page 78?

14:46 7 A. Yes.

14:46 8 Q. And this is the formula Cameron says to use?

14:46 9 A. Yes.

14:46 10 Q. As of 2008, two years before Macondo blew out?

14:46 11 A. Yes.

14:46 12 MR. WILLIAMSON: Go out to Fly-out 7, please, which
14:46 13 is page 6 of 10 of TRES-1199. Fly-out 7. Is that it? We have
14:47 14 to go up ten from the bottom.

14:47 15 BY MR. WILLIAMSON:

14:47 16 Q. One of these lines on this page identifies the particular
14:47 17 configuration of BOP that was present on Macondo, correct?

14:47 18 A. Correct.

14:47 19 MR. WILLIAMSON: Fly-out 8, please, which is page 7
14:47 20 of 10 of TRES-1199.

14:47 21 BY MR. WILLIAMSON:

14:47 22 Q. Does this also talk about the SBR ram?

14:47 23 A. It does.

14:47 24 Q. Does this also talk about the DVS and CDVS ram?

14:47 25 A. Yes.

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14:47 1 Q. You apply certain constants into the formula?

14:47 2 A. Correct. I would point out, too, that S-135, there is --
14:47 3 my understanding was there might be some B150 pipe on this rig,
14:47 4 which is not addressed by this chart.

14:47 5 Q. Let's talk about S-135. It's your understanding that
14:48 6 S-135 is the grade of pipe that was across the BOP when this
14:48 7 disaster happened?

14:48 8 A. Yes.

14:48 9 Q. What does "S-135" mean?

14:48 10 A. 135 is the yield strength. It's the minimum as specified
14:48 11 typically by the manufacturer and the American Petroleum
14:48 12 Institute. So 135,000 psi, pounds per square inch, is the
14:48 13 yield stress or the yield strength of the pipe at a minimum.
14:48 14 It means a minimum. It could be more. It could be 140. It
14:48 15 could be 142. It could be 145. The actual pipe in the
14:48 16 wellbore could be 135 or greater.

14:48 17 Q. If I change from S-135 and instead of having
14:48 18 135,000 pounds per square inch shear -- you said at a minimum?

14:48 19 A. At a minimum.

14:48 20 Q. If I change that to 140,000, in other words, can a piece
14:48 21 of S-135 be more than 135,000?

14:48 22 A. It can be.

14:49 23 Q. What would be the effect on its ability to be sheared?

14:49 24 A. It would take more shearing force.

14:49 25 MR. WILLIAMSON: Next fly-out, please, which is also

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14:49 1 on page 7 of 10 at TREX-1199, Fly-out 9.

14:49 2 **BY MR. WILLIAMSON:**

14:49 3 **Q.** I want to turn to the middle. It says: "Large variations
14:49 4 in actual shear pressures are a consequence of the tubular
14:49 5 manufacturer's allowable variance in the mechanical properties
14:49 6 and significant dimensional tolerances."

14:49 7 **A.** Dimensional tolerances have to do with the fact that pipe
14:49 8 isn't necessarily round. It can have a slightly larger OD,
14:49 9 sometimes a slightly smaller OD, or a slightly larger ID,
14:49 10 meaning inside diameter. It can have other variations as well.
14:49 11 So that can affect shearability.

14:49 12 **MR. WILLIAMSON:** Go to Fly-out 10, which is page 10
14:50 13 out of 10, TREX-1199.

14:50 14 **BY MR. WILLIAMSON:**

14:50 15 **Q.** The purpose is to notify Cameron equipment users that
14:50 16 Engineering Bulletin EB 702 D has been updated to provide the
14:50 17 most up-to-date shearing information that Cameron has regarding
14:50 18 the shearability of drilling tubulars.

14:50 19 **MR. WILLIAMSON:** Please go to the next fly-out,
14:50 20 Fly-out 11, the same page of TREX-1199.

14:50 21 **BY MR. WILLIAMSON:**

14:50 22 **Q.** Example: The required shearing force has been recorded to
14:50 23 be as low as 2250 psi and as high as 3540 psi.

14:50 24 What does Cameron mean by that?

14:50 25 **A.** It means you could have a variation in the material

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14:50 1 properties and geometry that would affect that number.

14:50 2 Q. And the last fly-out of this one, Fly-out 12: "Cameron
14:50 3 has performed extensive testing over the years to validate and
14:51 4 investigate if a tubular is shearable with a given BOP operator
14:51 5 configuration." Correct?

14:51 6 A. Yes.

14:51 7 Q. Did you find any evidence that BP used 1199 to calculate
14:51 8 the shearability of the drill strings aboard the
14:51 9 *Deepwater Horizon*?

14:51 10 A. No.

14:51 11 Q. This was out two years, right?

14:51 12 A. 2008, yes.

14:51 13 MR. WILLIAMSON: Could you show me stipulation --
14:51 14 while we are on this subject, someone please show me a
14:51 15 stipulation which is marked as TREN-4741.

14:51 16 BY MR. WILLIAMSON:

14:51 17 Q. While that's coming up, let me ask you this: Did you find
14:51 18 any evidence that Transocean on Macondo --

14:51 19 MR. WILLIAMSON: I don't think that's it. What
14:51 20 number is the stipulation?

14:51 21 BY MR. WILLIAMSON:

14:51 22 Q. Did you find any information -- while I'm looking for that
14:51 23 exhibit number, did you find any information that Transocean
14:52 24 calculated and used 1199, TREN-1199, put out by Cameron to
14:52 25 calculate worst possible case or shearability numbers for the

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14:52 1 drill strings on Macondo?

14:52 2 A. Not that I recall.

14:52 3 MR. WILLIAMSON: Let's go back to page 78 now, while
14:52 4 we look for that. Do you have it?

14:52 5 Your Honor, may I switch to the ELMO?

14:52 6 THE COURT: Sure.

14:52 7 MR. WILLIAMSON: Your Honor, this is a document filed
14:52 8 in this case. It's a stipulation by Transocean. It's
14:52 9 called -- I would ask the Court to take judicial notice of it.

14:52 10 THE COURT: What's the record document number?

14:52 11 MR. WILLIAMSON: Yes, Your Honor. It is
14:52 12 Document 4741.

14:52 13 THE COURT: Okay. Thank you.

14:52 14 BY MR. WILLIAMSON:

14:52 15 Q. Stipulation regarding Well Advisor.

14:52 16 Gregg, did you briefly look at the Well Advisor tool
14:53 17 or the printout?

14:53 18 A. I think I did.

14:53 19 Q. Okay. Transocean stipulated -- it is a copy of
14:53 20 Transocean's Well Advisor tool. "This exhibit, along with its
14:53 21 native format, shall be in the business records of Transocean,
14:53 22 admissible in evidence, along with this stipulation. The Well
14:53 23 Advisor is a spreadsheet tool authored by Transocean's well
14:53 24 operations group, available to be used in their discretion by a
14:53 25 Transocean senior drilling crew and/or the rig manager

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1 performance to assist in evaluating a customer's well design
2 planning."

3 Okay. We'll read the rest of the stipulation.

4 "For Macondo, Transocean's vessel management, both on
5 the rig and shore side, elected to use Well Advisor to evaluate
6 the well's kick tolerance on or about February 6, 2010, when
7 the *Deepwater Horizon* was at MC252 and about to commence
8 drilling operations. Other spreadsheet tabs of Well Advisor,
9 Well Review Checklist, Well Overview, Maximum Pressure at BOP
10 and Surface, Pore Pressure, Mud, and Fracture Pressure Chart,
11 Well Control Preparation Checklist, were not used by Transocean
12 at Macondo.

13 "Also attached to this stipulation, Exhibits 4902 and
14 1586, e-mail strings, dated February 2010, and a Well Advisor
15 spreadsheet that reflects the kick tolerance calculation
16 undertaken and described in paragraph 3. These exhibits are
17 the copies or business records of Transocean and are stipulated
18 to be admissible in evidence."

19 Given Transocean, did they calculate on this well
20 what the maximum pressure could be available at the blowout
21 preventer?

22 A. By this they said they did not.

23 Q. Should they?

24 A. Sure.

25 Q. Why?

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14:55 1 A. To promote safety, to make sure the well is being drilled
14:55 2 safely, to protect the environment, to protect their people, to
14:55 3 protect their equipment, to manage the drilling operation in a
14:55 4 safe and prudent manner, to use good oilfield practices. A
14:55 5 number of things.

14:55 6 Q. I want to show you Exhibit 1454, Fly-out 1.

14:55 7 MR. WILLIAMSON: TREN-1454, Your Honor, is the
14:55 8 Transocean well control manual, and it's 01454. Fly-out 1 is
14:55 9 the cover.

14:55 10 BY MR. WILLIAMSON:

14:55 11 Q. Is this from the Transocean well control manual?

14:55 12 A. It is.

14:55 13 Q. Is this what one -- what Transocean described as maximum
14:55 14 anticipated surface pressure?

14:56 15 A. It is.

14:56 16 Q. What part of this is most relevant for the part we are
14:56 17 reading or we're talking about?

14:56 18 A. It is right here: "The maximum anticipated pressure at
14:56 19 the BOP is typically calculated using a worst-case scenario,
14:56 20 assuming full evacuation of the drilling fluid to gas from the
14:56 21 section, total depth to the BOP/wellhead."

14:56 22 Q. Did Transocean do that?

14:56 23 A. No.

14:56 24 Q. Okay. So did Transocean comply with its own well control
14:56 25 manual when they were drilling this well?

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14:56 1 A. They did not.

14:56 2 MR. WILLIAMSON: Fly-out 14, please.

14:56 3 For the record, the fly-out that I just read is
14:56 4 from TREN-1454, and it is on what is marked Bates stamp
14:57 5 TRN-MDL-00286797.

6 BY MR. WILLIAMSON:

14:57 7 Q. Next, we go to Fly-out --

14:57 8 THE COURT: Well, wait a minute. I'm looking at the
14:57 9 screen. What's on the screen is Exhibit 1454, it looks like,
14:57 10 page 31.

14:57 11 MR. WILLIAMSON: The one I'm looking at, Your Honor,
14:57 12 says page 1 of 12.

14:57 13 THE COURT: Well, I'm just looking at what's on the
14:57 14 screen, and at the very top -- well, it just got covered up.
14:57 15 You see the number up at the top?

14:57 16 So I don't want this record to be all confused
14:57 17 with all these different numbers. We have to keep this
14:57 18 straight. Look at your screen. Look at your screen,
14:57 19 Mr. Williamson, the screen right next to the podium. Look at
14:57 20 the top.

14:57 21 MR. WILLIAMSON: I'm not seeing it.

14:58 22 THE COURT: 01454-031.

14:58 23 MR. WILLIAMSON: Right. That's 01454-031.

14:58 24 THE COURT: That's what I just said.

14:58 25 MR. WILLIAMSON: I didn't mean to argue with the

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14:58 1 Court. That wasn't a number that was showing up --

14:58 2 **THE COURT:** That's a different number than what you
14:58 3 were using. My point is this record is going to be totally
14:58 4 confused if you-all don't use some kind of consistent number
14:58 5 identification here when you are using exhibits during the
14:58 6 trial.

14:58 7 **MR. WILLIAMSON:** Yes, Your Honor. Point well taken.

14:58 8 **THE COURT:** Go ahead.

14:58 9 **MR. WILLIAMSON:** Go to Fly-out 14. This is also
14:58 10 TREX-1454. Switch to the ELMO.

14:58 11 **BY MR. WILLIAMSON:**

14:59 12 **Q.** This is another page out of TREX-1454. At the top it
14:59 13 says: "Section 9, Subsection 1. The following well control
14:59 14 equipment and procedures are regarded as a minimum
14:59 15 requirement."

14:59 16 What does it say down at "the pipe rams, shear
14:59 17 rams" -- please read it, Gregg.

14:59 18 **A.** "The pipe rams, shear rams, spool pieces, gate valves, and
14:59 19 any component attached to the BOP stack must have a working
14:59 20 pressure rating that exceeds the maximum anticipated surface
14:59 21 pressure," i.e., MASP, "under 'worst case' operating
14:59 22 conditions."

14:59 23 **Q.** Worst-case operating conditions are what, according to
14:59 24 Transocean and what we just read?

14:59 25 **A.** That is the scenario where the liquid in the well

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14:59 1 basically is unloaded by gas coming from the well.

15:00 2 MR. WILLIAMSON: Please turn to Exhibit 93,
15:00 3 Fly-out 7. This is a BP document. This is a BP document.

15:00 4 BY MR. WILLIAMSON:

15:00 5 Q. It says that the maximum allowable -- 15.2.3 out of
15:00 6 TREX-93 is: "The maximum allowable wellhead pressure shall
15:00 7 take into account a gas column to surface for exploration and
15:00 8 appraisal wells. For development wells, reservoir fluids shall
15:00 9 be used."

15:00 10 Did I read it correctly?

15:00 11 A. You did.

15:00 12 Q. So if BP's group practice drilling and well operations
15:00 13 practices believe -- are you supposed to use 50 percent
15:01 14 gas/50 percent liquid, or are you supposed to use something
15:01 15 different?

15:01 16 A. "Shall take into account a gas column to surface for
15:01 17 exploration."

15:01 18 Q. Is that consistent with your opinion that that is what
15:01 19 should be taken into account?

15:01 20 By the way, was Macondo an exploration well?

15:01 21 A. Yes.

15:01 22 Q. So is Macondo subject to this provision if BP is going to
15:01 23 follow its own group practice?

15:01 24 A. It should be, yes, sir.

15:01 25 THE COURT: All right. And again, you're at

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15:01 1 Exhibit 93, page 47.

15:01 2 MR. WILLIAMSON: Yes, the Court is completely
15:01 3 correct.

15:01 4 Please turn to Exhibit 215, Fly-out 1. This is
15:01 5 BP's group practice 10-10, TRES-215.

15:01 6 BY MR. WILLIAMSON:

15:01 7 Q. And it says -- what part -- which portion of this one is
15:02 8 the correct portion, Gregg?

15:02 9 A. I think you are looking at 6.1.3, where I have got my
15:02 10 pointer at, right here.

15:02 11 Q. Let's see --

15:02 12 A. "Maximum allowable wellhead pressure" --

15:02 13 Q. Hold up. Hold on one second.

15:02 14 MR. WILLIAMSON: For the record, it's 215-010.

15:02 15 BY MR. WILLIAMSON:

15:02 16 Q. Go ahead.

15:02 17 A. 6.1.3: The maximum allowable wellhead pressure," MASP,
15:02 18 "shall take into account a gas column to surface for
15:02 19 exploration and appraisal wells." It is virtually the same
15:02 20 thing we read just before.

15:02 21 Q. Right. So in two different group practice documents, BP
15:02 22 describes that you should be using a gas column to surface?

15:02 23 A. For an appraisal well or exploration well.

15:02 24 Q. In the Transocean well control manual, Transocean says you
15:02 25 should be using a gas column to surface?

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15:02 1 A. That's correct.

15:02 2 Q. Did they?

15:02 3 A. No.

15:02 4 MR. WILLIAMSON: Would you please pull up
15:02 5 Exhibit 1861, Fly-out 1.

15:02 6 BY MR. WILLIAMSON:

15:02 7 Q. This is an evaluation of the casing design basis for the
15:03 8 Macondo prospects, and this is actually done by Steve Morey
15:03 9 with BP Drilling. Have you seen this document?

15:03 10 A. I have.

15:03 11 Q. Please go to the next fly-out. You are not here to talk
15:03 12 about casing design, are you?

15:03 13 A. No.

15:03 14 Q. Okay. Fly-out 2. But Mr. Morey, when he did the casing
15:03 15 design -- has he done more than one of these? Are there
15:03 16 several of these in the record?

15:03 17 A. I believe there are.

15:03 18 Q. Right. In the particular language we are about to quote,
15:03 19 are they contained in every one of them?

15:03 20 A. I believe so.

15:03 21 Q. What does Mr. Morey say about worst-case situation? He
15:03 22 says --

15:03 23 A. Do you want me to read it?

15:03 24 Q. Go ahead, you read it.

15:03 25 A. "The AB packer load case default is a design with pore

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15:04 1 pressure external . . . so that a well that would not flow
15:04 2 would exhibit" --

15:04 3 THE COURT: You might read it better off your screen
15:04 4 in front of you.

15:04 5 THE WITNESS: You're probably right, Judge.

15:04 6 BY MR. WILLIAMSON:

15:04 7 Q. Start with -- you start.

15:04 8 A. I will just read it. I'll start on the second line up
15:04 9 here.

15:04 10 "The AB packer load case" -- or wait. "The AB packer
15:04 11 load case default is a design with pore pressure external and
15:04 12 zero pressure internal. This would simulate a well that would
15:04 13 not flow and was jetted of all fluid to below the perforations.
15:04 14 This would certainly be a worst-case scenario. However, I have
15:04 15 seen it happen, so I know it can occur."

15:04 16 I have seen it happen, too.

15:04 17 Q. That last sentence wasn't in the report.

15:05 18 Mr. Morey's comment was he has seen a well that is
15:05 19 jetted of all fluid to gas?

15:05 20 A. Yes.

15:05 21 Q. Would this indicate to you what the worst-case scenario
15:05 22 was for the person who was evaluating the casing? Namely,
15:05 23 could you achieve a 100 percent gas column to surface?

15:05 24 A. He believes you could. He's seen it happen.

15:05 25 Q. I'm going to ask personally Gregg Perkin. Has Gregg

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15:05 1 Perkin personally ever seen it happen?

15:05 2 A. I've seen it happen twice.

15:05 3 Q. Okay. Please describe.

15:05 4 A. There was a well blowout in South Texas that basically had
15:05 5 lost circulation. The fluid in the well basically got sucked
15:05 6 in by the formation, all of it. They couldn't get fluid out to
15:05 7 the well fast enough. You had basically well pressure in the
15:05 8 form of gas coming to the surface, and they overwhelmed the
15:05 9 BOPs.

15:05 10 Q. Okay.

15:05 11 A. Do you want the other one or just that one?

15:05 12 Q. That one will do for right now.

15:05 13 But the point is: Is it possible that you can go gas
15:06 14 to surface -- gas column to surface?

15:06 15 A. Yes.

15:06 16 Q. So when you are planning your BOP, what, in your opinion,
15:06 17 should you plan for?

15:06 18 A. You have to plan for worst-possible case, and the
15:06 19 worst-possible case would have to be -- as the documents show,
15:06 20 the worst-possible case has to be less than the maximum
15:06 21 allowable working pressure of your pressure vessel; namely,
15:06 22 your BOP.

15:06 23 MR. WILLIAMSON: Pull up an e-mail, 26011.

15:06 24 TREX-26011. Fly-out -- actually, we should start at the back.

15:06 25 It should be Fly-out 8.

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15:04 1 BY MR. WILLIAMSON:

15:07 2 Q. This is an e-mail chain, TREX-26011-003. Do you recognize
15:07 3 what this is?

15:07 4 A. I do.

15:07 5 Q. What is it?

15:07 6 A. It is part of an e-mail from Steve Hand to Steve Wascom,
15:07 7 carbon copied to those gentlemen, regarding the Kodiak
15:07 8 sidetrack using the *Marianas* rig.

15:07 9 Q. Someone has calculated an MASP?

15:07 10 A. Correct.

15:07 11 Q. Does it use 100 percent gas to surface?

15:07 12 A. No.

15:07 13 Q. Let's go to up above that to Fly-out 6. This is from
15:07 14 Steve Hand to Steve Wascom, and I will represent to you those
15:07 15 are Transocean employees.

15:08 16 This says: "The bottom hole pressure based on the
15:08 17 mud weight equals 28,388 times 14.8 times .052 equals 21,847
15:08 18 psi."

15:08 19 A. Can I say something just to --

15:08 20 Q. Yes.

15:08 21 A. -- clarify it?

15:08 22 Q. Sure.

15:08 23 A. This is the well depth in feet. This is the mud weight in
15:08 24 pounds per gallon. This is a conversion factor. So when you
15:08 25 are calculating the pressure at the bottom of the hole, this is

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15:08 1 the -- what we -- it's an engineering term of art, "hydrostatic
15:08 2 head." That's the pressure at the bottom of the well.

15:08 3 Q. It says: "The maximum anticipated pressure, MASP, at mud
15:08 4 line, based on the worst-case scenario, works out to 21,847
15:08 5 times .01 equals 19,519 psi."

15:08 6 A. Right.

15:08 7 Q. "This exceeds the BOP pressure rating. It will be helpful
15:08 8 to find out client's MASP calculation assumptions."

15:09 9 A. If I can elaborate a little bit, again taking -- this .1
15:09 10 is the gradient of the gas or the weight of the gas in psi per
15:09 11 foot. That's the number that they used.

15:09 12 Evidently the wellhead or the BOP is at a depth of
15:09 13 5,106 feet. So they are calculating the MASP at the mud line.
15:09 14 So it's 19,519 psi. That's a lot of pressure.

15:09 15 Q. Right. Someone in Transocean has used that formula of gas
15:09 16 column to surface --

15:09 17 A. Gas column to surface.

15:09 18 Q. And what have they come up with when they used
15:09 19 Transocean's formula and BP's formula gas column to surface?
15:09 20 What have they come up with here?

15:09 21 A. Well, if they're stacked as elements that are rated to
15:09 22 15,000 psi maximum allowable working pressure, they won't meet
15:09 23 that number, 19,519 psi. That is a higher number than the BOP
15:09 24 elements can stand.

15:09 25 Q. That's what he says, "This exceeds the BOP pressure

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1 rating. It will be helpful to find out client's MASP
2 calculation assumptions," right?

3 A. That's what he says.

4 Q. And right below that is that other box somebody put in
5 showing that somebody has calculated it with 50 percent
6 liquid/50 percent gas?

7 A. If you bring it up, I can show the judge.

8 Q. Yeah.

9 A. Bring it back up again.

10 Q. Well, I'm going to show you in between the two. I'm going
11 to show you Fly-out 7.

12 **MR. WILLIAMSON:** For the record, Fly-out 7 is
13 26011-003.

14 **BY MR. WILLIAMSON:**

15 Q. Someone has answered -- when Mr. Wascom has said, "The
16 pressures will be 19,000 psi and it will exceed our BOP
17 rating," someone has answered and said, "On the MASP, for
18 purposes of BOP test pressures, we'll only be testing to
19 9500 psi max (might even reduce it to 9300 psi). Even when we
20 calculate a MASP that's higher, we have been running with the
21 philosophy that (a) something else will break down before we
22 ever reach that pressure, and (b), we don't want to put
23 unnecessary wear and tear on the stack."

24 Now, I will tell you, this is talking about the
25 Kodiak well.

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15:11 1 MR. WILLIAMSON: I will represent to the Court this
15:11 2 is talking about the Kodiak well, BP well.

3 BY MR. WILLIAMSON:

15:11 4 Q. If that's the approach that BP is taking, that they --
15:11 5 well, "something else will break down before we ever reach that
15:11 6 pressure," do you agree with that approach?

15:11 7 MS. KARIS: Your Honor, I am going to object to the
15:11 8 relevance of this.

15:11 9 THE COURT: I sustain the objection.

15:11 10 MS. KARIS: Thank you.

15:11 11 MR. WILLIAMSON: Your Honor, I was going to go into
15:11 12 other parts of this e-mail because -- may I explain why so that
15:11 13 I can ask the Court if I can do so?

15:11 14 THE COURT: I sustained the objection.

15:12 15 MR. WILLIAMSON: Yes, Your Honor.

15:12 16 I'm going to ask this question, Your Honor. If
15:12 17 it offends the Court, tell me, and I'll withdraw it.

18 BY MR. WILLIAMSON:

15:12 19 Q. The e-mail chain that we are talking about here,
15:12 20 Exhibit 26011, is Mr. Steve Newman, the CEO of Transocean, in
15:12 21 this e-mail chain to see this information?

15:12 22 A. He is in that e-mail chain.

15:12 23 Q. Thank you.

15:12 24 THE COURT: How much more do you have with this
15:12 25 witness?

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15:12 1 MR. WILLIAMSON: If the Court would indulge a break
15:12 2 right now, I will try to get very, very, very, very close to
15:12 3 passing the witness.

15:12 4 THE COURT: Let's take about a 15-minute recess.

15:34 5 (Recess.)

15:34 6 THE COURT: Please be seated, everyone.

15:34 7 Mr. Williamson, you may proceed.

15:12 8 MR. WILLIAMSON: Thank you, Your Honor.

15:34 9 BY MR. WILLIAMSON:

15:34 10 Q. Mr. Perkin, I want to cover a couple things.

15:34 11 MR. WILLIAMSON: Can I have TRES-25049, page -- I
15:34 12 think it's page 70 and 71. It's called Martin Breazeale
15:35 13 deposition.

15:35 14 I believe it's text, Your Honor.

15:35 15 Blow up the first page. For the record, this is
15:35 16 22249, I think it's -75, starting on page 21 -- line 21 of
15:35 17 page --

15:35 18 THE COURT: Whose deposition is this?

15:35 19 MR. WILLIAMSON: This is Martin Breazeale. He's the
15:35 20 person who trains -- he is BP -- the person who trains the well
15:35 21 site leaders. He is a well site leader trainer.

15:36 22 BY MR. WILLIAMSON:

15:36 23 Q. Line 21.

15:36 24 "QUESTION: Other than this, Module 5 is the only
15:36 25 training that BP gives him on BOP systems offshore?

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15:36 1 "ANSWER: No. I think BP supplies him with an
15:36 2 opportunity to go to Wild Well.

15:36 3 "QUESTION: But the only training" --

15:36 4 THE COURT: You have to do -- you are kind of
15:36 5 summarizing or skipping over it. If you are going to use it,
15:36 6 you ought to read question and answer verbatim or ask the
15:36 7 witness to read it.

15:36 8 What part of it would you like him to read?

15:36 9 MR. WILLIAMSON: Page 71, line 7 through line 15 of
15:36 10 TREN-250549.

15:36 11 A. The question starts on line 7.

15:36 12 "QUESTION: But the only training that's done
15:37 13 internally to BP on the blowout preventers is this
15:37 14 Module 5, Exhibit 2097?

15:37 15 "ANSWER: To my knowledge.

15:37 16 "QUESTION: Right. And then in addition, in fairness
15:37 17 to you, part of the course also involves this Wild Well
15:37 18 training?

15:37 19 "ANSWER: Yes."

15:37 20 That brings you down to line 15.

15:37 21 MR. WILLIAMSON: Sure. Please put up Exhibit 2097.

15:37 22 BY MR. WILLIAMSON:

15:37 23 Q. Have you reviewed Module 5, TREN-2097?

15:37 24 A. I have reviewed Module 5, TREN-2097.

15:37 25 Q. Is there anything in Module 5 dealing with how you use,

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1 operate, or determine the limitations of a blowout preventer?

2 A. Not that I could see.

3 Q. What's in Module 5 is the only training that BP gives to
4 its well site leaders about blowout preventers.

5 MS. KARIS: Your Honor, I'm going object to relevance
6 of this. As all the witnesses have established prior to this
7 and as this Court as indicated to me, it's very clear in the
8 record who is responsible for activating and operating the BOP.
9 So the well site leaders here, whatever training they have or
10 don't have, is of no relevance to the issues in this case.

11 MR. WILLIAMSON: I respectfully disagree, Your Honor.
12 I will respond if the Court wishes.

13 THE COURT: I will allow him to answer. Go ahead.

14 The question was what's this --

15 BY MR. WILLIAMSON:

16 Q. What does Module 5 teach?

17 A. Module 5 is an instructional guide that identifies,
18 essentially, equipment. Identify the equipment on your rig,
19 identify the equipment on your -- your blowout prevention
20 equipment, your well control equipment. What does a riser look
21 like, those sorts of things.

22 Q. In your opinion, please state whether or not that's
23 adequate training.

24 A. Not for a well site leader. I think a well site leader
25 has to know what a blowout preventer is for, what its

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15:38 1 limitations are, how the well has been designed, how the BOP
15:38 2 has been configured to handle those well control situations and
15:38 3 so on. That's how I would envision the guide to be --

15:39 4 Q. Switching subjects --

15:39 5 A. -- done.

15:39 6 Q. I'm sorry. Did I cut you off?

15:39 7 A. No, my wife does that all the time.

15:39 8 Q. Switching subjects. The annulars, there's been testimony
15:39 9 in the case that the upper annular preventer was utilized, on
15:39 10 the 2141, on April 20 to shut in the well?

15:39 11 A. Yes.

15:39 12 Q. Should, in your opinion, the upper annular preventer have
15:39 13 been utilized as the component to shut in the well on 2141?

15:39 14 A. No. I think the annular preventer was a poor choice. I
15:39 15 think the annular preventer had been accidentally stripped
15:39 16 through on an earlier occasion. And as Dr. Davis talked about
15:39 17 yesterday, stripping through the annular -- particularly with
15:39 18 the tool joint -- can create problems with the rubber doughnut.

15:39 19 What Dr. Davis didn't talk about was the fact that
15:39 20 tool joints typically are screwed together with an iron
15:39 21 roughneck or tongs, and that the tong dye marks are left on the
15:39 22 outside or the outside diameter of the tool joints. So those
15:40 23 little sharp edges, many of them can be detrimental to the
15:40 24 packer in the annular -- the upper annular, in particular --
15:40 25 that's been pulled through. And I understand about 2200 feet

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15:40 1 of pipe got pulled through the upper annular.

15:40 2 Q. Have you heard the testimony before the Court that, in
15:40 3 fact, the upper annular was leaking during the period of the
15:40 4 negative pressure test?

15:40 5 A. That was my understanding. And they had to up the
15:40 6 actuation pressure from 1500 psi to 1900 psi to get it to seal.

15:40 7 Q. Had BP and Trans- -- or had Transocean closed in the well
15:40 8 with an annular preventer before on the Macondo?

15:40 9 A. Yes.

15:40 10 **MR. WILLIAMSON:** Please show me Exhibit 657.

15:40 11 **BY MR. WILLIAMSON:**

15:40 12 Q. This is a daily -- TREX-657. It's a Daily Drilling Report
15:40 13 from March 8, 2010. Have you seen this, Gregg?

15:41 14 A. I have.

15:41 15 **MR. WILLIAMSON:** Please go to Fly-out 3.

15:41 16 **BY MR. WILLIAMSON:**

15:41 17 Q. By the way, does BP receive these Daily Drilling Reports?

15:41 18 A. Yes.

15:41 19 Q. Does Transocean, obviously, generate and receive these
15:41 20 Daily Drilling Reports?

15:41 21 A. TO, or Transocean, typically generates them, yes.

15:41 22 Q. This is actually the kick where they lost the well. They
15:41 23 lost this well on March 8 and had to go sidetrack after this,
15:41 24 right?

15:41 25 **MR. DOYEN:** Your Honor, this is not a subject covered

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15:41 1 by the witness in his report.

15:41 2 MR. WILLIAMSON: I will withdraw it.

15:41 3 BY MR. WILLIAMSON:

15:41 4 Q. Please read what's here under this --

15:41 5 MR. WILLIAMSON: Can you blow that up a little bit?

15:41 6 THE WITNESS: You want me to read roughly what I'm
15:41 7 pointing to?

15:41 8 BY MR. WILLIAMSON:

15:41 9 Q. Uh-huh. For the record, it is 657002.

15:41 10 A. Okay. There is -- I can't see it all, but there's a 2 and
15:41 11 then the next column says: Observe gain of 10 to 12 barrels
15:41 12 picked up off bottom, check for well flow -- flow well
15:42 13 flowing -- check for flow well flowing, shut well in on lower
15:42 14 annular, 2205 hours.

15:42 15 Q. You can stop. I'm talking about the BOP part.

15:42 16 They shut -- on March 8 on this well, when they took
15:42 17 a kick, they shut the well in on the lower annular?

15:42 18 A. Correct.

15:42 19 Q. What's the problem with that?

15:42 20 A. Well, the lower annular --

15:42 21 MR. DOYEN: Your Honor, I don't believe the subject
15:42 22 is discussed in his report.

15:42 23 MR. WILLIAMSON: It is exactly, Your Honor, because
15:42 24 the lack of training is discussed in my report. And I think,
15:42 25 if the Court will let me ask two questions, I will establish

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15:42 1 the relevance.

15:42 2 THE COURT: Go ahead. Go ahead.

15:42 3 BY MR. WILLIAMSON:

15:42 4 Q. What's the problem with shutting the well in on this well
15:42 5 in a kick with the lower annular?

15:42 6 A. The lower annular was reconfigured to a stripping annular,
15:42 7 which has a lower maximum allowable working pressure in the --

15:42 8 Q. What's the working pressure?

15:43 9 A. 5,000 pounds, as I understand it.

15:43 10 Q. So was this well capable of producing more than 5000 psi
15:43 11 in the wellbore?

15:43 12 A. Sure.

15:43 13 Q. Did you see any record where BP reprimanded Transocean for
15:43 14 the fact that they were using the lower annular preventer, a
15:43 15 5000 psi component, to shut in the well?

15:43 16 A. I did not see anything like that.

15:43 17 Q. Did you see anything where Transocean reprimanded any of
15:43 18 their own people for the fact they shut in the well with a
15:43 19 5000 psi component?

15:43 20 MR. DOYEN: Your Honor, there's no discussion of this
15:43 21 in the report.

15:43 22 MR. WILLIAMSON: There's a discussion of a lack of
15:43 23 training, Your Honor --

15:43 24 MR. DOYEN: There's no discussion of a lack of
15:43 25 training relating to the March 8 kick. There's no discussion

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15:43 1 of the lack of training of the Transocean crew. There's no
15:43 2 discussion of the training of the Transocean crew other than
15:43 3 they had well control training. This is outside the scope of
15:43 4 the report.

15:43 5 **THE COURT:** Where's the part of the report you are
15:43 6 relying on, Mr. Williamson?

15:44 7 There is something that -- are you relying on
15:44 8 Opinion 5?

15:44 9 **MR. WILLIAMSON:** Yes, Your Honor, I'm sure that's
15:44 10 right.

15:44 11 **THE COURT:** Well, I don't know if that's right or
15:44 12 not. That was a question.

15:44 13 **MR. WILLIAMSON:** No, no, no, it was actually
15:44 14 Opinion 7, Judge. BP management and Transocean's management
15:44 15 failed to adequately inspect, test, maintain, and repair --
15:44 16 upgrade it and maintain it to its perfect working order.

15:44 17 **THE COURT:** That sounds different than what we are
15:44 18 talking about. I'm looking at -- I'm trying to help you out
15:44 19 here, Mr. Williamson.

15:44 20 **MR. WILLIAMSON:** Your Honor, I missed that somewhere
15:44 21 this afternoon.

15:44 22 **THE COURT:** It sounds like Opinion 5, where it says:
15:44 23 "BP management had a faulty well control policy in place
15:44 24 whereby *Horizon's* annulars were to be closed first to shut in
15:44 25 and seal off the wellbore."

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15:44 1 MR. WILLIAMSON: That is true.

15:45 2 THE COURT: Is that not what we are talking about?

15:45 3 MR. WILLIAMSON: Yes, Your Honor.

15:45 4 THE COURT: Then I overrule the objection.

15:45 5 BY MR. WILLIAMSON:

15:45 6 Q. Did you find where TO reprimanded anyone in connection
15:45 7 with the fact that they had shut in a high-pressure,
15:45 8 high-temperature well with a component that only was capable of
15:45 9 containing 5000 psi?

15:45 10 A. I have not seen a document like that.

15:45 11 Q. Please turn to Exhibit 3187, TREX-3187.

15:45 12 Are you aware of who Mr. John Guide is?

15:45 13 A. Yes.

15:45 14 Q. He was the well teams leader for the *Deepwater Horizon* for
15:45 15 BP?

15:45 16 A. Yes.

15:45 17 Q. This is an e-mail --

15:45 18 MR. WILLIAMSON: Could I have a blowup of it some?
15:45 19 Could you read it?

15:45 20 For the record, this is TREX-3187.

15:46 21 BY MR. WILLIAMSON:

15:46 22 Q. This is dated after -- it's Tuesday, May 11. The blowout
15:46 23 has now been going on for 21 days. Mr. Guide, the person who
15:46 24 is the well teams leader -- let's see. The bottom one -- go to
15:46 25 the bottom of the paper. It's at the bottom of this, yeah,

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15:46 1 that e-mail down there. Right there.

15:46 2 May 11, from Forrest Shanks to John Guide: John
15:46 3 Sprague tells me you are looking for Cameron shear data. What
15:46 4 specifically, or all data?

15:46 5 Now go to the reply that Mr. Guide made.

15:46 6 A. It says: John Sprague tells me you are looking for
15:46 7 Cameron shear data. What specifically, or all data?

15:46 8 Q. What's the next e-mail in the chain?

15:47 9 A. That would be going up. This looks like all the pipe that
15:47 10 he was --

15:47 11 Q. You can't hardly read it because the print is small, but
15:47 12 if we could blow it up.

15:47 13 A. He says: The pipe below -- the pipe below for the *Horizon*
15:47 14 blind shear and super shear is -- just going on down the
15:47 15 line -- 5 1/2-inch, 21.9 pounds; 5 1/2-inch 38 pounds; 6 5/8 --

15:47 16 Q. You don't have to go through them all.

15:47 17 A. And so on. Okay.

15:47 18 Q. My point is this: On May 11, 21 days after the blowout,
15:47 19 what is the significance of the fact that John Guide has to ask
15:47 20 for shearing data about how to shear the drill pipe aboard the
15:47 21 *Deepwater Horizon*? What does that tell you, if anything?

15:47 22 A. He didn't know.

15:47 23 Q. And what did that tell you, if anything?

15:47 24 A. It tells me he should have known. He should have known
15:47 25 that certain pipe on this rig being used to drill this well was

1 not shearable with that blind shear ram.

2 MR. WILLIAMSON: Your Honor, I will pass the witness.

3 THE COURT: All right. Does the United States have
4 any questions?

5 MS. SULLIVAN: No questions, Your Honor.

6 THE COURT: Alabama?

7 MR. MAZE: No questions, Your Honor.

8 THE COURT: Louisiana?

9 MR. KANNER: No questions.

10 THE COURT: Transocean?

11 By the way, I should have mentioned this
12 earlier, but I'm going to need to shut down today at about a
13 quarter 'til 6:00 instead of 6:00. Okay. I know that
14 disappoints everybody. You get 15 minutes more of Daylight
15 savings time.

16 CROSS-EXAMINATION

17 BY MR. DOYEN:

18 Q. Good afternoon, Mr. Perkin.

19 You were here yesterday for Dr. Davis's testimony,
20 weren't you?

21 A. Yes, sir, I was.

22 Q. You heard and agree with his testimony that at the time
23 the blind shear rams activated, the pipe was off to the side of
24 the well, correct?

25 A. Yes.

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15:49 1 Q. And you agree with that, don't you?

15:49 2 A. Yes. I observed the evidence myself.

15:50 3 Q. It was far enough off to the side that the pipe was
15:50 4 actually partially outside the cutting blades of the ram,
15:50 5 correct?

15:50 6 A. That's correct.

15:50 7 Q. You heard Dr. Davis's testimony that the blades did cut
15:50 8 that portion of the pipe which was within the ram blades,
15:50 9 correct?

15:50 10 A. It cut the pipe as far as it could. I don't know how far
15:50 11 it did cut it, but it did cut the pipe.

15:50 12 Q. But you have been out to Michoud to inspect the pipe
15:50 13 yourself, haven't you?

15:50 14 A. I have. I guess my point is that whenever the blind shear
15:50 15 rams were activated, listening to Dr. Davis's testimony, either
15:50 16 at AMF or autoshear, that once the blades come together and the
15:50 17 pipe is cut -- I'm not sure how far the blades went into the
15:50 18 pipe; but over time, with actuation pressure and erosion, the
15:50 19 blades could come further together.

15:50 20 Q. You heard Dr. Davis's testimony, correct, that the pipe --
15:50 21 the blind shear rams cut that portion of the pipe which was in
15:51 22 the blades and were unable to cut that portion of the pipe that
15:51 23 was outside of the blades? Do you agree with that?

15:51 24 A. It cut the pipe, and there was a portion of the pipe
15:51 25 outside the blades.

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15:51 1 Q. That portion of the pipe outside the blades, Dr. Davis
15:51 2 said, prevented the blades from being able to come together.
15:51 3 Do you recall that?

15:51 4 A. I recall that testimony.

15:51 5 Q. Do you agree with that?

15:51 6 A. If the blades had come together, they would have shut in
15:51 7 the well and formed a seal, but the blades could not come
15:51 8 together.

15:51 9 Q. Do you agree with his testimony that the reason the blades
15:51 10 could not come together was there was a portion of the pipe
15:51 11 which was outside the blades and uncut?

15:51 12 A. Yes.

15:51 13 Q. You also heard Dr. Davis's testimony yesterday that if the
15:51 14 pipe had been centered, it is almost certain that the blind
15:51 15 shear rams would have severed the pipe and sealed the well.
15:51 16 You heard that, didn't you?

15:51 17 A. I heard him say that.

15:51 18 Q. Do you agree with that?

15:52 19 A. Not necessarily.

15:52 20 Q. Do you think that's a reasonable conclusion, based on the
15:52 21 forensic evidence?

15:52 22 A. I think the forensic evidence is not -- does not depict
15:52 23 exactly what happened at the time the blades came together.

15:52 24 Q. Do you think Dr. Davis's conclusion, based on the forensic
15:52 25 evidence that it is almost certain that the blind shear rams,

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1 had the pipe been centered, would have cut the pipe and sealed
2 the well, is a reasonable one?

3 A. I think it's reasonable if you presume that capacity was
4 sufficient, and I'm not sure about the capacity.

5 Q. So you're not sure whether you agree with Dr. Davis?

6 A. I'm not sure if I agree with Dr. Davis.

7 Q. I will leave you two to fight that out.

8 A. Thank you.

9 Q. You understand, don't you, that BP submitted maximum
10 anticipated surface pressure calculations to the MMS for the
11 Macondo well when they started drilling, correct?

12 A. Yes, sir.

13 Q. You understand that the MMS approved those calculations,
14 don't you?

15 A. That's my understanding, yes.

16 Q. You testified to an aspect of the closing of the
17 annulars -- let me state that differently.

18 In your report, there's an aspect of the closing of
19 the annulars that I want to go into that's different than what
20 we have heard so far. I'm not going to do the cumulative parts
21 of it where I think you are in agreement with Dr. Davis.

22 **MR. DOYEN:** Your Honor, I would like to approach and
23 pick up the demonstrative we have over here.

24 **THE COURT:** Sure.
25

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15:53 1 BY MR. DOYEN:

15:53 2 Q. I'm going to set a big piece of pipe right here.

15:53 3 MR. BRIAN: I'm not sure, Your Honor, that his
15:53 4 microphone is working.

15:53 5 THE WITNESS: Maybe move it up a little?

15:53 6 THE COURT: Just move it up a little bit.

15:53 7 THE WITNESS: Is that better?

15:53 8 THE COURT: Yes.

15:53 9 THE WITNESS: I can talk louder.

15:53 10 BY MR. DOYEN:

15:53 11 Q. Everybody else has heard this. You maybe have heard this
15:53 12 yesterday and recall. This was printed using the laser scans
15:53 13 that were prepared out -- by DNV out at Michoud and then
15:54 14 submitted -- just sent to a 3D printer of the sort we've read
15:54 15 about recently and this is what comes out of it and then it was
15:54 16 glued together here in the middle with the seam. Okay?

15:54 17 A. That's how we created ours. Same process.

15:54 18 Q. Same process here. Okay. Great.

15:54 19 A. Do you want me to hold on to this?

15:54 20 Q. I will be right back. If you can hold on to it meanwhile
15:54 21 and prevent it from breaking, that would be great.

15:54 22 MR. DOYEN: Can we put up TREN-7536-90A.

15:54 23 BY MR. DOYEN:

15:54 24 Q. What we are looking at here, I just want to understand a
15:54 25 couple of sentences from your report. Do you see there where

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15:54 1 you say, "In setting up for the negative pressure test, the
15:54 2 driller had positioned the DP" -- the drill pipe, right -- "so
15:55 3 that only the pipe portion of the drill pipe was adjacent to
15:55 4 the ram-type BOPs"?

15:55 5 Did I read that correctly?

15:55 6 A. You did.

15:55 7 Q. So in this particular piece of the pipe taken from the
15:55 8 BOP, we have a tool joint section, right, and we have a plain
15:55 9 pipe section? And the tool joint here is the fat end of two
15:55 10 pipes where they're screwed together, correct?

15:55 11 A. Yeah. They are called tool joints, and this one that your
15:55 12 left hand is on is called the "pin." The one in your right
15:55 13 hand is called the "box." These are tool joints.

15:55 14 Q. Okay. When you're talking about the pipe portion of the
15:55 15 drill pipe, you're talking about the thinner portions here,
15:55 16 correct?

15:55 17 A. Right. Tool joints are the upsets, and where your hands
15:55 18 are above and below the tool joint is drill pipe.

15:55 19 Q. So you're stating that the driller would position the
15:55 20 drill pipe so that these thinner portions, the pipe portions,
15:55 21 would be next to the various BOP elements, correct?

15:55 22 A. Correct.

15:56 23 Q. So the purpose would be to avoid closing the BOP around
15:56 24 the tool joints, correct?

15:56 25 A. Correct.

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15:56 1 Q. Then your testimony -- I shouldn't say "your testimony."
15:56 2 Your report states that the flow from the well, once the
15:56 3 blowout is under way here, is sufficient to lift this pipe,
15:56 4 right, lift it up, lift the drill string up so that the tool
15:56 5 joint, at least this lower portion of it, ends up inside the
15:56 6 upper annular before it fully closed, correct?

15:56 7 A. Yes. I say apparently.

15:56 8 Q. In other words, the force of the well is lifting this up
15:56 9 as the BOP is closing, as the annular is closing; and as a
15:56 10 result, the annular grips it right around here where we see all
15:56 11 this massive erosion, correct?

15:56 12 A. That's one possibility.

15:56 13 THE COURT: Wait. Mr. Perkin, you need to get up
15:56 14 closer to the microphone.

15:56 15 THE WITNESS: Oh, sorry.

15:56 16 MR. DOYEN: Thank you, Your Honor.

15:56 17 BY MR. DOYEN:

15:56 18 Q. Nobody got hurt.

15:56 19 A. No lost time accident.

15:57 20 Q. Mr. Perkin, your report contains, I believe, 19 findings.
15:57 21 Does that sound right?

15:57 22 A. Sounds about right.

15:57 23 MR. DOYEN: Can we put up TRES-7535-6K.

15:57 24 BY MR. DOYEN:

15:57 25 Q. I think just for illustration, we are pulling up the pages

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1 on which that appears. And all the highlighting there is all
2 the times you mentioned BP or BP management. Do you see that?

3 A. I do.

4 Q. In fact, you mentioned BP management or BP in, I think, 18
5 of your findings. Does that sound about right?

6 A. I'll take your word for it. It looks like quite a few.

7 Q. Quite a few of them. In fact, only two of your
8 19 findings mention Transocean; isn't that right?

9 A. Yes. If you highlight -- it looks like you highlighting
10 them, so --

11 Q. Yes. Transocean 16 -- I believe 6 and 7.

12 A. Yes, they say BP and Transocean, and you have highlighted
13 Transocean.

14 Q. Correct. Those both relate to training and to
15 maintenance, correct?

16 A. Correct.

17 Q. And then in your -- just after you have all your findings,
18 you list eight main opinions. Do you recall that in your
19 report?

20 **MS. KARIS:** Your Honor, I don't mean to interrupt
21 Mr. Doyen's examination. But just to be clear, we are going to
22 object to Mr. Perkin's opinions which are cumulative, many of
23 which are within those. And so I just want to make sure the
24 witness answering questions on these doesn't now suggest that
25 he is allowed to opine on all of these same issues.

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15:58 1 MR. DOYEN: I wasn't even meaning to suggest any
15:58 2 endorsements of the BP ones, merely to make a contrast and a
15:58 3 focus of the report and try and narrow down to what you said
15:58 4 about Transocean.

15:58 5 MS. KARIS: I completely appreciate that. I just
15:59 6 wanted to make sure that this doesn't now make the entire
15:59 7 report part of the record.

15:59 8 THE COURT: I think we understand that.

15:59 9 BY MR. DOYEN:

15:59 10 Q. So of the eight main opinions -- got that figure?

15:59 11 A. Yes.

15:59 12 Q. -- six of those are addressed "BP management." Does that
15:59 13 sound about right?

15:59 14 A. I think so.

15:59 15 Q. And only two of those are addressed to Transocean; and
15:59 16 once again, they are limited to training and maintenance,
15:59 17 correct?

15:59 18 A. I think that's correct.

15:59 19 Q. In fact, what you say about training is that Transocean
15:59 20 failed to have and enforce a program for training their
15:59 21 personnel who would be responsible for operating the BOP,
15:59 22 correct?

15:59 23 A. Correct.

15:59 24 Q. And you lay out the basis for that in your appendix,
15:59 25 correct?

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15:59 1 A. I think I do.

15:59 2 Q. So let's look at 7536-55. Once again, I'm merely going to
16:00 3 point to some observations you make about BP employees. I'm
16:00 4 not asking you what your opinion is about those. I don't mean
16:00 5 to endorse those this any way. I'm just making the same
16:00 6 contrast. Okay? With me?

16:00 7 So you talk, for example, in Opinion 1 here or
16:00 8 Point 1 in your appendix, I should say, you make a comment
16:00 9 about the adequacy of Mr. Sims' training?

16:00 10 A. Correct.

16:00 11 Q. Mr. Sims was the immediate supervisor of John Guide,
16:00 12 correct?

16:00 13 A. That's my understanding.

16:00 14 Q. In fact, in the next paragraph, No. 2, you talk about the
16:00 15 adequacy of Mr. Guide's training, correct?

16:00 16 A. Correct.

16:00 17 Q. Then below that -- I'm not going to pull it out -- we talk
16:00 18 about Mr. Lambert. And then I think in paragraph 4, you talk
16:00 19 about the training of Mr. Little, who was Mr. Guide's and
16:01 20 Mr. Sims' superior. Do you see that?

16:01 21 A. I do.

16:01 22 Q. Then in paragraph 5, you have reference to the adequacy of
16:01 23 the training of Mr. Morel and Mr. Hafle. Do you see that?

16:01 24 A. I do.

16:01 25 Q. Then there are several more references to BP people,

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16:01 1 including -- there's actually a reference to a Transocean
16:01 2 person in paragraph 9, but only because you're saying
16:01 3 Mr. Keeton of Transocean commented that Mr. Cocalles was
16:01 4 inexperienced. Do you see that?

16:01 5 A. I do.

16:01 6 Q. But you don't make any adverse comment about Mr. Keeton's
16:01 7 training, do you?

16:01 8 A. Not in No. 9, no.

16:01 9 Q. Well, in fact, I think you have maybe a dozen BP employees
16:01 10 whose training you comment in in this section of your report
16:01 11 dedicated to training. Do you recall that?

16:01 12 A. I do.

16:01 13 Q. It is a fact, isn't it, that you don't mention a single
16:01 14 Transocean person who you contend had inadequate training here
16:02 15 in your appendix?

16:02 16 A. I don't recall.

16:02 17 Q. You can't point to one now in your report, can you?

16:02 18 A. Not without doing a word search or something like that,
16:02 19 but I don't know.

16:02 20 Q. You don't recall.

16:02 21 Isn't it a fact, sir, that -- let me pull up
16:02 22 TREX-7536-53B.

16:02 23 I will posit to you, sir, that in this section of the
16:02 24 appendix which supports your finding and opinion concerning
16:02 25 Transocean training, we find your only statement about

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16:02 1 Transocean training -- here it is. "On Macondo" -- I'm going
16:02 2 to skip the BP part, just to focus on Transocean. "On Macondo,
16:02 3 all Transocean personnel had current well control
16:02 4 certifications."

16:02 5 A. That was my understanding.

16:02 6 Q. There is no other basis stated in your discussion of
16:03 7 training for any criticism of Transocean's training; isn't that
16:03 8 correct?

16:03 9 A. Of their personnel, not that I can recall.

16:03 10 MR. DOYEN: Your Honor, we would move to strike the
16:03 11 witness's opinion concerning Transocean's training as utterly
16:03 12 lacking in any stated foundation. I understand the Court may
16:03 13 rule on that at a separate time. I'm not asking for an
16:03 14 immediate ruling.

16:03 15 THE COURT: Thank you.

16:03 16 MR. DOYEN: Mr. Williamson indicated this morning,
16:03 17 Your Honor, when we were having a discussion concerning the
16:03 18 avoidance of cumulative testimony that he was not going to go
16:03 19 into the solenoid, the battery, and the maintenance issues with
16:03 20 this witness. And I, therefore, am going to follow the same
16:03 21 approach on cross-examination. I'm not going into those as
16:03 22 well.

16:03 23 THE COURT: Thank you.

16:04 24 MR. DOYEN: There is much Mr. Williamson skipped, and
16:04 25 I am trying to do likewise. Bear with me just a moment.

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16:04 1 BY MR. DOYEN:

16:04 2 Q. Mr. Perkin, one more comment about the BOP, one more
16:04 3 question about the BOP.

16:04 4 You agree, don't you, that flow rates for Macondo at
16:04 5 the time of the blowout were such that neither the upper
16:04 6 annular BOP nor the VBR could seal the wellbore annulus?

16:04 7 A. Looking at the -- in my review of the evidence, I would
16:04 8 agree that the wellbore was not sealed.

16:04 9 Q. In fact, it was as a result of the flow rates at that time
16:04 10 that neither the upper annular nor the VBR could seal the
16:04 11 wellbore?

16:04 12 A. If they could not seal the flow rates -- off-center pipe
16:04 13 could have had something to do with the VBRs; but to the extent
16:05 14 you had flow rates, high flow rates, that's always a very --
16:05 15 that's a detriment to the closing, shutting, and sealing in of
16:05 16 the well.

16:05 17 Q. You believe in this case, in fact, resulted in those
16:05 18 elements failing to seal the well?

16:05 19 A. The upper annular, I believe. And I do believe the
16:05 20 VBRs -- the evidence speaks for itself.

16:05 21 MR. DOYEN: Can we put up TREX-7535-6C -- I'm sorry.
16:05 22 Let me read it again. 7536-90C.

16:05 23 BY MR. DOYEN:

16:05 24 Q. Unfortunately, if we say things like "the evidence and the
16:05 25 record speaks for itself," none of us later will know what we

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1 think it was saying. So I want to put the question to you as
2 to what you think the evidence is telling us.

3 You agree, don't you, with this statement in your
4 report, "Flow rates for Macondo were such that neither the
5 upper annular BOP nor the VBR could seal the wellbore's
6 annulus"?

7 A. That's what it says.

8 Q. Do you agree with that?

9 A. I still do.

10 Q. You also agree, don't you, that BP's management controlled
11 the configuration of the BOP at Macondo?

12 A. I still believe that, yes, I do.

13 Q. In fact, that is Finding 1 in your report, isn't it?

14 A. I think that's true.

15 MR. DOYEN: Let's put up 7535-6E.

16 Did I say that wrong?

17 BY MR. DOYEN:

18 Q. "BP's management controlled the configuration, testing,
19 and safety profile of *Horizon's* BOP and its control systems."

20 You agree with that, don't you?

21 A. I do.

22 Q. In fact, you could see, in the course of your review and
23 in forming your opinions, that the drilling contract between BP
24 and Transocean set out the configuration of the BOP, correct?

25 A. That's what I recall.

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16:07 1 Q. Let's look at TRES-11 --

16:07 2 MR. DOYEN: I'm sorry. I'm having numerical dyslexia
16:07 3 here this afternoon, Your Honor.

16:07 4 Let's look at TRES-4112-5B. Let's go to --

16:07 5 BY MR. DOYEN:

16:07 6 Q. This provision here simply tells us that, later on in the
16:07 7 agreement, contractor shall use the blowout prevention
16:07 8 equipment specified in Exhibit B here. Do you recall that?

16:07 9 A. Yes. On all strings of casing unless otherwise directed
16:07 10 by company.

16:07 11 Q. In fact, we have to go further down into the contract to
16:07 12 see the actual specifications, correct?

16:07 13 A. Probably so.

16:07 14 Q. Why don't we go ahead and do that.

16:07 15 MR. DOYEN: Let's go down to 4112-11B.

16:08 16 MS. KARIS: Your Honor, I'm going to object to this
16:08 17 as beyond the scope of this witness's direct and the subjects
16:08 18 for which he was tendered. Mr. Williamson did not ask him any
16:08 19 opinions about the configuration. I think we have had prior
16:08 20 testimony on that issue. So this is beyond the scope.

16:08 21 MR. DOYEN: Your Honor, if all of the opinions that
16:08 22 weren't covered in the direct are being withdrawn, we would
16:08 23 move on. If, in fact -- however, because the report is before
16:08 24 the Court, I was assuming that maybe I should talk about --

16:08 25 THE COURT: Let me ask Mr. Williamson. Where is

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16:08 1 Mr. Williamson?

16:08 2 We had said that -- I had said that we would
16:08 3 probably have to agree on some redaction of his report that
16:08 4 would go into evidence. Do you agree with what Mr. Doyen just
16:08 5 said?

16:08 6 **MR. WILLIAMSON:** No, I don't agree with what he just
16:08 7 said. I don't have a problem, I don't think, with what the
16:08 8 Court just said if we are talking about the batteries and
16:09 9 solenoids but --

16:09 10 **THE COURT:** Tell me the subject area again that you
16:09 11 want to go into about --

16:09 12 **MR. DOYEN:** Really, one of the opinions the witness
16:09 13 stated --

16:09 14 **THE COURT:** I'm not sure -- we are talking about the
16:09 15 contract?

16:09 16 **MR. DOYEN:** The witness says -- I'm sorry.

16:09 17 **THE COURT:** Then you were referring to an exhibit.

16:09 18 **MR. DOYEN:** Yes, Your Honor. We were just talking
16:09 19 about the basis for the witness's opinion that BP --

16:09 20 **THE COURT:** The configuration.

16:09 21 **MR. DOYEN:** -- controlled the configuration of the
16:09 22 BOP. That is an opinion stated in the report. As I say, if
16:09 23 it's being withdrawn, that's one thing. If it's still there --

16:09 24 **THE COURT:** You're not withdrawing that?

16:09 25 **MR. WILLIAMSON:** No.

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16:09 1 MS. KARIS: Your Honor, this is the problem we have.
16:09 2 It's unclear to me what is being withdrawn. Is it only
16:09 3 batteries, solenoids, and rig maintenance? Because there's a
16:09 4 lot more in his report that's entirely cumulative with what
16:09 5 Mr. Davis testified to.

16:09 6 THE COURT: Anything that's cumulative is going to be
16:09 7 redacted out. Okay? I don't know that this is cumulative or
16:09 8 not.

16:10 9 MR. DOYEN: I think it's not, Your Honor. I do
16:10 10 agree -- we are in agreement, I think, a bunch of the design
16:10 11 discussion which is in the witness's report was covered by
16:10 12 Dr. Davis.

16:10 13 THE COURT: So the only thing you are trying to
16:10 14 establish is that BP set the parameters of the configuration?

16:10 15 MR. DOYEN: Specified the configuration on some of
16:10 16 the very issues the witness talked about. That's all. And
16:10 17 then I will be done with design and I will leave --

16:10 18 THE COURT: I'll let him answer that, but we are not
16:10 19 going to go beyond that on design.

16:10 20 MR. DOYEN: I'm not.

16:10 21 MS. KARIS: Can I just say one thing? The opinion
16:10 22 that was just pulled out referred also to testing. It referred
16:10 23 to other aspects of Mr. Perkin's opinion. That leaves us now
16:10 24 in a situation where we now need to go back to the contract to
16:10 25 speak to who the contract says has responsibility for testing.

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16:10 1 And this is my concern --

16:10 2 **THE COURT:** Well, you know, it's another thing here.
16:10 3 If this is all specified in the contract, you can read the
16:10 4 contract, I can read the contract. That would be a legal
16:10 5 issue, it would seem to me, not something I need an expert to
16:10 6 tell me what the contract says. Right?

16:11 7 **MS. KARIS:** I agree, which is why I don't think this
16:11 8 is proper.

16:11 9 **THE COURT:** Well, that's a different question here.

16:11 10 **MR. DOYEN:** I agree with that, Your Honor.

16:11 11 Your Honor, in light of the direct testimony
16:11 12 being as -- not getting into these issues and taking the
16:11 13 Court's lead, I agree with this. The specification of all the
16:11 14 BOP elements, the MUX cables and all that, being a clear matter
16:11 15 of record that can be briefed to the Court, doesn't need to be
16:11 16 elicited in testimony. So I will move past that.

16:11 17 **THE COURT:** Very well.

16:11 18 **MR. DOYEN:** Your Honor, I had some questions about
16:11 19 the MMS regulations and the compliance of the stack with the
16:11 20 MMS regulations, but I think that would fall under the same
16:11 21 category, relevant but not something that needs to be elicited
16:11 22 from this witness. We could get the regulations out at any
16:11 23 time.

16:11 24 One moment, Your Honor. I may be done.

16:12 25 **THE COURT:** All right.

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16:12 1 MR. DOYEN: Your Honor, with that understanding, I
16:12 2 will pass the witness.

16:12 3 THE COURT: Thank you.

16:12 4 MR. DOYEN: Thank you.

16:12 5 THE COURT: Halliburton. You haven't said anything
16:12 6 about Halliburton, have you?

16:12 7 THE WITNESS: I don't think I did.

16:12 8 THE COURT: Do you really want to ask questions?

16:12 9 MR. VON STERNBERG: Jerry von Sternberg for
16:12 10 Halliburton, Your Honor.

16:12 11 CROSS-EXAMINATION

16:12 12 BY MR. VON STERNBERG:

16:12 13 Q. Mr. Perkin, how are you doing today?

16:13 14 A. I'm fine.

16:13 15 MR. VON STERNBERG: Thank you. I pass the witness.

16:13 16 THE WITNESS: Thank you.

16:13 17 THE COURT: BP.

16:13 18 MS. KARIS: Your Honor, I just want to start by
16:14 19 noting I think Mr. Roberts lost his A-plus for shortest
16:14 20 examination.

16:14 21 THE COURT: I think he did.

16:14 22 MS. KARIS: I don't think I'm going to take that
16:14 23 title away.

16:14 24 THE COURT: Mr. Von Sternberg gets the gold medal
16:14 25 today.

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16:14 1 **THE WITNESS:** I'll second that.

16:14 2 **MS. KARIS:** Recognizing I am not going to get that
16:14 3 star at any point in this trial.

16:14 4 Let me start -- first, I think our tech people
16:14 5 are setting up, but I think I can cover some background before
16:14 6 we get to any documents.

16:14 7 Hariklia Karis, first of all, counsel for BP
16:14 8 conducting Mr. Perkin's cross-examination.

9 **CROSS-EXAMINATION**

16:14 10 **BY MS. KARIS:**

16:14 11 **Q.** Good afternoon, Mr. Perkin. We have met once before at
16:14 12 your deposition, correct?

16:14 13 **A.** We have.

16:14 14 **Q.** Okay. You offered some opinions here today about some BOP
16:14 15 design issues specifically with respect to acoustic systems and
16:14 16 the routing of MUX cables, correct?

16:15 17 **A.** Correct.

16:15 18 **Q.** All right. Just to be clear, I know we got some
16:15 19 information about your background, but you have never designed
16:15 20 a BOP, correct?

16:15 21 **A.** I have worked on the design of BOPs. That was in my
16:15 22 deposition testimony. When I started my career, I actually
16:15 23 worked for a BOP designer and manufacturer of subsea equipment.

16:15 24 **Q.** Right. And that was back when you were getting out of
16:15 25 high school?

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16:15 1 A. Yeah. I got out of high school, and I went to work for
16:15 2 Regan Forge Engineering. At the time, they were one of the
16:15 3 foremost subsea BOP manufacturers.

16:15 4 Q. Right. When you got out of high school, you worked on at
16:15 5 least an aspect of a BOP back in 1968, as I understand it, but
16:15 6 it's correct that at no time in your career have you ever
16:15 7 designed a BOP in its entirety, correct?

16:15 8 A. I don't know of anybody who has designed a BOP in its
16:15 9 entirety.

16:15 10 Q. My question was specific to you.

16:15 11 A. I have not designed a BOP in its entirety. I have worked
16:15 12 on the designs of BOPs.

16:15 13 Q. You have never designed a BOP control system, correct?

16:16 14 A. I have not.

16:16 15 Q. You have never designed any type of blind shear rams for
16:16 16 any BOP, correct?

16:16 17 A. I have not designed a blind shear ram, no.

16:16 18 Q. Nor have you designed variable bore rams?

16:16 19 A. I have not designed -- no, that's true.

16:16 20 Q. You have never designed an acoustic system?

16:16 21 A. No.

16:16 22 Q. And you have never designed a BOP or configured a BOP to
16:16 23 specify where MUX cables should be run on a BOP. Is that
16:16 24 correct?

16:16 25 A. That's correct.

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16:16 1 Q. Is it correct that you are not aware of a BOP anywhere in
16:16 2 the world that runs the MUX cables in a location other than the
16:16 3 one that we have on the *Deepwater Horizon*?

16:16 4 A. I am presently not aware of another drilling contractor or
16:16 5 operator who runs MUX cables elsewhere.

16:17 6 Q. So everyone in the world actually runs their MUX cables
16:17 7 the same way the *Deepwater Horizon's* BOP ran them, correct?

16:17 8 A. It appears to me that that would be the case, but it does
16:17 9 not eliminate the single point of failure.

16:17 10 Q. Is it correct that the current regulatory body, the BOEM,
16:17 11 continues today to approve applications for permits to drill
16:17 12 that have BOPs that have MUX cables routed in the same location
16:17 13 with what you call a "single point of failure"?

16:17 14 A. I don't have an opinion on that.

16:17 15 Q. Do you know, regardless of what your opinion is, that's a
16:17 16 fact not an opinion?

16:17 17 A. I don't know, and I don't have an opinion on it.

16:17 18 Q. So while you rendered opinions in this case that the MUX
16:17 19 cables were problematic because they were -- they identified or
16:17 20 routed through a single point of failure, you have not looked
16:18 21 at whether today we continue to have BOPs with the same routing
16:18 22 with MUX cables approved?

16:18 23 A. I have not looked into that and, as I said, I don't have
16:18 24 an opinion and I don't know.

16:18 25 Q. Thank you.

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16:18 1 Is it correct that you have not looked at any other
16:18 2 BOPs used on any other wells to compare them to the
16:18 3 *Deepwater Horizon*?

16:18 4 A. I relied on the configuration of this particular BOP, as I
16:18 5 said in my deposition.

16:18 6 Q. So my statement is correct? You haven't looked at any
16:18 7 other BOPs used on any other wells to compare them to the
16:18 8 *Deepwater Horizon's* BOP, correct?

16:18 9 A. Well, to compare them, I would need to do a proper
16:18 10 engineering analysis and proper engineering analysis entails
16:18 11 more than just reviewing documents such as the ones provided to
16:18 12 me. I would need -- can I finish?

16:19 13 Q. Sure.

16:19 14 A. I would need to have much more information to apply design
16:19 15 engineering principles, to look at comparing and setting up
16:19 16 side-by-side specifications relative to other BOPs similar to
16:19 17 the one used on Macondo. That is something that I have not
16:19 18 done. I have only looked at what has been provided to me;
16:19 19 i.e., through the documents provided to me.

16:19 20 Q. So because you felt that you would have needed a lot more
16:19 21 information, you didn't do a comparative analysis; is that
16:19 22 fair?

16:19 23 A. You can't do a comparative analysis without the design
16:19 24 specifications and other information.

16:19 25 Q. All right. Let's --

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16:19 1 A. That's how engineers think.

16:19 2 Q. I'm sorry. Let me move on.

16:19 3 Is it correct that neither you nor anyone at your
16:19 4 direction has performed any physical or other type of testing
16:19 5 in connection with the opinions you give in this case?

16:19 6 A. I'm sorry. Which opinions are we talking about?

16:19 7 Q. Have you performed any physical or other type of testing
16:20 8 in connection with the BOP?

16:20 9 A. No. The only testing that I'm aware of is the one -- the
16:20 10 testing of the data developed at DNV.

16:20 11 Q. So it's correct to say --

16:20 12 A. At Michoud.

16:20 13 Q. I'm sorry. So it's correct to say you certainly have not
16:20 14 performed any physical testing?

16:20 15 A. I was not provided with a blowout preventer or any of the
16:20 16 parts to do any physical testing, so I relied on the stuff that
16:20 17 I saw at Michoud and the work that DNV did relative to
16:20 18 preparing their data.

16:20 19 Q. Neither you nor anyone at your direction has performed a
16:20 20 finite element analysis in connection with the BOP in this
16:20 21 case, correct?

16:20 22 A. I'm not sure what a finite element analysis would do
16:20 23 relative to BOP. What am I looking at? I don't know what you
16:20 24 are asking me.

16:20 25 Q. Can we look at your deposition, page 40, lines 24 through

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16:20 1 line 41 -- I'm sorry, through page 41, line 2.

16:20 2 Do you recall in your deposition I asked you the
16:20 3 following question:

16:21 4 "QUESTION: Did you yourself or anybody in your
16:21 5 office perform a finite element analysis in connection
16:21 6 with the BOP in this case?

16:21 7 "ANSWER: No, I don't think we did."

16:21 8 Was that your testimony?

16:21 9 A. That's correct. But going on, I said we had the
16:21 10 capability, but we did not do that.

16:21 11 Q. Correct. That's right. You had the capability, but you
16:21 12 elected not to do that, correct?

16:21 13 A. To do it, I would need to have drawings and other
16:21 14 engineering information to make a finite element analysis
16:21 15 meaningful.

16:21 16 Q. So at the end of the day, was my statement correct that
16:21 17 you hadn't performed any finite element analysis modeling in
16:21 18 connection with your work in this case?

16:21 19 A. That's correct because it would serve no purpose.

16:21 20 Q. Thank you.

16:21 21 Your report doesn't discuss any computer modeling
16:21 22 that you did in connection with your opinions in this case
16:21 23 either, does it?

16:21 24 A. No. I relied upon the information provided by Cameron,
16:21 25 TO, BP, DNV.

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16:22 1 Q. You testified about the suitability of this BOP for the
16:22 2 operations of the *Deepwater Horizon*?

16:22 3 A. Just now? Yes.

16:22 4 Q. Earlier, correct.

16:22 5 And I want to follow up on some of that. Would you
16:22 6 agree with me that -- you have reviewed Transocean's well
16:22 7 control handbook, correct?

16:22 8 A. Their manual? Yes.

16:22 9 Q. Yes. If we can look at 1454.11.2, please. This is the
16:22 10 "Transocean Well Control Procedures and Responsibilities
16:23 11 Manual" that you reviewed in connection with this case?

16:23 12 A. That's correct.

16:23 13 Q. This was the applicable well control procedures and manual
16:23 14 that applied to the operations on the *Deepwater Horizon* on the
16:23 15 evening of April 20, correct?

16:23 16 A. Yes, ma'am.

16:23 17 Q. All right. And under Transocean's well control manual,
16:23 18 1.15, it indicates that casing, wellheads, and pressure control
16:23 19 equipment must, as a requirement, meet the working pressure and
16:23 20 temperature requirements determined by the maximum anticipated
16:23 21 surface pressure and temperature for each well and be reviewed
16:23 22 prior to spudding by the rig manager performance.

16:23 23 Do you see that?

16:23 24 A. I think you misread it.

16:23 25 Q. I'm sorry.

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16:23 1 A. It says: "Casing, wellheads, and pressure control
16:23 2 equipment must, as a minimum"

16:23 3 You said "requirement." As a minimum. . . .

16:23 4 Q. Correct. Let me --

16:23 5 A. You read the rest of it right.

16:23 6 Q. Okay. Let me start over.

16:23 7 "Casing, wellheads, and pressure control equipment
16:23 8 must, as a minimum, meet the working pressure and temperature
16:24 9 requirements determined by the maximum anticipated surface
16:24 10 pressure and temperature for each well and be reviewed prior to
16:24 11 spudding by the manager performance," correct?

16:24 12 A. Rig manager performance.

16:24 13 Q. Rig manager, sorry. I should have put my glasses back on.
16:24 14 That's the problem. I can't see close with them on, and I
16:24 15 can't see far without them.

16:24 16 The rig manager here was Mr. Johnson, correct?

16:24 17 A. I don't recall his name, but yes.

16:24 18 Q. And you recall that -- did you review Mr. Johnson's
16:24 19 testimony?

16:24 20 A. As I sit here today, I don't recall.

16:24 21 Q. Okay. Let's look at Mr. Johnson's testimony, page 393,
16:24 22 line 18, to 394, line 13.

16:24 23 A. What lines? I'm sorry, ma'am.

16:24 24 Q. I'm sorry. Line 18 at the top there where he was read
16:24 25 what I just read you.

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16:24 1 A. Would you like me to read it?

16:24 2 Q. Sure. Happy to have you do that.

16:25 3 A. (Reading):

16:25 4 "QUESTION: And it reads casing, wellheads, and
16:25 5 pressure control equipment must, as a minimum, meet the
16:25 6 working pressure and temperature requirements determined
16:25 7 by the maximum anticipated surface pressure and
16:25 8 temperature for each well and be reviewed prior to
16:25 9 spudding by the rig manager" -- that's lines 18 through 24
16:25 10 -- "by the rig manager performance. You see that?

16:25 11 "ANSWER: Yes.

16:25 12 "QUESTION: Was that something you would be -- would
16:25 13 be to review the working pressure and temperature
16:25 14 requirements" --

16:25 15 THE COURT: I think you read that wrong.

16:25 16 THE WITNESS: I did.

16:25 17 (Reading):

16:25 18 "QUESTION: Was that something you would do, would be
16:25 19 to review the working pressure and temperature
16:25 20 requirements for wells, concerning the functionality of
16:25 21 the, as a well control equipment?

16:26 22 "ANSWER: Yeah."

16:26 23 Do you want me to keep going?

16:26 24 BY MS. KARIS:

16:26 25 Q. Sure.

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16:26 1 A. Question, line 8.

16:26 2 "QUESTION: And you would do that for each well; is
16:26 3 that correct?

16:26 4 "ANSWER: Yeah."

16:26 5 "QUESTION: And did you do that for the Macondo well?

16:26 6 "ANSWER: Yeah."

16:26 7 Q. Okay. So it is the rig performance manager's testimony in
16:26 8 this case that, as required by Transocean's well control
16:26 9 manual, he was the one that would have reviewed the working
16:26 10 pressures and looked at the functionality of the well control
16:26 11 equipment, including the BOP, for suitability for this well,
16:26 12 correct?

16:26 13 A. In terms of maximum anticipated working pressure?

16:26 14 Q. Yes.

16:26 15 A. Or maximum anticipated surface pressure? That's what he
16:26 16 says. I don't think he did.

16:26 17 Q. So you doubt that he was testifying truthfully?

16:26 18 A. If he didn't use the maximum anticipated surface pressure
16:26 19 as part of his analysis, then he was mistaken.

16:27 20 Q. Well, you see where he said that was something that you
16:27 21 would do, you would review the working pressure and the
16:27 22 temperature requirements concerning the functionality of the
16:27 23 well control equipment.

16:27 24 That's something he would do for each well, and that
16:27 25 he did, in fact, do that for Macondo. That was his testimony,

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16:27 1 correct?

16:27 2 A. I'm not denying that was his testimony. I haven't seen
16:27 3 the results of that work that he says he did.

16:27 4 Q. Okay. I thought you testified earlier that you didn't
16:27 5 believe anybody did these kinds of -- this analysis or
16:27 6 calculations as part of a risk assessment or performance prior
16:27 7 to starting the operations at Macondo?

16:27 8 A. I'm sorry. I didn't get all of your question. Could you
16:27 9 try and rephrase it?

16:27 10 Q. Sure. Is it correct, at least, that the rig performance
16:27 11 manager, Mr. Johnson, in this case under oath testified that he
16:27 12 looked at the working pressure in accordance with the
16:28 13 requirements of Transocean's well control manual prior to
16:28 14 beginning operations at Macondo?

16:28 15 A. That's what he says he did.

16:28 16 Q. Okay.

16:28 17 A. I think if he calculated maximum anticipated surface
16:28 18 pressure, it would turn into a different answer.

16:28 19 Q. We'll talk about maximum anticipated surface pressure, I
16:28 20 promise.

16:28 21 So in addition to Mr. Johnson, who said he looked at
16:28 22 those working pressures for suitability -- so we have
16:28 23 Transocean looking at this BOP for suitability, the Government,
16:28 24 the MMS, also looked at calculations for suitability,
16:28 25 specifically maximum anticipated surface pressure for this BOP

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16:28 1 on the Macondo well, correct?

16:28 2 A. I think Mr. Davis testified to that, that he believed they
16:28 3 did, and I think I testified in my deposition the same.

16:28 4 Q. So we have a second entity that looked at the maximum
16:29 5 anticipated surface pressure and found this BOP to be suitable
16:29 6 for the operations at Macondo, and that entity was the
16:29 7 United States government regulatory agency, Minerals Management
16:29 8 Service, correct?

16:29 9 A. I think -- I think I said this in my deposition. I think
16:29 10 the MMS would rely on BP or Transocean to present to them a
16:29 11 calculation for MASP.

16:29 12 Q. Let's see what the MMS's own witnesses said about that,
16:29 13 whether they are relying on BP. You're aware that several of
16:29 14 them were deposed in this case, correct?

16:29 15 A. I'm aware of that.

16:29 16 Q. One of them was Mr. Patton, correct?

16:29 17 A. I don't recall his name.

16:29 18 Q. All right. Let's -- did you read Mr. Patton's testimony
16:29 19 as to whether he relied on BP or did his own calculations for
16:29 20 determining maximum anticipated surface pressure?

16:29 21 A. I don't recall the testimony.

16:29 22 Q. Okay.

16:29 23 A. If you want to show it to me, I will be glad to look at
16:29 24 it.

16:30 25 Q. Sure. Let's look at page 70, line 21, through page 71,

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16:30 1 line 18. He was asked by my colleague, Mr. Keegan:

16:30 2 "QUESTION: Do you know whether or not in this
16:30 3 particular case for this APD the MMS did any type of
16:30 4 independent analysis of maximum anticipated surface
16:30 5 pressure values?

16:30 6 "ANSWER: The eWell system does that evaluation."

16:30 7 And you're aware that the eWell system is the
16:30 8 government's system, correct?

16:30 9 A. I'm aware of it.

16:30 10 Q. (Reading):

16:30 11 "ANSWER: And if it's okay, it shows up in blue. If
16:30 12 we see a problem with it, it shows up in red.

16:30 13 "QUESTION: Okay. How does the eWell system do that
16:30 14 calculation?

16:30 15 "ANSWER: It's based on calculations -- on formulas
16:30 16 that MMS at the time used for evaluating casing and well
16:30 17 design."

16:30 18 That was his testimony, correct?

16:30 19 A. Correct.

16:31 20 Q. All right. Then you're familiar with Mr. Domangue -- I
16:31 21 believe, Brian D-O-M-A-N-G-U-E -- the MMS's district manager
16:31 22 for the Houma district?

16:31 23 A. I don't remember his name.

16:31 24 Q. Let's look at Mr. Domangue's testimony, page 51, line 24,
16:31 25 to 52, line 11.

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16:31 1 "QUESTION: Are you basically saying, sir, that with
16:31 2 respect to MMS, whether it be the New Orleans district or
16:31 3 Houma, that you would expect the engineers prior to and up
16:31 4 through April 20 to independently calculate the MASP as
16:31 5 provided by the operator in an APD?

16:31 6 "ANSWER: My expectation in the Houma district would
16:31 7 be that they review the numbers.

16:31 8 "QUESTION: 'Review the numbers' meaning all the
16:31 9 numbers like the pore pressure, the frac gradient, all
16:31 10 those types of things, correct?

16:31 11 "ANSWER: Yes."

16:32 12 Correct?

16:32 13 A. Correct, but I don't know -- my comment to that testimony
16:32 14 would be I don't know what parameters go into the eWell
16:32 15 program, specifically if the eWell program considers gas to
16:32 16 surface or a mix of mud and gas.

16:32 17 Q. Whatever it considers, it's trying to determine the
16:32 18 maximum anticipated surface pressure, which is what you were
16:32 19 talking about earlier, correct?

16:32 20 A. Correct, but even maximum anticipated surface pressure, as
16:32 21 I testified in my deposition, can be altered if you consider a
16:32 22 maximum anticipated surface pressure with mud and gas, which is
16:32 23 what BP did.

16:32 24 Q. We will get to whether anybody else in the world, other
16:32 25 than you, thinks we should use 100 percent gas column when

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16:32 1 calculating that MASP.

16:32 2 But you would agree with me, at least with respect to
16:32 3 determining the suitability of this BOP for this well, we have
16:32 4 Transocean's rig manager that has done that and the MMS has
16:32 5 done it. And not to go over Mr. Saucier's deposition, but you
16:33 6 are aware that he too testified that the MMS does their own
16:33 7 calculations, page 120, line 24 to 121, line 9. We don't need
16:33 8 to read it into the record unless you would like to see it.

16:33 9 A. No, the only comment I have, as I responded to an earlier
16:33 10 question that you asked, is that I don't know what parameters
16:33 11 go into the eWell program and you know my response to that.

16:33 12 Q. And I respect you don't know the parameters, but what the
16:33 13 Government is trying to understand is whether the BOP is
16:33 14 suitable for use at a particular well. And in this instance,
16:33 15 it is the *Deepwater Horizon's* BOP at the Macondo well, correct?

16:33 16 A. That's what they testified to.

16:33 17 Q. What they concluded, all three of those gentlemen,
16:33 18 Mr. Saucier, Mr. Patton, and Mr. Domangue -- and I apologize
16:33 19 that I'm probably butchering their names -- all three of them
16:33 20 concluded, yes, this BOP was suitable for use at the Macondo
16:33 21 well and, therefore, approved the permit to drill, correct?

16:34 22 A. That's my understanding.

16:34 23 Q. Thank you.

16:34 24 Did you undertake any effort to understand what other
16:34 25 operators do when they calculate MASP, whether they use a

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1 100 percent gas column, as you suggest should have been done?

2 A. Well, I suggest that they do that based upon their DWOP
3 manual, their best practices manual, and Transocean's well
4 control manual.

5 Q. We will get to DWOP, I promise.

6 A. Other than that, you showed me in my deposition several
7 examples of operators who used a mixture of mud and gas. And
8 if those wells are not exploratory, then -- I would have to
9 study those examples a little bit more closely; but if they are
10 not exploratory wells, they must have other information that
11 would justify that calculation.

12 Q. So let's break that up a little bit. First of all, is it
13 fair to say that, at least in your deposition, I gave you
14 probably 10 different examples of other operators who use a
15 gas-to-oil ratio that is not 100 percent, as you suggest?

16 A. I don't think it was 10. I think --

17 Q. A fair number?

18 A. I think you gave me a couple.

19 Q. All right.

20 A. I think you showed me a couple that used 40:60, 70:30; and
21 that was all you showed me.

22 Q. All right. Those are publicly available documents, the
23 APDs, right?

24 A. They are. But I didn't know if those wells were
25 exploratory wells. I don't have their DWOP manuals. I don't

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16:35 1 have their drilling contractors' well control manuals. They
16:35 2 may say the same things that Transocean's and your manuals say.

16:36 3 Q. We will get to our DWOP manual. But is it fair to say
16:36 4 that you have not undertaken any effort to see, for similar
16:36 5 wells, exploratory wells at depths greater than 10,000 feet
16:36 6 like Macondo, whether the way BP calculates MASP, maximum
16:36 7 anticipated surface pressure, is straight in line with how
16:36 8 other operators calculate that figure? You haven't done that
16:36 9 analysis, correct?

16:36 10 A. I relied on BP's analysis and I relied on Transocean's --
16:36 11 well, Transocean didn't do an analysis that I am aware of. I
16:36 12 also relied on BP's DWOP manual and your well control manual
16:36 13 and what you say you do when you compute MASP.

16:36 14 Q. Let's see what we tell the Government we do when we
16:36 15 compute MASP. If we can pull up 1339.1.1.

16:37 16 Mr. Perkin, you agree with me that when BP submits an
16:37 17 application to drill with a particular BOP, it needs to provide
16:37 18 to the Government with that application how it has calculated
16:37 19 MASP, maximum anticipated surface pressure, correct?

16:37 20 A. Correct.

16:37 21 Q. If we can go to 1339.1.2 -- before we leave this page,
16:37 22 actually, this application was approved, we see here, on
16:37 23 March 15 following the sidetrack that had to be done at
16:37 24 Macondo, correct?

16:37 25 A. Yeah, I see.

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16:37 1 Q. So now if we can go to 1339.1.2. This is in a document
16:37 2 that BP submits to the Government as to how it calculates MASP.

16:37 3 Do you see there it first identifies the fracture
16:37 4 gradient and then has bottom hole pressure method, a column of
16:38 5 50 percent gas and 50 percent liquid back to surface gives, and
16:38 6 then it gives out those calculations. And then it says, using
16:38 7 50 percent gas and 50 percent liquid from ML to surface --
16:38 8 that's mud line to surface -- the mud line pressure is 8404.
16:38 9 That's what BP told the United States government in terms of
16:38 10 how it was calculating MASP in connection with this well and
16:38 11 this BOP, correct?

16:38 12 A. Correct. And I think I testified to that in my
16:38 13 deposition.

16:38 14 Q. I respect that we have asked many of these same questions
16:38 15 in your deposition; but your deposition is not part of the
16:38 16 record, which is why I am asking you these questions again.

16:38 17 A. Okay. I'm just the engineer.

16:38 18 Q. I completely understand.

16:38 19 Correct to say after BP told the Government the way
16:38 20 it was going to calculate this was to do 50 percent oil,
16:38 21 50 percent gas, that application was approved, correct?

16:39 22 A. Well, it's not oil; it's mud.

16:39 23 Q. I'm sorry, mud. 50 percent gas, 50 percent mud, that
16:39 24 application was approved?

16:39 25 A. Evidently.

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16:39 1 Q. Now, are you aware that -- you're familiar with West
16:39 2 Engineering?

16:39 3 A. I am. I've been there many times.

16:39 4 Q. I'm sorry?

16:39 5 A. I've been there many times.

16:39 6 Q. Are you aware that they conducted a study on behalf of the
16:39 7 MMS, the applicable regulatory agency that looks at this very
16:39 8 issue as to what the gas-to-oil ratio is that should be used?

16:39 9 A. I'm sorry. I missed part of that. Can you read that
16:39 10 back?

16:39 11 Q. Are you aware that in 2006, the MMS commissioned a study
16:39 12 by West and it discussed this issue of how to calculate maximum
16:39 13 anticipated surface pressure?

16:39 14 A. I do recall that.

16:39 15 Q. You reviewed that study in preparing your opinions in this
16:39 16 case, correct?

16:39 17 A. I did.

16:39 18 MS. KARIS: If we can pull up 07550, please.

16:40 19 BY MS. KARIS:

16:40 20 Q. At page 53, this is that study that you looked at in
16:40 21 connection with reaching your opinions, correct?

16:40 22 A. Let me look at this, please.

16:40 23 Q. Sure.

16:40 24 A. Okay.

16:40 25 Q. If we can now go to page 53 of Exhibit 7550. If you will

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1 call out there -- you see where it says: "There is no standard
2 petroleum industry procedure for calculating MASP."

3 Correct?

4 A. I see that that's what they say. There is an equation;
5 but how the equation is utilized, I think that's what they are
6 referring to.

7 Q. Fair enough. There's an equation; but in terms of what
8 variables you put into that equation, including what the oil-
9 or gas-to-mud ratio is, that's something that, at least as of
10 2006, West concluded there was no industry procedure for
11 calculating, correct?

12 A. I disagree with that a little bit. Your predicate is that
13 there is -- there is a calculation, true; but the calculations
14 don't account for -- at least the equations that I'm familiar
15 with do not account for a mixture of mud and gas.

16 Q. Okay.

17 A. That is an adaptation.

18 Q. If we can go to page 51.

19 While they are pulling that up, do you agree with me
20 that the West Engineering report concludes that evacuation
21 percentages for MASP vary from 40 to 70 percent, depending on
22 the operating company or the -- and/or the depth of the casing
23 string setting?

24 A. That sounds familiar, but where are you reading that?

25 Q. Let's see if we can find that. I think we have this in a

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1 call-out. Right at the bottom, last paragraph, please. Last
2 couple of sentences: "The percentage of evacuation varies from
3 40 to 70 percent, depending on the operating company and/or the
4 depth of the pertinent casing string setting depth."

5 Correct?

6 A. Yes.

7 Can I read the whole thing, if you don't mind?

8 Q. Sure.

9 A. They make the point in the upper portion of the paragraph
10 the length of the case is always a critical value. "This
11 length is determined by some based on a volume of influx.
12 Others simply use a percentage of the total true vertical depth
13 evacuated to gas."

14 So they're making -- their conclusion is that
15 apparently they use evacuation from 40 to 70 percent. It
16 depends upon the operating company.

17 Q. The conclusion is they use from 40 to 70 percent,
18 depending on the operating company, correct?

19 A. Correct. They are not talking about exploratory wells
20 here. They are not talking about offset wells or wells that
21 are drilled in the same field.

22 Q. Are they excluding exploratory wells, to your knowledge?

23 A. They don't make a specific reference or exclude any, but I
24 know BP and Transocean don't make that distinction.

25 Q. I'm asking whether West's studies excluded exploratory

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1 wells?

2 A. No, I think they are talking about in general. They are
3 making a general comment.

4 Q. Right. The general comment they say is to use somewhere
5 from 40 to 70 percent?

6 A. They are saying -- no, they are not saying that. They are
7 saying that's what the operating companies typically do, based
8 upon their research.

9 Q. Okay. Now, you've testified about DWOP several times.
10 And if we can pull out 93.47.1. I believe this is where you
11 referenced -- this is what you say you relied on, in part, for
12 your opinion that a 100 percent gas column should have been
13 used for MASP?

14 A. This is BP's DWOP?

15 Q. Right.

16 A. I think Mr. Williamson asked me about this, so yes.

17 Q. Let's just read the words first. What we have been
18 talking about is the words "maximum anticipated surface
19 pressure" that has the acronym of MASP, correct?

20 A. It's also "maximum allowable surface pressure." There's
21 other acronyms for MASP, but maximum anticipated, maximum
22 allowable --

23 Q. We are going to get to that as to whether these words are
24 the same; but what we have been speaking to is MASP, maximum
25 anticipated surface pressure, correct?

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16:44 1 A. Or maximum allowable surface pressure.

16:44 2 Q. You used this document to conclude that this is speaking
16:44 3 to the same issue, correct?

16:45 4 A. I believe it is.

16:45 5 Q. What it says is that: "The maximum allowable wellhead
16:45 6 pressure shall take into account a gas column to surface for
16:45 7 exploration and appraisal wells, whilst for development wells
16:45 8 reservoir fluid shall be used."

16:45 9 Correct?

16:45 10 A. That's what it says.

16:45 11 Q. You concluded that this is speaking to the same thing,
16:45 12 maximum anticipated surface pressure, correct?

16:45 13 A. Yes.

16:45 14 Q. You concluded that BP uses those terms the same way; that
16:45 15 was your opinion?

16:45 16 A. Yes.

16:45 17 Q. Do you know who Rich Miller is?

16:45 18 A. No, I don't.

16:45 19 Q. Do you know that he is a BP tubular design manager who
16:45 20 uses these same manuals, the casing manual Mr. Williamson
16:45 21 showed you, the DWOP, and similar documents, in his everyday
16:45 22 operations at BP?

16:45 23 A. I'll have to take your word for it.

16:45 24 Q. That was one of the -- there was a deposition of
16:46 25 Mr. Miller in this case regarding this specific document and

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16:46 1 whether it means the same thing as to MASP. Did you read that
16:46 2 testimony?

16:46 3 A. I probably did. If you're going to show me the testimony,
16:46 4 then I can look at it again.

16:46 5 Q. Fantastic. Let's look at Mr. Miller, please, page 73,
16:46 6 lines 16 to 19 first.

16:46 7 "So you said maximum anticipated or maximum allowable
16:46 8 is different in your opinion?"

16:46 9 Can you read us what his answer was?

16:46 10 A. He says: "Yes, those are two different things."

16:46 11 Q. Then if we go to page 81, 19 to 25.

16:46 12 A. Are we going to the follow-up, or are we jumping ahead
16:46 13 five six or pages?

16:46 14 Q. We are going ahead to what Mr. Miller -- and this whole
16:46 15 deposition was available to you -- what Mr. Miller said in
16:47 16 response to Mr. Lundy's questions and -- Mr. Lundy, Matthew
16:47 17 Lundy, counsel for the Plaintiffs' Steering Committee.

16:47 18 He was asked as to BP's understanding and what it
16:47 19 says in these paragraphs that we read. It says: "The maximum
16:47 20 allowable wellhead pressure, is that the same thing as MASP?"

16:47 21 What was his answer?

16:47 22 A. He says: "No, it is not."

16:47 23 Q. All right. Then further on in his dep at page 79, 6 to
16:47 24 20, without reading all of it, just to be clear here, he is
16:47 25 shown Exhibit 215, "Well Control Group Practice," Exhibit 93,

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16:47 1 the very same one you used and talked about, "Drilling and Well
16:47 2 Operations Practice," DWOP; those two sections that we read,
16:47 3 the same thing.

16:47 4 And he is asked questions by Mr. Lundy, counsel for
16:47 5 the plaintiffs: "It's my understanding that what this means is
16:47 6 that we are measuring MASP. You test it at 100 percent column
16:48 7 of gas to surface; is that correct?"

16:48 8 What does he say?

16:48 9 A. He says: "No, that's not correct."

16:48 10 Q. So Mr. Miller, who uses this manual day in and day out at
16:48 11 BP to perform his responsibilities as tubular design manager
16:48 12 for BP, does not say that those two principles are the same,
16:48 13 does he?

16:48 14 A. Well, without going through the deposition and the other
16:48 15 questions that were asked, and you asked me about those
16:48 16 specific responses, evidently he doesn't agree.

16:48 17 Q. Did you look at that in connection with reaching your own
16:48 18 opinion and conclusion that those are the same?

16:48 19 A. I looked at that. I looked at other references that I
16:48 20 have and my own work, and I think he is mistaken.

16:48 21 Q. So Mr. Miller, who works for BP and uses this manual, is
16:48 22 mistaken in your opinion, correct?

16:48 23 A. His definition of "maximum anticipated" or "maximum
16:48 24 allowable"; I think they are one and the same.

16:49 25 Q. Now, what BP did is they represented to the MMS that the

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16:49 1 maximum anticipated surface pressure was around 8500, correct?
16:49 2 8409, I think.

16:49 3 A. 8404 with a 500 -- you have a 500 psi safety factor,
16:49 4 right.

16:49 5 Q. What you told us is that's looking at -- you should look
16:49 6 at what the worst-case scenario is, correct?

16:49 7 A. Worst-case scenario, in my opinion, is gas to surface.

16:49 8 Q. You agree here that the event on the evening of April 20
16:49 9 with the BOP activated, when it was activated, was a worst-case
16:49 10 scenario?

16:49 11 A. Well, it was a horrible case, that's true; but I don't
16:49 12 think the wellhead pressures got to -- or the BOP pressures got
16:49 13 to almost 9000 psi, based upon the data that I have.

16:50 14 Q. That's right. The event that we are looking at where the
16:50 15 riser unloaded when the BOP was activated and gas was well
16:50 16 above the riser, the maximum pressure experienced by the BOP on
16:50 17 the evening of April 20 was lower than the figure that BP
16:50 18 represented as the maximum anticipated surface pressure,
16:50 19 correct?

16:50 20 A. I would agree with part of that predicate, but you said
16:50 21 the well unloaded. The well did not unload. The well still
16:50 22 had fluid in it.

16:50 23 Q. So with the caveat that, in your view, the well still had
16:50 24 fluid -- I appreciate that -- you would agree that on the
16:50 25 evening of April 20, under the conditions that the well

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16:50 1 actually saw, the maximum pressure experienced by the BOP on
16:50 2 that evening was lower than the figure represented by BP as the
16:50 3 maximum anticipated surface pressure, correct?

16:50 4 A. Correct. It was somewhere, I believe, in the 6500 --
16:51 5 6000- to 6500-psi range, based upon the data that I considered.

16:51 6 Q. So we can say whatever we want about MASP; but at the end
16:51 7 of the day, this event, this well that night saw less pressure
16:51 8 than what was in the APD, correct?

16:51 9 A. That's correct, but that doesn't take away the
16:51 10 responsibility to design for the worst case and that was a
16:51 11 pretty bad case but not the worst case.

16:51 12 Q. Now, you offered some opinions regarding what the well --
16:51 13 or what the BOP should have been designed for in connection
16:51 14 with acoustic systems, correct?

16:51 15 A. I think I did.

16:51 16 Q. I want to touch on some of those opinions.

16:52 17 To be clear, what happens is that an acoustic trigger
16:52 18 is basically a control system that sends sound waves to the BOP
16:52 19 to control certain functions of the BOP. Is that a fair
16:52 20 description?

16:52 21 A. Through the water.

16:52 22 Q. Through the water.

16:52 23 A. Then it's a fair description.

16:52 24 Q. Fair. Thank you.

16:52 25 And you agree with me that acoustic triggers or

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16:52 1 acoustic control systems, they are not required by regulation
16:52 2 in the Gulf of Mexico, certainly not as of April 20, 2010,
16:52 3 correct?

16:52 4 A. That's my understanding. I know that one was offered to
16:52 5 BP back in '99, 2000 when the proposal was being made; but
16:52 6 there was something about the ABS had to be talked to first.

16:52 7 Q. Mr. Perkin, I didn't ask you what was offered to BP. I
16:52 8 asked you about the regulations.

16:52 9 THE COURT: Well, he started off by answering and he
16:52 10 said, "That's my understanding." Then he went on to explain.

16:52 11 MS. KARIS: Fair enough.

16:52 12 THE COURT: I think we can move this along a little
16:52 13 faster, Ms. Karis.

16:52 14 MS. KARIS: All right.

16:52 15 BY MS. KARIS:

16:52 16 Q. Is it fair to say that neither the IADC, the
16:53 17 International Association of Drilling Contractors, the API,
16:53 18 which is the American Petroleum Institute, nor the regulatory
16:53 19 body in play here recommends the use of acoustic systems?

16:53 20 A. Well, I think the regulatory body in play here would be
16:53 21 the American Bureau of Shipping or the MMS. I'm not aware of
16:53 22 it being required in the Gulf of Mexico.

16:53 23 Q. How about the -- I apologize if you answered this; but
16:53 24 neither the API nor the IADC recommends the use of them,
16:53 25 correct?

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16:53 1 A. I wouldn't expect the API or the IADC to recommend them.

16:53 2 Q. You are aware that there have been reliability concerns in
16:53 3 connection with acoustic systems?

16:53 4 A. You brought that up in my deposition and West did a study
16:53 5 on acoustic systems and they indicated some of the problems.

16:53 6 Q. Did you undertake a hazard or risk analysis to determine
16:53 7 the disadvantages of installing an acoustic system on the
16:54 8 *Deepwater Horizon*?

16:54 9 A. Again, I relied on the information that was provided to me
16:54 10 by the West report and the Cameron documents that I reviewed
16:54 11 relative to the building of the rig. So that's what I relied
16:54 12 upon.

16:54 13 Q. So you did not do your own risk assessment?

16:54 14 A. I did not do an assessment where I took Acoustic System A,
16:54 15 Acoustic System B, Acoustic System C, line them up side by side
16:54 16 and did a risk assessment. I was not asked to do that. I was
16:54 17 asked if an acoustic trigger is a reasonable backup system to a
16:54 18 single point of failure such as the MUX cables.

16:54 19 Q. Okay. And you're familiar with who Mr. Boughton is; that
16:54 20 is, Transocean's subject matter expert for subsea equipment?

16:54 21 A. He sounds familiar.

16:54 22 Q. You referenced that, in 1999, somebody offered to BP the
16:54 23 possibility of using an acoustic system. Did I hear you
16:54 24 correctly?

16:54 25 A. Correct.

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16:54 1 Q. Were you aware that Transocean's subject matter expert for
16:54 2 subsea equipment believed that there were reliability concerns
16:54 3 in connection with using acoustic systems?

16:55 4 A. I don't recall that testimony. I think there was some
16:55 5 other testimony that I read recently that -- I guess it was a
16:55 6 Cameron employee that I was referring to. So I am probably
16:55 7 misspeaking.

16:55 8 Q. Just to refresh -- this won't go long, I promise -- 230,
16:55 9 page 230, line 12 to 22:

16:55 10 "QUESTION: With acoustic backup systems" --

16:55 11 This is Mr. Boughton's testimony. I'm sorry. Let me
16:55 12 start over.

16:55 13 A. Do you want me to read it?

16:55 14 Q. Sure. Go ahead.

16:55 15 A. Starting at line 12.

16:55 16 "QUESTION: Generally with acoustic backup systems,
16:55 17 are there reliability concerns?

16:55 18 "ANSWER: Yes, absolutely. There are problems with
16:55 19 the reliability of acoustic backup systems.

16:55 20 "QUESTION: What are those problems?

16:55 21 "ANSWER: They can receive inappropriate or false
16:55 22 signals and they have been -- there's the many incidents
16:55 23 where they made a malfunction while the BOP's on bottom."

16:56 24 Q. Not only Mr. Boughton held that point of view but
16:56 25 West Engineering conducted a study for the MMS and reached the

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16:56 1 same conclusions, correct?

16:56 2 A. I think they reached similar conclusions about muddy
16:56 3 water, debris in the water, that sort of thing, as I recall.

16:56 4 Q. All right. Is it fair to say that West Engineering
16:56 5 reached conclusions that there were reliability concerns in
16:56 6 connection with the system that you recommend to have been
16:56 7 used?

16:56 8 A. I think they pointed out deficiencies in the system,
16:56 9 potential deficiencies in the system; but my opinion, having a
16:56 10 backup system rather than no backup system is a preferred
16:56 11 solution here.

16:56 12 Q. Other than yourself, as of the time of your deposition, is
16:56 13 it correct you couldn't identify anyone in the industry
16:56 14 anywhere in the world that recommends the utilization of an
16:56 15 acoustic system for rigs that are operating in the Gulf of
16:56 16 Mexico?

16:56 17 A. I think I testified to that, yes.

16:57 18 Q. Very quickly. Mr. Doyen asked you about who controlled
16:57 19 the configuration -- the decisions with respect to the
16:57 20 configuration of the BOP stack that was used on the
16:57 21 *Deepwater Horizon*. Do you recall those questions generally?

16:57 22 A. Generally.

16:57 23 Q. Would you agree with me that that stack -- which was
16:57 24 configured with two annulars, one blind shear ram, one casing
16:57 25 shear ram, two variable bore rams, and one test ram -- complied

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1 with the MMS regulations that existed as of April 20?

2 A. If the MMS had a problem with it, I'm sure they would have
3 said something. So I agree with that.

4 Q. Thank you. You began your testimony by speaking of risk
5 assessments and what risk assessments had been done in
6 connection with the Macondo well. Do you recall that?

7 A. My testimony with you or my testimony with Mr. Williamson?

8 Q. No. I'm sorry. You began your testimony with
9 Mr. Williamson.

10 A. Okay. I don't recall exactly what he asked me, but --

11 Q. I get it. It's been a long day, and I completely
12 appreciate that.

13 I'll represent to you that one of the first subjects
14 that you were asked about here was the risk register or risk
15 assessment that had been done on the Macondo well.

16 A. That, I recall.

17 Q. Okay. Great.

18 Now, you are aware that, in addition to the Macondo
19 risk register that you said only identified nonproductive time,
20 there was also something called the drilling and completions
21 risk register for the Gulf of Mexico's business unit, correct?

22 A. Was that the same risk register?

23 Q. It's not. I'm asking -- I guess I should ask you: Do you
24 know -- you said the only thing that had been identified in
25 terms of impact was nonproductive time?

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16:59 1 A. On that document that Mr. Williamson showed me, yes.

16:59 2 Q. Fair enough. But you would agree with me there were other
16:59 3 risk registers that existed that identified, in capped types,
16:59 4 far greater than nonproductive time, correct?

17:00 5 A. On that list there was. Not necessarily related to the
17:00 6 BOP.

17:00 7 Q. Right. I'm focusing specifically on BOPs, so let's see if
17:00 8 I can move this along.

17:00 9 MS. KARIS: 04160.

17:00 10 BY MS. KARIS:

17:00 11 Q. Are you familiar with this risk register which was
17:00 12 applicable at the time of the incident to the drilling and
17:00 13 completions organization for the Gulf of Mexico?

17:00 14 THE COURT: We just lost it.

17:00 15 THE WITNESS: Your mic is -- there's something wrong
17:00 16 with your mic.

17:00 17 THE COURT: Is it still on your screen?

17:00 18 THE WITNESS: I can see it.

17:00 19 THE COURT: It's the second time this has happened,
17:00 20 Stephanie.

17:01 21 Mine is off again. Let's take about a
17:01 22 five-minute recess.

17:01 23 (Recess.)

17:11 24 THE COURT: Please be seated, everyone. Let me see
17:11 25 if I can avoid turning off my computer again this afternoon.

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17:11 1 Go ahead, Ms. Karis.

17:11 2 MS. KARIS: Thank you, Your Honor. Let me see if I
17:11 3 can help you with that in finishing up very quickly here.

17:11 4 BY MS. KARIS:

17:11 5 Q. Mr. Perkin, before we took our break, we were talking
17:11 6 about risk registers.

17:11 7 A. Yes, ma'am.

17:11 8 Q. We had pulled up --

17:11 9 MS. KARIS: And if you can put it back up.

17:11 10 BY MR. KAR:

17:11 11 Q. -- 4160.1.1. First, let me start by asking you: Is this
17:12 12 one of the documents that you reviewed in connection with
17:12 13 reaching your opinions in this case about what risk assessments
17:12 14 had been done for the Macondo well?

17:12 15 A. I don't recall seeing this.

17:12 16 Q. Are you familiar with the drilling and completions
17:12 17 organization in the Gulf of Mexico?

17:12 18 A. Somewhat.

17:12 19 Q. Is that the organization under which the Macondo well was
17:12 20 drilled?

17:12 21 A. I don't recall.

17:12 22 Q. Do you know whether the drilling and completions
17:12 23 organization, as part of their routine risk assessment
17:12 24 operations, conducts a risk assessment of the risks associated
17:12 25 with that business, including drilling in the Gulf of Mexico?

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17:12 1 A. I would presume they would.

17:12 2 Q. You did not look at what risk assessments they had done;
17:12 3 is that correct?

17:12 4 A. I said I don't recall.

17:12 5 Q. So we can skip past this one.

17:12 6 4171.1.1. This was the risk mitigation plan in place
17:13 7 for the operations at Macondo in drilling and completions in
17:13 8 the Gulf of Mexico. And you see at the bottom, it's signed
17:13 9 October 14, 2009. Is this one of the documents that you
17:13 10 reviewed in connection with reaching your opinions in this case
17:13 11 as to what risk assessment BP had done?

17:13 12 A. Let me read it.

17:13 13 Q. Sure. To the extent it helps, we can put the call-out
17:13 14 back in so you can see the full page.

17:13 15 A. Are you asking me to read this call-out, fly-out?

17:13 16 Q. I'm asking first whether this is one of the documents that
17:13 17 you reviewed when you reached your opinions in this case as to
17:13 18 what risk assessment had been done by BP?

17:13 19 A. I don't recall seeing this document; but I may have, I may
17:13 20 not have.

17:13 21 Q. I appreciate that it's very hard to read what's shaded out
17:14 22 there. But since you testified earlier that the only thing BP
17:14 23 had identified -- I'll represent to you that in this risk
17:14 24 assessment/risk mitigation plan, the boxes that are checked for
17:14 25 drilling operations in the Gulf of Mexico, including

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17:14 1 contractor-owned rigs such as the *Deepwater Horizon* there, do
17:14 2 you see that what's checked there in terms of risks includes
17:14 3 safety, environment, and reputation?

17:14 4 A. I do.

17:14 5 Q. That's not one of the documents you looked at in reaching
17:14 6 your opinions regarding risk assessments, correct?

17:14 7 A. I don't recall if this is in my reliance documents or not.

17:14 8 MS. KARIS: Then if we can look at 2188.3.1. If we
17:14 9 can put it back in so he can see the full document.

17:14 10 BY MS. KARIS:

17:14 11 Q. This is a major accident hazard risk assessment
17:14 12 specifically done for the *Deepwater Horizon*.

17:14 13 A. I think I've seen this.

17:15 14 Q. This is done by Transocean. Are you familiar with this
17:15 15 document?

17:15 16 A. I think I am.

17:15 17 Q. Is this one of the documents you reviewed in reaching your
17:15 18 opinions in this case as to what risk assessment had been done?

17:15 19 A. I think so.

17:15 20 Q. You would agree with me, then, that in this document,
17:15 21 Transocean does look at the risks associated with operations,
17:15 22 including risks specifically for the BOP?

17:15 23 A. I would have to see where you are referring to.

17:15 24 Q. Well, do you recall, first of all, whether this document
17:15 25 includes such an assessment?

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17:15 1 A. I don't recall. The document looks familiar, of the
17:15 2 hundreds and hundreds of documents I've looked at, but I
17:15 3 haven't seen this one in a while. So if you want to ask me a
17:15 4 question about it, I think you need to show me.

17:15 5 Q. Sure. 2188.198.1. Do you see here where Transocean looks
17:15 6 at the hazards, the consequences, preventions, and mitigations?

17:15 7 A. I do.

17:15 8 Q. That's what you would expect the risk assessment to take
17:15 9 into account, correct?

17:16 10 A. I think this is one way to do it.

17:16 11 Q. So is it fair to say that, with respect to the
17:16 12 *Deepwater Horizon* BOP, there had been a major accident hazard
17:16 13 risk assessment done on the *Deepwater Horizon's* BOP?

17:16 14 A. That Transocean did?

17:16 15 Q. Yes.

17:16 16 A. Yes, if this is it.

17:16 17 Q. Well, is this it, I guess I should ask you?

17:16 18 A. I don't know for sure if this was it, but it appears to be
17:16 19 one.

17:16 20 Q. So when you testified at the beginning of this case that
17:16 21 you had not identified any risk assessment that identified any
17:16 22 risks other than nonproductive time, is it fair to say you were
17:16 23 not considering these documents we just looked at?

17:16 24 A. I think Mr. Williamson was asking me a question about that
17:16 25 specific chart.

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17:16 1 Q. So your opinion or your testimony was limited that, on one
17:16 2 document, the only risk identified was nonproductive time; you
17:16 3 weren't intending to say there had been no other risk
17:17 4 assessments; is that correct?

17:17 5 A. In light of your question, I would say this is a risk
17:17 6 assessment done by Transocean; and I would say it does talk
17:17 7 about hazards, consequences, mitigations, and so on.

17:17 8 Q. Similarly, 4160.11, D&C risk register, which also has
17:17 9 causes, events, consequences, and impact type, that would be
17:17 10 another risk assessment done by BP on the BOP here?

17:17 11 A. I honestly don't recall seeing this document. And I can't
17:17 12 read it, it's so small.

17:17 13 Q. Fair enough. Let's move on.

17:17 14 You offered some opinions regarding EDS-1 versus
17:17 15 EDS-2 and which of those two systems were used, correct?

17:17 16 A. Yeah, I think I described both of them.

17:17 17 Q. You reviewed the Transocean well control manual here,
17:17 18 correct?

17:18 19 A. With Mr. Williamson, I did.

17:18 20 Q. And in connection with reaching your opinions in this case
17:18 21 regarding well control?

17:18 22 A. I did.

17:18 23 Q. Based on your review of Transocean's well control manual,
17:18 24 would you agree that the responsibility for shutting in the
17:18 25 well rests with Transocean's driller?

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17:18 1 A. I would agree with that. He is sort of driving the ship,
17:18 2 so to speak.

17:18 3 Q. So when you speak to whether choosing EDS-1 or EDS-2, it
17:18 4 would be the driller who would make that selection; is that
17:18 5 correct?

17:18 6 A. Well, I think he would make that selection in conjunction
17:18 7 with BP. I thought your question was more -- my response
17:18 8 previously was more in line with if the well was to be shut in,
17:18 9 who would be first and foremost responsible to shut in the
17:18 10 well; and I would agree it would be the driller.

17:18 11 Q. Let's look at Exhibit 48102.1.2, and I want to follow up
17:18 12 on what you've just said about it would be done in conjunction
17:19 13 with BP.

17:19 14 Can we agree that the driller does not need BP's
17:19 15 authorization in order to activate the BOP in a well control
17:19 16 situation?

17:19 17 A. No, he does not. He can activate it at his discretion.

17:19 18 Q. So the driller can make the selection as to whether he is
17:19 19 going to go to EDS-1 or EDS-2, correct?

17:19 20 A. Based upon this picture, yes, he can make the choice of
17:19 21 going to normal or to casing.

17:19 22 Q. To be clear here, what we have in 48102.1.2 is a photo of
17:19 23 a BOP panel, correct?

17:19 24 A. Correct.

17:19 25 Q. This BOP panel is in the driller's shack, correct?

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17:19 1 A. It is.

17:19 2 Q. What we have called out there are the EDS selector
17:19 3 buttons, correct?

17:19 4 A. Yeah. They would be over on the right. Looks like this
17:20 5 one right here is this blowup right here.

17:20 6 Q. And one says "normal" and the other says "casing,"
17:20 7 correct?

17:20 8 A. Yes.

17:20 9 Q. So when you're speaking to selecting either EDS-1 or
17:20 10 EDS-2, what you're referring to there is selecting either
17:20 11 "normal" or selecting "casing"; is that correct?

17:20 12 A. That's my understanding. I'm not sure if that's that
17:20 13 particular function. My understanding was you had to hold two
17:20 14 buttons -- there is two buttons. So I assume that's how you do
17:20 15 it.

17:20 16 Q. Okay. I just want to be clear then. In all of your
17:20 17 opinions about which EDS panel should have been used, you're
17:20 18 referring to -- which EDS system, I should say, should be used,
17:20 19 EDS-1 or EDS-2, you are talking about which of these two
17:20 20 buttons should have been pressed that night in a well control
17:20 21 event?

17:20 22 A. Well, I think in an emergency disconnect sequence event,
17:20 23 as I testified earlier in regards to Mr. Williamson's
17:20 24 questions, EDS-2 should have been utilized. And I think EDS-2
17:21 25 should have been utilized with the possibility of off-centered

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17:21 1 pipe.

17:21 2 THE COURT: I want to make sure I understand it. I
17:21 3 think what she is asking, and I want to make sure -- at least
17:21 4 this is what I'm interested in. When you said "EDS-1," that
17:21 5 would be what's called normal here, the normal button?

17:21 6 THE WITNESS: That's my understanding, Judge.

17:21 7 THE COURT: EDS-2, as you described it, would be the
17:21 8 casing button, the red button?

17:21 9 THE WITNESS: That would be my understanding based on
17:21 10 this exhibit, yes.

17:21 11 THE COURT: Your understanding is -- and I think
17:21 12 there was some prior testimony on this -- someone would have to
17:21 13 push the top button, hold that down while you push one of the
17:21 14 others?

17:21 15 THE WITNESS: I think that's true. I haven't done it
17:21 16 personally.

17:21 17 BY MS. KARIS:

17:21 18 Q. So at the end of the day, what your opinion pertains to is
17:21 19 which button the driller elects to push in a well control
17:21 20 situation, right?

17:21 21 A. It gives him the opportunity to switch between one or the
17:21 22 other. I think that's what you're asking me.

17:21 23 Q. Yes, that is.

17:21 24 And is that correct in the sense that's a selection
17:21 25 the driller makes?

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17:21 1 A. He can make it, but I also think he should make the well
17:22 2 site leader aware of it.

17:22 3 Q. He should what?

17:22 4 A. He should also make the well site leader aware of that,
17:22 5 the company man.

17:22 6 Q. He should make the company man involved?

17:22 7 A. No, no. He should make the company man aware of what he
17:22 8 has selected.

17:22 9 Q. The rule of thumb is you shut in the well first and then
17:22 10 you notify whoever else you want to notify, correct?

17:22 11 A. When you are in an emergency mode -- when you are in
17:22 12 emergency mode, you have to make the right selection based upon
17:22 13 what kind of emergency you anticipate. This well was an
17:22 14 emergency by definition.

17:22 15 Q. Right. So just to be clear, what you should do is you
17:22 16 shut in the well first and then you make whatever notifications
17:22 17 you want to make, correct?

17:22 18 A. Correct. When the well was actually flowing through the
17:22 19 crown block above the rig floor, EDS should have been
17:22 20 initiated.

17:22 21 MS. KARIS: Thank you. I have nothing further.

17:22 22 THE WITNESS: Thank you.

17:22 23 THE COURT: Cameron?

17:23 24 MR. JONES: May I proceed, Your Honor?

17:23 25 THE COURT: Yes.

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1 CROSS-EXAMINATION

17:23 2 BY MR. JONES:

17:23 3 Q. Good afternoon, Mr. Perkin. My name is David Jones. I
17:23 4 represent Cameron, and I have you on cross-examination.17:23 5 You would agree with me that on April 20, 2010, there
17:23 6 was no attempt to activate any of the BOPs in the BOP stack
17:24 7 until after the blowout had already started?

17:24 8 A. Correct.

17:24 9 Q. All right. In your report, in Opinion No. 4 in your
17:24 10 report, you identify what you call "the defects in the BOP"; is
17:24 11 that correct?17:24 12 A. I would have to see the report, but I will take your word
17:24 13 for it.17:24 14 Q. Opinion 4 states: "*Horizon's* BOP, as originally designed
17:24 15 and configured on April 20, 2010, was defective."

17:24 16 That was one of your opinions?

17:24 17 A. Correct.

17:24 18 Q. I believe you identified six specific items that you
17:24 19 believe were defects in the BOP, A through F?

17:24 20 A. I think that's true.

17:24 21 Q. I want to go through those with you.

17:24 22 THE COURT: Before you go there, let me ask
17:24 23 Mr. Williamson: Is that something that the PSC wants to leave
17:24 24 in this report?

17:24 25 MR. WILLIAMSON: Which is what, Your Honor? I'm

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17:25 1 sorry. I wasn't following.

17:25 2 THE COURT: The issue he just brought up, none of
17:25 3 this was talked about in your examination of the witness, as I
17:25 4 recall.

17:25 5 MR. WILLIAMSON: What's the issue?

17:25 6 THE COURT: Alleged defects in the BOP. It goes to
17:25 7 Cameron, not to Transocean or -- everything we have been
17:25 8 talking about up to now is centered on conduct or lack thereof
17:25 9 alleged against BP and Transocean, and now we are moving into a
17:25 10 totally different area that Mr. Williamson didn't cover at all
17:25 11 and I'm assuming that that's going to be redacted out of this
17:25 12 report.

17:25 13 MR. WILLIAMSON: Well, I guess --

17:25 14 THE COURT: Let me -- it's pretty simple. As I read
17:25 15 the expert report, the things he is talking about are things
17:25 16 that Cameron had available but for whatever reason weren't used
17:26 17 in this -- on this BOP, and that doesn't seem to me to be a
17:26 18 case against Cameron. If Cameron has equipment available and
17:26 19 the operator or the owner chooses not to buy it or use it, I
17:26 20 don't know how that leads to a case against Cameron. It seems
17:26 21 like that's a decision -- your argument -- everything you have
17:26 22 said today is about decisions allegedly made by BP and
17:26 23 Transocean. Am I right?

17:26 24 MR. WILLIAMSON: Sort of.

17:26 25 THE COURT: Sort of.

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17:26 1 MR. WILLIAMSON: Can I explain?

17:26 2 THE COURT: Briefly, because I don't see where this
17:26 3 is going against Cameron. I tell you --

17:26 4 MR. WILLIAMSON: Your Honor, my comment is I think we
17:26 5 have criticized the configuration and things like CSR/BSR or
17:27 6 not robust enough activation or SPOF. The way I see it,
17:27 7 Your Honor, it's up to Your Honor -- there could be a --
17:27 8 Cameron and BP and Transocean were all involved in that. The
17:27 9 way I see it, it's up to Your Honor to decide --

17:27 10 THE COURT: Unless I'm missing something, Cameron
17:27 11 sold what they were asked to provide and they had other
17:27 12 equipment, which you say -- which you argue was better or
17:27 13 later -- later-developed technology, and there are issues as to
17:27 14 whether or not it was practicable or feasible and all of that
17:27 15 stuff, but there was later-developed technology which Cameron
17:27 16 could perhaps have provided to BP or Transocean. But for
17:27 17 whatever reason, they did not buy it or use it. I don't
17:27 18 understand your theory against Cameron under that scenario.

17:28 19 MR. WILLIAMSON: Some equipment was contemporaneous
17:28 20 and some was later-developed. The Court is right about that.
17:28 21 But to me the issue -- the Court is going to decide whether or
17:28 22 not the configuration was the responsibility of Cameron or BP
17:28 23 or Transocean and allocate that. I don't think Mr. Perkin, if
17:28 24 you ask him, would allocate it. I would say he is merely
17:28 25 critical and whether --

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17:28 1 THE COURT: I have read his report; and, frankly, I
17:28 2 don't think he is qualified to opine on those matters. So we
17:28 3 are not going to go there. Okay. I don't know what that does
17:28 4 to your cross-examination, Mr. Jones.

17:28 5 MR. JONES: I'm not sure either, Your Honor. You're
17:28 6 struggling with the same issues that we are struggling with.

17:28 7 THE COURT: I'm not struggling. I just ruled. I'm
17:28 8 wondering -- I ask you the same question I asked Halliburton,
17:28 9 he hasn't said a word about Cameron here today.

17:28 10 MR. VON STERNBERG: He didn't take my lesson very
17:28 11 well, Your Honor.

17:28 12 THE COURT: You're not going to get a gold medal,
17:28 13 Mr. Jones.

17:29 14 MR. JONES: Well, I guess, perhaps -- I spoke with
17:29 15 Mr. Williamson before --

17:29 16 THE COURT: If you keep talking, I may change my
17:29 17 mind. You may talk me out of it. Keep talking.

17:29 18 MR. JONES: Your Honor, give me one moment.

17:29 19 MR. GODWIN: You sound like you need to sit down,
17:29 20 David.

17:29 21 MR. JONES: Your Honor, the question as I see it is
17:29 22 whether and to what extent these opinions are going to remain
17:29 23 in this report. For example, the very first opinion he has is
17:29 24 that the particular blind shear ram model was defective because
17:29 25 it didn't have blades that went all the way across the BOP.

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17:29 1 THE COURT: Just go ahead and ask any questions you'd
17:29 2 like. And I will reserve my final ruling.

17:30 3 BY MR. JONES:

17:30 4 Q. Mr. Perkin, you have identified the failure of the BOP to
17:30 5 have cutting blades extending across the wellbore as an issue
17:30 6 with this particular blind shear ram design, correct?

17:30 7 A. You mean not extending across the entire wellbore?

17:30 8 Q. I misspoke.

17:30 9 You identified not having blades extending all the
17:30 10 way across as an issue with this blind shear ram?

17:30 11 A. Yes.

17:30 12 Q. That blind shear ram is the SBR blind shear ram that we
17:30 13 have heard so much about, correct?

17:30 14 A. Yes. Mr. Davis talked about that at length yesterday.

17:30 15 Q. Cameron also offered, in 2001, the DVS shear rams,
17:30 16 correct?

17:30 17 A. Yes.

17:30 18 Q. At the time of your deposition, you weren't sure whether
17:30 19 or not the DVS rams had blades that went all the way across,
17:30 20 correct?

17:30 21 A. I had just gotten the drawings, and I was not sure.

17:30 22 Q. So during your deposition, you identified the DVS ram as
17:31 23 an alternative design because it had blades that went all the
17:31 24 way across, correct?

17:31 25 A. DVS rams -- my testimony as I sit here today, I know the

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17:31 1 DVS rams do not go all the way across.

17:31 2 Q. Right. They have the same issue with respect to a gap on
17:31 3 the side that the SBR rams have in terms of being able to
17:31 4 shear, correct?

17:31 5 A. Right. They have other advantages, as I understand it,
17:31 6 but they don't cover the wellbore.

17:31 7 Q. The rams offered by Cameron that do have blades that go
17:31 8 all the way across are the CDVS rams, correct?

17:31 9 A. That's my understanding, yes.

17:31 10 Q. Those rams at the time, back in 2001 when this particular
17:31 11 BOP was sold, they did not -- they weren't available, correct?

17:31 12 A. I think that's true.

17:31 13 Q. Just so I'm clear, your criticism, then, of not having
17:31 14 CDVS rams in the BOP in April of 2010 is not a criticism of
17:32 15 Cameron, but it is a criticism of not upgrading to those
17:32 16 particular rams; is that correct?

17:32 17 A. In part, yes.

17:32 18 Q. Well, what's the other part?

17:32 19 A. Well, I think my experience in the tool business, if you
17:32 20 will, is that when products like CDVS come out, DVS come out,
17:32 21 new products come out with new features, new benefits, that an
17:32 22 engineering bulletin, some product bulletin is announced. And
17:32 23 to the extent that they were there and they were available to
17:32 24 BP, I don't know what steps Cameron took to do that. If they
17:32 25 were available, they certainly would have been a better option

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17:32 1 if they were -- if they had a pressure rating and would cut
17:32 2 across the wellbore.

17:32 3 Q. But in terms of what other marketing materials may have
17:32 4 been out there and what knowledge others may have had about
17:32 5 these rams, that's not something you have studied or looked at?

17:32 6 A. No, I didn't.

17:32 7 Q. Very good. Thank you.

17:32 8 You would agree with me that a BOP is not a failsafe
17:33 9 device, correct?

17:33 10 A. It's supposed to be failsafe.

17:33 11 Q. Well, let me pull up your deposition, page 495, line 25 --

17:33 12 A. Okay.

17:33 13 Q. -- through 496, line 7. You were asked in your
17:33 14 deposition:

17:33 15 "QUESTION: Do you agree that a BOP -- you don't
17:33 16 agree that a BOP is a failsafe device, do you?"

17:33 17 And your answer was?

17:33 18 A. "No, it's not. The first line of defense is your mud."
17:33 19 Yes.

17:33 20 Q. Then you went on to say: "Basically a BOP -- it's got
17:33 21 limitations. You want to try to have a well control program
17:33 22 that's going to be -- allow the BOP to function under
17:33 23 controlled conditions."

17:33 24 Do you see that?

17:33 25 A. Yes, sir. That's true.

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17:33 1 Q. And that is your opinion?

17:33 2 A. Yes, it is. Yes, it is. And I misspoke. When you said
17:33 3 "failsafe," I was interpreting it some other way.

17:34 4 Q. Okay. You would agree with me, and it's your opinion that
17:34 5 the industry was well aware, prior to April 20, 2010, that
17:34 6 closing blind shear rams under high rates of flow can
17:34 7 jeopardize a BOP's ability to shut in and seal the well?

17:34 8 A. Blind shear rams and other rams.

17:34 9 Q. It's your opinion in this case, is it not, that regardless
17:34 10 of whether you had blades extending all the way across the bore
17:34 11 of the BOP, if you tried to close -- shear drill pipe with
17:34 12 pressure in it, those side packers, the sealing elements in the
17:34 13 BOP, would have been horribly damaged, correct?

17:34 14 A. Well, the side packers, as I appreciate it, are somewhat
17:34 15 different than -- if we are talking about CDVS rams, I know
17:34 16 that they would have to be smaller and differently designed.
17:34 17 Their limitations I'm not aware of because I don't have the
17:34 18 drawings of the CDVS.

17:35 19 Q. All right. Let's pull up your deposition, page 553, at
17:35 20 page 10 -- starting at line 10 and continuing on down -- it
17:35 21 actually goes to 554, line 11 -- we'll start here. You were
17:35 22 asked:

17:35 23 "QUESTION: So assuming you had a ram with blades
17:35 24 that went all the way across --

17:35 25 "ANSWER: Okay.

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17:35 1 "QUESTION: -- your analysis is that it's just simple
17:35 2 engineering, it would be able to shear?

17:35 3 "ANSWER: Well, it covers the wellbore.

17:35 4 "QUESTION: Right.

17:35 5 "ANSWER: Then you'd have to look at the design to
17:35 6 ensure that you have shearing capability materially and
17:35 7 sealability and other things that go along with what you
17:35 8 expect from a shearing blind ram.

17:36 9 "QUESTION: And what did you do to analyze whether,
17:36 10 even if it sheared, it would be able to seal the well?

17:36 11 "ANSWER: One thing I did in terms of -- at least my
17:36 12 consideration was that once if -- if you have a flowing
17:36 13 condition and if you have a well control condition and you
17:36 14 have sufficient energy in the pipe and you attempt to
17:36 15 shear it in terms of elastomer" -- and that's referring to
17:36 16 the packers, correct?

17:36 17 A. Let me -- go ahead and finish, and I will clear that up.

17:36 18 Q. (Reading):

17:36 19 "QUESTION: -- I feel that the elastomers, from a
17:36 20 reasonable engineering standpoint, would be horribly
17:36 21 damaged if you attempt to shear pipe that has pressure --
17:36 22 high pressure in it."

17:36 23 Is that your answer?

17:36 24 A. That was my answer, but I think you were asking me a
17:36 25 question about the side packers.

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17:36 1 Q. Which --

17:36 2 A. No, no, no. I think your question earlier that led you
17:36 3 into this testimony --

17:36 4 Q. Yes, sir.

17:36 5 A. -- you were asking about the side packers, and I think I
17:36 6 was responding to the packers that were on the side of the ram.

17:36 7 This has to do with the packers, the elastomers that
17:37 8 go across the face of the cutting surface. In other words,
17:37 9 when the pipe is cut and the blades come together and you shut
17:37 10 in the well, then they have to seal, and that's the elastomers
17:37 11 I'm talking about. That's the explosive decompression that
17:37 12 Mr. Williamson and I talked about earlier in my testimony.

17:37 13 Q. Fair enough.

17:37 14 What you are referring to -- there really hasn't been
17:37 15 much discussion of this -- in Cameron rams, when the blades
17:37 16 come together, they impact rubber packers or elastomers where
17:37 17 the blades come together as well, correct?

17:37 18 A. No. The rubber on the -- the rubber on the blades that
17:37 19 are -- blind rams, when they come together, have to have a
17:37 20 sealing element. Okay? And there's elements that go across
17:37 21 the face. That's how you effect a seal.

17:37 22 Q. That's your understanding of the way Cameron CDVS rams
17:37 23 were designed?

17:37 24 A. You have to effect a seal, yes.

17:37 25 Q. And the rubber is on the blade?

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17:37 1 A. Well, it has got to be somewhere close to the blade.

17:37 2 Q. Okay.

17:37 3 A. Not on the blade necessarily, but close to the blade.

17:37 4 Q. Nevertheless, whatever elastomers we are talking about,
17:37 5 it's your opinion if you sheared, under the conditions you have
17:37 6 described today, the packers, the elastomers would be horribly
17:38 7 damaged?

17:38 8 A. Right. There's got to be a seal running across the face
17:38 9 of the blind shear rams, whatever kind of ram we are talking
17:38 10 about. That's the elastomer I'm talking about.

17:38 11 MR. JONES: If I could pull up, Paul, 7535.18.2.

17:38 12 BY MR. JONES:

17:38 13 Q. This was another opinion that you expressed identifying an
17:38 14 issue with the BOP.

17:38 15 MR. JONES: And, Jimmy, I just want to confirm for
17:38 16 the record that this is an opinion that --

17:38 17 MR. WILLIAMSON: Judge, that's one that's already
17:38 18 been covered, Your Honor. That's not before us.

17:38 19 THE COURT: It's not what?

17:38 20 MR. WILLIAMSON: It's not before us; in other words,
17:38 21 it's redacted.

17:38 22 THE COURT: You're redacting this out. Okay.

17:38 23 MR. WILLIAMSON: Yes, sir.

17:38 24 THE COURT: Thank you.

17:39 25 MR. JONES: If I could get you, Paul, to pull up

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17:39 1 TREX-75535.19.1 -- 7535.19.1.

17:39 2 BY MR. JONES:

17:39 3 Q. This is discussing the batteries and the inability to have
17:39 4 monitoring or charging of batteries on the BOP. And, again,
17:39 5 just to confirm --

17:39 6 THE COURT: This is cumulative, so we are going to
17:39 7 redact that out.

17:39 8 BY MR. JONES:

17:39 9 Q. The last thing I want to cover with you, Mr. Perkin,
17:39 10 there's been some discussion today about EDS and the AMF
17:39 11 deadman sequences, and I want to make sure we all are on the
17:39 12 same page and understand what we are talking about.

17:39 13 You understand that EDS sequences are established by
17:39 14 the drilling contractor and the operator, correct?

17:40 15 A. Yeah. It's in the SEM, as I understand it.

17:40 16 Q. I'm not talking about where the logic is stored. I'm
17:40 17 talking about the actual sequence itself is selected by the
17:40 18 operator and the drilling contractor, correct?

17:40 19 A. That would not surprise me, no. I would agree with that.

17:40 20 Q. So we understand what we are talking about, it is an
17:40 21 emergency disconnect sequence, correct?

17:40 22 A. Correct.

17:40 23 Q. What it means by a "sequence" is when you hit the button,
17:40 24 when you hit the EDS button, it goes through an automatic
17:40 25 series of BOP functions?

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17:40 1 A. Correct.

17:40 2 Q. Ultimately, the last one is unlatching the LMRP from the
17:40 3 lower stack?

17:40 4 A. Correct.

17:40 5 Q. For example, you want to -- you need to retract the
17:40 6 stingers from the bottom of the pods that communicate and
17:40 7 allows fluid to flow through the BOP, correct?

17:40 8 A. Right. You've got to -- there's other functions as well.
17:40 9 You have got to close the choke and kill line valves. You have
17:40 10 got other things you have to do before you can actually make
17:41 11 that disconnect.

17:41 12 Q. Right. So what it does, rather than have someone manually
17:41 13 go through and punch all those buttons on the BOP, it does it
17:41 14 in one -- you hit one button and it does all of them, correct?

17:41 15 A. That's my understanding.

17:41 16 Q. And it's also your understanding that you can program
17:41 17 virtually anything you want into that sequence, correct?

17:41 18 A. I think if -- you could if it was designed into the
17:41 19 hardware.

17:41 20 Q. Right. If, for example, you wanted to close a variable
17:41 21 bore ram before you closed a blind shear ram, you could do
17:41 22 that?

17:41 23 A. I'm assuming you could, yes.

17:41 24 Q. On the *Deepwater Horizon* we had two EDS sequences,
17:41 25 correct?

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17:41 1 A. 1 and 2, yes.

17:41 2 Q. 1 and 2. What we know is really the only difference
17:41 3 between the two is that in EDS-1, it closed the blind shear
17:41 4 rams; in EDS-2, it closed the blind shear rams and the casing
17:41 5 shear rams, correct?

17:41 6 A. Well, it closed in different sequence.

17:42 7 Q. Reverse the order. Casing shear ram first --

17:42 8 A. Blind shear rams.

17:42 9 Q. -- and then blind shear rams.

17:42 10 All right. Let's shift then and talk about the
17:42 11 EDS -- or, I'm sorry, the AMF or deadman system. You
17:42 12 understand, do you not, that the AMF system, just like the EDS
17:42 13 system, is programmed to customer specifications? Correct?

17:42 14 A. I would agree with that.

17:42 15 MR. JONES: In fact, Paul, if I can get TRES-43317.

17:42 16 BY MR. JONES:

17:42 17 Q. This is a copy of the RBS 8D Multiplex BOP Control System
17:42 18 operations manual. I believe this is a document you reviewed
17:42 19 in connection with your work?

17:42 20 A. Yes, I have. I've seen this document.

17:42 21 Q. You understand that RBS 8D was the name of the
17:42 22 *Deepwater Horizon* before it was called the *Deepwater Horizon*?

17:42 23 A. Yes.

17:42 24 MR. JONES: All right. Now, if we can go to page 175
17:43 25 of this document, Paul. Blow up the second paragraph there at

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17:43 1 the very top.

17:43 2 **BY MR. JONES:**

17:43 3 **Q.** This is discussing the deadman or the AMF. It says: "The
17:43 4 deadman sequence is software based and can be programmed as per
17:43 5 customer request."

17:43 6 That's the way you understand that it works?

17:43 7 **A.** Sure.

17:43 8 **Q.** It goes on in the next sentence to say: "The only
17:43 9 limitation is the capacity of the batteries installed on the
17:43 10 transducer modules, and the volume of accumulators assigned to
17:43 11 the job." Correct?

17:43 12 **A.** Correct.

17:43 13 **Q.** That's the way you understand this particular system
17:43 14 worked as well?

17:43 15 **A.** Sure.

17:43 16 **Q.** The batteries that we are talking about here are the
17:43 17 batteries that have been discussed over the last couple days?

17:43 18 **A.** 9 volts and 27 volts.

17:43 19 **Q.** The volume of the accumulators, that means that if you
17:43 20 want to close more functions, you need to add additional
17:43 21 accumulator bottles or bottles that store hydraulic fluid,
17:44 22 correct?

17:44 23 **A.** That's correct.

17:44 24 **Q.** It's your understanding that in this case, the customer
17:44 25 did request the programming for the deadman sequence, correct?

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17:44 1 A. That's my understanding.

17:44 2 MR. JONES: If we could get TRES-4114 pulled up,
17:44 3 please. Blow up the top. There you go.

17:44 4 BY MR. JONES:

17:44 5 Q. We have seen this before. This is the Vastar Resources,
17:44 6 Inc., *Deepwater Horizon* technical position paper talking about
17:44 7 the EDS/DMS disconnect philosophy, September 1999.

17:44 8 This is a document you have seen, correct?

17:44 9 A. It is.

17:44 10 Q. At the very last page of this document, maybe you know
17:44 11 that we don't need to go to it. Do you understand this
17:44 12 document is signed by BP and Transocean?

17:44 13 A. It is.

17:44 14 Q. Or actually, Vastar and R&B at the time?

17:45 15 A. I think it is, yes, sir.

17:45 16 Q. It's not signed by Cameron, as you understand it, correct?

17:45 17 A. I didn't recall seeing a Cameron signature.

17:45 18 MR. JONES: All right. If we look down -- there are
17:45 19 the signatures. Let's go back to the first page. Blow up the
17:45 20 "Issue" section right there below. Go down a little further.
17:45 21 Right there.

17:45 22 BY MR. JONES:

17:45 23 Q. It states under the issue -- this is what's being
17:45 24 discussed by this technical position paper. It says:

17:45 25 "Initiation of either the Emergency Disconnect Sequence or

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17:45 1 Deadman System requires certain functions on the stack to
17:45 2 execute within a certain amount of time. This paper describes
17:45 3 the sequences, timing, and overall philosophy for these events.
17:45 4 Based on this information, the vendor should be able to design
17:45 5 the control system to accommodate these requirements."

17:45 6 A. The vendor being Cameron.

17:46 7 Q. That's right. So the vendor in this case is Cameron,
17:46 8 correct?

17:46 9 A. Yes. I was trying to speed things along.

17:46 10 Q. If we go to page 2 --

17:46 11 THE COURT: Mr. Jones, how much more do you think you
17:46 12 have?

17:46 13 MR. JONES: Two minutes or less.

17:46 14 THE COURT: Okay.

17:46 15 MR. JONES: Down at the -- halfway down there's a
17:46 16 paragraph that begins "Tertiary." Paul, let's get that. Keep
17:46 17 going down, getting all three of those paragraphs right there.
17:46 18 A little bit more. Perfect.

17:46 19 BY MR. JONES:

17:46 20 Q. Here in this technical position paper where it's
17:46 21 discussing the deadman system and it talks about "The deadman
17:46 22 system is the final means of shutting in the well."

17:46 23 And we get down to the paragraph or the sentence --
17:46 24 two sentences later it says: "The overall reliability
17:46 25 philosophy of the DMS is to provide reliability through

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17:46 1 simplicity. This means that the fewer decisions the system has
17:47 2 to make the more reliable it will be in executing its
17:47 3 pre-programmed logic."

17:47 4 Do you see that?

17:47 5 A. I do.

17:47 6 Q. What that is saying is that we want this to operate few
17:47 7 functions so it's simple, correct, as you understand it?

17:47 8 A. I think in general that's what it's saying.

17:47 9 Q. Then down at the bottom it says: "Based on this
17:47 10 philosophy, the DMS will close only the SBR using the dedicated
17:47 11 shear bottle circuit." Correct?

17:47 12 A. That's what it says.

17:47 13 Q. That's the way the deadman was ultimately programmed for
17:47 14 the *Deepwater Horizon*?

17:47 15 A. The next sentence says: "The casing shears will not be
17:47 16 closed due to the accumulator volumetric constraints."

17:47 17 MR. JONES: I have nothing further, Your Honor.
17:47 18 Thank you.

17:47 19 THE COURT: M-I?

17:47 20 MR. TANNER: We have no questions.

17:47 21 THE COURT: Are you going to have redirect,
17:47 22 Mr. Williamson?

17:47 23 MR. WILLIAMSON: I think not, Judge.

17:47 24 THE COURT: Good. You are done. You get to go home.
17:48 25 We will recess until 8:00 a.m. tomorrow morning.

1 Everyone have a good evening.

2 (Proceedings adjourned.)

3 * * *

4 CERTIFICATE

5 I, Toni Doyle Tusa, CCR, FCRR, Official Court
6 Reporter for the United States District Court, Eastern District
7 of Louisiana, do hereby certify that the foregoing is a true
8 and correct transcript, to the best of my ability and
9 understanding, from the record of the proceedings in the
10 above-entitled matter.

11
12
13 s/ Toni Doyle Tusa
14 Toni Doyle Tusa, CCR, FCRR
15 Official Court Reporter
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