

# Deposition Testimony of:

## **Robert Florence**

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Page 8:13 to 8:15

00008:13 ROBERT EWEN FLORENCE,  
14 having been first duly sworn, testified as  
15 follows:

Page 8:21 to 8:22

00008:21 THE WITNESS: Actually, for the record,  
22 it's Robert Ewen Florence.

Page 9:08 to 9:21

00009:08 Q. My name is William Dills, I'm  
09 here today on behalf of the Plaintiffs  
10 Steering Committee; do you understand that?  
11 A. Yes.  
12 Q. Okay. And who are currently  
13 employed by, sir?  
14 A. Transocean.  
15 Q. All right. And how long have  
16 you worked for Transocean?  
17 A. I started with Transocean, I  
18 started with the -- the company that was  
19 bought over by Transocean, Reading & Bates,  
20 in 1980, February 19 -- 19 -- sorry, 1998.  
21 Q. 1998.

Page 10:02 to 10:14

00010:02 Q. Thank you. And did you attend  
03 college after that?  
04 A. Yes, I did, at -- at Aberdeen  
05 Technical College for three years.  
06 Q. And what did you study?  
07 A. Electrical.  
08 Q. Electrical engineering?  
09 A. Yes.  
10 Q. Okay.  
11 A. Construction, electrical  
12 construction.  
13 Q. Electrical construction.  
14 A. Okay.

Page 11:10 to 11:22

00011:10 Q. Okay. Thank you. And in 1998  
11 when you went to work for Transocean, what  
12 was your first position or title with  
13 Transocean?  
14 A. Assistant subsea engineer.  
15 Q. Okay. Did that involve you  
16 working offshore on rigs, or did you work on

17 land rigs or --  
18 A. Yes, I did.  
19 Q. You were offshore?  
20 A. No.  
21 Q. Okay.  
22 A. Yes, I was.

Page 12:09 to 16:10

00012:09 Q. And what -- what was your job  
10 after that? What was your next position with  
11 Transocean?  
12 A. Subsea engineer.  
13 Q. Okay. And how long were you a  
14 subsea engineer?  
15 A. It's vague. I -- I couldn't tie  
16 it down perhaps.  
17 Q. Just ballpark it for me, if you  
18 can.  
19 A. A year.  
20 Q. A year?  
21 A. Yeah, just about a year, yeah.  
22 Q. Okay. And after that, after you  
23 were a subsea engineer, what was your next  
24 position?  
25 A. Subsea supervisor.  
00013:01 Q. Okay. And --  
02 A. And that was about a year as  
03 well, perhaps a year and a half.  
04 Q. And after that?  
05 A. Subsea superintendent.  
06 Q. What's the difference between a  
07 subsea supervisor and a subsea  
08 superintendent?  
09 A. Subsea supervisor is mainly on  
10 board, running the -- the equipment on board.  
11 Subsea superintendent is normally in town,  
12 assisting with the equipment in town.  
13 Q. Okay. And what were you -- what  
14 was your job title or position after you were  
15 a subsea superintendent?  
16 A. I moved from subsea  
17 superintendent to technical field support  
18 manager.  
19 Q. Okay. And what other job --  
20 what's the job descriptions or  
21 responsibilities of that position?  
22 A. Of technical field support  
23 manager?  
24 Q. Yes.  
25 A. It was to run -- run the  
00014:01 technical field support in -- in a remote  
02 location as Brazil, and the department was  
03 solely maintenance for electrical, DP,  
04 mechanical, and subsea.

05 Q. And subsea, does that include  
06 blowout preventers?  
07 A. Yes, it does.  
08 Q. Okay. Mr. Florence, it's my  
09 understanding that you were also part of the  
10 Transocean investigation team; is that  
11 correct?  
12 A. That is correct.  
13 Q. And that -- that team was  
14 construed for the purpose of investigating  
15 the events that occurred on the Deepwater  
16 Horizon?  
17 A. It was the events that happened  
18 on the Deepwater Horizon, that's correct.  
19 Q. Okay. And how did you come to  
20 be a member of the investigation team? Did  
21 you ask to be a part of that team?  
22 A. I was in communication with a --  
23 with -- with an ex-boss of mine, Simon  
24 Watson, and he invited me to join the team.  
00015:01 Q. And do you remember when that  
02 was? When were you invited to become a part  
03 of the team?  
04 A. I believe it was the last week  
05 of April.  
06 Q. And did he specify why you were  
07 being brought on to the team?  
08 A. To assist with the subsea, to --  
09 to assist with the subsea equipment.  
10 Q. Okay. And what were your  
11 responsibilities as a member of the  
12 investigation team? What did you do on a  
13 daily basis, if you will?  
14 A. On a daily basis we were -- I  
15 was assisting the team to look at the various  
16 parts of the subsea equipment.  
17 Q. What parts of the subsea  
18 equipment?  
19 A. All of the subsea equipment, as  
20 in BOPs, riser, the venter, tensioners,  
21 subsea equipment itself.  
22 Q. Okay. And who did you report to  
23 as a member of the investigation team?  
24 A. I was supporting firstly to  
25 Simon Watson.  
00016:01 Q. Okay.  
02 A. And then after Simon had left,  
03 after Simon left I reported direct to Dan  
04 Farr and then Dan Farr moved to a different  
05 position within the investigation team and I  
06 reported to Steve Myles.  
07 Q. Okay. And up until the time  
08 that Simon Watson left, who did he report to?  
09 Who did Simon Watson report to?  
10 A. Simon Watson was reporting to

10 Bill Ambrose.

Page 16:19 to 17:11

00016:19 Q. Okay. Did you write or help  
20 write any portions of the Transocean  
21 investigation report?  
22 A. I did help write, yes.  
23 Q. Okay. Can you tell me which  
24 sections of the report you assisted in the  
25 writing of?  
00017:01 A. I helped write some part of the  
02 AMF system. I also helped to write some part  
03 of the B -- the understanding of a BOP and  
04 the -- the understanding of a BOP control  
05 system.  
06 Q. And have you read the report --  
07 A. I also assisted -- sorry.  
08 Q. I'm sorry, go ahead please  
09 finish your answer.  
10 A. I also assisted to -- yeah. I  
11 also assisted in the -- in leakage.

Page 18:08 to 18:13

00018:08 Q. Okay. Now, you've said you read  
09 the report since it was made publicly  
10 available. Do you -- at this point, sitting  
11 here today, do you agree with the report as  
12 it was published?  
13 A. Yes, I do.

Page 18:20 to 19:21

00018:20 Q. All right, sir, if I could get  
21 you to look at tab 8 in the materials that we  
22 provided for you. While you look at that,  
23 we're going to go ahead and mark tab 8 as  
24 Exhibit 5489, for the record.  
25 All right. Have you had an  
00019:01 opportunity to look at this document, sir?  
02 A. Yes, sir.  
03 Q. Okay. In the top line it says,  
04 subject, "BOP - Justify It Functioned As  
05 Designed."  
06 Did I read that correctly?  
07 A. Yes, you did.  
08 Q. Okay. And this appears to  
09 either be an e-mail or a calendar reminder;  
10 is that correct?  
11 A. Yes, that's correct.  
12 Q. Okay. And it has a list of  
13 required attendees. Do you see that section?

14 A. Yes, I do.  
15 Q. It has Dan Farr, Steve Myers,  
16 Bob Walsh, yourself, Jeff Boughton, Greg  
17 Childs, a few others. Did you attend this  
18 meeting, sir?  
19 A. Yeah.  
20 Q. Okay. And I'm assuming --  
21 A. Yes, I did.

Page 20:08 to 20:13

00020:08 Q. Okay. And this meeting was  
09 called as part of the investigative effort;  
10 was it not?  
11 A. It was called to -- to review  
12 what we -- our findings, what we -- what we  
13 believed and to review our findings.

Page 22:11 to 23:06

00022:11 Q. Okay. Was there a specific  
12 area -- I -- let me phrase it this way: Is  
13 there a specific area of the BOP or the  
14 subsea equipment that any one of these  
15 individuals, obviously -- or that any one of  
16 these individuals was specifically there to  
17 discuss, like, for example, someone there --  
18 was there to discuss the annulars or the  
19 blind shear rams or the accumulators? Were  
20 any of these people assigned a specific part  
21 of the BOP to look at and address?  
22 A. No, sir.  
23 Q. No, sir. So all of these people  
24 were there to discuss the functionality of  
25 the BOP generally?  
00023:01 A. Yes, sir.  
02 Q. What was the conclusion of this  
03 meeting? Did you conclude that the BOP did  
04 function as it was designed?  
05 A. We had concluded, yes, that  
06 it -- the BOP functioned as designed.

Page 25:16 to 29:16

00025:16 Q. All right. I believe I provided  
17 for you as tab -- actually, it's previously  
18 marked **Exhibit 4248**, which is the Transocean  
19 investigative report. Do you have a copy of  
20 that handy?  
21 MR. BAAY: Yes.  
22 Q. (BY MR. DILLS) Okay. If you  
23 would, sir, please turn to Page 157.  
24 A. 157.

25 Q. Under Section 3.4.4, the  
00026:01 automatic mode function activation; do you  
02 see that section?  
03 A. Yes, I do.  
04 Q. All right. Would you take a  
05 moment, please read the second paragraph of  
06 that section. Let me know when you're  
07 finished. I'm going to ask you a few  
08 questions about that.  
09 A. Okay.  
10 Q. Okay. Is this part of the  
11 report that you assisted in writing, sir?  
12 A. Which part? I was -- I was  
13 assisting on the automatic mode function,  
14 yes.  
15 Q. Okay. It's Transocean's  
16 position that the AMF fired; is that correct?  
17 A. Can you repeat the question?  
18 Sorry.  
19 Q. Absolutely. It's Transocean's  
20 position that the AMF fired on the Deepwater  
21 Horizon blowout preventer; is that correct?  
22 A. Yes, it is.  
23 Q. And you believe that the  
24 Tran- -- or that the AMF fired following the  
25 explosion or shortly thereafter; is that  
00027:01 correct?  
02 A. Yes, I do. Yes, I do.  
03 Q. And in support of this position  
04 Transocean cites the fact that the ST locks  
05 were closed behind the blind shear rams; is  
06 that also correct?  
07 A. Yes, it is.  
08 Q. How did Transocean determine  
09 that the ST locks had closed behind the blind  
10 shear rams?  
11 A. There was a number of evidence  
12 showing that the ST locks were closed. One  
13 was an X ray was performed subsea that showed  
14 that the ST locks were closed. One it was  
15 retrieved to surface, it also showed that the  
16 ST locks were closed.  
17 Q. When was the subsea inspection  
18 done in which Transocean concluded that the  
19 ST lock had closed?  
20 A. I couldn't give you a precise  
21 date, sorry.  
22 Q. Can you roughly give me a date?  
23 Was it April 20th?  
24 A. Honestly, I couldn't give you a  
25 precise date, no.  
00028:01 There was also another -- there  
02 was another evidence showing that there was a  
03 leak in one of our -- one of the pipes, at  
04 4,000 psi the pipe would leak, and the only

05 way that pipe would leak is if the ST lock  
06 was engaged.

07 Q. And when was that leak detected?

08 A. That leak was detected during  
09 the intervention.

10 Q. When during the intervention?

11 A. Early on in the -- very early  
12 on, when they were doing the ROV intervention  
13 team.

14 Q. Okay.

15 A. That was April -- April -- late  
16 April.

17 Q. So was it -- okay. At the time  
18 the ST lock was determined to be closed,  
19 either through the inspection or the  
20 discovery of the leak, was it one or two days  
21 after the explosion or more than one or two  
22 days?

23 A. I couldn't say, sorry. I  
24 couldn't give you a precise date of that  
25 number.

00029:01 Q. Okay. Would we -- I'm assuming  
02 we'd be able to find that date in the  
03 records. But you did not determine that the  
04 ST locks had closed until the ROV -- I'm  
05 assuming it was ROV inter- -- inspection of  
06 the BOP subsea, that was the first time that  
07 Transocean determined that the ST locks had  
08 closed behind the blind shear rams; is that  
09 correct?

10 A. During that intervention, when  
11 they were doing the intervention they pumped  
12 fluid and there was a leak come out and  
13 that's when they saw the leak and the only  
14 way that leak could happen is if the ST locks  
15 were in a closed position on the blind shear  
16 rams.

Page 30:01 to 30:01

00030:01 Q. (BY MR. DILLS) Okay, I

Page 30:03 to 30:07

00030:03 phrased question. The first time that  
04 Transocean made the determination that the ST  
05 locks had closed was during the ROV  
06 intervention efforts; is that correct?

07 A. Yes, it was.

Page 30:22 to 30:25

00030:22 Q. (BY MR. DILLS) Absolutely. You



23 do not know that the AMF functioned at the  
24 time of the explosion on April 20th, 2010?  
25 A. During --

Page 31:02 to 31:10

00031:02 A. (Continuing) During our  
03 investigation we established that the AMF did  
04 fire.  
05 Q. (BY MR. DILLS) But you do not  
06 know when -- the first time you are able to  
07 confirm that the ST locks closed was during  
08 the ROV intervention, so you don't know when  
09 specifically the ST locks were activated, do  
10 you?

Page 31:12 to 32:23

00031:12 A. We -- we do not know  
13 specifically when the AMF was energized. We  
14 do not know specifically when the AMF fired.  
15 Q. (BY MR. DILLS) This paragraph  
16 also states that the upper and middle VBR  
17 were closed; is that correct?  
18 A. Yes, it is.  
19 Q. Okay. And the ST locks had  
20 closed behind the upper and middle VBR; is  
21 that also correct?  
22 A. That is also correct, yes.  
23 Q. The VBR, specifically, the upper  
24 and middle VBR are not part of the AMF  
25 function, are they?  
00032:01 A. The VBR themselves are not part  
02 of the AMF function. The ST locks are.  
03 Q. Okay. When does Transocean  
04 believe that the upper and middle VBR were  
05 closed?  
06 A. There was -- during the  
07 intervention on the middle pipe ram, when  
08 they intervened to close the -- the -- the  
09 ram where they cut the -- the host  
10 intervention there. When they pressured up,  
11 it pressured up instantly or very quickly to  
12 something like .94 of a gallon. That  
13 indicated that the ram was closed, and it --  
14 it also indicated that the -- that with the  
15 result of the previous testing, you know, on  
16 the blind shear ram where the -- the pipe was  
17 leaking, it also indicated that the ST locks  
18 were in as well.  
19 Q. Okay. If you would, let's turn  
20 back to what we've already marked as  
21 Exhibit 5490. Kind of keep the report handy  
22 as well, but if you could also refer back to

23 Exhibit 5490, please.

Page 33:04 to 33:21

00033:04 Q. (BY MR. DILLS) If you look at  
05 the seventh bullet point, second sentence,  
06 obvious flow wash at the upper and middle  
07 rams; do you see that?  
08 A. Seventh?  
09 Q. Yes.  
10 A. Could you read the line, please?  
11 Q. Sure, it's the second sentence  
12 under that bullet point. It says, "Obvious  
13 flow wash at the upper and middle rams."  
14 A. Yes, sir, I see it.  
15 Q. And this paragraph, this bullet  
16 point also says that there was erosion both  
17 internal and external on the drill pipe; do  
18 you see that?  
19 A. Yes. Pipe was obviously washed  
20 into the upper rams. The pipe section ended  
21 in the ram --

Page 33:24 to 35:09

00033:24 A. (Continuing) Yes, I see that.  
25 Q. (BY MR. DILLS) All right, sir.  
00034:01 Do you believe that the upper and middle VBRs  
02 were closed before or after the AMF  
03 functioned?  
04 A. I believe they closed before the  
05 AMF functioned.  
06 Q. Okay. And do you know when the  
07 lower and -- I'm sorry, when the upper and  
08 middle VBRs were activated by the ROVs?  
09 A. I don't believe the ROV  
10 intervention in the upper pipe ram. I think  
11 it was only in the middle pipe ram.  
12 Q. Okay. I'm sorry, I may have  
13 misunderstood your testimony earlier. When  
14 do you believe the upper VBR was closed?  
15 A. We determined that the upper VBR  
16 had been closed during the incident by the --  
17 by the rig crew.  
18 Q. So you believe that the -- all  
19 right. Just for -- to make sure I'm clear  
20 and the record's clear, it's Transocean's  
21 position that the rig crew sometime during  
22 the incident, I'm assuming prior to the  
23 explosion, closed the upper VBR; do I  
24 understand that correctly?  
25 A. Yes, sir, that is correct.  
00035:01 Q. And then it's also Transocean's  
02 position that sometime following the

03 explosion, the AMF fired, which would have  
04 closed the blind shear rams; is that correct?  
05 A. That is correct, yes.  
06 Q. If the rig crew closed the upper  
07 VBR and the AMF subsequently fired, how does  
08 Transocean explain the erosion on the drill  
09 pipe in the vicinity of the upper VBR?

Page 35:11 to 35:12

00035:11 A. I'm not too sure. I can't  
12 answer that.

Page 35:25 to 36:24

00035:25 Q. (BY MR. DILLS) Sure, it's  
00036:01 probably a very poorly worded question. I  
02 apologize. So you cannot explain today why  
03 there is erosion on the exterior of the drill  
04 pipe in the location of the upper VBR?  
05 A. No, I can't -- I can't make a  
06 judgment in that.  
07 Q. And you do not know who at  
08 Transocean can explain that?  
09 A. At the moment, no, I don't.  
10 Q. And it's Transocean's position  
11 that when the AMF -- if the AMF did fire and  
12 the blind shear rams were activated, it  
13 sealed on the drill -- it closed and severed  
14 the drill pipe, but it did not seal the well;  
15 there was a portion of the drill pipe that  
16 was left outside of the cutting surfaces of  
17 the BSR; is that correct?  
18 A. On the report, that's what it  
19 says on the report. I did not know until  
20 that part of the report was released.  
21 Q. Did you know that Cameron  
22 manufactured DBS rams and CD -- CDVS rams,  
23 specifically the CDVS rams which extended the  
24 cutting surface entirely across the wellbore?

Page 37:01 to 37:11

00037:01 A. I -- I know they produced a  
02 round block called DBS and CDVS. I'm unaware  
03 that it had a sealing surface or cutting  
04 surface from wellbore -- from inside all the  
05 way across the wellbore.  
06 Q. (BY MR. DILLS) Okay. If it did  
07 have a cutting surface that extended entirely  
08 across the wellbore, do you think that would  
09 have been a better ram block to have as  
10 opposed to one that did not extend all the

11 way across the wellbore?

Page 37:13 to 37:15

00037:13 A. I -- I -- no, I can't give you a  
14 comment on that. Sorry, it's -- it's hard to  
15 decide, unless you test it and confirm.

Page 38:17 to 38:23

00038:17 Q. Sure. During the course of the  
18 investigation did you -- or did you or do you  
19 know of anybody who looked at the maximum  
20 anticipated surface pressure of the Macondo  
21 well?  
22 A. I certainly did not look at it.  
23 It wasn't part of my task to do.

Page 38:25 to 39:04

00038:25 A. I believe the result -- I  
00039:01 believe there was a part of the team that was  
02 involved with the -- the well construction,  
03 and I believe that took into well  
04 construction and flow and pressures.

Page 40:01 to 40:13

00040:01 Q. (BY MR. DILLS) Are you aware,  
02 sir, that the federal regulations require  
03 every component of a BOP be able to meet or  
04 exceed the maximum anticipated surface  
05 pressure?  
06 A. Yes.  
07 Q. And you --  
08 A. I'm -- I'm not aware of that  
09 reg- -- I'm not aware of that regulation,  
10 but, yeah, they're designed -- the API design  
11 is designed if it's a 10,000 psi rated BOP,  
12 it's designed to hold 10,000 ps -- static  
13 pressure of 10,000 psi.

Page 40:25 to 41:14

00040:25 Q. Sure. You were brought on to  
00041:01 the Deep- -- or you -- let me start over, I  
02 apologize. You were brought on to the  
03 investigation team to examine or inspect or  
04 evaluate the blowout preventer on the  
05 Deepwater Horizon, correct?  
06 A. I was brought on team to review  
07 the BOP control system and the well control

08 system of the Deepwater Horizon, yes.  
09 Q. But you did not look at what the  
10 maximum anticipated surface pressure was for  
11 this well? I understand another team did  
12 that, but you, sir, did not look at that; is  
13 that correct?  
14 A. That is -- that is correct.

Page 42:10 to 42:14

00042:10 A. There was someone else that was  
11 doing that.  
12 Q. Okay. Do you know how maximum  
13 anticipated surface pressure is calculated?  
14 A. No, sir.

Page 45:09 to 46:06

00045:09 Q. Okay. All right. I want to  
10 talk very briefly about digital BOP testing.  
11 Did you look into the digital BOP testing as  
12 any part of your investigative effort?  
13 A. Yes, I did.  
14 Q. And the digital BOP testing that  
15 was being utilized aboard the Deepwater  
16 Horizon was a system that was patented and  
17 owned by BP; is that correct?  
18 A. I believe that is correct, yes.  
19 Q. And one of the benefits of  
20 digital BOP testing is the amount of time it  
21 takes to conduct the test; is that also  
22 correct?  
23 A. That is the reason why the  
24 digital testing, yes.  
25 Q. Okay. And that, in turn, saves  
00046:01 the operator money; the less time it takes,  
02 the less money it costs; is that correct?  
03 A. It takes less time to do the  
04 testing, that's correct.  
05 Q. And does -- by taking less time,  
06 does that save the operator of the rig money?

Page 46:08 to 46:12

00046:08 A. As I said, it takes time -- it  
09 takes less time to do the testing.  
10 Q. (BY MR. DILLS) We've  
11 established that, but my question is does  
12 saving time save the operator money?

Page 46:14 to 46:17

00046:14 A. It -- yeah, yes, it would.

15 Q. (BY MR. DILLS) Okay. Do you  
 16 know approximately how much money BP saved  
 17 every time the digital testing was utilized?

Page 46:19 to 47:04

00046:19 A. No, I don't, sir.  
 20 Q. (BY MR. DILLS) During the BOP  
 21 testing, is this the time when the rig crew  
 22 performed maintenance?  
 23 A. It was an opportunity to conduct  
 24 maintenance, yes.  
 25 Q. Did you find or do you know, did  
 00047:01 BP ever consult with Transocean to see how  
 02 reducing this amount of time or reducing the  
 03 time for this test would impact Transocean's  
 04 ability to perform maintenance on the rig?

Page 47:06 to 47:08

00047:06 A. I don't know if that was there  
 07 was a discussion. I don't know about that  
 08 discussion.

Page 49:13 to 51:25

00049:13 Q. (BY MR. DILLS) Okay. This is  
 14 an e-mail dated July 15th from Greg Childs to  
 15 Bill Ambrose, and you along with Bob Walsh  
 16 and Dan Farr were cc'd on it. Can you make  
 17 that out?  
 18 A. I can just make it out, yes.  
 19 Q. Okay. I'm going to go ahead and  
 20 mark this document as the next exhibit, 5492,  
 21 for the record. I'm going to go ahead and  
 22 read that paragraph, and if you or David  
 23 disagree with the way I'm reading it, let me  
 24 know. I know it may be hard to see.  
 25 First paragraph says, Sorry, I  
 00050:01 failed to include the mud hydrostatic effects  
 02 in my first calculations for the 6.625 .522  
 03 wall V-150 drill pipe. Adding the effects of  
 04 the 14.3 ppg mud in 5047 feet of water depth  
 05 increases the maximum shear pressure from  
 06 4837 psi to 5394 psi, using the dimensional  
 07 method from Cameron EB 702.  
 08 To the best of your ability, do  
 09 you think I read that paragraph correctly?  
 10 A. Yes, I believe you did.  
 11 Q. And the next paragraph below  
 12 that says, 80 percent of 5394 is 4315 psi  
 13 which is above the 4,000 psi limit meaning  
 14 there is a very low chance you could shear

15 the pipe with the SBRs at depth.  
 16 Did I read that correct?  
 17 A. I believe you did. It's very --  
 18 it's very smudged at the end of that e-mail.  
 19 Q. Okay.  
 20 A. But I believe you did, yes.  
 21 Q. All right. Now, we know that at  
 22 the time of the incident 5 and a half-inch  
 23 drill pipe was in the hole, but this document  
 24 is referring specifically to 6-and-5/8-inch  
 25 drill pipe, correct?  
 00051:01 A. Yes.  
 02 Q. All right. Who is Greg Childs?  
 03 A. Greg Childs was one of the team  
 04 that was working in the investigation. He  
 05 works for Wes.  
 06 Q. Okay. So he's not a Transocean  
 07 employee?  
 08 A. He was -- he was -- no, he's  
 09 not.  
 10 Q. And, I'm sorry, I believe I  
 11 interrupted you. Will you go ahead and  
 12 finish what you were saying. He's a West  
 13 Engineering employee?  
 14 A. Yes, that's correct.  
 15 Q. The accumulators on the  
 16 Deepwater Horizon had a regulator which was  
 17 set to 4,000 psi; is that correct?  
 18 A. That's correct, yes.  
 19 Q. So according to Mr. Childs'  
 20 e-mail, had 6-and-5/8-inch pipe been in the  
 21 hole, it is unlikely that the BOP would have  
 22 been able to shear and seal the well, given  
 23 that there was a 4000 psi accumulator -- or  
 24 regulator on the accumulators; do you agree  
 25 with that?

Page 52:02 to 52:08

00052:02 A. That's, I believe, what he  
 03 states in that statement there on the e-mail.  
 04 Q. (BY MR. DILLS) Right, that's  
 05 what he states, but do you agree with that?  
 06 A. I do not have -- I cannot agree  
 07 on that. I did not do the calculations on  
 08 the shearing capabilities of the BP.

Page 52:25 to 53:04

00052:25 Q. Okay. If the BOP had available  
 00053:01 4,000 psi, but was not capable of shearing  
 02 6-and-5/8-inch drill pipe with only 4,000 psi  
 03 available, do you think that would have been  
 04 a dangerous situation?

Page 53:06 to 53:24

00053:06 A. A dangerous situation.  
07 Q. (BY MR. DILLS) Is it -- is  
08 it -- let me rephrase that question.  
09 A. This is -- yes, sir, please do.  
10 Q. I'll rephrase the question. I'm  
11 sorry. Do you consider it hazardous to have  
12 a non-shearable across the BOP?  
13 MR. BAAY: Object to the form.  
14 A. That is -- that is, again, a  
15 calculation. It was a calculation which was  
16 calculated. I did not have the -- I did not  
17 do the calculations on the shear  
18 capabilities, and I did not have the records  
19 of the shear capabilities of the ram.  
20 Q. (BY MR. DILLS) Okay. That's  
21 not my question. My question is this: Is it  
22 hazardous to have a non-shearable across the  
23 BOP?  
24 A. Yes, it is.

Page 54:02 to 55:05

00054:02 Q. (BY MR. DILLS) Do you know what  
03 drill pipe was used to drill the Macondo  
04 well, what size drill pipe was used?  
05 A. I believe there was 6-and-5/8  
06 and 5-inch, 5-and-a half-inch.  
07 Q. Okay. So if BP was using  
08 6-and-5/8-inch drill pipe to drill the well,  
09 according to this e-mail from Greg Childs, it  
10 is unlikely, according to this e-mail, that  
11 the BOP would have been able to shear, given  
12 that the regulator was limited to 4,000 psi;  
13 is that correct?  
14 MR. BAAY: Object to the form.  
15 A. Again, not -- no. Again, this  
16 is a calculation which conducted, and so  
17 if -- if there was other calculations done  
18 prior -- pre- -- previous to that again, I do  
19 not have that information.  
20 Q. (BY MR. DILLS) Okay, I'll give  
21 you that. But looking at Mr. Childs' e-mail,  
22 if this information is accurate -- and I'm  
23 not telling -- I'm not asking you to tell me  
24 if it is or not. I'm just saying according  
25 to this e-mail and this statement from  
00055:01 Mr. Childs, that there is a low chance that  
02 it could shear the pipe, he's referring to  
03 6-and-5/8-inch pipe; is he not?  
04 A. Yeah, in that statement that's  
05 what he states.



Page 55:22 to 56:02

00055:22 Q. I understand that. But  
23 according to this e-mail that we have marked  
24 as 5492, according to Mr. Childs it is  
25 unlikely that the BOP would have been able to  
00056:01 shear 6-and-5/8-inch pipe had it been across  
02 the BOP at the time of the explosion?

Page 56:04 to 56:15

00056:04 A. Again, that's Greg Childs'  
05 calculation and that's Greg Childs opinion on  
06 that time.  
07 Q. (BY MR. DILLS) But reading this  
08 e-mail, you agree with this -- reading  
09 this -- sorry, strike that.  
10 But reading this e-mail,  
11 according to Mr. Childs, had 6-and-5/8-inch  
12 drill pipe been in the hole across the BOP,  
13 it is unlikely it would have been able to  
14 shear it, according to this e-mail, according  
15 to Exhibit 5492?

Page 56:17 to 56:25

00056:17 A. Again, this is a calculation he  
18 did. So based on that calculation with  
19 6-and-5/8 going through the BOP, that's what  
20 his statement is, it would not cut the pipe  
21 unless it was above 4,000 psi.  
22 Q. (BY MR. DILLS) Okay. And we've  
23 already established that running a  
24 non-shearable across the BOP is potentially  
25 hazardous, correct?

Page 57:02 to 57:10

00057:02 A. Yes, it is.  
03 Q. (BY MR. DILLS) Okay. And it's  
04 hazardous because in the event you have an  
05 emergency and need to activate any of the  
06 emergency systems that would rely upon the  
07 blind shear rams, according to Mr. Childs and  
08 this e-mail, it is unlikely they would have  
09 been able to shear and seal the well,  
10 correct?

Page 57:12 to 57:13

00057:12 A. That's what it says in this

13 e-mail, yes.

Page 58:15 to 58:18

00058:15 Q. (BY MS. HANKEY) I'm sorry, my  
16 name is Rachel Hankey, and I with the  
17 Department of Justice and I represent the  
18 United States.

Page 60:25 to 61:03

00060:25 Q. (BY MS. HANKEY) And I'm going  
00061:01 to ask you to look at tab 41, and this has  
02 been marked as Exhibit 5493 and it's  
03 Bates-stamped TRN-MDL-02815267 to 02815321.

Page 62:19 to 63:03

00062:19 Q. (BY MS. HANKEY) And I wanted to  
20 ask you, it refers to some interviews that  
21 took place of some of the Transocean  
22 employees. Did you conduct any interviews of  
23 Transocean employees?  
24 A. I did conduct two interviews,  
25 one with the -- the chief "optician," and I'm  
00063:01 sorry, I do not remember his name; and there  
02 was another interview with a call -- a guy  
03 called Ron Guidry.

Page 64:03 to 65:16

00064:03 Q. (BY MS. HANKEY) Now, one of the  
04 things that the investigation team did was to  
05 determine when the batteries had been changed  
06 in the pod; is that correct?  
07 A. We tried to establish, yes,  
08 that's correct.  
09 Q. And one of the things that you  
10 looked at was -- if you can turn to tab 3.  
11 One of the things -- this is marked as  
12 Exhibit 3318. It's an e-mail from DWH subsea  
13 to James Kent.  
14 A. Yes.  
15 Q. And one of the things that you  
16 guys did was look at this e-mail and attempt  
17 to confirm the dates in this e-mail; is that  
18 correct?  
19 A. That's correct, yes.  
20 Q. And in that attempt to confirm  
21 the dates, did you look in -- at RMS?  
22 A. Yes, we did. Yes, the person  
23 that was tasked to do, did --  
24 Q. And did --

25 A. -- I believe.  
 00065:01 Q. And did you look at the subsea  
 02 workbook?  
 03 A. The subsea workbook was also  
 04 used, I believe.  
 05 Q. And did you look at e-mails from  
 06 the subsea department?  
 07 A. I -- I do not know that that  
 08 e-mails were used. I don't know.  
 09 Q. Well, this, for example, is an  
 10 e-mail from the subsea department, and this  
 11 was used.  
 12 A. So, yes, that -- so that was  
 13 used, then.  
 14 Q. Do you know, did you speak with  
 15 any of the subsea engineers or -- or  
 16 supervisors?

Page 65:18 to 66:07

00065:18 A. I spoke with a -- with some of  
 19 them, yes. I spoke with Owen. I spoke with  
 20 Owen and Mark Hay, I spoke with him, and I  
 21 spoke with Chris Pleasant on different  
 22 subjects and different things.  
 23 Q. (BY MS. HANKEY) Did you speak  
 24 to them specifically about the battery  
 25 changes listed in this document?  
 00066:01 A. No, I did not.  
 02 Q. Did you speak to them at all --  
 03 A. Not to my knowledge, no.  
 04 Q. Did you speak to them at all  
 05 about the -- the -- the recordkeeping on the  
 06 battery changes?  
 07 A. No, I did not.

Page 66:15 to 66:21

00066:15 Q. (BY MS. HANKEY) And I'm going  
 16 to ask you to look at tab 8. I'm going to  
 17 mark this as Exhibit 5494, and this is  
 18 Bates-stamped TRN-MDL-02785585 to 5586.  
 19 And if you turn to Page 2, when  
 20 you get there --  
 21 A. Yeah, when I get there, yeah.

Page 67:22 to 68:04

00067:22 Q. (BY MS. HANKEY) Well, can you  
 23 confirm for me, is it your understanding that  
 24 within the RMS records BOPP 001 was the blue  
 25 pod, BOPP 02 was the yellow pod, and BOPP 03  
 00068:01 was the white pod?

02           A.       To be quite honestly, I can't  
03 confirm that with the white pod and the blue  
04 pod.

Page 68:08 to 68:18

00068:08       Q.       (BY MS. HANKEY) Can you see?  
09           A.       Yeah, I can see it, yes. It's  
10 an RMS, recording of RMS.  
11       Q.       Yes. And BOPP 001 is the blue  
12 pod, BOPP 002 is the yellow pod, and BOPP 003  
13 is the white pod?  
14       A.       Okay, confirm.  
15       Q.       And those -- and those pod  
16 numbers correspond to the part numbers that  
17 we just looked at in the Exhibit 3318; that  
18 is, pods 1, 2, and 3?

Page 68:24 to 69:02

00068:24       Q.       (BY MS. HANKEY) And those pod  
25 numbers that we just looked at refer to those  
00069:01 same pod numbers identified in that e-mail;  
02 that is, pod 1, pod 2, and pod 3?

Page 69:04 to 70:12

00069:04       A.       That -- that's correct.  
05       Q.       (BY MS. HANKEY) And now I'm  
06 going to ask you to look at tab 2, which I'm  
07 marking as Exhibit 5495, and this is  
08 Bates-stamped TRN-INV-02853658.  
09       A.       Yes, to okay.  
10       Q.       And it ends in 02853668. And  
11 this is an e-mail from -- from you to Dan  
12 Farr; is that correct?  
13       A.       That's correct, yes.  
14       Q.       And I'm going to ask you to turn  
15 to the page that is Bates-stamped 2853662,  
16 which is an attachment to that e-mail. And  
17 this is a document?  
18       A.       2853662.  
19       Q.       Okay. And this is a document  
20 prepared by you; is that correct?  
21       A.       No, it was not prepared by me.  
22 It was prepared by Ryan McIntosh.  
23       Q.       Ryan who?  
24       A.       Ryan McIntosh.  
25       Q.       And the dates here listed, they  
00070:01 compare to what was in the Owen McWhorter  
02 e-mail; is that correct, Exhibit 3318?  
03       A.       The date is the 24th of -- oh,  
04 this one. Yes, okay.

05 Q. And if you look down on the  
06 bottom -- if you look -- I'm sorry, I'm  
07 back -- I'm still on tab 2. One of the  
08 things that it says, pod 3 spare SEM in first  
09 quarter 2010 was in spare pod on DWH deck.  
10 And there's no citation for that statement,  
11 and I'm wondering, can you tell me what the  
12 basis for that statement is?

Page 70:20 to 71:24

00070:20 A. (Continuing) Yes, which  
21 sentence are you talking about?  
22 Q. (BY MS. HANKEY) It's the sixth  
23 bullet on the page. It says pod No. 3 spare  
24 SEM in first quarter 2010 was in spare pod on  
25 DWH deck?  
00071:01 A. That was through -- that was  
02 through some -- some -- some -- we found some  
03 evidence that it was on board, yes.  
04 Q. And what evidence was that?  
05 A. We had -- we had confirmation  
06 that -- that it had been shipped offshore  
07 by -- by -- I believe the interview by Ron  
08 Guidry give me that interview -- or gave that  
09 information. I believe there was another  
10 information I do not have, I can't remember,  
11 but there was information telling me that  
12 that spare part was on the Deepwater Horizon.  
13 Q. And when you say "spare pod,"  
14 are you -- you mean that the pod 3 was the  
15 spare pod?  
16 A. Yes.  
17 Q. And you -- sitting here today,  
18 you can't recollect what the basis for that  
19 statement was?  
20 A. No, I can't, sorry.  
21 Q. I'm going to ask you to look at  
22 tab 25 and I'm going to mark this as  
23 Exhibit 5496 and it's Bates-stamped  
24 TRN-INV-03293628.

Page 72:05 to 74:16

00072:05 Q. (BY MS. HANKEY) And one of the  
06 things that you guys did which is reflected  
07 in this e-mail as part of your investigation  
08 was you used the serial numbers and the  
09 information that was tagged on the SEMs that  
10 were found at Michoud in order to figure out  
11 when the batteries had been changed; is that  
12 correct?  
13 A. They were figuring out, yes.  
14 Q. And I'm going to ask you to look

15 at tab 19 and I'm going to mark that as  
 16 Exhibit 5497 and that's TRN-INV-03500581.  
 17 And I'm going to ask, do you recognize this  
 18 document?  
 19 A. I recognize the notes, yes.  
 20 Q. And are these your notes?  
 21 A. These are my notes, yes.  
 22 Q. And looking at the top of the  
 23 page, one of the things that you've written  
 24 is for the yellow pod -- let me -- I'm sorry,  
 25 strike that.

00073:01 The typewritten information on  
 02 this page, where did that information come  
 03 from?  
 04 A. This is information read back  
 05 from the -- the -- let me try and think. I  
 06 can't -- I've got to think about this to give  
 07 you a correct answer here, where -- where  
 08 that information came from. This information  
 09 was on the pods at Michoud.  
 10 Q. And under -- the first item is  
 11 yellow pod No. 2; is that correct?  
 12 A. Yeah, there you go.  
 13 Q. And -- and it has a serial  
 14 number listed down below it, and next to it  
 15 you've written blue pod SEM; is that correct?  
 16 A. Yes.  
 17 Q. And so one of the things that  
 18 you did was that by researching the serial  
 19 numbers, you found that the blue pod SEM was  
 20 actually in the yellow pod on the stack; is  
 21 that correct?  
 22 A. That's what we established  
 23 there, yes.  
 24 Q. And with respect to the blue  
 25 pod, it is listed as No. 3; is that correct?

00074:01 A. The blue pod was listed -- blue  
 02 pod was listed as No. 2.  
 03 Q. It says, blue pod No. 3; is that  
 04 correct?  
 05 A. Okay, up here, yes. Yes, blue  
 06 pod No. 3, got you.  
 07 Q. And do you have a reason to  
 08 believe that that is not referring to the  
 09 blue -- the pod No. 3 was in the blue  
 10 position on the stack?  
 11 A. Can you rephrase that question,  
 12 please?  
 13 Q. What would be the basis for  
 14 believing that that is not referring to the  
 15 fact that pod No. 3 was in the blue position  
 16 on the stack?

00074:18           A.       This is checking back the serial  
 19 numbers on the -- on what we found on Michoud  
 20 to check about the serial numbers on the RMS  
 21 records. So confirmation on which SEM went  
 22 onto which pod.

Page 75:05 to 78:14

00075:05           Q.       (BY MS. HANKEY) Now, I'm going  
 06 to ask you to look at tab 22 and this is  
 07 Exhibit 4305 and this is a printout from RMS.  
 08           A.       Okay.  
 09           Q.       And if you look at the very last  
 10 page and the very last entry.  
 11           A.       Okay.  
 12           Q.       The very last entry is for  
 13 BOO -- BOPP 002, the yellow control pod, and  
 14 if you go under job instruction --  
 15 instructions, it says, "Cameron installed two  
 16 new modems in our spare SEM."  
 17                   Did I read that correctly?  
 18           A.       I need to get the line.  
 19           Q.       On the very last line on the  
 20 very last page.  
 21           A.       The last page, right? Yeah,  
 22 the -- the writing is extremely small here.  
 23 The Deepwater Horizon -- if you give me the  
 24 targets, blue, yellow MUX control pod, right?  
 25           Q.       It is the yellow MUX control  
 00076:01 pod, correct?  
 02           A.       Yellow, sorry, yellow, yes.  
 03           Q.       And if you go over to job  
 04 instructions -- and it's also tag No. 2; is  
 05 that correct?  
 06           A.       Tag No. 2. Yes, tag No. 2, yes.  
 07           Q.       And also under job instructions,  
 08 it says, "Cameron installed two new modems in  
 09 our spare SEM."  
 10           A.       Okay.  
 11           Q.       And so this indicates that in  
 12 March of 2010 Cameron had the SEM for the  
 13 yellow pod, does it not, and pod No. 2?  
 14           A.       Yes, it does.  
 15           Q.       I'm sorry, I just want to find  
 16 the next exhibit, because I'm going to skip a  
 17 bit.  
 18                   Now, I'm going to ask you to  
 19 look at tab 18 and I'm going to mark this as  
 20 Exhibit 5498 and it's Bates-stamped  
 21 TRN-INV-01870820 and it's entitled "Horizon  
 22 SEM Information."  
 23           A.       Yes.  
 24           Q.       And you'll see here, it's been  
 25 written, "Pod No. 2 is in the yellow position  
 00077:01 on the LMRP," and then it lists the ID tag

02 information. And then it says, "Cameron  
 03 identified as blue No. 1 SEM shop order of  
 04 June 2009."  
 05 And that confirmation what we  
 06 were just discussing earlier, does it not,  
 07 that the blue SEM was found in the yellow  
 08 pod?  
 09 A. That's correct, yes.  
 10 Q. And then it says, pod No. 3,  
 11 blue position on the LMRP; is that correct?  
 12 A. Yes.  
 13 Q. And it is identifying that pod  
 14 No. 3 --  
 15 A. Yes.  
 16 Q. -- was in fact on the blue  
 17 position on the stack?  
 18 A. Yes, that's correct.  
 19 Q. And then it says that pod No. 1  
 20 is the spare pod went down with the DWH in;  
 21 is that correct?  
 22 A. Yes, it does.  
 23 Q. And Cameron identified as No. 2  
 24 yellow SEM shop order of February 2010; is  
 25 that correct?  
 00078:01 A. Yes, it is.  
 02 Q. Now, when this was produced it  
 03 was identified as having come from the  
 04 custodial files of Jeff Boughton. Did  
 05 Mr. Boughton ever have any discussions with  
 06 you about the notations in this document?  
 07 A. No, he did not.  
 08 Q. And this conflicts with your  
 09 understanding that it was pod No. 1 that was  
 10 on the stack?  
 11 A. Yes, it does.  
 12 Q. And, to your knowledge, did  
 13 Mr. Boughton have any discussions about this  
 14 document with anyone else on the team?

Page 78:16 to 79:23

00078:16 A. I -- no, I don't know.  
 17 Q. (BY MS. HANKEY) I'm going to  
 18 ask you to turn to tab No. 6, which has been  
 19 previously marked as Exhibit 3435.  
 20 A. Okay.  
 21 Q. And this is a page that --  
 22 this -- this is the subsea workbook that you  
 23 were relying on for the dates in the re- --  
 24 in the -- to confirm the dates in the Owen  
 25 McWhorter e-mail; is that correct?  
 00079:01 A. This is one of the -- this is  
 02 one of the areas we looked at, yes.  
 03 Q. And you see in the middle of the  
 04 page it has the dates that are -- correspond



05 to the dates we saw in that e-mail?  
 06 A. Yes, it does.  
 07 Q. Now, if you look up in the  
 08 right-hand corner, it says, "SEM shop" and it  
 09 says, "SEM No. 2 overhauled 9/09 to present";  
 10 do you see that?  
 11 A. Yes, I do.  
 12 Q. And the date that this document  
 13 was last updated, if you look in the  
 14 left-hand corner, is 2-26-10; is that  
 15 correct?  
 16 A. Yes, it is.  
 17 Q. And when you guys decided to  
 18 adopt the dates in this document as having  
 19 been correct for the batteries been changed,  
 20 how come you didn't also adopt what the  
 21 document says with regard to SEM 2 being the  
 22 SEM that was at Cameron at the time of the  
 23 incident?

Page 79:25 to 80:03

00079:25 A. I can't honestly answer that.  
 00080:01 There was other people investigating the  
 02 battery replacements. It was Ryan -- Ryan  
 03 McIntosh was doing that.

Page 80:11 to 80:14

00080:11 Q. And I want to move to another  
 12 area, which is there were two solenoids that  
 13 were miswired when they were discovered at  
 14 Michoud; is that correct?

Page 80:16 to 81:05

00080:16 A. I believe so.  
 17 Q. (BY MS. HANKEY) And --  
 18 A. Yes, it's in the -- it's in the  
 19 report.  
 20 Q. And as part of your  
 21 investigation one of the things you did was  
 22 confirm with Mr. Guidry that he had, in fact,  
 23 changed out solenoid 103; is that correct?  
 24 A. That is correct, yes.  
 25 Q. And he also told you that when  
 00081:01 he was replacing solenoids, that he was using  
 02 solenoids that were either rebuilt by T --  
 03 Transocean personnel or were rebuilt by D&D;  
 04 is that correct?  
 05 A. That is correct, yes.

Page 81:19 to 83:08

00081:19 Q. I'm going to ask you to turn to  
 20 tab 36 and I'm going to mark this as  
 21 Exhibit 5499 and this is Bates-stamped  
 22 TRN-INV-01268788 through to 01268796. And if  
 23 you go to Page 2, you'll see the starting  
 24 e-mail is an e-mail from Mr. Boughton to  
 25 Mr. Fry, with the serial numbers from the two  
 00082:01 solenoids; do you see that?  
 02 A. Yes, I do.  
 03 Q. And then the next e-mail is an  
 04 e-mail from Mr. Fry to Mr. Diaz listing the  
 05 serial numbers and asking if they had worked  
 06 on those.  
 07 A. Okay.  
 08 Q. And then Mr. Diaz responded and  
 09 said that they had not -- that they did not  
 10 have either of those serial numbers in any --  
 11 in any of those records. Do you see that?  
 12 A. Can you give me -- can you give  
 13 me the line of that?  
 14 Q. Sure, it's in the middle of the  
 15 page --  
 16 A. Line where it is.  
 17 Q. It's in the middle of the page  
 18 under Mr. Diaz. We have a list of the valves  
 19 we have overhauled, and none start with 1100  
 20 which is the beginning of the serial numbers  
 21 that were listed on the previous page.  
 22 A. Okay. Yes, that's the statement  
 23 there, yes.  
 24 Q. And so based on -- do you know  
 25 what the basis for saying that D&D had in  
 00083:01 fact rebuilt those solenoids would be?  
 02 A. There were a number solenoids  
 03 being rebuilt with -- by D&D, and there were  
 04 a number of solenoids being rebuilt by the  
 05 rig crew, Transocean rig crew.  
 06 Q. And were --  
 07 A. To identify where they are.  
 08 Q. And with respect to those --

Page 83:12 to 84:05

00083:12 A. (Continuing) And to identify  
 13 which solenoids were -- were refurbished in  
 14 which place, they are identified by  
 15 contacting the D&D to ensure which ones was  
 16 which.  
 17 Q. (BY MS. HANKEY) And so, to your  
 18 knowledge, is there any basis for the  
 19 statement that those two solenoids, 103 and  
 20 3AY, were rebuild by D&D?  
 21 A. There's no -- there's no  
 22 confirmation from D&D that they were rebuilt.

23 Q. In fact, they -- they --  
24 according to them, they did not?  
25 A. On this e-mail that's what it  
00084:01 states, yes.  
02 Q. And I'm going to ask you now to  
03 turn to tab 29 and I'm going to mark this as  
04 Exhibit 5654 and this is TRN-INV-02504686 to  
05 02504690?

Page 84:10 to 85:07

00084:10 Q. And this is an e-mail exchange  
11 between you and a Mr. Neil Watson; is that  
12 correct?  
13 A. That it is, yes.  
14 Q. And I'm going to ask you to turn  
15 to the e-mail that you wrote that's in the  
16 middle of the page. And it says, "Thank's,  
17 Ken. Yes we are all look for reasons and  
18 answers at the moment. Some very interesting  
19 reading on not having the ability to test  
20 batteries to find out there condition. You  
21 would think being a critical function it  
22 would have some form of read back/procedure  
23 for testing, also I find it very unusual not  
24 having the batteries trickle charged, in that  
25 way would have a better read back and better  
00085:01 known condition."  
02 Did I read that correctly?  
03 A. Yes, you did.  
04 Q. And do you still believe that  
05 the critical function like the batteries  
06 would have been both rechargeable and have  
07 the ability to be monitored?

Page 85:10 to 85:21

00085:10 A. There is a number -- there is a  
11 number of limitations for your control system  
12 to be able to be allowed to do that. It  
13 would be a nice feature to have, but, again,  
14 it's -- it's a trade-off with -- you lose one  
15 function to another.  
16 Q. (BY MS. HANKEY) Well, is it  
17 your understanding that, in fact, there was  
18 technology available in which the batteries  
19 could have been recharged?  
20 A. There is a possibility for the  
21 batteries to be charged, yes.

Page 85:25 to 86:12

00085:25 A. (Continuing) Again, but it's a

00086:01 trade-off to your control system, where you  
02 add a function, you've got to remove another  
03 function, its capability.  
04 Q. (BY MS. HANKEY) And what  
05 function would need to be removed if you were  
06 to, for example, upgrade to the most recent  
07 technology for the monitoring of the control  
08 pod?  
09 A. I couldn't answer that. I'd  
10 have to be an engineer and study to -- to  
11 establish which functions would have to be  
12 removed to allow you to do trickle feed.

Page 95:18 to 95:21

00095:18 Q. All right. You stated that you  
19 participated in at least two interviews  
20 related to your investigation, correct?  
21 A. That's correct, yes.

Page 96:14 to 96:20

00096:14 Q. Okay. Did you interview or did  
15 you have an opportunity to interview anybody  
16 other than Transocean employees?  
17 A. No, I did not.  
18 Q. Did you read any deposition  
19 transcripts related to your investigation?  
20 A. No, I did not.

Page 97:04 to 97:09

00097:04 Q. (BY MR. KRAUS) So you -- during  
05 the 11 -- approximately 11 months that you  
06 were -- worked full time on this  
07 investigation you never uncovered one thing  
08 that you believe Transocean did wrong?  
09 A. No, I did not.

Page 98:23 to 99:06

00098:23 Q. Hi, Mr. Florence, I'm Denise  
24 McKenzie, and I'll be asking questions on  
25 behalf of BP.  
00099:01 The three pods on the  
02 Deepwater -- the three pods on the Deepwater  
03 Horizon are labeled blue, yellow, and spare,  
04 correct?  
05 A. The blue, yellow, spare or  
06 white.

Page 99:19 to 99:22

00099:19 Q. (BY MS. MCKENZIE) Do you know  
20 if there is any equipment connected to the  
21 spare pod when it's on the rig deck?  
22 A. I don't believe there is.

Page 100:17 to 100:24

00100:17 Q. (BY MS. MCKENZIE) Could you  
18 turn to tab 35 of the binder? And for the  
19 record, I'm marking tab 35 as Exhibit 5655,  
20 and it has Bates numbers TRN-MDL-02785016 to  
21 018. And in the middle of Exhibit 5655 there  
22 is an e-mail from you, dated December 8,  
23 2010; do you see that?  
24 A. Yes, I do.

Page 101:01 to 101:12

00101:01 I'm going to read the second sentence of the  
02 first paragraph. During our test -- our  
03 testing with the DWN spare SEM we came across  
04 an abnormality concerning the raw values when  
05 the AF deadman is armed and disarmed.  
06 In that sentence does DWN stand  
07 for Deepwater Nautilus?  
08 A. Yes, it does.  
09 Q. Were there tests performed on  
10 the spare pod for the Deepwater Nautilus?  
11 A. I believe they were doing some  
12 testing on the spare pod, yes.

Page 102:05 to 102:15

00102:05 Q. How often did Transocean check  
06 the battery voltages in the Deepwater Horizon  
07 control pods?  
08 A. I do not have that information.  
09 Q. Do you know if there was a  
10 formal Transocean maintenance schedule to  
11 check battery voltages?  
12 A. I do not have that information,  
13 no.  
14 Q. Who --  
15 A. I don't know who did that.

Page 102:21 to 104:01

00102:21 Q. Can you turn to tab 23 of your  
22 binder?  
23 A. Okay.  
24 Q. Are you there?  
25 A. Yes, we are.

00103:01 Q. For the record, I'm marking  
02 tab 23 as Exhibit 5657. It has Bates numbers  
03 TRN-MDL-02806212 to 213, and it's an e-mail  
04 from you, dated September 17th, 2010,  
05 correct?  
06 A. That's an e-mail at the top,  
07 yes, from me.  
08 Q. And at the bottom there is an  
09 e-mail from Kent James to William  
10 Stringfellow; do you see that?  
11 A. Yes, I do.  
12 Q. And in that e-mail it says that  
13 batteries should be replaced when the number  
14 of actuations has been exceeded for that  
15 year, and the number of actuations is 33; is  
16 that correct?  
17 A. That's correct, yes.  
18 Q. Did Transocean record the number  
19 of actuations for the batteries?  
20 A. To my knowledge, I don't know if  
21 they did or not.  
22 Q. Do you have any information  
23 about whether Transocean in any way tracked  
24 the number of actuations that were performed  
25 for either the 27-volt battery or the 9-volt  
00104:01 battery in the control pods?

Page 104:03 to 104:06

00104:03 A. To my knowledge, I don't know.  
04 Q. (BY MS. MCKENZIE) Who would  
05 know if Transocean tracked the number of  
06 actuations performed by the 27-volt battery?

Page 104:08 to 104:11

00104:08 A. Again, it's -- it's the part of  
09 the maintenance system on board would record  
10 or can record that. So the guys on board  
11 would know that.

Page 104:22 to 105:05

00104:22 Q. With regard to the software on  
23 the SEM, who is responsible for loading the  
24 software on the SEM?  
25 A. It's Cameron's responsibility to  
00105:01 load the software onto the SEM.  
02 Q. Do Transocean -- Transocean  
03 employees ever make any changes to the SEM  
04 software?  
05 A. Not to my knowledge, no.

Page 105:12 to 105:20

00105:12 Q. (BY MS. MCKENZIE) Do you know  
13 the date of the latest version for the SEM  
14 software?  
15 A. No, I don't.  
16 Q. What is the typical -- typical  
17 operating temperature of a SEM that's in  
18 operation on the seafloor?  
19 A. Sorry, I don't have that answer.  
20 I don't know.

Page 106:01 to 107:13

00106:01 Q. Do you know the SEM temperature  
02 when a pod is on the deck?  
03 A. No, I don't.  
04 Q. Each subsea pod contains two  
05 SEMs, correct?  
06 A. Yes, it does.  
07 Q. So altogether there -- there are  
08 four SEMs, correct?  
09 A. That's correct.  
10 Q. On the control panel there is an  
11 int- -- indicator that shows which SEMs are  
12 active, correct?  
13 A. I believe so, yes.  
14 Q. On the control panel a  
15 particular SEM can be selected, correct?  
16 A. I believe so, yes.  
17 Q. Can that button on the control  
18 panel be used to activate all four SEMs?  
19 A. I don't believe it can actually  
20 operate all the SEMs at the same time in  
21 normal operations.  
22 Q. How would one activate all four  
23 SEMs?  
24 A. I think the system -- the system  
25 can do the activation of the four SEMs,  
00107:01 the -- the offline pod or the on-line pod.  
02 You have a SEM that's selected and then --  
03 but both SEMs, I believe, fire the solenoid,  
04 but one is selected.  
05 Q. So when one SEM is selected,  
06 both SEMs fire the solenoid; is that correct?  
07 A. I believe so, yes.  
08 Q. You are aware that the DNV found  
09 that for solenoid valve 103 in the yellow pod  
10 one of the coils was wired in a reverse  
11 polarity to the other coil, correct?  
12 A. I had that information I was  
13 told, yes.

Page 108:02 to 108:14

00108:02 Q. For the solenoid valve 103 in  
03 the yellow pod, do you have any information  
04 about whether Transocean performed any  
05 testing on the valve before it was installed  
06 in the yellow pod?  
07 A. I -- I don't know if there was  
08 any testing performed on the -- on the  
09 solenoid before it was installed, no, I do  
10 not, do not know.  
11 Q. Is it normal practice for  
12 Transocean to perform testing on a -- on a  
13 pod -- on the solenoid valve before it's  
14 installed in a pod?

Page 108:16 to 108:20

00108:16 A. I don't know that policy, no.  
17 Q. (BY MS. MCKENZIE) Is it your  
18 understanding that Transocean would install  
19 solenoid valve 103 in the yellow pod without  
20 testing it?

Page 108:22 to 109:17

00108:22 A. I believe once a solenoid is  
23 installed, it gets tested then. What it --  
24 what it does before, I'm not too sure if  
25 there's testing being conducted or not.  
00109:01 Q. (BY MS. MCKENZIE) So it's your  
02 testimony that once solenoid valve 103 was  
03 installed in the yellow pod, it was tested at  
04 that point?  
05 A. There was tests performed on  
06 that solenoid after it was installed, yes.  
07 Q. And how is it that you know  
08 there were tests performed on solenoid valve  
09 103 after it was stalled in -- installed in  
10 the yellow pod?  
11 A. There was function testing  
12 performed on the pod.  
13 Q. And when you say "function  
14 testing," what do you mean?  
15 A. All functions were tested on the  
16 pod. So every solenoid was tested,  
17 functionality.

Page 110:02 to 111:20

00110:02 Q. When solenoid valve 103 was  
03 tested, did anyone at Transocean uncover that  
04 one of the coils was wired in reverse  
05 polarity to the other coil?  
06 A. Not to my knowledge, no, no one



07 knew, no.  
 08 Q. When the solenoid valve 103 was  
 09 tested, were both coils energized at the same  
 10 time?  
 11 A. As -- as -- SEM A and SEM B and  
 12 you fire it to the normal operations, then,  
 13 yes, SEM A and SEM B would fire both -- both  
 14 coils at the same time.  
 15 Q. Well, what I'm asking --  
 16 A. Or simultaneous, not -- not --  
 17 yeah.  
 18 Q. Did you finish your answer?  
 19 A. Simultaneously it would fire --  
 20 it would fire the -- the SEM A and SEM B  
 21 would fire. There may be a split second of  
 22 delay or between the two SEMs, but the coils  
 23 would fire not simultaneously, but at the  
 24 same time.  
 25 Q. So what I'm asking you is at the  
 00111:01 time that the solenoid valve 103 in the  
 02 yellow pod was tested, were both coils  
 03 energized at the same time?  
 04 A. I believe they must have been.  
 05 Q. And what is your basis for  
 06 saying that at the time the solenoid valve  
 07 103 was tested both coils were energized at  
 08 the same time?  
 09 A. Again, because I believe when  
 10 you -- when you do it in normal operations,  
 11 when you push the button, that the -- even if  
 12 the SEM A is energized, SEM B also energizes  
 13 the coil.  
 14 Q. Well, when you say, "when you do  
 15 it in normal operation," what is it that you  
 16 mean?  
 17 A. Pushing the button on -- on the  
 18 drill floor or pushing the button on the  
 19 toolpusher's panel or not under a "NACI,"  
 20 like an AMF sequence.

Page 112:02 to 112:05

00112:02 Q. (BY MS. MCKENZIE) At any point  
 03 in time before the incident did anyone at  
 04 Transocean get any indication about this  
 05 reverse -- reverse polarity issue?

Page 112:07 to 112:07

00112:07 A. No. Not to my knowledge, no.

Page 113:06 to 117:01

00113:06 Q. (BY MS. MCKENZIE) Have you been  
07 involved in any testing of the AMF cycle?  
08 A. Yes, I was.  
09 Q. And when --  
10 A. Yes.  
11 Q. When were you involved in  
12 testing of the AMF cycle?  
13 A. We tested the AMF cycle on the  
14 Deepwater Nautilus pod on -- at West  
15 Engineering.  
16 Q. And when was that?  
17 A. Ah, the months -- the months --  
18 let me -- let me -- let me get my memory.  
19 I'm not too sure of the months. It was late  
20 into -- late into 2010. I think it was  
21 something like June -- June, July, August,  
22 something like that.  
23 Q. Can you turn to tab 30 of your  
24 notebook? For the record, I'm marking tab 30  
25 as Exhibit 5658. It has Bates Nos. TRN-INV  
00114:01 02546928 to 29 and at the top it says,  
02 "Introduction: The purpose of this test is  
03 to retest the AMF card with the standard SEM  
04 test."  
05 Do you see that?  
06 A. Tab 30, right?  
07 Q. Yes.  
08 A. Could you read that line again?  
09 Sorry.  
10 Q. Under the introduction it says,  
11 "The purpose of this test is to retest the  
12 AMF pod with the standard SEM test, correct?  
13 A. I don't think I'm on the right  
14 tab.  
15 Okay, here we go.  
16 Q. Are you at tab 30 now?  
17 A. The purpose of this test -- yes.  
18 Yes, I've got it now, yes.  
19 Q. Does Exhibit 5658 refresh your  
20 recollection about tests you were involved in  
21 regarding the AMF cycle?  
22 A. Yes.  
23 Q. Is -- is this test dated  
24 November 3rd, 2010 the test you were -- you  
25 were referring to?  
00115:01 A. I don't have a date on that.  
02 Q. The date --  
03 A. This test.  
04 Q. The date is under "Project  
05 Data."  
06 A. Yes, it is. Yeah.  
07 Q. And why is it that -- did you  
08 perform tests on the Deepwater Nautilus SEM?  
09 A. Deepwater Nautilus SEM is very  
10 similar to the Deepwater Horizon system.

11 Q. And when you said the Deepwater  
12 Nautilus is very similar to the Deepwater  
13 Horizon, in what -- in what respect is the  
14 Deepwater Nautilus very similar to the  
15 Deepwater Horizon?  
16 A. It's a very similar components  
17 in the SEMs. There -- the control system  
18 software was very similar.  
19 Q. How is it that you determined  
20 that the control system software for the  
21 Deepwater Nautilus was similar to the control  
22 system software for the Deepwater Horizon?  
23 A. We had asked during our  
24 investigation to identify what systems were  
25 similar, and the Deepwater Nautilus was  
00116:01 produced at similar -- just very close as the  
02 Horizon, and we had confirmation that it was  
03 similar systems --  
04 Q. Who did you ask?  
05 A. -- from a number of different  
06 sources.  
07 Q. What source --  
08 A. We ask -- we did ask Cameron.  
09 We asked Cameron.  
10 Q. So you're testifying that you  
11 asked Cameron whether the software for the  
12 Deepwater Nautilus SEM was similar to the  
13 software for the Deepwater Horizon; is that  
14 what you're saying?  
15 A. That was one of the -- one of  
16 the places we asked. We also asked our  
17 engineering department, also.  
18 Q. Did the Transocean engineering  
19 department do a comparison of the Deepwater  
20 Nautilus software to the Deepwater Horizon  
21 software?  
22 A. I couldn't answer for the -- for  
23 the -- for the engineering, what they did do  
24 to -- to identify they were similar systems,  
25 but they come up and told us they were  
00117:01 similar systems.

Page 117:04 to 120:12

00117:04 Q. And for the -- and for the  
05 record, I'm marking tab 27 as 5659. It's  
06 Bates numbered TRN-MDL-02805023 to 031, and  
07 the first e-mail is an e-mail from you, dated  
08 October 27, 2010; do you see that?  
09 A. Yes, I do.  
10 Q. Okay. Please turn to Page 30 --  
11 I'm sorry, 31, and there is an e-mail from  
12 you to -- to Ally Murray; do you see that?  
13 A. Yes, I do.  
14 Q. Who is Ally Murray?

15 A. Ally Murray is a -- is a small  
16 company that -- that has a lot of experience  
17 in Cameron control systems?  
18 Q. And why did you contact Ally  
19 Murray?  
20 A. I was given his -- I was given  
21 these details by our engineering, Terry  
22 Loftus, to -- to understand the -- to  
23 understand the BOP control system, the  
24 Cameron B -- BOP control system.  
25 Q. So you contacted Ally Murray  
00118:01 because you believed he was knowledgeable --  
02 knowledgeable about the Cameron control  
03 system; is that correct?  
04 A. That's correct, yes.  
05 Q. Please turn to Page 5024.  
06 A. 5024, yeah.  
07 Q. And in the middle of the page  
08 there is an e-mail from Ally Murray to you.  
09 Do you see that?  
10 A. Yes, I do.  
11 Q. And the first sentence says, The  
12 symptoms you are seeing with the card cycling  
13 have been seen by us in the past, this was  
14 being caused by different revisions of the  
15 AMF software being installed on AMF cards in  
16 the same SEM. When we installed the same  
17 AMF -- AMF versions to each card the issue  
18 stopped.  
19 Do you see that?  
20 A. Yes, I do.  
21 Q. Do you understand what card  
22 cycling refers to in this e-mail?  
23 A. The specific card itself is --  
24 it cycles, yes, I do. I understand the card  
25 is switching on and switching off.  
00119:01 Q. When you say, "the card is  
02 switching on and switching off," what do you  
03 mean?  
04 A. That is the cycle, cycle of the  
05 card. It starts and goes through its cycle,  
06 and then it stops.  
07 Q. So we look down at the bottom of  
08 the page on Page 5024 and there is an e-mail  
09 from you; do you see that? It starts with,  
10 "Thanks, Ally."  
11 A. Yes, I do. Yes, I do.  
12 Q. Okay. So the -- the third  
13 sentence says, "By having the DWN pod we can  
14 run the AMF system firstly to see if it  
15 repeats"...  
16 Is that repeating the cycling  
17 that you're talking about?  
18 A. Yes, it is.  
19 Q. Now, for the Deepwater Horizon

20 for the AMF software installed, was the same  
 21 AMF software version installed on each of the  
 22 cards in the SEM?

23 A. On the -- on -- on which SEM?  
 24 I'm sorry. Can you repeat the question? I'm  
 25 sorry.

00120:01 Q. For the Deepwater Horizon was  
 02 the -- was the same AMF software versions  
 03 installed on each card in the SEM?

04 A. I couldn't give you an answer  
 05 because I don't know what -- what was on  
 06 the -- on the AMF cards when it was  
 07 retrieved.

08 Q. Well, occurring -- occurring --  
 09 according to Ally Murray, if the same AMF  
 10 versions were installed on each card in the  
 11 SEM, the card cycling would not occur,  
 12 correct?

Page 120:14 to 120:20

00120:14 A. That's what he state in there,  
 15 yes.  
 16 Q. (BY MS. MCKENZIE) And you have  
 17 no information about whether the same AMF  
 18 software versions were installed on each card  
 19 in the SEM for the Deepwater Horizon,  
 20 correct?

Page 120:22 to 121:03

00120:22 A. I do not have that information,  
 23 no.  
 24 Q. (BY MS. MCKENZIE) Did anyone at  
 25 Transocean evaluate whether the same AMF  
 00121:01 software versions were install -- installed  
 02 on the cards in the SEM for the Deepwater  
 03 Horizon?

Page 121:05 to 122:04

00121:05 A. I do not have that information,  
 06 no.  
 07 Q. (BY MS. MCKENZIE) If we turn to  
 08 page -- please turn to Page 5023.  
 09 A. Yes.  
 10 Q. And on the first paragraph,  
 11 second -- second sentence you say, "We have  
 12 continued to run tests of the AMF system on  
 13 the Spare Deep water Nautilus SEM"....  
 14 Do you see that?  
 15 A. Yeah, we continue to run, yes.  
 16 Q. Now, for the spare Deepwater

17 Nautilus SEM were different revisions of the  
 18 AMF software installed on the AMF cards?  
 19 A. On the Deepwater Nautilus?  
 20 Q. Yes.  
 21 A. I don't believe there was, no.  
 22 Q. And how is it that you know?  
 23 A. Obviously, I -- no, okay. I  
 24 don't know.  
 25 Q. So you have no information  
 00122:01 whatsoever about what versions of the AMF  
 02 software were installed on the AMF cards in  
 03 the SEM -- in the SEM for the Deepwater  
 04 Nautilus; is that correct?

Page 122:21 to 123:12

00122:21 Q. Well, I wasn't asking about the  
 22 timing. I was asking specifically with  
 23 respect to the AMF software installed on the  
 24 AMF cards in the SEM, did you or anyone else  
 25 perform any test to determine whether the  
 00123:01 Deepwater Nautilus SEM was equivalent to the  
 02 Deepwater Horizon SEM?  
 03 A. As I said before, it was -- it  
 04 was very similar systems. We got the -- our  
 05 engineering department had given us that they  
 06 were very similar systems.  
 07 Q. But there was no analysis  
 08 performed to determine whether the AMF  
 09 software install -- installed on the AMF  
 10 cards in the SEM, whether that software was  
 11 the same for the Deepwater Nautilus as for  
 12 the Deepwater Horizon, correct?

Page 123:15 to 123:15

00123:15 A. Not to my knowledge.

Page 125:02 to 125:05

00125:02 Q. (BY MS. MCKENZIE) So I have  
 03 here Appendix N. I've marked it as  
 04 Exhibit 5660, and I'm going to show it to  
 05 you.

Page 127:13 to 127:14

00127:13 Q. Did Transocean do any testing of  
 14 the 9-volt batteries for the blue pod?

Page 127:16 to 128:21

00127:16           A.       On the blue pod, no, not that  
 17 I -- not to my knowledge.  
 18           Q.       (BY MS. MCKENZIE) Well, are you  
 19 aware that Transocean is alleging that the  
 20 SEM B battery, the SEM B 9-volt battery had  
 21 insufficient power to boot the AMF?  
 22           A.       I understand that, yes.  
 23           Q.       But here DNV found that the SEM  
 24 B 9 -- 9-volt battery had 8.68 volts,  
 25 correct?  
 00128:01           A.       Yes, it did, yes.  
 02           Q.       Is it your testimony that  
 03 8.68 volts is insufficient to power the AMF?  
 04           A.       There is a possibility that it's  
 05 insufficient to power the AMF.  
 06           Q.       8.68 volts?  
 07           A.       Yes.  
 08           Q.       And when you say there -- there  
 09 is a possibility, what is that possibility  
 10 based on?  
 11           A.       On testing that we performed in  
 12 the Nautilus SEM.  
 13           Q.       With the testing that you  
 14 performed did it measure -- measure the  
 15 voltage of the 9-volt SEM B battery?  
 16           A.       Yes, it did. On the Nautilus  
 17 spare, yes, it did?  
 18           Q.       So -- so your allegation that  
 19 the 9-volt battery had insufficient power is  
 20 not based on the DNV findings; is that  
 21 correct?

Page 128:23 to 129:08

00128:23           A.       We performed tests on -- on the  
 24 Deepwater Nautilus SEM and with varied  
 25 voltages and various currents and found that  
 00129:01 it -- below 9 volts and above 8 volts there  
 02 is a possibility it goes into a recycle, so  
 03 that 8.68 may be the point where it could go  
 04 into a recycle.  
 05           Q.       (BY MS. MCKENZIE) So you have  
 06 no conclusive proof that for a 9-volt SEM B  
 07 battery at 8.68 volts that it went into a  
 08 endless cycle, right?

Page 129:10 to 129:19

00129:10           A.       Not that particular system on  
 11 that Horizon. On the Deepwater Nautilus we  
 12 have varied voltages and -- and we did  
 13 testing of varied voltages and at 8.6 it went  
 14 into a recycle. So at 8.68 it may have done  
 15 that as well.

16 Q. (BY MS. MCKENZIE) So you -- you  
 17 have no -- you have no test results that  
 18 confirm at 8.68 volts the Deepwater Horizon  
 19 went into a endless loop cycle, correct?

Page 129:21 to 130:12

00129:21 A. I don't know what was all done,  
 22 conducted at Michoud during the testing. I  
 23 was not there and present at that testing, if  
 24 there was testing performed, so I cannot give  
 25 you an answer if it was performed or not. To  
 00130:01 my knowledge, I tested on the Deepwater  
 02 Nautilus system, and at 8.6, around that  
 03 voltage there you could go into a recycle  
 04 mode.  
 05 Q. (BY MS. MCKENZIE) So what I'm  
 06 asking you -- and I think you may be  
 07 answering a different question. What I'm  
 08 asking --  
 09 A. Yeah.  
 10 Q. -- specifically is that you have  
 11 no proof that at 8.68 volts the system would  
 12 go into a endless cycle; is that correct?

Page 130:14 to 130:16

00130:14 A. I have no proof that the  
 15 Deepwater Horizon system went into recycle at  
 16 8.68 volts. I never tested it.

Page 130:20 to 132:13

00130:20 Q. And for the record, I'm marking  
 21 tab 38 as 5661. It's Bates numbered TRN-INV  
 22 02509564 to 567, and the top of the page  
 23 says, "AMF Sequence Tests for SEM A and B,"  
 24 correct?  
 25 A. Can you confirm your tab number,  
 00131:01 please?  
 02 Q. My tab number is 38.  
 03 A. Okay, 38, yeah.  
 04 Q. And the top of the page says,  
 05 "AMF Sequence Tests for SEM A and B,"  
 06 correct?  
 07 A. Yes.  
 08 Q. Is this a test that you were  
 09 involved in?  
 10 A. Give me a moment to read,  
 11 please.  
 12 Yes, I was involved in these  
 13 testing or some of these testing.  
 14 Q. As part of this test did you



15 ever include a situation where you had a SEM  
16 A battery that had 8.85 volts and a SEM B  
17 battery that had 8.68 volts?  
18 A. We -- we did -- we did a lot of  
19 test -- lot of testing with all the various  
20 voltages. I don't have the notes in front of  
21 me which all was carried out, but there was  
22 notes taking all during our testing to  
23 various voltages. So we may have done that  
24 voltage you're talking about.  
25 Q. So the notes that you are  
00132:01 talking about, where would we find those  
02 notes?  
03 A. These notes were taken during  
04 our testing on the -- on the Deepwater  
05 Nautilus. I don't know where you can get  
06 that notes from. I'm sure they'd be here  
07 somewhere.  
08 Q. What are the title of the notes  
09 for the Deepwater Nautilus?  
10 A. I can't remember what the title  
11 is. It was just we were doing testing of the  
12 AMF sequence testing and -- and that would be  
13 it, you know.

Page 134:02 to 134:15

00134:02 Q. (BY MS. MCKENZIE) So I'm  
03 referring to document Exhibit No. 5662, and  
04 it is an e-mail from you, starting with, "Did  
05 we managed" do you see that?  
06 A. Yes, I do. Up on the screen,  
07 yes.  
08 Q. It says, "Did we managed" -- so  
09 then I'm putting on Page 2 here. This is  
10 still an e-mail from you. And it says, "I  
11 did call Dan last night to warn him this  
12 testing we found out yesterday could mean  
13 that the AMF did not function."  
14 And, that's your e-mail,  
15 correct?

Page 135:03 to 136:23

00135:03 Q. (BY MS. MCKENZIE) Mr. Florence,  
04 do you remember writing that e-mail?  
05 A. Honestly, I don't know.  
06 Q. You don't know what?  
07 A. Don't remember writing that  
08 e-mail, no, I don't.  
09 Q. Do you remember having any  
10 conversations, communications, chats, any  
11 type of communication whatsoever about a  
12 Transocean test which showed that the AMF may

13 have not functioned?

14 A. We were doing -- okay. We had a  
15 talk. I was talking with Dan, and during our  
16 testing we did -- as I say, we did a lot of  
17 testing, and one of the test results that we  
18 found during our testing, that the AMF did  
19 not fire.

20 Q. Now, when you say you were  
21 having a communication with Don, Don who?

22 A. Dan, A. Dan Farr.

23 Q. Oh, Dan Farr?

24 A. That's correct, yes.

25 Q. So you were having a  
00136:01 communication with Dan Farr about the AMF not  
02 functioning; is that correct?

03 A. Yes, that's correct.

04 Q. And what did -- when did you  
05 have that conversation with Dan Farr?

06 A. The dates, I do not have the  
07 dates. It would have been around the same  
08 time we were doing the testing of the AMF of  
09 the Deepwater Nautilus SEM over at West  
10 engineering.

11 Q. So it would have been around  
12 November 2000 --

13 A. So it would have been around --  
14 it would have been around October, November,  
15 yes.

16 Q. So the tests that you're  
17 referring to where the AMF did not function,  
18 that would have been around October, November  
19 2010, correct?

20 A. I believe it would have been,  
21 yes.

22 Q. How many Transocean tests showed  
23 that the AMF may have not functioned?

Page 136:25 to 139:16

00136:25 A. I do not have all that notes in  
00137:01 front of me. There were many permutations of  
02 testing the -- the battery and the AMF  
03 system. So there was a number of ways and  
04 permutations that the AMF would not function.  
05 I do not have them all. I don't have all the  
06 notes there.

07 Q. (BY MS. MCKENZIE) So when you  
08 said in this e-mail that you had to warn Dan  
09 about this test, why did you need to warn  
10 Dan?

11 A. Because I had made -- I -- I had  
12 been talking before about testing that we had  
13 conducted, and I -- and we had a -- the AMF  
14 did function under that -- under that  
15 condition, and then we retested again and it

16 did not function under that condition.  
17 Q. So do you remember -- so you're  
18 referring to a condition. What condition are  
19 you talking about where the AMF did not  
20 function?  
21 A. I'm talking about voltages of  
22 the 9 volts, 9-volt battery pack and the  
23 27-volt battery pack.  
24 Q. So was it --  
25 A. The condition say -- say the  
00138:01 9-volt was 8.6 volts or 6 volts or 5 volts.  
02 Q. So -- so there was a test that  
03 was run by Transocean where the 9-volt  
04 battery was at 8 volts or 6 volts; is that  
05 what you're saying?  
06 A. Yes, it was. We did tests on  
07 the Deepwater Nautilus system to -- to  
08 different voltages and different current  
09 limits on the AMF system.  
10 Q. And so are you saying in the  
11 case where the 9-volt battery was at  
12 8.6 volts, that the AMF did not function?  
13 A. It went into a recycle in one --  
14 one SEM, with that -- that voltage.  
15 Q. But you wrote here in this  
16 e-mail that -- that you needed to warn Dan  
17 that the AMF didn't function; is that  
18 correct?  
19 A. As I said before, I'd made  
20 the -- the -- we'd done testing and I'd found  
21 about the testing before and we had a  
22 instance where it did function and then it --  
23 and then it didn't function. So I was  
24 warning him that I'd given him information  
25 before was not correct and it didn't function  
00139:01 the second time and then we tested again at  
02 different voltages. So I was warning him  
03 that I didn't give him the correct answer.  
04 So I was telling him that yes, it was  
05 functioning and then it didn't function.  
06 Q. So the tests that you ran,  
07 sometimes it failed and sometimes it  
08 succeeded; is that what you're saying?  
09 A. If it's very close -- very close  
10 voltages, it's very -- point of a volt could  
11 make a difference to this system. Like I  
12 say, at -- at 8.61 or 8.62 it may go into  
13 recycle. At 8.66 it may function. At 8.67  
14 you had function. So it all depends on the  
15 point of the volt whether it functions or  
16 not.

Page 140:01 to 141:08

00140:01 Q. In the notes of that failure do

02 you have any information about the title of  
03 the notes that would discuss the failure that  
04 you described in your e-mail?

05 A. No, I don't have. No, I -- I  
06 can't remember the heading of the notes.  
07 They were -- they were taken continuously  
08 when we were doing every test was -- was  
09 recorded with -- with notes on the voltage,  
10 the start-up voltage, voltage during the  
11 testing, and finished voltage. So I don't  
12 have the heading of that notes, no.

13 Q. And one thing I just want to  
14 confirm with you, you testified that the  
15 testing could change, depending on the  
16 battery voltage; is that correct?

17 A. That's -- that is correct, yes.

18 Q. And you testified that you could  
19 get one result for 8.6 -- for a battery with  
20 8.61 volts, but you can get a different  
21 revolt -- result for a battery with  
22 8.62 volts; is that correct?

23 A. I'm talking about the point is  
24 the difference. The point of the volt is so  
25 minimal, it can make a difference. That's

00141:01 what I'm saying.

02 Q. So --

03 A. I'm not saying is 1, 2, 3. I'm  
04 saying a point of a volt it makes a  
05 difference.

06 Q. So if an exact voltage was not  
07 tested by Transocean, then you wouldn't have  
08 an opinion about that voltage, correct?

Page 141:10 to 141:13

00141:10 A. That -- as I said on the notes,  
11 all the voltages were recorded at the start.  
12 So that's in our notes where we can -- we can  
13 establish the voltages I'm talking about.

Page 142:16 to 143:07

00142:16 Q. Okay. And in reference to this  
17 particular litigation, your role was to  
18 perform an investigation as to the BOP; is  
19 that correct?

20 A. BOP well control equipment,  
21 that's correct.

22 Q. Okay. I can assume, then, that  
23 you did no investigation in reference to any  
24 cementing that may have gone on in the well  
25 prior to the incident; is that air fair

00143:01 statement?

02 A. That's a very fair statement.

03 Q. And you did no work in reference  
04 to well control in reference to drilling  
05 applications on the well before the incident,  
06 that's true as well?  
07 A. That is correct, yes.

Page 143:18 to 144:07

00143:18 Q. Okay. If I understand your  
19 earlier testimony -- and, believe me, it's  
20 late here, so I'm not going to go over things  
21 that you already discussed as much as  
22 possible. But I understand from your earlier  
23 testimony that you never did any work on the  
24 Deepwater Horizon BOP prior to the incident  
25 of April 20th, 2010; is that true?  
00144:01 A. That is correct, yes.  
02 Q. Okay. But sitting here today  
03 and in light of your investigation, you did  
04 know or you do know today the configuration  
05 of the BOP as it sat on the ocean floor on  
06 April 20th, 2010, correct?  
07 A. Yes, I do.

Page 147:12 to 149:18

00147:12 Q. Now, what control system did the  
13 Deepwater Nautilus have on it? Was it a  
14 Mark 2 or a Mark 3 system?  
15 A. It was a very similar system to  
16 the Deepwater Nautilus, which I believe is a  
17 Mark 2.  
18 Q. All right. Now, you have  
19 testified that you had some role in reference  
20 to the drafting of the Transocean report  
21 specifically in reference to the BOP  
22 activation; is that correct?  
23 A. Yes.  
24 Q. Okay.  
25 A. That -- that would be correct,  
00148:01 yes.  
02 Q. And your involvement ended in  
03 March of 2011; is that a fair statement of  
04 what you've testified to?  
05 A. Yes, it is.  
06 Q. You did not participate in any  
07 way in the DNV investigation at Michoud in  
08 reference to the forensic attempts that they  
09 made to determine whether or not the BOP  
10 functioned?  
11 A. No, I did not.  
12 Q. Are you aware that after March  
13 of 2011 the DNV then participated in  
14 additional testing of the BOP functioning?

15           A.       I was aware that there were  
 16 testing being performed, but I do not -- I  
 17 was not aware of what testings were being  
 18 performed.  
 19           Q.       So in reference to your drafting  
 20 and assisting in reference to the -- sorry,  
 21 let me start over, because that was getting  
 22 very convoluted.  
 23                   In reference to your  
 24 participation in the drafting of the  
 25 Transocean report on the BOP, you did not  
 00149:01 utilize any information that may have been  
 02 created by DNV after March of 2011; is that  
 03 true?  
 04           A.       That's correct.  
 05           Q.       And you testified earlier that  
 06 you were made aware but you probably were not  
 07 aware at the time of your participation that  
 08 the DNV determined that solenoid 103Y was  
 09 miswired, correct?  
 10           A.       That's correct. That's correct.  
 11           Q.       Were you aware that solenoid 103  
 12 was tested additionally after March of 2011  
 13 by the DNV?  
 14           A.       No, I was not.  
 15           Q.       Were you aware that the solenoid  
 16 was tested using a PETU and that whenever  
 17 both coils were activated it failed to  
 18 function?

Page 149:20 to 150:01

00149:20           A.       No, I was not.  
 21           Q.       (BY MR. VON STERNBERG) In any  
 22 event, that information would not have gone  
 23 into your analysis when you assisted in the  
 24 drafting of the Transocean report as of March  
 25 of 2011; is that correct?  
 00150:01           A.       That -- that is correct, yes.

Page 152:08 to 152:10

00152:08           Q.       Earlier counsel for BP provided  
 09 us with an Exhibit No. 5659, and if you want  
 10 to look at the BP notebook, it's tab 27.

Page 152:13 to 155:05

00152:13           A.       Yeah.  
 14           Q.       (BY MR. VON STERNBERG) And if  
 15 you'll look at the document that ends in  
 16 Bates No. 5025; do you see that one?  
 17           A.       Yes.

18 Q. Who is Ally Murray?  
19 A. Ally Murray is -- is -- is a  
20 company that's over -- that -- that -- a  
21 company that is an expert on Cameron control  
22 systems. He is the company, Ally Murray.  
23 Q. So Ally Murray is not only an  
24 individual, he also has a company that  
25 specializes in control systems?  
00153:01 A. That's correct, yes.  
02 Q. And if you'll look at the e-mail  
03 in the middle of the page sent to you --  
04 or -- yeah, sent to you on Tuesday,  
05 October 5th of 2010; do you see that?  
06 A. Yes, I do.  
07 Q. He says, "Just to help you  
08 clarify just what you can achieve with pod  
09 onshore."  
10 Do you see that?  
11 A. Yes, I do.  
12 Q. He goes on to say -- skip a few  
13 words, I would have thought, I assume is what  
14 he's trying to say, "the most accurate test  
15 would be using the isagraf application via  
16 control panels."  
17 Do you see that?  
18 A. Yes.  
19 Q. What is he talking about in  
20 reference to an isagraf application via  
21 control panels?  
22 A. I'm -- I'm not an expert in the  
23 software electronics side of this. But I  
24 believe the isagraf is the format that the  
25 software is put into.  
00154:01 Q. Okay. And you --  
02 A. But I'm not an expert on that.  
03 Q. Okay. But he goes on to say,  
04 "If you are just functioning a pod onshore  
05 using the PETU, it's not going to tell you  
06 anything really."  
07 Do you see that?  
08 A. Yes, I do.  
09 Q. Do you understand what he's  
10 saying there?  
11 A. He's saying that if it's -- yes,  
12 I do, I understand. He's saying that the  
13 control panels on board on the PETU is a test  
14 unit.  
15 Q. What does he mean by "it's not  
16 going to tell you anything really"?  
17 A. Well, I'm not too sure what he  
18 means exactly, but I believe it's -- it's --  
19 using the PETU, which is individual functions  
20 where the control system fires it as a  
21 complete control system.  
22 Q. So are we to assume that Ally

23 Murray believes that if you use the PETU  
24 onshore, that you're not going to get valid  
25 test results if you're testing the solenoid  
00155:01 pods?  
02 A. On whatever -- that's his belief  
03 on the PETU, using in what specifically you  
04 want to test it with. As a complete system,  
05 that's correct.

Page 161:07 to 162:07

00161:07 Q. I'm going to change subjects now  
08 to the subject of Transocean's rationale for  
09 determining how the AMF functioned. And I  
10 wondered if you could explain in your own  
11 words the process by which the 9-volt battery  
12 on the blue pod of the Deepwater Horizon's  
13 BOP caused a re-boot of the system and  
14 ultimately drained the 27-volt battery. Do  
15 you have an understanding of what the finding  
16 was that your team worked on with respect to  
17 that 9-volt battery on the blue pod and the  
18 possible re-boot?  
19 A. I have an understanding of it,  
20 yes. The AMF system requires a certain  
21 voltage for it to con- -- to function through  
22 to completion and turn itself off. Under  
23 certain voltages less than 9 volts it can go  
24 into a recycle, re-boot where it continually  
25 switches itself on, and also it connects the  
00162:01 27-volt battery when it -- when it's  
02 initiated it connects the 27-volt battery to  
03 start monitoring the pressure transducers.  
04 And if it goes into a recycle, it does not  
05 turn that 27-volt battery off, so it also  
06 drains the 27-volt battery and it also drains  
07 the 9-volt battery.

Page 162:19 to 163:04

00162:19 Q. Okay. And I'd like you to put  
20 up the last document we provided. It's  
21 TRN-INV 01030970, and I'm marking that with  
22 the next exhibit, which is 5666.  
23 A. Okay.  
24 Q. And I just want to confirm, is  
25 this document something that you worked on, a  
00163:01 ticket that was assigned to you; is that  
02 correct?  
03 A. It is a ticket that was assigned  
04 to me, yes.

Page 164:13 to 166:22



00164:13 Q. Good evening, good morning,  
14 Mr. Florence. My name is David Jones, and I  
15 represent Cameron. I have just a few  
16 questions for you. Staying with the exhibit  
17 we just marked, Exhibit 5666, do you have  
18 that in front of you?

19 A. Yes.

20 Q. This is a sheet in connection  
21 with the Transocean investigation, and this  
22 particular sheet, the investigation at issue  
23 is did the AMF, slash, blind shear ram  
24 performance prevent sealing of the well,  
25 correct?

00165:01 A. Yes, sir.

02 Q. And as I understand, the team  
03 lead for this was Mr. Farr; is that correct?

04 A. That's correct, yes.

05 Q. And the specific member of the  
06 investigation team to whom the issue was  
07 assigned was you, correct?

08 A. That's correct, yes.

09 Q. And this particular  
10 investigation was completed as of March 10,  
11 2011, if you look about three quarters of the  
12 way down the page; is that correct?

13 A. That's correct, yes.

14 Q. And if you look up above, it  
15 says that the percent complete was 100 and  
16 the investigation complete, it says, yes,  
17 correct?

18 A. That's correct, yes.

19 Q. In the investigation actions  
20 going back toward the top of the page, about  
21 a quarter of the way down investigation  
22 action No. 2 was, was the design criteria  
23 exceeded; do you see that?

24 A. Yes.

25 Q. And you have a summary of the  
00166:01 investigation that says, "The Transocean  
02 investigation team concluded that the AMF did  
03 operate as designed and close the Blind Shear  
04 Rams, however the well was not sealed because  
05 the shear rams were closed when there was  
06 high flow that damaged the rubber sealing  
07 components of the rams."

08 Do you see that?

09 A. Yes.

10 Q. And so was that your finding  
11 when this particular investigation was  
12 completed as of March 2011?

13 A. That was the conclusion drawn at  
14 that time, yes.

15 Q. And -- and the finding No. 2  
16 that's reflected as of that time was that the  
17 design criteria of the BSR was exceeded due

18 to well flow conditions that damaged the  
19 sealing components. That was your finding as  
20 of February 2011?  
21 A. That's correct. That's correct,  
22 yes.

Page 168:22 to 169:02

00168:22 Q. Sitting here now, are you aware  
23 of any documentation other than the Subsea  
24 Workbook and Mr. McWhorter's e-mail that  
25 support the dates that the batteries were  
00169:01 changed, as reflected in Appendix N?  
02 A. No.

Page 169:19 to 171:02

00169:19 Q. You were asked various questions  
20 about the testing, the deadman testing that  
21 y'all did, and I believe you said that --  
22 that one test was done with the bat- -- with  
23 the batteries -- well, let me ask it this:  
24 When you were using various voltages in your  
25 deadman testing, was it done with batteries  
00170:01 or was it done with a power source?  
02 A. It was done with a power source.  
03 Q. I believe you said there were  
04 instances when you were doing your testing  
05 that the AMF went into a repeating cycle,  
06 correct?  
07 A. That's correct, yes.  
08 Q. During your testing when you saw  
09 it go into a repeating cycle, how long did  
10 you let that repeating cycle run?  
11 A. At the moment, without looking  
12 back, but it was -- there is -- there is a --  
13 there is a time-out on the card, on the  
14 particular AMF card itself and it was over  
15 that time out and it did not shut itself off.  
16 It continued to recycle. It switched itself  
17 on, then switched itself back on again and  
18 continued recycling.  
19 Q. And would the --  
20 A. So there is a time -- yeah, I  
21 don't know what exact time is. I think it's  
22 four minutes or something like that. So  
23 we -- we let it run for longer than that.  
24 Q. All right. Would that  
25 information be reflected in the notes that  
00171:01 you mentioned earlier?  
02 A. Yes, it would.

Page 176:24 to 177:22

00176:24 Q. As I understand it, you ran  
25 tests on those batteries using the Deepwater  
00177:01 Nautilus rig?  
02 A. That's correct.  
03 Q. Why did you choose the Deepwater  
04 Nautilus?  
05 A. Because it's a very similar  
06 system to the Deepwater Horizon.  
07 Q. How did you verify that the  
08 systems were similar?  
09 A. We verified it through  
10 Transocean engineering and feedback from  
11 Cameron.  
12 Q. Anything else that the internal  
13 team did to verify that the two systems were  
14 similar?  
15 A. Chris did a verification on the  
16 software.  
17 Q. And when you say "Chris," who  
18 are you speaking of?  
19 A. Mr. Tolleson.  
20 Q. You said he did a verification  
21 of the software?  
22 A. On the Nautilus software, yes.

Page 178:04 to 180:04

00178:04 Q. So the three things, as you  
05 understand it, that were done to verify the  
06 two systems were similar between the Horizon  
07 and the Nautilus was Chris' verification, a  
08 verification with Transocean engineering, and  
09 a confirmation through Cameron that the  
10 systems were similar?  
11 A. That's correct.  
12 Q. What -- what was the purpose of  
13 that testing on the Deepwater Nautilus?  
14 A. To understand in the -- the AMF  
15 system.  
16 Q. Was it specifically focused on  
17 the battery -- the 27-volt battery of the  
18 blue pod?  
19 A. It was specifically to -- to  
20 understand the battery yes, on the 27.  
21 Q. What did you learn as a result  
22 of that testing?  
23 A. We learned that the 7-volt, the  
24 system would go into a recycle and would  
25 cause the 27 battery to drain.  
00179:01 Q. And when you say "a recycle,"  
02 it's when the AMF software would not shut  
03 itself off; do I understand that correctly?  
04 A. That is correct, it would not  
05 shut itself off.

06 Q. And what your testimony is is  
07 the testing on the Deepwater Nautilus  
08 confirmed that a recycling phenomenon does  
09 occur?

10 A. Yes, it does.

11 Q. When you were shown the document  
12 I believe has been marked Exhibit 5662,  
13 that's your e-mail to Dan Farr and your  
14 warning that the AMF system would not  
15 function, what did you mean by that?

16 A. What I mean by that, that the  
17 AMF did function. It did not go into a  
18 recycle and drain the -- the 27. So it did  
19 go through its cycle, fired its own lights,  
20 and then turned itself off.

21 Q. Your comment didn't intend to  
22 mean that the AMF did not function on  
23 April 20th, 2010?

24 A. That's correct.

25 Q. And as I understand it, what you  
00180:01 were advising Mr. Farr of was there were  
02 certain voltages where the recycling did not  
03 occur?

04 A. That's correct.

Page 180:10 to 181:04

00180:10 Q. But was the conclusion of the  
11 internal team based on the testing of the  
12 Deepwater Nautilus -- let me ask it this way:  
13 What was the ultimate conclusion as it  
14 relates to the blue pod 27 -- 27-volt battery  
15 based on the testing that you performed on  
16 the Deepwater Nautilus?

17 A. On the testing we performed to  
18 establish that the -- the SEM A would be  
19 turned off and SEM B would continue to  
20 recycle and drain the 27-volt.

21 Q. And when you said that the test  
22 was sensitive to voltages, what exactly did  
23 you mean?

24 A. There are certain voltages where  
25 it will continue to function and turn itself  
00181:01 off completely, and then there is -- there is  
02 voltages where it will go into a recycle and  
03 will not switch itself off and it will drain  
04 the -- the 9-volt and the 27-volt.

Page 181:22 to 183:17

00181:22 Q. Take a moment, if you would,  
23 read through this. For the record, I'm going  
24 to go ahead and mark this as Exhibit 5667,  
25 Bates Stamp No. TRN-MDL-02800177. I'm really

00182:01 just going to ask you questions about the  
02 first page. Let me know when you've had a  
03 chance to review that.  
04 MR. BAAY: Billy, is it the e-mail from  
05 Neil Watson?  
06 MR. DILLS: Yes, it is.  
07 A. Give me a moment to read it,  
08 please.  
09 Q. (BY MR. DILLS) Yes.  
10 A. I've read it here.  
11 Q. Okay. I'm going to read that  
12 second paragraph. It says, "The answer to  
13 your other question regarding drain on the  
14 batteries when the DeadMan System is armed is  
15 this:" Quote, arming the DeadMan System  
16 applies 9-volt battery power to the DeadMan  
17 Controller card and puts it in a mode of  
18 operation in which the conditions trigger an  
19 Emergency Shutdown are continuously  
20 monitored. This drains the 9-volt battery at  
21 a rate of 1.75 mA continuously. Although  
22 this is a very small current, over a period  
23 of one year (24 hours a day) this reduces the  
24 capacity of the 9-volt battery by about  
25 15 Ah, which is more than half the total  
00183:01 capacity of the battery. And, by the way,  
02 the 27 actuations we discussed earlier were  
03 calculated after one year of operation in the  
04 Monitoring Mode.  
05 Did I read that correctly?  
06 A. Yes, you did.  
07 Q. How long at this rate of 1.7 --  
08 can you tell me -- let me start that question  
09 over again.  
10 Can you tell me at this rate of  
11 1.75 mA how long would it take for the 9-volt  
12 batteries to reach a stage, which I believe  
13 you said is 8 point -- was it 8.68, which  
14 would cause the system to run a continuous  
15 cycle?  
16 A. I couldn't answer it without  
17 sitting down, doing the calculations.

Page 184:02 to 184:12

00184:02 Q. (BY MR. DILLS) Okay. Well, if  
03 this -- if this statement says after a year  
04 the 9-volt battery would be reduced by  
05 approximately half, can we agree that it  
06 would take -- do you think it would take six  
07 months or less?  
08 A. And, again, this is a statement  
09 from -- from -- from someone else's opinion.  
10 It's not an engineer back from -- from  
11 Cameron. So this is Neil Watson's

12 interpretation of the system.

Page 184:17 to 185:04

00184:17 Q. Well, I'm asking you, sir, as  
18 the person who did the investigation or a  
19 portion of the investigation into the AMF  
20 system, do you agree with this statement that  
21 there is a continuous drain on the 9-volt  
22 battery system when it is in the armed mode?  
23 A. When it's in the armed mode the  
24 9-volt battery is energized and if it's  
25 energized, then it is using power, yes.  
00185:01 Q. Okay. And do you agree that  
02 after a one-year period that the 9-volt  
03 battery would be reduced by approximately  
04 half?

Page 185:06 to 185:22

00185:06 A. As I said before, I'd have to  
07 be -- do the engineer -- the calculation. I  
08 couldn't do the calculation. Again, this is  
09 someone else's opinion. I'd have to make  
10 sure that I had the correct information in  
11 front of me to do the engineering on that.  
12 Q. (BY MR. DILLS) Okay. This  
13 e-mail was sent to you; was it not?  
14 A. It certainly was, yes.  
15 Q. Did you look at this e-mail when  
16 you received it?  
17 A. Yes, I did.  
18 Q. Did you do any testing to verify  
19 this statement?  
20 A. We had other testing. I don't  
21 know if we did testing -- I don't believe we  
22 did testing to verify this.

Page 186:06 to 186:16

00186:06 Q. Okay. And so I think it was  
07 Transocean's conclusion that the voltage on  
08 the 9-volt battery on the blue pod was at  
09 8.6 volts or less, thus causing it to have a  
10 recycle scenario; is that correct?  
11 A. That is correct, yes.  
12 Q. So is it safe to assume -- or  
13 can I assume that had the 9-volt batteries in  
14 the yellow pod been at or below 8.6 volts,  
15 they, too, would have entered a recirculating  
16 state?

Page 186:18 to 186:24

00186:18 A. That's correct.  
19 Q. (BY MR. DILLS) Okay. But you  
20 cannot tell me based on this information how  
21 long it would take with a continuous drain of  
22 1.75 mA to reach an 8.6-volt state; you can't  
23 tell me that?  
24 A. No, I can't tell you that, no.

Page 187:04 to 188:06

00187:04 You're aware that the Deepwater  
05 Horizon BOP had an EDS-1 and an EDS-2  
06 function; is that correct?  
07 A. Again, this is a long time ago  
08 when we looked into the EDS functions. I  
09 would have to look back at my notes to  
10 confirm what the EDS functions they did have.  
11 Q. Okay. Have you seen BOP systems  
12 where they are set up with an EDS-1 and an  
13 EDS-2 system?  
14 A. Yes, I have.  
15 Q. Okay. I'm going to tell you  
16 that any understanding on the Deepwater  
17 Horizon is the EDS-1 would function the blind  
18 shear rams and the EDS-2 would function the  
19 casing shear rams first and then the blind  
20 shear rams. Does that refresh your memory?  
21 A. Again, I would have to look back  
22 at my notes to -- to confirm.  
23 Q. All right. Do you know if the  
24 AMF system can be programmed with multiple --  
25 I guess, have multiple setups, such as an  
00188:01 EDS-1 or an EDS-2? Can the AMF have a  
02 similar setup?  
03 A. The AMF system can be programmed  
04 to function what -- what you want to  
05 function, that's correct. Its limitation can  
06 only function six solenoids at one time.

Page 189:15 to 189:18

00189:15 Q. In your experience, who  
16 determines what drill pipe to use in a  
17 drilling operation? Is it the operator or  
18 the rig owner?

Page 189:20 to 189:23

00189:20 A. It's certainly the operator.  
21 The -- the oil -- the oil company.  
22 Q. (BY MR. DILLS) And in this case  
23 the operator was BP; is that correct?

Page 189:25 to 190:06

00189:25 A. That's correct, yes.  
00190:01 Q. (BY MR. DILLS) And we  
02 established earlier during my previous line  
03 of questioning that -- and you confirmed that  
04 BP at some point used 6-and-5/8-inch drill  
05 pipe to drill a portion of this well,  
06 correct?

Page 190:08 to 190:09

00190:08 A. There were 6-and-5/8-drill pipe  
09 used, I believe.



1 WITNESS CORRECTIONS AND SIGNATURE  
2 ROBERT EWEN FLORENCE OCTOBER 5, 2011  
3 Please indicate changes on this sheet of  
4 paper, giving the change, page number, line  
5 number and reason for the change. Please  
6 sign each page of changes.

PAGE/LINE CORRECTION REASON FOR CHANGE

11 - 5 SERVICE ENGINEER Misspelling



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