

U.S. CHEMICAL SAFETY AND HAZARD
INVESTIGATION BOARD

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PUBLIC HEARING

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REGULATORY APPROACHES TO OFFSHORE OIL AND
GAS SAFETY

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WEDNESDAY

DECEMBER 15, 2010

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The U.S. Chemical Safety Board met
in the Embassy Suites Ballroom, 1250 22nd
Street NW, Washington, D.C., at 9:00 a.m,
Rafael Moure-Eraso, Chairman, presiding.

PRESENT

RAFAEL MOURE-ERASO, Ph.D., Chairman

JOHN S. BRESLAND, Board Member

MARK GRIFFON, Board Member

WILLIAM B. WARK, Board Member

WILLIAM E. WRIGHT, Board Member

ALSO PRESENT

OLE PREBEN BERGET, Vice President Operations

USA and Mexico E&P, Statoil

JOHN CLEGG, retired CEO, Australian National
Offshore Petroleum Safety Authority

ROY ERLING FURRE, Representative, Norwegian
Union of Energy Workers, SAFE

FRITZ GUENTHER, Chief Steward, USW Local 4959,
Alaska

DON HOLSTROM, Lead Investigator for Deepwater
Horizon Investigation, Director, CSB
Western Regional

ANDREW HOPKINS, CSB Consultant, Australia
National University

BILL HOYLE, Senior Investigator, CSB

AMANDA JOHNSON, ESQ., Investigator, CSB

JOE LEIMKUHNER, Offshore Well Delivery
Manager, Shell Oil

CHERYL MACKENZIE, Investigator, CSB

ERIK MILITO, Director of Upstream and Industry
Operations, American Petroleum Institute

MAGNE OGNEDAL, Director-General, Norwegian
Petroleum Safety Authority
(via telephone)

DR. ROBIN PITBLADO, Director of HSE Risk
Management Services, DNV

DR. GERALD POJE, former CSB Board Member

ARTHUR SCHWARTZ, CAE, Deputy Executive
Director and General Counsel, National
Society of Professional Engineers

WILLIAM SEMBER, Vice President, ABS Consulting

ALAN SPACKMAN, Vice President, Offshore
Technical and Regulatory Affairs,
International Association of Drilling
Contractors

DAN TILLEMA, PE, Investigator, CSB

GLENN TRIMMER, Secretary-Treasurer, USW Local
4959, Alaska

IAN WHEWELL, retired Director of Offshore
Division, United Kingdom Health and
Safety Executive

MIKE WRIGHT, Health, Safety and Environment
Director, United Steelworkers Union

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1 P R O C E E D I N G S

2 MR. MOURE-ERASO: Okay. This is the
3 official good morning. And welcome to the
4 U.S. Chemical and Hazard Investigation Board
5 for the Public Hearing entitled, Regulatory
6 Approaches to Offshore Oil and Gas Safety.

7 My name is Rafael Moure-Eraso. And
8 I am the Chairperson and Chief Executive
9 Officer of the CSB. I would like to introduce
10 my fellow board members with me at the table
11 this morning. First, John Bresland. He's a
12 long time board member and a former
13 Chairperson of the board. Mark Griffon was
14 appointed by the president early this year at
15 the same time that I was. William Wark, that
16 corner over there and William Wright that are
17 now serving their fifth years as board
18 members.

19 Before we proceed farther I'd like
20 to point out some safety information. Please
21 take a moment to note the locations of the
22 exits from this meeting room. There are four

1 over here. In case of any emergency please
2 follow the exit signs. I also ask that you
3 mute your cell phones so that these
4 proceedings are not disturbed. Thank you very
5 much.

6 Let me begin by saying for those
7 perhaps not familiar with our agency that this
8 is the Chemical Safety Board. The Chemical
9 Safety Board is an independent, non-regulatory
10 federal agency charged by Congress with
11 investigating major chemical accidents
12 unreported to them to the public. Our mission
13 is to conduct full root cause investigations
14 and then to issue and make public reports and
15 safety recommendations, all aimed at
16 preventing similar events from occurring in
17 the future.

18 CSB investigations examine all
19 aspects of chemical accidents. These include
20 the regulatory systems in place at the time of
21 an incident, physical causes related to
22 equipment design, industry standards and

1 safety management systems. That is certainly
2 what we are engaged in as our investigation as
3 the Deepwater Horizon tragedy unfolds.

4 At this time please allow me to go
5 over today's agenda. We will first hear from
6 the CSB lead investigators, Mr. Don Holstrom.
7 Mr. Holstrom will give us a brief overview of
8 the status of the CSB investigation.

9 Next, Dr. Andrew Hopkins, an
10 internationally recognized expert on
11 industrial safety and accident analysis, will
12 provide an overview of international
13 regulatory approaches to offshore drilling.

14 Following Dr. Hopkins we will here
15 from our first panel, experts on how offshore
16 drilling is managed and regulated overseas.
17 Following their presentations our board
18 members and investigators will ask questions
19 of the panelists. Additionally, if members of
20 the audience have questions, please feel free
21 to e-mail them on your BlackBerrys or other
22 devices to question@CSB.gov. That is

1 question, singular as in one question@CSB.gov.

2 We will also collect any written
3 questions you might have. If you are watching
4 our webcast you can submit questions for
5 consideration through the webcast interface.
6 We will have questions and answers period
7 after each of our three panels. As you can
8 see from the agenda, there will also be
9 multiple opportunities for questions and
10 comments.

11 Following the Regulator's Panel and
12 before the lunch break Mr. Holstrom and I will
13 be available to talk to the media. Also, you
14 can interview our panelists if they wish to do
15 so. The media, however, will take place here
16 in this room.

17 After lunch we will feature two
18 panels. One will consist of representatives
19 from industry and the third and final panel of
20 the day will consist of national and
21 international union leaders.

22 Today the CSB is here in an

1 investigative capacity. Our goal is to gather
2 as much information as possible on the safety
3 practice, management and regulation of
4 offshore oil and gas operations, not only in
5 the United States but in other countries, as
6 well. These countries have mature regulatory
7 regimes covering offshore drilling. And we
8 would like to listen to their experience and
9 learn from them.

10 Offshore rig accidents have been
11 devastated -- has had devastating consequences
12 around the world. The catastrophic Deepwater
13 Horizon accident took the lives of 11 workers
14 and created environmental havoc, hurt the
15 economies of the area and disrupted the
16 pursuit of oil in our own backyard.

17 In 1980 the Alexander Kielland, a
18 Norwegian offshore oil rig, capsized when a
19 leg support brace failed. 123 workers were
20 killed. In 1998 a United Kingdom offshore
21 production platform named Piper Alpha produced
22 an explosion and ensuing fire in which 167

1 workers were killed. These are terrible
2 tragedies. I believe that with these
3 tragedies come an obligation by all of us to
4 critically examine offshore drilling
5 practices, make them safer and more reliable
6 and create safer workplaces.

7 The CSB's mission is to critically
8 examine the Deepwater Horizon accident in
9 order to issue meaningful recommendations
10 aimed at preventing future offshore accidents
11 in the U.S. waters.

12 Offshore drilling represents a
13 substantial fraction of domestic oil and gas
14 production and is of tremendous economic and
15 strategic importance to the United States.
16 Clearly, it is imperative we examine ways to
17 ensure the utmost safety of operations in
18 offshore drilling, offshore operations that
19 are managed in Europe and Australia or not.

20 And so what can we learn from them?
21 What are the various views on how offshore
22 drilling should be regulated? That is our

1 purpose today. And we are grateful to the
2 participants who are joining us today,
3 especially those who have traveled to get here
4 at a very busy time of the year.

5 We will be hearing from
6 international experts on the safety practice
7 and policies, uses in the United Kingdom,
8 Norway and Australia. It is important to
9 remember that safety and prevention involves
10 more than regulation. It requires the
11 involvement and cooperation of industry, as
12 well as input and perspectives from unions and
13 workers.

14 The CSB comes to this investigation
15 with a special perspective. First, while
16 several agencies are investigating the
17 accident and we respect their work, the CSB is
18 the only independent federal agency looking
19 into the accident.

20 As Congressional committee leaders
21 note, the CSB conducted an extensive,
22 comprehensive investigation of the March, 2005

1 explosion at the BP Texas City Refinery. This
2 accident killed 15 workers and injured 180
3 others. It caused the greatest loss of life
4 of any U.S. workplace disaster since 1990.
5 The CSB's extensive final report determined
6 that the Texas City disaster was caused by
7 organizational and safety deficiencies at all
8 levels of the BP organization. This
9 investigation is summarized in an hour-long
10 video named Anatomy of a Disaster that was
11 produced by the CSB.

12 I would like to ask the other board
13 members if they have any opening statements
14 that they would like to share at this time.
15 Thank you.

16 Mr. Bresland?

17 MR. BRESLAND: Thank you, Dr. Moure.

18 Just a brief statement. I just
19 would like to add my thanks to the visitors
20 who are here today from all parts of the
21 world. We really appreciate your coming on
22 this somewhat chilly day here in Washington,

1 D.C., for those of you who have been outside.
2 I certainly look forward to hearing from you,
3 to hearing your expertise in this area.

4 MR. MOURE-ERASO: Mr. Griffon?

5 MR. GRIFFON: Yes. I also would
6 thank everyone for showing up today and
7 particularly, the panelists for their
8 participation today. I look forward to
9 gaining a perspective on safety on offshore
10 drilling and production operations and I'm
11 particularly interested in what the panelists
12 feel has been effective and what hasn't worked
13 over the years and in the various areas where
14 they regulate. So that will be very
15 interesting to discuss today and look forward
16 to your input. Thank you.

17 MR. MOURE-ERASO: Thank you, Mark.
18 Mr. Wark?

19 MR. WARK: Yes. I, too would like
20 to thank everyone for coming today. I also
21 would -- and I do look forward to hearing from
22 the panel. I for one don't have a great deal

1 of background in the area we're discussing
2 right now and this will be very helpful. My
3 colleague, Bill Wright, and I flew out to
4 Thunder Horse back a couple Mays ago and it
5 was a real eye opener for me in that regard.

6 And I also would like to thank the
7 staff for all the hard work you folks have
8 done to pull this together. Thanks.

9 MR. MOURE-ERASO: Mr. Wright?

10 MR. WRIGHT: Thank you, Mr.
11 Chairman.

12 I would just like to echo the
13 sentiments expressed by my peers and thank the
14 panelists and the staff for putting this on.
15 And look forward to the presentations. Thank
16 you.

17 MR. MOURE-ERASO: Thank you.

18 Please allow me to introduce Mr. Don
19 Holstrom. Mr. Holstrom joined the CSB in 1999
20 and currently directs a regional office in
21 Denver, Colorado. Mr. Holstrom has 30 years
22 of experience in the petroleum industry and

1 accident investigation. He has led a number
2 of major investigations for the CSB, including
3 the 2005 BP Texas City explosion
4 investigation. The 2007 Xcel Energy fire and
5 the 2010 Kleen Energy explosion. He studied
6 biology at Stanford and holds a law degree
7 from the University of Colorado.

8 Mr. Holstrom.

9 MR. HOLSTROM: Thank you, Chairman
10 Rafael Moure-Eraso.

11 The Deepwater Horizon investigation
12 team also welcomes the noted speakers and
13 guests at the CSB's public meeting regulatory
14 approaches to offshore oil and gas safety.

15 We also -- I also would like to
16 thank the many staff members who have worked
17 really hard to not only put this hearing
18 together, but also have worked very hard in
19 this investigation for the last number of
20 months. Greatly appreciate their dedication.

21 This hearing is an opportunity for
22 the CSB and the public to understand many of

1 the important regulatory issues and proposals
2 that are being discussed to help prevent
3 future catastrophes like the Deepwater
4 incident. Today we are ensuring that a
5 diversity of voices on this important topic
6 are being heard, regulators from other
7 jurisdictions, industry and trade associations
8 and unions representing workers in the oil
9 industry. Some of these prospective will be
10 aired publicly for the first time in the wake
11 of the Deepwater Horizon accident.

12 While this investigation and
13 accident is the first offshore explosion and
14 fire investigation for the CSB, our agency is
15 very familiar with major accidents in the oil
16 industry, including those in refining,
17 exploration and production and fuel storage.

18 Since 1999 the Chemical Safety Board
19 has investigated 30 major accidents in the oil
20 sector. Since 2007 after the CSB issued its
21 BP Texas City Refinery investigation report
22 the agency gathered data on 140 significant

1 oil industry accidents, nearly 50 of which
2 occurred in the oil refining sector.

3 The accident at the BP Texas City
4 Refinery in 2005 and the important lessons
5 from that terrible tragedy were an historic
6 opportunity for industry and government to
7 implement effective changes to prevent
8 industry catastrophes from reoccurring.

9 At the Texas City Refinery a
10 distillation tower overfilled and flammable
11 liquid was released from the disposal system
12 that led to a massive vapor cloud and an
13 explosion that killed 15 workers that were
14 near or in occupied trailers that were sided
15 close to the hazardous process areas. 180
16 workers were injured in the accident.

17 And the CSB Texas City Investigation
18 Report identified a number of causes and
19 recommendations that were directed at the oil
20 industry as a whole, not just BP. Those
21 industry recommendations included the
22 importance of specifically focusing on major

1 accident prevent or process safety by
2 improving management systems and
3 organizational performance rather than solely
4 focusing on personal safety measures designed
5 to prevent slips, trips and falls. Major
6 accident prevention requires improvement of
7 safety management systems such as design and
8 engineering, mechanical integrity and
9 effective hazard evaluation processes that are
10 not related to worker behavior.

11 We found the industry focus on
12 personal injury rates, if the primary if not
13 the sole measure of measuring safety
14 performance gave a false picture of the health
15 and safety systems necessary to prevent a
16 catastrophic accident.

17 The CSB recommended that the
18 American Petroleum Institute and the United
19 Steelworkers publish safety performance
20 indicators, both leading and lagging
21 indicators to prevent major accidents that go
22 beyond measuring recordable injury rates. The

1 CSB report emphasized that these process
2 safety metrics must drive performance and be
3 included in company goals, performance
4 contracts and reward systems such as bonuses.
5 We found that that was not the case in Texas
6 City and safety performance was severely
7 impaired.

8 As a result, the CSB report
9 emphasized that previous accidents should not
10 just be studied as a matter of interest, but
11 that key lessons from other divisions of the
12 same company, other industrial sectors and
13 other jurisdictions, including other countries
14 must be implemented. Preventable catastrophic
15 accidents need not be repeated in the same
16 company, the same industry or in another
17 country where those companies are operating.

18 The CSB report also recommended that
19 OSHA implement an ongoing major accident
20 prevention program with a sufficient cadre of
21 competent, technically-qualified personnel to
22 conduct comprehensive inspections to prevent

1 catastrophic accidents. A competent regulator
2 needs to have expertise comparable to those in
3 the regulated community, especially in a
4 highly technical industry. Again, these
5 recommendation were directed at industry and
6 government, not just BP.

7 Similar findings were determined by
8 a panel of experts formed by BP as a result of
9 a recommendation from the CSB to examine the
10 safety culture of all of BP's North American
11 refineries. The panel headed by former
12 Secretary of State James Baker, III found a
13 number of safety cultural deficiencies at all
14 of BP's U.S. refineries. When the findings
15 were announced Secretary Baker noted that he
16 believed that the lessons from the panel's
17 report were applicable to all the oil
18 industry. Again, not just BP.

19 Despite significant progress not all
20 the lessons of Texas City and CSB
21 investigations have been effectively
22 implemented by the oil industry. Rafael

1 Moure-Eraso and John Bresland, the current and
2 past chairmen of CSB, have noted a serious
3 problem with the frequency of oil sector
4 accidents. Over half of the current open
5 investigations at the Chemical Safety Board
6 are in the oil industry, which however,
7 represents only a small portion of the
8 industrial sites that are included within the
9 CSB jurisdiction.

10 OSHA, as a result of the Texas City
11 accident and CSB recommendations implemented
12 a national emphasis program in the oil
13 refining sector and found the results deeply
14 troubling with serious problems in the
15 implementation of process safety. OSHA has
16 noted that the status quo is not working.

17 In the Deepwater Horizon
18 investigation we are alert to examining the
19 key lessons and recommendation from previous
20 CSB accident investigations to determine
21 whether industry is implementing needed
22 changes.

1 The CSB team has identified several
2 emerging key issues concerning how safety was
3 managed in the Deepwater Horizon. These
4 include the lack of a separate and distinct
5 safety focus on preventing major accidents.
6 Key safety metrics, performance metrics,
7 primarily addressed personal safety. And
8 performance contracts, safety programs and
9 reward systems focused on personal safety
10 indicators. Consequently, we believe that
11 many of the key lessons and recommendations
12 from Texas City are important inquiries in the
13 Deepwater Horizon accident investigation.

14 A number of the questions will be
15 asked today about regulatory systems. We'll
16 address these issues. For example, does a
17 regulatory system or proposal focus on major
18 accident prevention separate and distinct from
19 personal injury incidents such as slips, trips
20 and falls? Does the scheme utilize key safety
21 indicators to prevent major accidents that
22 drive safety performance? It should be noted

1 that the American Petroleum Institute guidance
2 on key safety performance indicators developed
3 as a result of the CSB Texas City
4 recommendations do not exclusively apply to
5 offshore.

6 Do the regulations address whether
7 metrics are included in managers' performance
8 contracts and bonus schemes? In fact, the
9 importance of process safety indicators was
10 highlighted not only in the Texas City
11 investigation but in BP's own report on three
12 serious incidents at their UK Grangemouth
13 Refinery back in 2000.

14 This raises the importance of
15 whether the regulatory system or proposal
16 requires the key lessons from major accidents
17 be implemented as opposed to a purely
18 voluntary approach. In the Texas City
19 accident there was a lengthy history of
20 previous near misses but the warning signs
21 were overlooked.

22 The CSB identified that OSHA out of

1 the Texas City accident investigation had only
2 a half-dozen or so technically trained
3 inspectors and had conducted no planned
4 comprehensive inspections of oil refineries in
5 the previous ten years prior to the accident.

6 Department of Interior and other reports
7 identify similar problems with the numbers,
8 level of competence and low rate of
9 comprehensive inspections by offshore
10 regulators. In light of these findings it is
11 important for us to inquire about the level of
12 competence, consistent enforcement and
13 regulatory effectiveness of other regulatory
14 systems.

15 Safety and regulatory systems must
16 constantly adapt to be effective. It is not
17 acceptable for safety change to be driven only
18 by repeated disasters. The answer to these
19 questions and others today is vitally
20 important for prevention and we are excited to
21 have such an esteemed group of experts here
22 today. What you say here today will aid in

1 the prevention of accidents such as the
2 Deepwater Horizon and we greatly appreciate
3 your contribution.

4 Thank you, Chairman Moure-Eraso.

5 MR. MOURE-ERASO: Thank you very
6 much, Don.

7 I would like now to introduce
8 Professor Andrew Hopkins of the Australian
9 National University. Dr. Hopkins is a
10 sociologist and an international renowned
11 author in major accident prevention. Dr.
12 Hopkins is serving as a consultant to the
13 Chemical Safety Board Deepwater Horizon team.
14 We asked Dr. Hopkins to provide an overview of
15 international regulatory approaches for
16 offshore operations, including those such as
17 the safety case.

18 Dr. Hopkins?

19 DR. HOPKINS: Thank you very much,
20 Chairman, and good morning, ladies and
21 gentlemen. I want to put -- I want to make a
22 few general comments just to put safety case

1 regime -- the safety case regime into
2 perspective, into some kind of international
3 perspective.

4 So to start with I want to
5 characterize the U.S. safety regimes --
6 they're plural, many of them, safety
7 regimes -- as essentially prescriptive in
8 nature. Now, prescription has its strengths
9 and weaknesses. Certainly, prescription is
10 very important for small business. Small
11 businesses frequently say, Tell us what to do
12 and we'll do it. So prescription is very
13 important in those contexts. I think also in
14 certain other industries where the risks are
15 well understood, such as the construction
16 industry, prescription may well be very
17 appropriate.

18 But for major hazard industries the
19 weaknesses, I think, of prescription outweigh
20 the strengths. The problem is that where
21 technology is complex and constantly evolving
22 the detail in prescription can never be

1 sufficient to keep up with the -- with
2 technological changes. I think this was
3 highlighted in the report of the Piper Alpha
4 accident. This is the accident that's already
5 been referred to off the coast of Scotland in
6 1998, a real game-changing accident in the UK
7 when 167 people died.

8 Another problem with prescriptive
9 regulations is that they generate disputes,
10 constant disputes, about whether they actually
11 apply or not in particular situations. And I
12 think that was highlighted -- has been
13 highlighted by OSHA's experience in this
14 country with BP following the Texas City
15 accident when there have been numerous
16 disputes about the extent to which certain
17 regulations actually apply. So this, I think,
18 leads to the importance of safety case in an
19 industry like the oil and gas industry, and
20 particularly offshore.

21 The alternative then in the present
22 context is the safety case approach. And the

1 safety case approach goes back to an accident
2 that happened in Italy in Seveso in 1976 when
3 there was a major gas release that affected
4 the health of hundreds of people. And
5 following that accident the European
6 Commission issued a directive in 1982, the so-
7 called Seveso Directive to member countries
8 that they should enact what we now know as
9 safety case regimes.

10 The UK responded in 1984 with safety
11 case regulations onshore and then following
12 the Piper Alpha accident in 1988, shortly
13 after that we had safety case regulations
14 offshore in the UK.

15 Norway is not a member of the EU but
16 it's also moved in the same direction towards
17 safety case regulation. And a major impetus
18 for that was the Norwegian semi-submersible
19 drilling rig accident in 1980, the Alexander
20 Kielland, which capsized and killed 123 people
21 as our Chair has already mentioned.

22 In Australia, which is one of the

1 countries of interest today, safety case was
2 enacted offshore in the wake of the Piper
3 Alpha disaster and onshore the first effective
4 safety case regime in the country was enacted
5 in the State of Victoria following a gas plant
6 accident at Longford in 1998. So that is some
7 of the international context of the safety
8 case movement, if you like.

9 What are some of the elements of the
10 safety case regime? What is a safety case
11 regime? Well, the first point is that the
12 operator must provide a detailed description
13 of the hazardous facility. That's a baseline
14 statement. Secondly, they must identify all
15 potential major hazards and major accident
16 events. They have to think carefully about
17 what could go wrong on the site from a major
18 accident point of view. They then have to
19 carry out systematic assessment of the nature
20 of such events and their consequences. They
21 then need to put in place control systems to
22 safeguard against such events. They need to

1 monitor such controls to ensure that they
2 really are working. And they need to embed
3 that control system in a comprehensive safety
4 management system.

5 So there's a certain logic to this
6 whole approach, the safety case approach,
7 which starts with a -- will focus on major
8 accident hazards and moving through to
9 identifying the controls which are necessary
10 to deal with those and then to ensuring that
11 those controls remain in place. There's an
12 elegance -- I would use the word elegance.
13 There's an elegance to this system.

14 I'm -- I should make the point that
15 it doesn't necessarily do away with rules,
16 prescriptive rules. But they are often
17 contained within standards which are called up
18 by the safety case. The controls that I spoke
19 about will be contained in standards. And
20 operators need to specify in the safety case
21 what are the standards which they are going to
22 comply with in their safety case. There is

1 also a very important role for the workforce
2 in the design of the safety case and in
3 ensuring the continued operation of the safety
4 case. We'll hear more about that later today.

5 That sequence I have on the screen
6 is actually a very familiar sequence. It's
7 the sequence which is involved in the U.S.
8 Process Safety Management Standard which was
9 passed in 1992 in this country and which
10 governs safety in general, particularly the
11 oil industry onshore.

12 So you might ask where does safety
13 case go beyond the Process Safety Management
14 Standard. And the answer is this, that it's
15 a case, an argument submitted to the
16 regulator. So the operator has to go through
17 this process, work out how it's going to
18 achieve these goals and submit a case to the
19 regulators testifying just how it is going to
20 do this. And the regulator must then approve
21 or accept or in some way acknowledge that
22 safety case. So it is really a licensing

1 regime. The operators need to have this
2 approval or this acceptance by the regulator
3 before they can do business.

4 And that's a very important point.

5 And it goes back to the Seveso Directive. If
6 you look at the language of the Seveso
7 Directive it says this, that the operator must
8 prove to the competent authority that it has
9 gone through this process and can manage major
10 hazards effectively. So this -- the word
11 there is prove. So this puts a high
12 obligation, if you like on the operator to
13 demonstrate to the regulator that it really
14 does have these risks under control. And this
15 is where safety case goes beyond the Process
16 Safety Management Standard.

17 And once that case has been accepted
18 it is then up to the regulator to audit
19 against that case, to ensure that the company
20 or the operator is complying with that case,
21 which itself demands, I think, a high level of
22 resourcing for the regulator which I will come

1 back to.

2 Okay. How do they audit safety
3 cases then and how do they judge the adequacy
4 of a safety case? The regulator must
5 fundamentally ask the question, Are the risks
6 involved -- have they been reduced as low as
7 reasonable practicable. That's the language
8 which is used. Or alternatively, Have the
9 risks -- Have you ensured safety so far as
10 reasonably practical. That's another
11 equivalent statement.

12 Now, there is a precise legislative
13 basis for this in many -- in some countries,
14 particularly the UK and in Australia. In the
15 UK, for example, UK Health and Safety At Work
16 Act specifies general duties and those general
17 duties include this statement, It shall be the
18 duty of every employer to ensure so far as
19 reasonably practicable the health, safety and
20 welfare at work of all his employees. So that
21 is fundamental. It's contained within the
22 umbrella overarching statute, this notion of

1 a low as low as reasonably practical. And I
2 should note this is very different from the
3 General Duty Clause which exists in the OSHA
4 Act.

5 So before approving a safety case
6 regime the regulator must ask, Are the risks
7 as low as reasonably practicable. So that
8 then raises the question, What does this mean,
9 What does it mean to be as low as reasonably
10 practicable. The actual test which
11 increasingly regulators are applying is, Are
12 you following good industry practice. That
13 has to be defined in various ways. But if you
14 are following good industry practice then you
15 will judge to be -- to have reduced your risks
16 as low as reasonably practicable. I'm sure
17 we'll hear a lot more about that today. But
18 that is a starting point.

19 Employers may want to argue that
20 they have reduced the risks as low as
21 reasonably practicable even if they are not
22 complying with good industry standards. But

1 if an employer goes to court trying to make
2 that argument they're not very likely to
3 succeed.

4 So I guess what follows from this is
5 if we are to introduce a safety case regime in
6 the U.S. it will need some kind of umbrella
7 regulation specifying the requirement that
8 risks be reduced as low as reasonably
9 practicable.

10 I want to just finish with the point
11 that this requires a highly competent and well
12 resourced and independent regulator. Without
13 a well resourced regulator safety case is no
14 better than any alternative. Indeed, in some
15 cases it can be worse. So any decision to
16 introduce a safety case regime must involve a
17 commitment to ensure proper funding. And this
18 doesn't necessarily mean government funding.
19 It could involve an industry levy. And I
20 think we may hear today that some other safety
21 case regimes are funded by industry levy,
22 they're therefore offline, as far as budget is

1 concerned and there are certain benefits
2 involved in doing that. But that's a matter
3 of detail for later.

4 I do want to leave you with this
5 final proposition, though, that a safety case
6 regime is worthless unless the regulator is
7 properly funded. Thank you.

8 MR. MOURE-ERASO: Thank you, Mr.
9 Hopkins.

10 We will now hear from our first
11 panel of experts. I would like to remind the
12 audience that you should e-mail through your
13 BlackBerrys any questions that you might have
14 after the end of the panel. You should send
15 it to question@csb.gov, and we will be
16 receiving those questions after the panel.

17 So this is the Regulatory Panel.
18 Our panelists include Mr. Ian Whewell, the
19 recently retired director of the Offshore
20 Division of the United Kingdom Health and
21 Safety Executive Hazards Installations
22 Directorate. Also, we have Mr. Magne Ognedal,

1 the current director general of the Norwegian
2 Petroleum Safety Authority. He's joining us
3 via a telephone conference line. And we also
4 have Mr. John Clegg, retired chief executive
5 officer of the Australian National Offshore
6 Petroleum Authority.

7 Mr. Whewell, please proceed with
8 your statement.

9 MR. WHEWELL: As we've already
10 heard, in 1988 the Piper Alpha offshore
11 installation was involved in a dramatic fire
12 and explosion, and the incident had a
13 traumatic effect on the oil industry and
14 throughout the UK. And as a result an inquiry
15 was set up by the government so that they
16 could -- to consider what lessons could be
17 learned. And Lord Cullen, who chaired the
18 inquiry, produced in 1990 a report with 106
19 recommendations for improvements to health and
20 safety on the UK continental shelf. And the
21 government accepted all those recommendations.

22 But as we've heard, an important

1 change was that any new offshore regulations
2 were to be risk based and objective or goal
3 setting, which was a change from the then
4 existing prescriptive offshore regulations.

5 One of the key recommendations was
6 the operator of every installation should
7 prepare a safety case, which as we've heard,
8 described the arrangements in place on the
9 installation for identifying, managing and
10 controlling major accident risks. This
11 requirement was felt to be so important that
12 it was actually introduced before all the
13 other regulatory changes were made.

14 Lord Cullen also recommended that
15 the responsibility for regulating offshore
16 safety be transferred from the Department of
17 Energy, which also had responsibilities for
18 different field developments and licensing, to
19 the Health and Safety Executive. The HSE is
20 the principal UK safety -- health and safety
21 regulator, which at the time had extensive
22 experience of regulating major hazard

1 industries, such as nuclear and onshore
2 petrochemical and chemical.

3 The safety case regulations were
4 developed very rapidly and came into course in
5 1993 and subsequently, further supporting
6 regulations relating to amongst other things,
7 prevention of fire and explosion emergency
8 response and the design and construction of
9 installation and wells were introduced.

10 In parallel the new offshore
11 division of the Health and Safety Executive
12 underwent a dramatic expansion and recruited
13 large numbers of specialists, industry experts
14 together with specialists in a range of
15 similar fields. This involved huge resources
16 being put into training them as regulators and
17 to develop appropriate industry expertise.

18 The importance of recruiting
19 appropriate expertise or providing extensive
20 training to create such expertise should not
21 be underestimated. At its peak the offshore
22 division had well over 300 staff to deal with

1 the implementation of new regulations and the
2 assessment of safety cases. As we've heard,
3 adequate resourcing to support assessment,
4 investigation, audit and review and inspection
5 and intervention is vital to ensure the
6 effectiveness of new safety regimes and
7 broader regulatory regimes.

8 Since that time the importance of
9 the safety case is a key requirement in the UK
10 for offshore legislation has not diminished.
11 The value of a safety case and this goal-
12 setting type approach is widely recognized.

13 Since their introduction the new
14 offshore regulations have been successful in
15 reducing major hazard risks on the UKCS and in
16 ensuring that installation operators properly
17 manage those risks. However, on the basis of
18 ten years experience a review of HSC in 2004
19 concluded that changes were necessary to the
20 safety case regulations to improve efficiency
21 and effectiveness and to take into account
22 major changes in the pattern of activity that

1 was taking place on the UKCS, mainly a result
2 of extending the life of many installations.

3 We've already heard some of the
4 basic requirements for a safety case. And
5 certainly, on the UKCS all operating
6 installations must have safety case accepted
7 by the regulator. And for drilling
8 installations that safety case must be
9 submitted three months before the drilling
10 installation enters UK waters.

11 We've heard that the primary
12 requirements to demonstrate that major hazard
13 risk are being properly controlled and the
14 safety case must contain details of the safety
15 management systems, the audit arrangements
16 ensuring that they're adequate and that must
17 make sure that all major accidents have been
18 properly identified and then those -- the
19 risks associated with those accidents have
20 been evaluated and measures taken to control
21 the risks, as we've heard, as low as
22 reasonably practicable.

1 Safety cases have to be kept up to
2 date. And where major revisions of the safety
3 case occurred these were required on the
4 original regulations be submitted to HSC for
5 acceptance three months before any changes
6 were made. And all combined operations --
7 that's operations between fixed and mobile
8 installations, drilling rigs -- were required
9 to have separate safety cases. And finally,
10 that the safety case should be revised and
11 resubmitted for acceptance every three years.
12 These were the original requirements.

13 For the case to be effective it must
14 provide a framework in major hazard risk are
15 effectively managed and controlled. The
16 requirements should complement the principals
17 of good safety management but provide the
18 stimulus to undertake this management in a
19 structured way. Lord Cullen took the view
20 that safety case actually was not a document
21 primarily for the regulator, but a good
22 discipline for all operators of offshore

1 installations. However, once the document had
2 been prepared Lord Cullen saw value in the
3 regulator forming a view as to whether the
4 case had indeed satisfactorily addressed the
5 effective management and control of major
6 accident hazards.

7 The changes introduced in 2005 now
8 better meet those objectives. And I'll
9 briefly outline the changes we made. To meet
10 the general goal-setting requirements of UK
11 legislation the requirements for the contents
12 of a safety case have now been -- reference
13 the supporting offshore regulations, which as
14 I've described actually followed the original
15 safety case and therefore, were not referenced
16 in it.

17 And to avoid any suggestion that
18 acceptance of a safety case transfers
19 responsibility from the duty holder to the
20 regulator or in any way gives permission, the
21 basis for the regulator's acceptance of a
22 safety case has been revised and clarified.

1 The new guidance for acceptance makes
2 absolutely clear that the regulator should
3 review the case to determine the validity of
4 the approach described as being capable if
5 it's implemented of achieving the necessary
6 degree of risk control. However, the
7 acceptance itself wouldn't confirm the
8 outcomes of that approach which could only be
9 achieved by subsequently regulatory
10 intervention. So actually inspecting on the
11 installation.

12 The changes also provide more
13 flexibility in the contents of a safety case,
14 which facilitate the preparation and updating
15 of the documents. With the clarification of
16 the purpose and to the basics of acceptance
17 fuel resources are being used in the processes
18 of assessment, both by the regulator and
19 industry. For HSE this was important -- this
20 was an important efficiency gain enabling a
21 move of resources from examination of
22 effective -- what was a paper document to

1 active verification of the claims made in that
2 document.

3 The timing of a design safety case,
4 now simply called design notification, has
5 been changed to a much earlier, more basic
6 submission to improve impact and ensure
7 maximum benefit of both the regulator and the
8 potential operator by ensuring a meaningful
9 dialogue will be begin at the earliest
10 possible stage. In addition, the link between
11 design and the operational safety case has
12 been strengthened by requiring the operational
13 case to specifically address those matters
14 raised by the regulator during design
15 discussions. The HSE still takes the view,
16 however, that specific acceptance of the
17 design or concept is not an appropriate role
18 for a regulator.

19 The safety cases are no longer
20 required to be resubmitted for acceptance by
21 HSE every three years. The current safety
22 case, once accepted, continues -- the safety

1 case, once accepted, continues to be current
2 but with greater emphasis on keeping it up to
3 date. Major revisions of the case arising
4 from changes on the installation or to
5 operations are required to be submitted for
6 acceptance before the changes can take place.
7 And the scope of duty to comply with the
8 safety case has also been extended to all
9 revisions, not just those ones accepted by the
10 regulator.

11 This makes it clear that the
12 document is intended to be living and current.
13 More importantly, if it's current, it should
14 be a key reference for management and the
15 workforce. It's also critical that there's
16 continuous improvement and controls and
17 measures in place take into account new
18 knowledge and changes in technology.

19 Now, as a result of the changes,
20 every five years the duty holder is required
21 to carry a thorough review of the case for
22 safety in the light of new knowledge and

1 changes on the installation.

2 Finally, HSE formed the view that
3 submission and acceptance of separate cases
4 for all combined operations was not cost
5 beneficial. Safety cases for installations
6 must now contain as much information as
7 possible about such potential operations.
8 However, if the combined operation has not
9 been properly covered in the safety case, a
10 revision to one or both safety cases is
11 required. The revision must be formally
12 accepted by the regulator. This ensures that
13 the risks -- any unique risks or proposals
14 that may involve new technology or a change in
15 existing good practice are properly examined.

16 As a result of these changes I
17 believe the UK regime now gives flexibility to
18 meet the health and safety challenges of a
19 dynamic and technically advanced offshore
20 industry and gives public and regulatory
21 reassurance that high hazard risks are being
22 properly managed. Thank you very much for

1 your attention.

2 MR. MOURE-ERASO: Thank you very
3 much, Mr. Whewell.

4 Our next panelist is Mr. Ognedal
5 that is going to join us via phone. Mr.
6 Ognedal is from the Norwegian Petroleum Safety
7 Authority. He will be coming in, I believe.

8 Mr. Ognedal, can you hear us?

9 (No response.)

10 MR. MOURE-ERASO: We can see you.

11 (No response.)

12 MR. MOURE-ERASO: Mr. Ognedal?

13 (No response.)

14 MR. MOURE-ERASO: Probably when we
15 connect with Mr. Ognedal -- we can proceed
16 with the panel, and we'll get him at the end
17 of the presentation of Mr. Clegg. So I want
18 to introduce now Mr. Clegg from the Australian
19 National Offshore Petroleum Authority.

20 So, Mr. Clegg, why don't you
21 proceed.

22 MR. CLEGG: Thank you, Mr.

1 Chairman. And I've been asked to make it
2 clear that so these are my views and not those
3 of the Australian government. I've been asked
4 to cover four areas. And that's the use of
5 the safety case; reducing risks to as low as
6 reasonably practicable, so that's ALARP;
7 employee involvement practices; and
8 measurement of safety performance. So not an
9 easy job in ten minutes, but I will try.

10 So first of all, the use of the
11 safety case. Legislation giving effect to the
12 safety case regime for offshore petroleum
13 activities in Australian waters was put in
14 place in 1992 following the Piper Alpha
15 disaster in the North Sea in 1988. Now,
16 that's very important because I think
17 Australia may be unique in the fact that they
18 didn't wait for their own offshore major
19 accident to happen before they implemented a
20 significant regime change. So I think they
21 should be commended for that. Thank you.

22 So in that regime all offshore

1 petroleum facilities required a safety case by
2 1996. Although the majority of the facilities
3 were in Commonwealth waters, legislation was
4 administered by the states on behalf of the
5 Commonwealth. The safety case was an addition
6 to much of the existing prescriptive
7 legislation.

8 Now, that's also an important point
9 I'd like to make, because some believe that
10 when duty-of-care regimes are brought in, all
11 prescription will go. And that often is not
12 the way. They have been brought in over and
13 above all existing prescription, and I believe
14 that is effectively what happened in
15 Australia.

16 So it was found after awhile that
17 the new duty-of-care regime, the safety case
18 regime was not functioning very well. And so
19 the Australian government -- Commonwealth
20 government -- had an international review done
21 in 1996. And that found significant issues.
22 The organizations affected were given four

1 years to improve. And I believe there were
2 few improvements over that time.

3 And so the Commonwealth government
4 then instituted a further international
5 review. And they found in 2000 there was too
6 much legislation, boundaries were unclear,
7 there was overlapping legislation and
8 application was inconsistent, state regulators
9 lacked regulatory skills, capacity and
10 consistency and did not have a clear view of
11 their role.

12 The Commonwealth did not have
13 sufficient resources, technical expertise,
14 credibility and authority to drive the
15 necessary changes. The review team then made
16 two central recommendations. A safety case
17 regime's framework of legal documents should
18 be restructured and simplified and the
19 regulatory system should also be restructured.
20 In January 2005 these findings were
21 implemented. A simplified set of legislation
22 comprising one act and four sets of

1 regulations revoking many acts and hundreds of
2 regulations was brought in and a single
3 national regulatory authority, the National
4 Offshore Petroleum Safety Authority, or NOPSA,
5 was established.

6 The principles underlying this were
7 an enhanced and continuing improvement of
8 safety outcomes in the Australian offshore
9 petroleum industry is a priority for
10 governments, industry and workforce, a
11 consistent national approach to offshore
12 safety regulation in both Commonwealth and
13 state waters is essential for the most cost-
14 effective delivery of safety outcomes. Also,
15 the safety case approach is the most
16 appropriate form of regulation to deliver
17 world class safety by developing appropriate
18 behavior within the industry. And that is
19 key. That is the critical issue.

20 And also, efficient and effective
21 safety regulation requires -- and I'll just
22 list these -- a legislative framework that is

1 clear and enforceable and that requires
2 operators to discharge their responsibilities
3 for safety, competent and experienced
4 personnel forming a critical mass of
5 appropriate skills within the regulator,
6 structure and governance of the regulatory
7 agency that demonstrates independence,
8 transparency, openness and cost efficiency, an
9 independent approach in implementing
10 legislative responsibilities and in dealings
11 with industry. And also, there should be a
12 grade performance criteria.

13 Furthermore, the industry and its
14 workforce must be empowered to identify and
15 report potential hazards and to ensure control
16 measures or implement them. Approval
17 processes must be streamlined to ensure no
18 undue delay to projects. So those are
19 strengths of safety case regime.

20 What about some of the weaknesses?

21 The employer treats the whole process as a
22 necessary evil to get a tick in the box and

1 the regulator to operate, i.e., they see it as
2 an impediment to operation. The employer
3 treats it as a one-off event -- it's only a
4 piece of paper, isn't it -- and not as part of
5 an ongoing process of continuous improvement.
6 And that is a big issue. A number of
7 operators feel this is just a matter about
8 producing a document. It is not. It's about
9 the process of ensuring continuous
10 improvement. It's just that that has to be
11 documented.

12 The safety case is treated as a
13 secret document. The employer dedicates a
14 process to or overuses contractors. And
15 particularly, NOPSA was set up when we
16 experienced quite a bit of that. But I'm
17 greatly relieved that the processes we put in
18 place and inspectors we had meant that that
19 was quickly identified in the first run
20 through of the case and we would then reject
21 it straight away.

22 Initially, we tried to work with

1 industry to improve their safety cases. We
2 did that for about 18 months. But we found
3 that in the end the operators were just
4 passing it over to the regulator and using the
5 regulator as a free consultant. So we stopped
6 that. And we just moved straight through
7 rejection. And I think in the first year
8 after that we rejected half-dozen or so safety
9 cases. And that certainly brought the
10 attention of the industry to the need to do a
11 better job.

12 We also found the workforce was not
13 being involved where they should be. And the
14 regulator provides poor quality challenge,
15 such as criticism of ourselves, and does not
16 use the safety case to hold employer to
17 account. So my experience over many years
18 operating the safety case regime is that not
19 only sometimes does the industry just use it
20 as a paper document, which gets the tick in
21 the box and they put it on the shelf, but
22 sometimes a regulator when they receive it

1 will also just put it on the shelf and don't
2 use it. And the whole regime therefore, is
3 into disrepute. The regulator must use the
4 safety case. The industry must see that a
5 regulator is using it and holding them to
6 account for the claims made in that case.

7 So in conclusion on this aspect, the
8 safety case regime is not a silver bullet. It
9 needs continuous commitment by the government,
10 the employer, the workforce and the
11 regulatory. If any of those four pillars are
12 weak or missing then the regime falls. No
13 doubt about it.

14 So let me move on to the second item
15 I was asked to address, reducing risk to
16 ALARP. Risk may reduced to as low as
17 reasonably practicable by following a rigorous
18 process of hazard identification and risk
19 minimization using appropriate mix of
20 decision-making tools.

21 Having identified the hazards and
22 risks the process should follow a hierarchy of

1 elimination, minimization, prevention,
2 control, mitigation and emergency response.
3 The design of each of those elements should in
4 preferred order be based on passive systems,
5 then after they're active and operation and
6 finally, external systems. Each system should
7 have clearly stated, meaningful and measurable
8 performance standards.

9 In deciding the mix of these
10 elements some decision-making tools can be
11 used. And these are in ascending order of
12 risk and uncertainty, codes and standards,
13 good practice, engineering judgment,
14 qualitative risk assessment, quantitative risk
15 assessment -- so QRA -- company values and
16 societal values.

17 Some of the main issues we've
18 experienced in ALARP demonstrations relate to
19 poor hazard analysis and risk assessment, poor
20 links between hazards, risks and controls,
21 poor understanding of the performance of
22 control systems and use of the process to

1 justify existing controls rather than to seek
2 the opportunity to improve.

3 So now let me move on to employee
4 involvement practices. These apply at three
5 levels. There are responsibilities on the
6 employer, the employee and the regulator. The
7 employer is required to ensure the workforce
8 is competent and provide information and
9 training, consult with and ensure effective
10 participation with workforce in a development
11 or revision of the safety case and this
12 process must be documented.

13 And certainly, in the early days in
14 assessing safety cases the first question we
15 would ask back on receiving a case for
16 assessment is, Please prove to us that you've
17 involved the workforce. And it was absolutely
18 amazing the flurry of activity and the
19 withdrawal of safety cases to rework or re-
20 engineer the process.

21 Consult with and ensure -- oh,
22 sorry -- got that one. Established work

1 groups, if requested by the workforce,
2 facilitate election of health and safety
3 representatives such as yourselves, provide
4 training for those health and safety reps, and
5 establish health and safety committees.

6 Responsibilities on the employees
7 are that they should cooperate with others,
8 establish designated work groups to select
9 health and safety reps and once elected, has
10 powers to inspect, investigate, issue
11 provisional improvement notices, refer a
12 matter to a regulator and accompany regulators
13 on an inspection, so quite wide-ranging task.

14 Moving on to the regulator, the
15 regulator is required to check
16 employer/workforce consultation during
17 assessment of safety case -- and I've touched
18 on that -- consult with health and safety reps
19 and workforce during inspections -- and we
20 do -- record and investigate complaints by the
21 workforce, assist industry and workforce in
22 running annual, one-day health and safety rep

1 workshops and conferences.

2 They run bimonthly meetings with the
3 employer's health and safety reps and other
4 members of the workforce to address topical
5 issues and matters of concern, they meet
6 regularly with trade unions and they
7 facilitate and audit formal training courses
8 for health and safety reps.

9 So what are some of the main
10 challenges and issues we have experienced
11 there? Quite a few employers are reluctant to
12 support health and safety rep regime. There's
13 a lack of employee involvement in the
14 preparation of safety cases. There's limited
15 regulator resources to investigate complaints
16 and incidents, so all we can do is take a cut
17 of those and investigate, I think, probably
18 about 10 percent.

19 Some difficult relationships with
20 union representatives where employment issues
21 are mixed with health and safety matters. And
22 that is an ongoing tension, because many

1 health and safety issues do have a -- are
2 mixed up with employment issues, as well as
3 trying to separate the two can be very
4 difficult.

5 So now let me move on finally, to
6 performance measurement. A review of the
7 health and safety performance of individual
8 companies and of the industry as a whole by
9 the regulator is obtained by collecting data
10 from four main areas. And these are, in
11 ascending order of usefulness, lagging
12 indicators. And there is a regulatory
13 requirement to report death, injury, fires and
14 explosions, hydrocarbon releases, well kicks,
15 collisions, unscheduled activation of the
16 Emergency Response Plan, and damage to safety
17 and critical equipment.

18 Then we collect leading indicators
19 from regulatory activities such as promotion
20 activities, advice, safety case assessment,
21 inspection, audit and investigation. We also
22 collect leading indicators from national

1 programs such as facility integrity.

2 We had serious concerns about the
3 maintenance of equipment offshore, so we put
4 in place a national program that we shared
5 with the industry for obtaining improvements
6 in the area. And, in fact, we tied up with
7 such programs that the UK were running, as
8 well, so we could share data and information
9 and benchmark. Also, lifting operations. We
10 found that was a major area of serious
11 personal risk. And emergency response.

12 And leading indicators are also
13 obtained from a new area that we just moved
14 into, which is undertaking annual safety
15 cultural surveys carried out across the
16 industry.

17 So what are some of the main issues
18 we've experienced there? We are certain there
19 is significant underreporting and poor
20 reporting of lagging indicators. There's a
21 significant amount of wrong classification of
22 incidents and lack of useful benchmarking

1 data. There's a lack of meaningful reporting
2 up through the management chain in companies
3 of health and safety performance. And there's
4 poor reporting of health and safety data in
5 company annual reports.

6 I'm always amazed that if you pick
7 up a company -- the average company annual
8 report, you'll find there are pages on the
9 environment and half-a-page on health and
10 safety.

11 So in conclusion, I've outlined the
12 development and use of safety cases in
13 offshore Australian petroleum operations.
14 I've also given a flavor of the processes we
15 expect to see used and demonstrating risks
16 have been reduced to ALARP and the measure to
17 ensure involvement of the workforce and how we
18 coordinate on health and safety performance.

19 Thank you.

20 MR. MOURE-ERASO: Thank you, Mr.

21 Clegg.

22 I wonder if we could call Mr.

1 Ognedal from --

2 MR. OGNEDAL: Yes?

3 MR. MOURE-ERASO: Mr. Ognedal, are
4 you on the line?

5 MR. OGNEDAL: Yes, I am on the line.

6 MR. MOURE-ERASO: Yes. So please
7 proceed with your statement.

8 MR. OGNEDAL: Yes. I taught a
9 number of issues that have been [interference]
10 regulations, and they were created in 2004,
11 because the government, the Norwegian
12 government, they decided to split the
13 Norwegian petroleum [interference], thereby
14 taking [interference] --

15 MR. MOURE-ERASO: Mr. Ognedal, could
16 you hold it for a second? We're having
17 trouble hearing you clearly. They are making
18 some adjustments here.

19 MR. OGNEDAL: Okay.

20 MR. MOURE-ERASO: How are we doing
21 now? Is it okay now?

22 MR. OGNEDAL: [interference].

1 MR. MOURE-ERASO: Let's wait for a
2 minute. Somebody's going to adjust here the
3 speakers.

4 Mr. Ognedal, what we are going to do
5 is to try to redial -- hang up and redial so
6 that we can see if we can a better
7 transmission line.

8 (Pause.)

9 MR. MOURE-ERASO: Okay. Let's
10 proceed now, Mr. Ognedal.

11 MR. OGNEDAL: Yes. Should I start
12 again?

13 MR. MOURE-ERASO: Yes. It's a lot
14 better now. Please continue.

15 MR. OGNEDAL: Okay. So the
16 Petroleum Safety Authority Norway, as I said,
17 was created in 2004 as a result of a
18 government decision to split the Norwegian
19 Petroleum Directorate in two parts and thereby
20 separating the safety function out from a
21 possible conflict with economic issues. So
22 that was a decision to reduce political risk,

1 as I see it.

2 The central issue in the entity
3 Norwegian Petroleum Directorate was the basis
4 for creating the new PSA. The PSA at the time
5 also caught responsibility not for overlooking
6 safety in the offshore activity, but also on
7 the inshore associated plants and refineries,
8 et cetera. So it was a big addition to
9 portfolio.

10 We are an agency today consisting of
11 about 160 people where 100 people are
12 professionals. And they are basically all
13 engineers from -- with university degrees.
14 And that is the -- sort of competence that we
15 need in our system. And the way we go about
16 things is based on the regulations in force.
17 They are risk based and they are goal setting
18 in the full, and they -- there's also
19 guidance. And guidance refers to acceptable
20 codes and standards. But they are not legally
21 binding. It's the regulations that are
22 legally binding.

1 So these regulations contain more or
2 less everything that already has been talked
3 about at your hearing, all the principles that
4 should be addressed, risk and all of this. So
5 I won't repeat that. But the difference
6 between us and the -- what I've heard my old
7 colleagues Ian and John talk about -- is that
8 we do not require a safety case being a
9 document, being submitted to us. It shall be
10 available in the industry, and when we need it
11 for purpose, we ask for it.

12 And then how do we go about
13 enforcing the regulations? Well, we perform
14 audits and verifications. So we don't have
15 inspectors in -- as staff members. So we do
16 audits and verifications based on the risk
17 approach, not the calendar approach; it's a
18 risk approach. But we use our resources to
19 address areas where we feel it's important to
20 try and make a difference.

21 And then one of the things -- as an
22 illustration, one of the things we have been

1 using quite a bit of the resources on is to
2 find out how company management handles major
3 risks. That is -- that's been sort of a
4 priority for many years now. So it's a
5 management approach, really. What do they do
6 to manage major risk?

7 And then our regulations -- they
8 apply to the offshore activity, but also where
9 relevant, to the onshore activity. So it's a
10 comprehensive set of regulations. And then
11 onshore activity and offshore activity, they
12 are tied together to a large extent, at least
13 in Norway, by pipelines, cables, control
14 rooms, et cetera, so we try to look at the
15 totality.

16 The focus on major risk, major
17 accident prevention. That is -- we use, would
18 guess, about 60 percent of our resources on
19 that problem area. And individual risk the
20 other 40. So it's a balanced approach, but
21 the bigger slice, more resources on to major
22 accident prevention.

1 Lessons learned? When we -- well,
2 we should all learn. We haven't put a
3 requirement into the regulations that the
4 industry should learn. But certainly, when
5 talking to the industry we are always asking
6 the question, how do they go about being
7 curious, what has happened other places, have
8 they evaluated it, et cetera. So it's more
9 influence and questioning technique we are
10 using on that point.

11 Well, risk management, risk
12 analysis, risk assessment, et cetera? It's
13 all in our regulations. Then, of course, we
14 check compliance with that. Management
15 systems? Well, that's part of the
16 regulations. We have a dedicated management
17 regulation that the industry has to comply
18 with and there are regulations, as they are
19 formed and written, they give the flexibility
20 so that we can really use the principle of
21 continuous improvement and to take into use
22 new methods, equipment, et cetera that will

1 improve the safety situation.

2 And when I talk about safety it's
3 basically three elements. It's prevention of
4 harm to people. It's prevention of harm to
5 the external environment. And it's prevention
6 to economic values. So it's all of those
7 three. And that varies from country to
8 country, what the content of the safety term
9 is.

10 We monitor the industry. And we
11 collect a lot of the data, indicators that we
12 use. And we produce a yearly risk report that
13 is public. And in that report we use for
14 major accidents, I think it's round about 23
15 different indicators. And we try and develop
16 to see is there a negative trend, a positive
17 trend, what is the situation. And based on
18 that it helps us setting up priorities for our
19 work.

20 Employee involvement? Well, you
21 know, in Norway there's a long tradition for
22 cooperation between industry, employees and

1 the regulator. And that is a natural part of
2 the Norwegian working life culture. And we,
3 as the regulator, of course, use that. So we
4 have several forums where the three parties
5 are together.

6 One is the forum dealing with the
7 development of regulations. So in the process
8 of developing new or adjusted regulations the
9 three parties participate in that development,
10 but the regulator makes the decision. But
11 they participate, come with their views,
12 suggestions, all of this. And well, to us,
13 it's working very well indeed.

14 Another forum is the safety forum.
15 I chair that. And their all representatives
16 of the unions and the -- yes, employer
17 organizations are present. And we are working
18 issues continuously in that meeting. The
19 system -- I'm sure that Roy Erling Furre, who
20 will speak later on today, he will touch on
21 this forum.

22 That was sort of brief comments to

1 the points that you wanted me to address.

2 MR. MOURE-ERASO: Thank you, Mr.
3 Ognedal. Would you please stay on the line
4 for the discussion that we have following
5 this?

6 So thank all of you. And I would
7 like now to start the discussion. We're going
8 to start with questions from the board members
9 to the panelists. And what we will do is a
10 first round of questions from the panelists.
11 And then we will ask our investigative team or
12 investigators for having a round of questions.
13 And if time permits we'll come back to the
14 board members and to investigators. So I'll
15 be watching at the time.

16 So if we could start on this side of
17 the table, please? Mr. Griffon, if you have
18 some questions?

19 MR. GRIFFON: Yes. I think my --
20 I'd like to start off, since everyone that
21 presented has some form of a safety case
22 approach, I was curious whether you have over

1 the years collected any information and data,
2 any metrics that demonstrate whether the
3 safety case approach is more effective than,
4 you know, previous or actually, the current
5 United States model of a more prescriptive
6 approach.

7 And I don't know if you have that
8 kind of information, but I'm very curious. I
9 definitely heard some suggestions that people
10 challenge that fact, that the safety case
11 approach, while it may sound good, whereas the
12 information to prove that it is actually
13 improving safety. I wonder if -- that would
14 be to all the panelists.

15 MR. CLEGG: I think the real test of
16 the answer to that question is to ask the
17 industry on their view. And in Australia
18 there is a requirement for a five-year
19 external review of the operations at the
20 Safety Authority. And that was carried out a
21 little while ago. And it might be three-year
22 review, anyway -- but Magne, who we just heard

1 from, and some people from Australia --
2 experts from Australia -- formed that
3 independent duty and came out to Australia and
4 carried out extensive consultation with the
5 industry and regulators from government.

6 And their overall view of the
7 industry was that they felt that the safety
8 case regime had improved health and safety.
9 And so that the regulatory regime that had
10 been put in place was effective. Obviously,
11 there was room for improvement. But it was
12 generally working, and the industry felt that
13 it had made a gain. We do have crude metrics
14 in place, of course; typically lagging
15 indicators.

16 So we do have crude indicators in
17 place, mainly lagging indicators, which show
18 that individual harm is at a fairly low level
19 compared to international benchmarks and is
20 running along very steady. It's not
21 increasing, not decreasing. We have a very
22 crude indicator like hydrocarbon releases.

1 Generally -- and while they aren't
2 broken out deaths, injury, hydrocarbon
3 releases, activation of the emergency plans
4 rate, they're generally reducing except,
5 interestingly, for the gas releases. They
6 have been increasing over the years. And
7 certainly, the implementation of our regime
8 didn't seem to alter that very much. Now,
9 that is a very important indicator.

10 And that is why we put in place a
11 national program to go out to all of the
12 industry and check their maintenance ratings
13 and to ask question sets, which included lots
14 of leading indicators, as well as lagging
15 indicators. And that mirrored a UK
16 initiative, as well; we could benchmark
17 against that. And certainly, using that we
18 found we got an improvement in maintenance
19 regime, but strangely gas releases didn't
20 reduce.

21 But personal injury, we find most
22 personal injury was in the area of lifting

1 operations. So we had a national campaign on
2 that and certainly, we drove down more of the
3 personal injuries of lifting operations like
4 that 60 percent. So it's a complex metric.
5 It's difficult to penetrate. But overall, I
6 believe industry and the government feel that
7 it is an appropriate regime and it is working.

8 MR. MOURE-ERASO: Thank you very
9 much.

10 So we continue with Mr. Bresland,
11 and then we'll come back the other way around.

12 MR. OGNEDAL: I can comment a little
13 bit around the question prescriptive versus --
14 hello?

15 MR. MOURE-ERASO: Yes, yes. We are
16 listening.

17 MR. OGNEDAL: Okay. In the '70s we
18 had the prescriptive regulations and an
19 inspection approach towards the industry. We
20 held that it didn't work. And there were many
21 reasons for that. One of them, we took on
22 responsibility from industry by telling

1 industry what was sufficient to do. The other
2 important point that was that the maintenance
3 of prescriptive regulations was -- the
4 maintenance need was very high and demanding
5 on our resources. It wasn't effective.

6 So based on those two and other
7 reasons, we decided to change it all and
8 formulate all of that change within a new set
9 of regulations, a new way of doing things. We
10 created new competence, et cetera. That
11 change was implemented in '85.

12 After that we've seen that the
13 regulator, we, have a much better impact on
14 industry than we had before. There's no -- in
15 my mind there's no question about that. So it
16 was a correct move to go to goal setting,
17 audit inspection and create a new set of
18 regulations for the management risks, all of
19 that.

20 MR. MOURE-ERASO: Ian?

21 MR. WHEWELL: Yes. If I could just
22 respond on the -- I think to talk about safety

1 case regime or safety case in isolation is --
2 does create a sort of slightly false
3 impression. You do need a total regime to
4 back it and you do need a goal-setting and
5 risk-based regime. I think I would quote from
6 two areas, not necessarily metrics.

7 But I'd quote -- I mean, certainly,
8 the original report on Piper Alpha was
9 absolutely clear that many of the problems
10 that arose on the Piper Alpha installation and
11 the lack of regulator control arose from the
12 prescriptive nature of the regulations and the
13 nature of inspection that was carried out.
14 Inspections were not risk based. They were --
15 and the duty holder was not looking at risk-
16 based controls. It was simply complying with
17 basic standards without any real consideration
18 of prioritizing risks. That was the first
19 point I'd make.

20 Second point, there was an
21 independent report carried out by Aberdeen
22 University for HSC in 1999 reviewing the

1 regulations but primarily the safety case
2 regulations. And that report concluded that
3 there had been a considerable reduction --
4 overall reduction -- in risk. In other words,
5 the risk was being better managed on the UKCS
6 as a result of the introduction of the
7 regulations.

8 It's very difficult to compare one
9 regime in one country with another because
10 nothing is exactly the same. And the culture
11 may be somewhat different. But certainly,
12 comparing within the UK I'm confident that
13 there's sufficient evidence to show that
14 moving, as Magne has said, from the
15 prescriptive approach to a goal-setting,
16 objective-setting approach has considerable --
17 has made considerable improvements and reduced
18 risks. And certainly, that last point that
19 Magne made, I think, is very relevant. The
20 regulator has much more impact under that type
21 of regime than simply a ticked box, black and
22 white, go/no go situation with prescription.

1 MR. CLEGG: Could I just also just
2 add just quickly? In a goal-setting regime,
3 in fact, prescription hasn't disappeared.
4 What's happened, it's gone out of the
5 legislation and into the standards -- codes
6 and standards. And the safety case requires
7 the company to state the standards that it's
8 going to use. Once it's stated those then it
9 has to comply with them. So that's where the
10 prescription's gone. It hasn't disappeared;
11 it's still there.

12 MR. MOURE-ERASO: Thank you.

13 I move to Mr. Bresland now.

14 MR. BRESLAND: Thank you, Mr.
15 Chairman.

16 Our organization, the Chemical
17 Safety Board, is one of several organizations
18 that's doing an investigation of the accident
19 in the Gulf of Mexico. And I'm sure that the
20 three panelists have been watching pretty
21 closely the other investigations that are
22 taking place. And I'm sure you've read some

1 of the reports from there.

2 Based on your expertise and
3 knowledge, had there been a safety case
4 program in place in the Gulf of Mexico what
5 would have been done differently that could
6 have prevented this accident? I mean, my
7 sense is that there were issues in this
8 particular incident in which the companies did
9 not do the -- what they were supposed to do;
10 the equipment didn't work as it was supposed
11 to work. What would have been different with
12 a safety case that would -- that you think
13 might have prevented this accident?

14 MR. WHEWELL: The -- as John's
15 already said, the safety case isn't a silver
16 bullet. What's -- what -- expectations
17 created in a safety case regime is that risks
18 are properly evaluated before those risks are
19 undertaken and the control measures are in
20 place.

21 From what I've read, risks were
22 taken which look as though they haven't been

1 properly evaluated before decisions were made.
2 And in the framework of the safety case
3 regime, the expectation would be, certainly in
4 terms of Macondo, the nature of the well would
5 have required very particular consideration of
6 decision making and very particular
7 consideration for that particular -- for that
8 operation because of the high temperature,
9 high pressure nature of the well and other
10 particular problems with the reservoir.

11 So my view is that whilst I can't
12 say and nobody can say if a safety case regime
13 had been in place that the incident wouldn't
14 have occurred, what I can say is that with a
15 safety case regime in place I think the risks
16 would have been much more effectively
17 evaluated, the decision-making process would
18 then have been guided by that evaluation of
19 the risks and that may well have altered the
20 decisions that were made at the time, many of
21 which were clearly with hindsight incorrect.

22 MR. MOURE-ERASO: Thank you, Mr.

1 Whewell.

2 Mr. Clegg?

3 MR. CLEGG: I would just add that
4 the safety case regime requires a competent
5 regulator and I would expect in those
6 circumstances that the regulatory would have
7 provided expert challenge to the way that well
8 had been managed. So that would have provided
9 a high level of control.

10 MR. MOURE-ERASO: Mr. Ognedal, do
11 you have any comment?

12 MR. OGNEDAL: Yes. Just a -- with
13 any regime, the competence of the operator,
14 the contractor, the organization that is
15 onshore and offshore, how they cooperate,
16 these factors are anyway crucial if one is
17 going to have sort of a good management
18 system, risk assessment system, et cetera, et
19 cetera. But those practices have to be in
20 place in my mind regardless of what kind of
21 regulatory system one has.

22 MR. MOURE-ERASO: Thank you.

1 So I believe this is my turn. I
2 would like to ask a question to a panelist.
3 I am interested on the issue of the
4 independence of the safety agency in your
5 countries, specifically you both have
6 mentioned in -- I remember in Australia and in
7 Norway that there was a clear separation
8 between the functions of the agency in which
9 the economic aspects or the promotion aspects
10 of energy were separated from the regulatory
11 aspects. And my question is what kind of
12 advantage you saw in the separation and what
13 were the kind of problems and difficulties
14 that you found when the same agency have both
15 responsibilities of promoting the industry and
16 regulating the industry.

17 MR. CLEGG: Can I start? So on
18 behalf of Australia, when NOPSA was set up in
19 2005 it was purposefully set up as a totally
20 independent authority dealing only with health
21 and safety matters. The independence was
22 assured by making CEO responsible to the

1 Minister for Energy, a Commonwealth minister
2 down in Canberra and there was an advisory
3 board so the governance came through in that
4 manner.

5 And the board was, I think, seven
6 members. And they were all individual experts
7 in their own areas. And although they came
8 from a mix of trade unions, industry and
9 academia they represented just their own views
10 on the board and not the industry or the
11 unions they came from. And they were there to
12 provide advice to the minister and to the CEO
13 on operational strategy. So the governance
14 was assured through there. The independence
15 of the Authority was assured through the CEO
16 reporting direct to the minister. And we were
17 totally levied on the industry so we were well
18 funded.

19 And the policy -- so the regulations
20 still lived with government down in Canberra
21 and nominally the Authority was part of a
22 government department but, very unusually, the

1 CEO did not report to the secretary; as I say,
2 he reported direct to the minister.

3 Now, just having a focus on health
4 and safety meant exactly that: We were
5 entirely focused. We were not driven in other
6 directions like dealing with the environment
7 or commercial development, and so we were able
8 to operate just in that bubble, and hence we
9 were more effective by being able to do so.

10 MR. MOURE-ERASO: Thank you, Mr.
11 Clegg.

12 Mr. Whewell, do you have a opinion?

13 MR. WHEWELL: Well, the separation
14 occurred, of course, after Piper Alpha, and
15 again, that was highlighted in the report --
16 in the inquiry, of the tensions that can occur
17 and it was believed did occur within the
18 Department of Energy at the time, because
19 clearly, the -- there was -- there were
20 difficulties in the various departments; one
21 wanting developments to be undertaken quickly
22 to achieve effective access to the oil, and

1 the safety department wanting to make sure
2 those developments were carried out safely.

3 And I think any government
4 department has responsibilities for both.
5 However well the Chinese walls or similar
6 systems are thought to upgrade, those tensions
7 will exist, and separating them eliminates
8 that risk.

9 MR. MOURE-ERASO: Thank you.

10 Mr. Ognedal?

11 MR. OGNEDAL: Yes. I'll mention
12 that the Petroleum Safety Authority was sort
13 of a result of a result of a split of the old
14 Norwegian Petroleum administration. So now
15 we, as an organization, report to the Ministry
16 of Labor, and they have nothing to do with the
17 Ministry of Oil and Energy, so that's a split
18 from the top and all the way down:
19 separation. After 2004 we in the
20 PSA have been able to focus on our mission in
21 life, and that is to try and participate in
22 making the petroleum activity in Norway

1 onshore and offshore safe.

2 And we are not, say, influenced by
3 other consideration in the organization, so it
4 has helped us. It has also make it clear that
5 we were the safety regulator and, you know,
6 were having a good dialog and impact on
7 industry. So it became easier to use
8 resources only on the mission that we were
9 given after the split.

10 MR. MOURE-ERASO: Thank you, Mr.
11 Ognedal.

12 So, Mr. Wright?

13 MR. WRIGHT: Thank you, Mr.
14 Chairman.

15 I guess one of my first take-aways
16 from what you have all said, including
17 Professor Hopkins, is that the safety case
18 scheme or construct will not work if it's
19 underfunded or underresourced. And that the
20 process itself is iterative in nature and that
21 you have multiple time lines that you assess
22 the process for improvement.

1 So I have a couple of questions with
2 that as background.

3 First, do you think your country's
4 safety regime, hybrid safety case scheme is
5 adequately resourced and if not, why not? And
6 secondly, whether or not there is any
7 perceived shift in liability to the government
8 having that role?

9 MR. WHEWELL: I'll start on that.
10 Any organization can always feel it can do
11 better with more resources. So every
12 government regulator is constrained by
13 financial aspects. Having said that, the
14 offshore regulatory authority in the UK
15 actually has continued to be well resourced.

16 Our major obstacle is the ability to
17 recruit. And salaries are a big issue because
18 we compete with a very powerful, very well-
19 paid industry. And that is an issue, I think,
20 for any government. But in terms of
21 willingness to ensure recruitment, I
22 understand -- and bear in mind I left the

1 Department a year ago -- that even in the
2 current climate offshore inspectors are still
3 being recruited by the health and safety
4 executive, which illustrates, I think, the
5 importance attached to that.

6 As a separate issue -- and this has
7 already been mentioned by John -- we are not
8 funded by a levy from the industry, but we do
9 recover our costs for activities in relation
10 to major -- to the offshore industry and
11 therefore to a certain extent that cushions
12 the offshore regulatory body in the UK from
13 the pressures that come on in times of
14 economic constraint.

15 MR. CLEGG: The situation in
16 Australia is that the regulatory authority is
17 levied directly on the industry. That's a bit
18 slicker and more efficient process than a fees
19 basis, which happens in the UK. And NOPSA is
20 well funded through that. The money comes
21 direct to NOPSA; it doesn't go via government,
22 so there's not a handling charge removed from

1 the money as it arrives at us. So we are well
2 funded. I have to emphasize that.

3 And the way of retaining those funds
4 is very efficient. Industry doesn't like it.
5 They feel that, yes, perhaps they should pay
6 some of it but they feel there should be some
7 appropriation from government because there's
8 a societal benefit, as well. But government
9 has resisted that pressure. So funding's
10 good.

11 Our real problem -- and it's always
12 going to be a continuing problem -- is getting
13 the right people, even though the CEO can
14 decide the salaries. So that's another
15 advantage. I don't believe that is the case
16 in the UK.

17 The CEO is in complete charge and
18 are paid more or less comparable salaries in
19 some areas. Some that I couldn't.
20 Particularly well operations. They are hugely
21 paid. But we offer other social benefits from
22 being government employee. I could more or

1 less match industry. I came in just under.

2 But I still had a problem in getting
3 the right people with the managerial skills,
4 the technical skills, the interpersonal
5 skills. Those three I can't do anything about
6 when I have to recruit those from industry.

7 As regards regulatory skills, I can
8 bump those off, so I can try and pick them up
9 as regulators. But I have to have someone who
10 comes to me with those three sets of skills.
11 So they have to have about five or ten years
12 experience in major hazard industry,
13 preferably offshore petroleum and they have to
14 have been middle or senior managers. And they
15 have to, as I say, have these brilliant
16 interpersonal skills. Now, those people are
17 well sought after in industry, as well as a
18 regulator.

19 Now, in Australia initially I was
20 quite successful in getting people. But, in
21 fact, I recruit continuously world wide.
22 Continuously. And what I find -- what I was

1 finding was that after I'd given them a year,
2 18 months training as a regulator they were
3 snapped back up by industry. It was
4 particularly as it was a new regulator on the
5 block, a new, reinforced safety case regime,
6 they wanted to know how that regulator thought
7 and operated. So they were being continuously
8 poached.

9 And it was not unusual for one of my
10 inspectors to get an interest from a duty
11 holder almost monthly. And monthly that they
12 would up the ante, keep increasing the offer,
13 keep increasing the offer and eventually there
14 would be an offer the individual could not
15 refuse. So I have a continual training line,
16 as well. So I have to put in place a very
17 comprehensive training system. Very
18 expensive. Very expensive to set up. Very
19 expensive to run. So I have to put a
20 regulator in place that can cope with
21 continuous change with personnel. Serious
22 changes.

1 MR. WRIGHT: I don't think anybody
2 answered the second part of that question. In
3 terms of perceived liability?

4 MR. CLEGG: Okay. Once or twice
5 where we prosecuted the company has initially
6 tried to involve the regulator and said, Oh,
7 look, we've got an accepted safety case so the
8 government feels we're safe. And tried to
9 sort of share blame that way.

10 MR. WRIGHT: Right.

11 MR. CLEGG: But it was never
12 pursued. And generally, as the industry got
13 a little bit more sophisticated then we didn't
14 hear that at all.

15 MR. WHEWELL: Yes. If I can just
16 address that. I apologize for --

17 MR. CLEGG: No, that's fine.

18 MR. WHEWELL: -- earlier. I tried
19 to cover that in my presentation. And that
20 was one of the key changes we did make because
21 there was a continual risk that acceptance
22 would be regarded as permission and agreement

1 that the safety case represented a safe
2 installation. And although we continually
3 publicly made clear that an accepted safety
4 case did not guaranty a safe installation,
5 merely guaranteed that the document said the
6 company was doing certain things.

7 We've now clarified that still
8 further. More importantly, we've clarified
9 our assessor's approach so they are absolutely
10 clear that their job is to verify the claims
11 made and say, Well, if they -- say if those
12 claims are substantiated after inspection,
13 then the installation will be safe. But we
14 can't verify that until we inspect. So the
15 document represents if you like, the initial
16 position, the claim of safe operation. And
17 that's what we accept, and therefore under no
18 circumstances is the responsibility passed
19 back to the regulator in our approach.

20 MR. WRIGHT: Thank you.

21 MR. MOURE-ERASO: Thank you.

22 Mr. Ognedal, do you have some

1 statements to make?

2 MR. OGNEDAL: Yes. Very quickly.

3 You know, when they talk of resources and so
4 on, you know, like Ian said, we can all
5 basically use the resources as the regulator.
6 But the challenge here -- the day-to-day
7 challenge is to do a good job with what we
8 have. And resource management is a discussion
9 between us and the ministry.

10 When it comes to the personnel
11 situation, you know, recruitment, that is a
12 challenge. We are competing with the
13 industry. And that also is reflected in the
14 salaries that we offer. But we also offer a
15 lot of other things that is attractive to
16 people. So it's a combined package that we
17 try to use to recruit the right people into
18 the organization.

19 When it comes to reliability, I
20 cannot see that any company operating in
21 Norway can believe that they have a commission
22 or anything like that or a guarantee from the

1 regulator, you know, because the
2 responsibility -- who is responsible for what
3 is clearly laid out in th legislation.

4 We, as the regulator, have the
5 responsibility of setting the framework, the
6 regulations and also supervise compliance
7 within those regulations. So the industry,
8 they cannot bid on anything that we are doing
9 or saying or anything like that; they also are
10 responsible.

11 MR. WRIGHT: Thank you.

12 MR. MOURE-ERASO: Okay. Mr. Wark?

13 MR. WARK: Yes. Thank you, Mr.
14 Chairman.

15 Shortly after the accident, the
16 blowout I read an article -- I think it may
17 have been the Post -- which indicated that
18 Exxon ran into a similar situation in the Gulf
19 where they were drilling and that they decided
20 because of the -- I believe they were talking
21 about the high pressure and temperature
22 readings -- to cap the well and abandon it.

1 I have two questions. One is -- and
2 actually, let me go back and say I see three
3 take-aways from the three main investigative
4 reports I'm reading from. And one of them
5 deals with managerial conclusions. And it
6 says, Individuals should be trained to
7 repeatedly question data, raise concerns and
8 double check assumptions. In other words,
9 maintain a healthy sense of vulnerability.

10 And my question is in your countries
11 are you aware of similar incidents where a
12 company was drilling and got these bad ratings
13 and decided to abandon the well, cap it off
14 and go someplace else?

15 And the second part of that would be
16 how does a regulator scheme in your country
17 ensure that there's a specific focus on
18 preventing these catastrophic accidents?

19 MR. WHEWELL: The first question I
20 can answer fairly simply. No, I'm not aware
21 specifically of a situation where a well was
22 capped off because the company concluded risks

1 were so great that it could not be operated
2 safely. But that may be a result of perhaps
3 water depth we operate in and the nature of
4 some of the reservoirs.

5 I'm sorry. Could you just clarify
6 the second part of the question? I'm not
7 fully --

8 MR. WARK: Well, I was wondering
9 primarily if this is something that happens
10 fairly frequently under your regulatory scheme
11 or if it's something that is rare or that
12 you're aware of. And --

13 MR. WHEWELL: Well, I would think
14 it's rare. I mean, we have a requirement in
15 our legislation and it's actually part of the
16 safety case regulations, although it's not of
17 the safety case itself, for the well design to
18 be submitted to the regulator.

19 And that well design is examined by
20 our well specialist on the basis of their
21 knowledge of reservoirs and the particular
22 area that the drilling's taking place and the

1 nature of the well.

2 And based on their detailed
3 technical knowledge, they will then look
4 further at design and talk to the competent
5 person who is also required to certify the
6 well design. So there's an independent
7 competent person required to certify the well
8 design independent of the company. And we
9 then overview that decision-making process, as
10 well. So there's a sort of double-check on
11 well design.

12 And certainly, that -- whilst that
13 doesn't guaranty that people will do what
14 they're supposed to do on the day, it does
15 give some support to making sure that the
16 initial risks arising from the well have been
17 properly evaluated and the design, if carried
18 out as intended, will work.

19 MR. CLEGG: Similar situation in
20 Australia, but different in some ways. Well
21 operations and management is not the
22 responsibility of the safety regulator to

1 oversight. It's the responsibility of the
2 states. But since the blowout on the Montara
3 in the Timor Sea, a recommendation has been
4 made to transfer those responsibilities to the
5 safety authority, where there is a
6 requirement, however, in our legislation to
7 report well kicks. And to my knowledge those
8 are very few and far between.

9 MR. MOURE-ERASO: Mr. Ognedal?

10 MR. OGNEDAL: Yes. In Norway I know
11 that there are some drilling activities that
12 have been stopped and the well shut down, and
13 the reasons could be technical and technical
14 in such a nature that it's too risky to
15 continue, so it has happened.

16 When we talk about the other issues,
17 say, You know, what happened, you know, when
18 drilling is going on, that's, you know, part
19 of the management system. That's also a part
20 dealing with management of change; there's a
21 problem that crops up and you need to resolve
22 it, you need maybe to do some changes to the

1 program. And, of course, when doing things
2 like that that you have to go through the
3 process again of risk evaluation and so on
4 based on the principles of management of
5 change.

6 MR. MOURE-ERASO: Thank you, Mr.
7 Ognedal.

8 So we continue our proceeding with
9 the questions from the Investigator Panel.

10 So, Mr. Holstrom?

11 MR. HOLSTROM: The first question I
12 have concerns the standards that the various
13 regulatory regimes rely on, how they're
14 accepted and if there's ever a determination
15 on the adequacy of those standards that are
16 submitted as part of either a safety case or
17 evaluated by the regulator. And related to
18 that in particular are the risk evaluations.
19 For example, if it's as low as reasonably
20 practical or some other formulation are those
21 applied to the safety standards that are
22 presented?

1 CSB has a history of noting that
2 certain safety standards have gaps and can
3 need -- can use improvement and in some cases
4 there's a lack of standards. For example, the
5 CSB out of its own investigation in about the
6 year 2000 made a recommendation to API to
7 develop safety system standards for oil and
8 gas production onshore, which were implemented
9 by API that didn't exist before and those
10 weren't in place.

11 So how do you deal with either non-
12 existent standards or standards that may have
13 gaps? Is there an evaluation process? And do
14 you apply the same risk-base approach that you
15 apply evaluation -- in evaluating the safety
16 case or the activities of those you're
17 regulating to the standards themselves?

18 MR. WHEWELL: I'll take that to
19 start with. I mean, the basis for decision
20 making on whether all reasonably practical
21 steps have been taken starts with the question
22 as to whether a standard exists. If a

1 standard exists that then becomes the base for
2 the decision making. But it doesn't mean that
3 we accept that standard as being good enough.

4 The next question that's asked by
5 the assessor is, What is currently -- current
6 good industry practice. In other words, if
7 things have moved on -- and they often do from
8 standards -- technologies as developed, we
9 look at good industry practice and say, Well,
10 what is industry actually doing. We then look
11 at the best industry practice. So we look
12 from our knowledge and experience and
13 technical -- from our technical experts and
14 say, What are the best companies doing, Can
15 they do better. And certainly, in terms of
16 new installations, for example, we would
17 expect that account would be taken, the best
18 industry practice if the cost benefits meant
19 that that was feasible.

20 So we work through that hierarchy,
21 really of standards. And there are gaps. And
22 we fill those gaps, as I say, looking at the

1 experience of our own specialists, looking at
2 the way industry deals with these issues,
3 looking worldwide at standards. But sometimes
4 we have to set our own base standards. We set
5 our own minimum standard as a regulator. One
6 could suggest that's prescription.

7 But quite honestly, we learn from
8 experience as a regulator. And if in our view
9 an incident has occurred as a result of a
10 deficiency in approach then we would expect
11 the industry to address that deficiency and
12 we'd set that as below our base standard and
13 insist on improvements. So standards very
14 much are the basis, but we move on from there
15 to try -- and that's the advantage of the
16 goal-setting approach.

17 MR. CLEGG: In Australia it's a
18 similar approach. And running through the
19 argument that the duty holder makes for
20 achieving ALARP is, as Ian has said, codes and
21 standards, good practice, not QRA. In the old
22 days in the UK there was a regulatory

1 requirement for industry to undertake QRA.

2 And on this Ian says otherwise. I
3 personally felt that was starting to override
4 almost good practice, proposed some standards
5 and arguments who have been made for some very
6 strange engineering standards. And I believe
7 that regulation has been revoked.

8 So the argument should be develop
9 some cogent standards and good practice.
10 After that you do move to engineering
11 judgment, as Ian has said, and qualitative
12 risk assessment. Use QRA as appropriate but
13 not as the main thing. And then you move up
14 to company values and societal risks where it
15 becomes more and more difficult. So that is
16 sort of the progressive implementation of the
17 tools.

18 But, yes, there are holes in the
19 tools and that is exactly why we need to
20 employ expert regulators. They should know
21 and understand the full range of codes and
22 standards and good practice in their

1 particular specialist areas. They should know
2 and understand where the gaps are and what's
3 the judgment that those standards are based
4 on. And if they're not happy with those or
5 the way those standards are beginning to fly
6 then they require the duty holder to
7 demonstrate how they've dealt with those
8 weaknesses.

9 And that's why you need a regulator
10 that can provide expert challenge. We are at
11 the moment, I believe, attempting to quantify
12 all this within the regulator. But that will
13 be a long, lengthy process.

14 MR. MOURE-ERASO: Thank you.

15 Mr. Ognedal?

16 MR. OGNEDAL: Yes. We -- as I said
17 initially, we refer to standards in our
18 guidance to the regulations. And when we
19 refer to the standard, we have evaluated the
20 standard and decided that this is an
21 acceptable standard to use.

22 We also participate in

1 standardization work where we feel it's
2 important to participate, and when there are
3 lack of standards and we see that there should
4 be a standardized approach, like, for
5 instance, to -- related to the question, you
6 know, What is safe, like extension of the
7 facilities, we work to develop, say, a
8 practice or more a standard on the issue.

9 Best practice is also very
10 important. That's your key standard, not
11 necessarily. Best practice -- there's a quote
12 in Norway, [speaking Norwegian], that there's
13 a challenge of the creating some best practice
14 document on specific issues. And I think
15 there's a number of best practices that have
16 been developed over the years. Thank you.

17 MR. MOURE-ERASO: Mr. Hoyle?

18 MR. HOYLE: Thank you. CSB
19 investigations have found that disasters are
20 almost always preceded by other less-serious
21 incidents -- near misses -- that provided
22 warning of a disaster to come and also

1 provided the opportunity to prevent such
2 disasters.

3 In the U.S. safety regulatory regime
4 there's no duty to learn lessons from serious
5 incidents and there's no duty to share lessons
6 with other companies from your incidents and
7 there's no duty to change operations or
8 improve operations based on the lessons of
9 incidents. How does your regulatory regimes
10 address this problem?

11 MR. WHEWELL: In the UK similarly,
12 there's no specific requirement to learn from
13 incidents. But as far as we're concerned, a
14 management system that doesn't include an
15 ability to learn from incidents is not
16 adequate. So we tackle it in terms of whether
17 the management system is adequate.

18 That having been said, we spend
19 considerable amount of time pressing the
20 industry to share data between companies and
21 indeed, making sure wherever possible that
22 even within companies they're sharing data.

1 The oil industry is -- does seem to
2 have particular difficulties in sharing
3 information even on something as critical as
4 safety. I found it over many years a mystery
5 as to why something as simple as safety isn't
6 shared. There's no great commercial advantage
7 in not sharing safety data.

8 In the UK we persuaded the trade
9 association to set up an accident database for
10 sharing information. And that is populated
11 and can be accessed by companies. And we've
12 also moved in recent years to more active
13 sharing without our safety forum that we
14 operate with the industry, trade unions and
15 HSE where if there are incidents where it's
16 felt lessons can be learned these are shared
17 in open forum and actually published on the
18 site. And that's the set changing safety site
19 for UK companies.

20 And there is a considerable amount
21 of information on there about incidents that
22 have occurred and also, sharing good and best

1 practice. In other words, where people have
2 solved safety problems, they've put those on
3 the site. But I won't pretend that that site
4 is comprehensive or we've solved the problem
5 of actually getting really good sharing of
6 information in the UK.

7 MR. CLEGG: The lawyers do not like
8 their companies sharing accident, incident
9 safety data. It's a big impediment.

10 In Australia, though, we can require
11 the company to issue a safety log. If they're
12 hesitant and delay or it's inadequate, then
13 the regulator will issue its own safety log.
14 Their main trade association, APPEA, also
15 maintains a database similar to the one that
16 Ian has described in the UK. But again, that
17 is not comprehensive.

18 But this is another major role for
19 the regulator. We pan the whole of the world
20 for significant events, be they onshore and
21 offshore and we share the learnings from those
22 events with the industry ourselves. We do

1 that on a one-to-one basis.

2 But we also do it through the --
3 what we know as the CO's Newsletter, which
4 comes out monthly. And there we share issues,
5 our topical issues of the day which cover the
6 Australian industry. And, as I say, it also
7 reviews what's happened internationally and
8 what the learnings are and we put in place the
9 links for the industry to access that
10 information.

11 When we go out on our inspections or
12 we deal with management back in the office, we
13 will review those learnings and ask how the
14 industry or the company is responding to them.

15 MR. MOURE-ERASO: Thank you.

16 Mr. Ognedal?

17 MR. OGNEDAL: Yes. In Norway, you
18 know, everything that is not a company secret
19 nor information about an individual is
20 basically public. So everything, for
21 instance, we as the regulator do is available
22 to everybody.

1 And we actively put all our
2 supervisors' report, investigation reports
3 onto our web site. And there -- that is --
4 the purpose of all of that is simply to give
5 to the industry and other people information
6 about what we have found and thereby
7 participate in sharing.

8 In the safety program, for instance,
9 where the three parties meet together, we
10 present always the serious incidents that have
11 happened since the last meeting. And the
12 industry will be -- operations organization in
13 Norway, they have now digested reports from
14 off of well control that they -- well, they
15 are sharing that between the members, and they
16 use it as sort of a training facility,
17 facilitate training in a way, because they
18 present it in such a way, ask questions, what
19 should have been done that wasn't done, and
20 they also indicate the possible answers once
21 you get out in the chain of industry.

22 So it's very open, so information is

1 available to everybody. And the trick is that
2 the people should be apprised about all of it
3 and ask the question, What can we learn from
4 these reports and this information?

5 MR. MOURE-ERASO: Thank you.

6 Mr. Tillema?

7 MR. TILLEMA: Yes. Thank you. One
8 of the areas I'm -- I have a lot of passion
9 around is the idea of continuous improvement,
10 which I was pleased to hear got mentioned a
11 few times today. So I guess my question would
12 be when a company goes out and assesses a
13 hazard and they come up with a safety case to
14 identify how that hazard's going to be
15 mitigated and if you're using industry
16 standards as the model to determine if you're
17 as low as reasonably practical, how does that
18 standard -- if it stays flat -- how is that
19 going to drive continuous improvement. So why
20 wouldn't the idea of when you renew a safety
21 case requiring reduced risk or raising the bar
22 for performance, how do you address that?

1 MR. CLEGG: I can answer on behalf
2 of Australia. I really do need to reenforce
3 the point that codes and standards is the
4 baseline and not the only line. On top of
5 that there is good practice, engineering
6 judgment, qualitative risk assessment,
7 quantitative risk assessment, company values
8 and societal values.

9 Now, we expect to see an application
10 of all of those. And, in fact, you can test
11 really whether a company seriously believes in
12 continuous improvement by seeing how it
13 contributes to society in those areas.

14 Is it open? Is it transparent?
15 Does it share? Does it send representatives
16 to standards-making bodies? And is it open
17 with the regulator? And does it take part in
18 producing technical papers for discussion and
19 improvement within the industry and worldwide?
20 So you can get a feel for the company like
21 that by applying various tests.

22 But there a regulatory requirement

1 which supports all that, which is that the
2 safety management system must be properly
3 implemented, and it must include facilities
4 and ways of obtaining continuous improvement.
5 So it's underpinned by regulatory requirement.

6 MR. TILLEMA: And does that system
7 ensure that ten years from now these risks
8 will be lower than they are now?

9 MR. CLEGG: It certainly provides
10 the basis for moving in that direction where
11 prescription would not.

12 MR. TILLEMA: Thank you.

13 MR. MOURE-ERASO: Mr. Ognedal?

14 MR. OGNEDAL: I think, you know, the
15 situation is that some of the standards, they
16 are not being maintained as properly as they
17 should be, so that's a problem there.

18 And we may compensate for that by
19 addressing issues in our guidance, and what we
20 try also to do is to be on top of everyone and
21 remove standards from the guidance. If they
22 are getting too old or experience shows that

1 they are not achieving the safety record we
2 are after, we can take them off the list of
3 acceptable standards. And that happens.

4 And there's a challenge there
5 related to this, because there are many
6 accidents in the petroleum industry. And
7 though many of these accidents are old
8 equipment -- they look at standards
9 differently. And operators, as has been
10 mentioned by John and Ian, have the duty of
11 seeking continuous improvement. And that
12 means that they cannot be static when it comes
13 to the use of standards. They have to do a
14 little bit more than that. Thank you.

15 MR. MOURE-ERASO: Thank you.

16 Mr. Whewell?

17 MR. WHEWELL: Yes. I probably can't
18 add a great deal to those comments, as John as
19 set out. I think that in answering your
20 question in ten years time how confident are
21 we that standards will be better in a goal-
22 setting regime than in a standards-based

1 prescription regime, I'm absolutely confident,
2 because I know the changes that have taken
3 place in the North Sea as a result of the
4 regulator pressing for improvements that have
5 been identified in good practice in companies
6 developing improved ways of achieving the
7 objectives and making it clear that our
8 expectation of the regulator is as a regulator
9 that other people will adopt those
10 improvements progressively on the cost-benefit
11 basis.

12 So I've seen considerable
13 improvements. And certainly, I mean, control
14 of drill flow equipment is a good example --
15 better automation and so on -- that is partly
16 driven by economics but nonetheless, wouldn't
17 have taken place if we hadn't had the
18 legislation to require -- to the continue
19 improvement approach to require companies to
20 progressively upgrade their equipment and take
21 advantage of the knowledge of improved
22 approaches.

1 MR. TILLEMA: Thank you.

2 MR. MOURE-ERASO: Dr. MacKenzie?

3 DR. MacKENZIE: Recognizing the
4 time, I'll just have a quick question for the
5 panelists regarding personnel resources you
6 spoke a little bit about. I'm interested to
7 hear from you about the number of inspectors
8 required to conduct a thorough inspection of
9 a drilling rig. There's a September 1 letter
10 to the Secretary of Interior regarding a
11 review by an oversight committee of MMS -- the
12 former MMS -- and BOEMRE. And one of the
13 major issues they pointed to was a lack of
14 resources, a lack of personnel where they only
15 had one inspector able to do an inspection
16 sometimes and then the difficulties of being
17 able to look at every rig. And I was just
18 wondering if you could speak to that very
19 quickly.

20 MR. WHEWELL: Yes, briefly. I mean,
21 certainly, in terms of our audit or primary
22 interventions they would usually be carried

1 out on the basis of the risk analysis of where
2 we put our resources for that intervention.
3 Which means you can't do everything. You've
4 got to target.

5 But what we would do is we would
6 probably have a three-day inspection with
7 three to four inspectors in various
8 disciplines with areas identified prior to the
9 visit as being a priority and needing review
10 and needing to be properly looked at. And
11 that visit would then be carried out fairly
12 comprehensively, picking up additional items
13 on routes and talking to the offshore
14 workforce, which as John has said, is a
15 primary source of information for us. And
16 feeding back on that. So it's that level of
17 intervention.

18 But I won't pretend that will deal
19 with everything all in one go. And that's the
20 value of the safety case. It enables you to
21 identify and prioritize some of the key areas
22 where if the risks are not properly controlled

1 on that particular installation there may be
2 a higher risk and therefore, that we can bring
3 in the specialists who've identified that as
4 a result of their assessment of the safety
5 case. And then they can look into that and
6 satisfy themselves that the risk controls are
7 as stated in the case.

8 MR. CLEGG: In Australia it's
9 identical situation. But there are certain
10 elements I'd just like to share with you. We
11 don't go offshore unannounced. And, in fact,
12 we make a positive move to involve onshore
13 management in what we're going to do. So we
14 use the safety case. We brief ourselves on
15 what's in there and what the main issues are
16 and how the management believe they control
17 those. We will then, prior to a visit, select
18 a few of those and we'll share those with
19 senior management and ask for a meeting with
20 them and ask them to present at that meeting
21 those managers who've had an input to those
22 areas of the safety case.

1 DR. MacKENZIE: Do you --

2 MR. CLEGG: The reaction to that has
3 been interesting. So suddenly they're having
4 to take the safety case off the shelf.
5 They're saying, Oh, the regulator is using a
6 safety case, oh, heck, perhaps we ought to use
7 it, as well. And also, that involves in the
8 offshore order for inspection.

9 Previously, I believe, under the
10 regime the inspector would just go off and do
11 something. And even if the management were
12 aware of an inspection often they wouldn't
13 be -- they would just keep their heads down
14 and hope nothing came of it, but now they're
15 involved in the process.

16 So then we take all that offshore
17 and we audit against what the management
18 thinks is going on, we audit against what is
19 stated in the safety case, because they're
20 sometimes a bit different. And management are
21 then waiting for us to come back onshore and
22 tell them how it's gone. And so they get

1 involved in the process; they get some
2 ownership of that inspection, and that is most
3 important.

4 DR. MacKENZIE: Thank you.

5 MR. MOURE-ERASO: Mr. Ognedal?

6 MR. OGNEDAL: Yes. Typical audit
7 combined with a verification, we will use a
8 team, three, four people, that would spend a
9 fortnight planning -- detailed planning and
10 then go in normally to the office of the
11 company and interview the management there, et
12 cetera.

13 And then they will go offshore and
14 may spend a couple of days, three days looking
15 at the effectiveness of the maintenance
16 management system, as an example. And then
17 these three, four people come back to the
18 office and they spend normally a week creating
19 the report.

20 DR. MacKENZIE: Thank you.

21 MR. MOURE-ERASO: Thank you.

22 I think that we're going to proceed,

1 you know, with asking the audience that if
2 they want to have questions to please put it
3 in the e-mail for us so that we can read. And
4 as I said before, we are going to have another
5 bite of the apple for the board if there is
6 somebody that needs to give a question.

7 MR. GRIFFON: Yes. I just -- this
8 is actually a follow-up to my first question,
9 so if you can remember about 40 minutes ago.
10 I just come back to whether the safety case
11 approach or your different regimes has
12 improved safety in offshore drilling. A
13 couple things have struck me throughout this
14 discussion.

15 One, the idea -- the notion came up
16 of the paper exercise, that it cannot become
17 just a paper exercise and be put on the shelf,
18 I think, as you said, Mr. Clegg. And I
19 certainly agree with that. And I guess the
20 other thing that I heard during earlier
21 discussions -- I forget who said it -- but in
22 response to whether it was a more effective

1 approach, someone said that the industry felt
2 that it was working much better.

3 And I guess my question to follow up
4 on that is do the workers or worker
5 representatives, unions to the extent they're
6 represented in their various countries, what
7 is their response to the -- this sort of new
8 approach, the safety case approach, whether
9 it's being effectively implemented in the
10 offshore locations.

11 And also, just the second part of
12 that is what requirements do your regulations
13 have, as far as worker involvement in the
14 planning, in the auditing and all aspects, I
15 guess, of the safety case approach.

16 MR. WHEWELL: I -- it's difficult to
17 speak for the trade unions. But I can
18 probably give you examples of where we have
19 received considerable support from the trade
20 unions in our approach. And that's where
21 situations are sufficiently bad that our view
22 is that the installation isn't complying with

1 its safety case which effectively means that
2 they are operating illegally. The
3 installation usually will shut down
4 voluntarily rather than have the regulator
5 shut it down, which obviously, we have the
6 power to do either by withdrawing the safety
7 case or issuing a prohibition notice.

8 But in those circumstances -- and
9 they've occurred -- I think that the --
10 certainly, in the UK with our changed approach
11 and strengthening as a result of the updating
12 of the regulations, we have been much firmer.
13 And this certainly has received a lot of
14 support from the trade unions that can now see
15 that the safety case is being used as a means
16 of ensuring that safety's being properly
17 managed on the installation and has clear
18 evidence, in terms of the correspondence that
19 they have access to in our -- to the companies
20 that we're using the safety case and indeed,
21 failures in safety management systems to take
22 companies to task. And I think that's greatly

1 appreciated by the trade unions who clearly
2 have members on some of these installations
3 which give them great concern.

4 MR. GRIFFON: Thank you.

5 MR. CLEGG: In Australia the unions
6 appreciate the strength of the duty-of-care
7 approach compared with prescription. That's
8 it. Basically, they do. However, having said
9 that, they are concerned that it places a lot
10 of power in the hands of the operator. That's
11 their view.

12 And their view is that in order to
13 control that you need to have a very expert
14 and properly resourced regulator to hold the
15 operator's feet to the fire. So they are very
16 supportive of having that expert, well
17 resourced regulator in place because they know
18 and understand that is key to the successful
19 operation of a duty of care, safety case based
20 regime.

21 To answer your question of worker
22 involvement, there are regulations that

1 require the workers to be involved in the
2 process of producing the safety case. And for
3 any new workers that come on board where you
4 have already the safety case in place and they
5 are -- the operator's required to share that
6 safety case content with the new workers and
7 explain how it is used on the installation and
8 what their contribution should be to that
9 process.

10 MR. MOURE-ERASO: Mr. Ognedal?

11 MR. OGNEDAL: Now, in the -- as I
12 indicated, in Norway, you know, they clearly
13 don't -- they welcome representatives shall be
14 involved in all aspects of the safety world.
15 So that is laid down in regulations as set
16 forth. When it comes to our regulations, et
17 cetera, my impression is that they -- also,
18 the workforce is in general happy with the
19 situation. But they say and I certainly agree
20 that the regulations, they are demanding --
21 yes. I know. I agree with that. In some
22 cases they indicate that it would be valuable

1 with a little bit more prescription in certain
2 areas. So that is my general fix of the
3 situation.

4 MR. GRIFFON: Thank you.

5 MR. MOURE-ERASO: Thank you.

6 Mr. Bresland?

7 MR. BRESLAND: This is a UK-based
8 question or UK-focused question. After Piper
9 Alpha you went from your previous regulatory
10 construction to the safety case program and
11 you hired -- eventually hired 300 people, as
12 I recall you said. How long did it take you
13 to get from, you know, Point A to Point B in
14 doing that?

15 MR. WHEWELL: The regulations -- the
16 safety case regulations came into force in
17 '93 -- or at least, they were published in '93
18 and came into force shortly afterwards. HSE
19 took -- was passed responsibility in 1991.
20 John can confirm that. So effectively there
21 were two years during -- twice of the
22 regulations becoming active and the rest of

1 the regulatory package being produced for the
2 division to actually set up its systems and
3 procedures. And there's no doubt that that
4 took a considerable amount of planning and
5 resource to actually be prepared to go on Day
6 1 when the safety cases started being
7 submitted.

8 Prior to that the industry did
9 submit some sort of test safety case to enable
10 the regulator to modify and improve the
11 systems and ensure that they were working and
12 get a better understanding of the issues
13 arising from the safety case, which was
14 obviously at the time totally new to the
15 industry. Although there were onshore safety
16 cases the framework was slightly different.
17 And, of course, the acceptance put far more
18 pressure on the company because they're
19 required to have it accepted within a certain
20 period of time with the regulations coming
21 into force.

22 So a tremendous amount of work went

1 in. Huge amount of work in the training.
2 But -- and I think when John set up NOPSA he
3 would have had similar problems of actually
4 setting up the systems and procedures. And
5 unless those systems and procedures are in
6 place and they are properly monitored and
7 properly managed then a safety case based
8 regime won't work effectively.

9 The assessment process must be very,
10 very carefully controlled. The assessment
11 work must be very carefully managed and
12 overseen. Technical decisions and legal
13 decisions need to be very carefully managed
14 and overseen. It is a complex process that
15 does require a considerable range of skills
16 and considerable resources.

17 But once the system is up and
18 running and the hump, is you like, is over --
19 I mean, we currently have approximately 160
20 staff in the division, which is -- with 100 to
21 110 professional inspection and engineers and
22 specialists in the division.

1 And that is, if you like, an ongoing
2 status quo level that, should there be any
3 major changes to legislation which required us
4 to do something significantly different those
5 resources might not be adequate. But that is
6 a status quo level. But that gives you a
7 feeling of the initial need for a very high
8 level of recruitment to actually achieve the
9 point where everybody has an accepted safety
10 case.

11 MR. BRESLAND: Thank you.

12 MR. CLEGG: If I could give an
13 Australian perspective on that -- you might
14 find that helpful -- our regime is very
15 similar to the UK.

16 But when I arrived in Australia in
17 June 2004, I had a bucket of money and I had
18 a bucket of revised and more focused
19 legislation. And that was it. There was just
20 me. So -- and I had to be up and running as
21 a regulator six months later on the 1st of
22 January 2005. So I had six months to build

1 the regulator.

2 Well, obviously, I didn't achieve
3 that in six months, but I did meet that
4 deadline in some fashion. And, yes, I had all
5 those challenges and more Ian has just
6 described.

7 I was on a five-year contract, so I
8 believed -- just -- I always thought it would
9 take five years to build that competent
10 regulator with all the systems, processes,
11 people in place, training schemes, enterprise
12 document record management systems, fitted out
13 the offices and got the electronics and
14 computer systems and everything that goes with
15 a modern, sophisticated regulator.

16 I thought that would take at least
17 five years. And when I left my fixed-year
18 contract five years later, we were there or
19 thereabouts. But I accept that continuous
20 improvement is needed, just as it is for the
21 industry. So they still work at it. But it
22 took me five years from nothing.

1 MR. MOURE-ERASO: Mr. Ognedal?

2 MR. OGNEDAL: Yes. Well, the things
3 we went through, you know, to establish the
4 PSA, get the regulations in place covering the
5 eventual responsibility, we got -- you know,
6 we did that in one year.

7 MR. MOURE-ERASO: Thank you.

8 So it is my turn. So in the
9 interest of time I cede my time to my
10 gentleman from -- my fellow member here.

11 So go ahead.

12 MR. WRIGHT: Thank you, Mr.
13 Chairman.

14 I don't recall who stated this
15 tenet. But one of the basic tenets was
16 developing appropriate behavior with respect
17 to risk and risk taking as part of the safety
18 case scheme, if you will. And my question is
19 are you familiar with any safety case
20 failures? And if so, why did they occur? Did
21 the system break down or was it the inability
22 of those people to display appropriate risk

1 behavior?

2 MR. WHEWELL: I'm not quite sure
3 what you mean by safety case failure. I mean,
4 we have situations where we have a safety case
5 submitted which just does not adequately
6 demonstrate that safety is being effectively
7 managed, which would mean that the company
8 would need to go away and either make sure
9 that the documents reflected reality if in fact
10 they were managing it effectively or,
11 conversely, sort out the management of -- on
12 the installation to ensure that the systems
13 were in place.

14 Certainly, we've had situations as
15 I've described where on audit and intervention
16 we have discovered a complete failure of
17 management systems as described in the safety
18 case. And in those circumstances, clearly, as
19 I say, the company has very little alternative
20 but to shut the installation down. So, I
21 mean, that I would view as a failure. And it
22 does occur.

1 And without adequate and competent
2 intervention that doesn't get discovered. And
3 that's the important corollary to safety
4 cases: These can't exist in isolation. They
5 must exist with a good supporting regime and
6 a good regulator -- with a competent regulator
7 with sufficient resources to back up that
8 safety case.

9 MR. WRIGHT: Thank you.

10 MR. CLEGG: In Australia it's not
11 unusual to reject safety cases because they
12 are such a poor quality; they haven't made
13 adequate demonstrations.

14 And in my five years there I think
15 we moved to withdraw accepted safety cases on
16 three occasions. We never actually had to go
17 that route. We went through many months of
18 trying to get the company to improve. And
19 it's normally due to systemic failures in the
20 safety management system. That's what gives
21 us serious cause for concern.

22 One of the worst was a drilling

1 company. And as a result of that I think they
2 doubled their staff in Australia and they
3 ensured that the Australian branch adopted and
4 properly implemented the company's worldwide
5 standards, because they had been a bit thin.

6 So -- and on those three occasions
7 we tried for months to get them to improve,
8 and they hadn't, so I gave them notice of
9 withdrawal. And, of course, I went straight
10 up the management chain to the management
11 director, and on all occasions in three days
12 those managing directors, on each occasion,
13 were in my office, not at my request. And
14 they come from around the world.

15 You shut down a drilling rig or an
16 operating facility, that is costing millions
17 of pounds, dollars. And that's what does it.

18 And I would just say, to finish,
19 that's why it's very important, I feel, if you
20 have a safety case regime in place, you must
21 give the operator -- sorry -- you must give
22 the regulator the ability to accept or reject

1 that safety case. If I didn't have that
2 power, I wouldn't have got all these
3 improvements.

4 MR. MOURE-ERASO: Thank you.

5 Mr. Ognedal?

6 MR. OGNEDAL: I have nothing to add.

7 MR. MOURE-ERASO: Okay.

8 Mr. Wart, do you have an additional
9 question?

10 MR. WARK: No follow-up.

11 MR. MOURE-ERASO: Okay.

12 There is any questions from the
13 Investigator Panel?

14 MR. HOLSTROM: We have a couple of
15 questions that have been posed by the
16 audience.

17 MR. MOURE-ERASO: Yes. But you have
18 one of your own before I move to those?

19 MR. HOLSTROM: Oh, no. Go ahead.

20 MR. MOURE-ERASO: Okay. We'll --
21 okay.

22 We have a couple of questions from

1 the audience. The first one is a person that
2 doesn't have a BlackBerry, which is fine, you
3 know. It says -- he wrote it down. It says,
4 During the actual drilling there are no
5 inspectors on site. I assume in the regimes
6 that we are describing. And another is, What
7 stopped companies for trying to avoid safety
8 case goals?

9 MR. WHEWELL: It's absolutely right.
10 I mean, one of the issues with the regulator
11 is that even if we can get up offshore once a
12 year with a comprehensive inspection of any
13 installation it is only a snapshot in time.
14 Which is why it's important that the visit is
15 well planned, well executed and the key areas
16 are dealt with.

17 What's to stop a company not
18 complying with a safety case? The short
19 answer is nothing, but the risk that the
20 installation will be shut down on discovery.
21 And the -- I think it's a brave operator that
22 intentionally goes outside the safety case

1 because the eyes and ears of the regulator --
2 certainly in the UK and I suspect in Australia
3 and Norway -- are on the installation.

4 They are the -- there's the
5 workforce on the installation. They are aware
6 of the key standards that the safety case
7 sets. And certainly, we have a system for the
8 workforce contacting us if they have any
9 safety concerns and certainly, if there's any
10 suggestion that the company is not --
11 intentionally not complying with the safety
12 case. That would be viewed extremely
13 seriously and we would carry out a very
14 thorough investigation into that.

15 But the question is absolutely
16 right. We can't, as a regulator, be there all
17 the time. But any company that intentionally
18 flaunts the law, as in any case where
19 intentional legal failure is identified, it's
20 viewed by certainly, us and the courts in the
21 UK as particularly serious than unintentional
22 breaching of the law.

1 MR. CLEGG: I would say that the
2 whole basis of the duty of care safety case
3 based regime is to improve the safety culture
4 of the whole of the company, both offshore and
5 onshore. And it is that safety culture that
6 prevents that sort of occurrence that the
7 questioner has asked about. That's the main
8 barrier that's in place.

9 Also, in Australia if we know that
10 we have a difficult drilling operator, we will
11 tie our inspections to the time of maximum
12 activity. So that is when he's drilling, so
13 we will be offshore when he is drilling.

14 MR. MOURE-ERASO: Mr. Ognedal?

15 MR. OGNEDAL: I think that, as I
16 said, we are risk based, so we may decide to
17 go offshore if there's a special well being
18 drilled that is very risky, et cetera. So we
19 decide based on the risk picture that we see.

20 We cannot be offshore all the time;
21 we have not resources for that, but we may be
22 offshore on one installation every month and

1 forget about other installations for a couple
2 of years. It's because we are of the opinion
3 that those installations we don't need to
4 visit because they are adhering to the
5 management system in place, and they are doing
6 things right.

7 As a baseline, I think also -- well,
8 if we talk about the safety case approach, you
9 know, the baseline is that once the company
10 tell you something, you believe it.

11 So there's a certain element of
12 trust between the company and the regulator,
13 and the worst thing a company can do here in
14 Norway is to breach that trust. So then there
15 will be heavy reactions. Thank you.

16 MR. MOURE-ERASO: Thank you.

17 I have another question from the
18 audience. It says, Mr. Griffon from the CSB
19 already questions whether safety case is
20 actually better improving safety over the
21 prescriptive approach in the U.S.

22 So the Montara blowout near

1 Australia last year seems to defy the notion
2 that safety case, even when it is blended with
3 regulations and standards is sufficient to
4 prevent devastating OSHA accidents. What
5 would be the response to this? This is
6 probably to Mr. Clegg.

7 MR. CLEGG: All right. Thank you.

8 Very good question. In fact, well
9 operations in Australia currently is not under
10 the purview of the Safety Authority; it's
11 under the purview of the state regulators.

12 And hence the Montara inquiry report
13 makes virtually no mention of the Safety
14 Authority at all but is very critical of the
15 role played by the state regulator, in that
16 they were underfunded, they were generally
17 underresourced, they didn't have the
18 competencies. I believe it also says that
19 they accepted what were clearly schlocky well
20 operation management plans and also didn't
21 inspect and audit as they should have done.

22 A consequence of that is there is a

1 recommendation that well operations, well
2 design, well operations and well management
3 should be brought within the purview of NOPSA.
4 And I believe that will occur fairly shortly.
5 And then they will be subject to the duty of
6 care regime.

7 MR. MOURE-ERASO: Any comments from
8 any members of the panel?

9 (No response.)

10 MR. MOURE-ERASO: Okay. I have
11 another question. Here it says, There is --
12 there are indexes of near-misses reporting
13 systems. For example, in the United States
14 there is a NASA Near-Miss Digest for the
15 airline industry. And for the IAFC from
16 firefighting. There is a large database
17 covering the benefits for districts of systems
18 and with actual accidents and injuries. Is
19 there something similar or something like this
20 is being used in your regimes? Digest or
21 near-misses and use of them.

22 MR. WHEWELL: There is no formal

1 near-miss reporting arrangements in -- on the
2 UKCS. But we would expect every company to
3 have a near-miss reporting and investigation
4 process as part of their management system
5 because you only learn from things that go
6 wrong. And if they -- if it's a near-miss
7 you're fortunate that it hasn't gone wrong
8 seriously. So every company should have a
9 near-miss reporting arrangement within the
10 company. But there's no formal requirements
11 for near-miss reporting.

12 In terms of -- I mean, we do require
13 gas -- oil and gas hydrocarbon releases to be
14 reported on the UKCS, which was a requirement
15 after the Piper Alpha inquiry. And we have a
16 very, very comprehensive database of release
17 which actually enables a -- after many, many
18 years of collecting this data, a very full
19 analysis of plant and equipment failures
20 enables companies to target that. And that,
21 in many cases, the oil and gas releases may be
22 of a relatively minor nature at the time which

1 might be viewed as a near miss but actually,
2 there's a lot that can be learned from that
3 database. And companies use that database for
4 evaluating plant and equipment design options.

5 MR. CLEGG: A similar situation in
6 Australia. But by regulation we do require
7 the reporting of certain lagging indicators.
8 And some of these may be considered to be near
9 misses. And they include hydrocarbon
10 releases, well kicks, unscheduled activation
11 of the Emergency Response Plan and damage to
12 safety-critical equipment.

13 MR. MOURE-ERASO: Mr. Ognedal?

14 MR. OGNEDAL: In our regulations we
15 have required reporting of quite a few types
16 of incidents. I'll mention some: a loss of
17 well control, ships on collision course,
18 trolling loads that didn't hurt anybody, and
19 so on. So that's quite a list that we are
20 asking industry to report to us. And we
21 collect all of this information and use it
22 together with other information in developing

1 the risk picture I talked about. Thank you.

2 MR. MOURE-ERASO: Thank you.

3 I have another question here. In
4 the U.S. MSHA, the Mine Safety and Health
5 Administration, conducts a major internal
6 review of its regulatory scope and competence
7 after a major mining disaster that was
8 published and that we know about. And the
9 question is, Do any of these regulations --
10 regulators do as well after a major offshore
11 failure. I mean, is that a question for us or
12 for the panel? To the panel, yes.

13 MR. CLEGG: Okay. I can answer on
14 behalf of Australia. Often when there was a
15 really serious incident, of course, there is
16 effectively a public inquiry, much as CSB
17 undertakes, which looks at questions of fact.
18 And that will, of course, also look at the
19 effectiveness and involvement of the
20 regulator. The regulator, of course, also
21 undertakes his own investigation but he's
22 unlikely to be too critical of himself. So

1 it's useful to have that check and balance, of
2 course.

3 Additionally, we have a legal
4 requirement every three years -- that's my
5 recollection -- for the minister to put
6 together an independent review of the
7 regulator, an independent review of NOPSA.
8 And first time that was done that was an
9 international panel and that consulted widely
10 with industry and the unions and the workforce
11 and the stakeholders as to the effectiveness
12 of the regulatory regime and the way in which
13 it was being implemented by the regulator.
14 And that came up with a number of useful
15 findings so we could use those to continuously
16 improve.

17 MR. WHEWELL: Yes. In the UK, as
18 John said, if the incident were serious enough
19 there would be a public inquiry, but that's a
20 decision for the government.

21 But HSE has its own -- because of
22 the size of the organization and the divisions

1 in it, it has the ability to investigate other
2 parts of its own organization. And if there
3 is a serious incident, then the major
4 investigation plan is activated within HSE and
5 certainly, the actions of the regulator of
6 that particular area.

7 And if it were an offshore incident,
8 the offshore regulator would be investigated
9 by other parts of HSE with often an
10 independent panel member called in by HSE to
11 ensure some, say, degree of independence of
12 that review.

13 And we learn lessons from that
14 review as to how we might have acted as that
15 part of HSE, how we might have acted better.
16 And they look at our systems and procedures,
17 so we look critically at our own actions, as
18 well as looking critically at company actions
19 if we have a serious incident.

20 MR. MOURE-ERASO: Mr. Ognedal?

21 MR. OGNEDAL: In our case we are
22 evaluated every three years on a routine

1 basis. And these evaluations are very
2 valuable, because they always identify the
3 areas where we can improve as the regulator,
4 so that is very useful to us.

5 In case of a serious, very serious
6 catastrophe or something the government can
7 sit down a special commission. And a
8 commission like that will, of course, also
9 look into the role of the regulator and what
10 the regulator has done and what it's not done.
11 So we would be evaluated in a process like
12 that.

13 MR. MOURE-ERASO: Thank you.

14 I have another question. It is, Do
15 your systems have a way to drive or encourage
16 adoption of inherently safety technologies and
17 if so, how.

18 MR. WHEWELL: The answer to the
19 question is yes because that's the
20 fundamental -- one of the fundamentals of the
21 ALARP approach. Inherently safer technologies
22 or elimination of risk is a key point on the

1 hierarchy of risk control. And certainly,
2 that -- there will be great emphasis on
3 technologies that -- of that type that
4 effectively eliminate the risk. So we will
5 be -- the expectation would be that they --
6 and if such technologies were cost
7 beneficial -- in other words, the cost of
8 adopting the technology didn't grossly
9 outweigh the benefits then we would expect
10 that technology to be adopted.

11 MR. MOURE-ERASO: Mr. Ognedal?

12 MR. OGNEDAL: Well, I'm not into
13 that, to what he has just said.

14 MR. MOURE-ERASO: Yes. The question
15 was if the --

16 VOICE: He said he had nothing to
17 offer.

18 MR. MOURE-ERASO: Okay. All right.
19 Thank you.

20 There's another short one that says,
21 When you conduct your inspections are workers
22 interviewed privately by the inspectors.

1 MR. CF: In Australia, yes. When we
2 go offshore the first significant thing we do
3 is to get together with representatives of the
4 workforce for a couple of hours. We share
5 with them why we are on the facility, what
6 we're doing, what our expectations are and how
7 we intend to go about our business. We ask
8 them to share with us all of the good things
9 and what are not so good things.

10 And it's important, you know, not to
11 be negative. We don't carry out negative
12 inspections. We carry out positive
13 inspections. And that means we look for the
14 good things, as well as the not so good
15 things. And we commend the workforce and the
16 operator for what they do well. And that is
17 very important. Because that builds the
18 relationship. And then having taken their
19 comments on board, we will build those into
20 our inspection as we can. And then we invite
21 one or two of them, if they wish to come along
22 with us, on our inspections.

1 Now, we also stay offshore for three
2 or four nights. And that is very important.
3 Because as I said, our inspections are
4 planned, their shared with management. Some
5 people say, Oh, you should carry out spot
6 inspections, not tell anyone. And, in fact,
7 if you stay on board for three or four nights
8 then you get under the skin of the
9 organization.

10 Make sure you eat with the people.
11 Don't sit near a little group in the corner
12 somewhere. We spread out, we engage them at
13 all levels. And it's amazing what comes out
14 of the woodwork, that most important aspect of
15 the inspection process.

16 MR. WHEWELL: Yes. And that's
17 exactly the same in the UK. And just to
18 conclude the visit, we always close out the
19 visit with a meeting with the representatives
20 of the workforce and inform them what we've
21 found. And that is confirmed in a copy of the
22 correspondence relating to our visit. So they

1 are kept fully informed and they are
2 interviewed separately.

3 MR. MOURE-ERASO: Mr. Ognedal?

4 MR. OGNEDAL: Yes. In our case it
5 is very similar. We always engage with the
6 workforce offshore. And normally, it's the
7 safety delegate. And talk to them, of course.
8 And they are invited to participate in our
9 activity on the facility.

10 MR. MOURE-ERASO: Okay.

11 Another question is, Are there
12 safety cases made publicly available via a
13 regulatory -- regulator's web site and are the
14 results of safety case inspections and
15 outcomes made public.

16 MR. WHEWELL: In the UK there isn't
17 a database. There isn't a web site for safety
18 cases. They're not confidential documents,
19 which means that any member of the workforce
20 can gain access to it, which means that trade
21 unions can gain access to it. We don't
22 normally provide full copies of safety cases.

1 We would expect companies to do that.

2 So the second part of the question
3 was?

4 MR. MOURE-ERASO: If the results of
5 the inspections are made public.

6 MR. WHEWELL: Again, the results of
7 the inspections are made available to the
8 workforce. Under Freedom of Information we
9 provide information on our inspections and
10 investigations, but on demand. So they are
11 made public but not pro-actively.

12 MR. CLEGG: And it's actually
13 exactly the same in Australia.

14 MR. MOURE-ERASO: And in Norway, Mr.
15 Ognedal?

16 MR. OGNEDAL: Yes. In Norway, as I
17 said, more or less everything is publicly
18 available. Some of it we make available pro-
19 actively, put it on our web site. Other
20 things are made available when people ask for
21 it.

22 MR. MOURE-ERASO: Thank you.

1 Is there any questions that have
2 come from the audience to you that you want to
3 present?

4 (No response.)

5 MR. MOURE-ERASO: No? Okay.

6 So that conclude our first panel.

7 We'd like to thank you very much for being
8 with us, especially thank you to Mr. Ognedal
9 from Norway.

10 And we are going to proceed now for
11 lunch. Lunch is on your own. And we would
12 like to ask you to promptly come here at 1:00
13 so we can continue with the panels.

14 MR. OGNEDAL: Thank you. Bye now.

15 MR. MOURE-ERASO: If there's nothing
16 else, we'll close.

17 Thank you, Mr. Ognedal. Goodbye.

18 (Whereupon, at 12:00 p.m., the
19 hearing was adjourned, to reconvene this same
20 day, December 15, 2010, at 1:14 p.m.)

21

22

1 A F T E R N O O N S E S S I O N

2 MR. MOURE-ERASO: Okay. I believe
3 we are ready to start back. Thank you for
4 coming back. Before getting started, I would
5 like to inform you that we were asked about
6 the participation or not of the Department of
7 Interior in our hearing.

8 We have invited them to participate,
9 and they let us know that they would prefer to
10 have discussion with us about regulation on a
11 one-to-one basis between the agencies. We did
12 invite them.

13 The -- this afternoon's program in
14 the hearing will start with our Industry
15 Panel. It will be the same format that we had
16 this morning. We're going to ask the panel
17 members to make their presentations and we
18 will have questions.

19 So with us today we have Mr. Erik
20 Milito, who serves as the Director of Upstream
21 and Industry Operations for the American
22 Petroleum Institute. We have Mr. Joe

1 Leimkuhler from the Offshore Well Delivery
2 Manager for the Shell Oil Company. We have
3 Ole Preben Berget, the Vice-President of
4 Operation for the U.S. and Mexico of Statoil.
5 We have Mr. Alan Spackman, Vice-President of
6 Offshore Technical and Regulatory Affairs for
7 the International Association of Drilling
8 Contractors.

9 We have Dr. Robin Pitblado, Director
10 of Safety and Health and Environment from Risk
11 Management Services for Det Norske Veritas,
12 and Mr. William Sember from ABSW Consulting.

13 I would like to ask first for Mr.
14 Milito of the American Petroleum Institute to
15 present his statement, please.

16 MR. MILITO: Good afternoon, Mr.
17 Chairman, members of the staff, the Board. My
18 name is Eric Milito, and I am the Upstream
19 Director for the American Petroleum Institute.

20 API is more than 450 member
21 companies which represent all sectors of
22 America's oil and natural gas industry. Our

1 industry supports 9.2 million American jobs,
2 including 170,000 in the Gulf of Mexico
3 related to offshore development business and
4 provides most of the energy our nation needs
5 to power our economy and way of life.

6 Our industry's top priority has
7 always been to provide energy in a safe,
8 technologically sound and environmentally
9 responsible manner. We look forward to
10 working with the CSB and to considering
11 recommendations that may help the industry
12 continue its efforts to enhance offshore
13 safety after the tragic accident in the Gulf.

14 Over the decades an enormous amount
15 of work by regulators and operators has gone
16 into staying safe offshore. Emphasis on
17 safety has increased. Trend lines showing
18 incidents and volumes spilled have gone down.
19 The Gulf accident obviously cast a shadow over
20 what has been achieved and has required a look
21 at all that has been done on safety, to review
22 ways to improve operations. We welcome that

1 reassessment and have been conducting that
2 review. But what has been done, what is
3 already in place to improve safety, including
4 recent changes following the accident is
5 considerable. So we must all assess what's
6 been done and continue to build on it.

7 Safety has always been a priority
8 for this industry. For 90 years the industry
9 has developed and continuously improved best
10 practices through API Standards Program, which
11 is accredited by the American National
12 Standards Institute, the authority on U.S.
13 standard setting and the same organization
14 that accredits programs at several national
15 laboratories.

16 API standards are developed
17 collaboratively by industry experts, technical
18 experts from government and other interested
19 stakeholders. These experts have created some
20 240 exploration and production standards, many
21 of which address offshore operations and 80 of
22 which are referenced in the Bureau of Ocean

1 Energy Management Regulation and Enforcement
2 Regulations.

3 Offshore standards cover everything
4 from blowout preventers to comprehensive
5 guidelines for offshore safety programs. In
6 2001 API published Recommended Practice T-2,
7 qualification programs for offshore personnel
8 who work with safety devices. This provides
9 guidelines for the qualification of personnel
10 engaging in installation, inspection, testing
11 and maintenance of surface and sub-service
12 devices that are used to ensure safety and
13 prevent pollution on offshore platforms. API
14 also has the Training Provider Certification
15 Program in which we certify schools that
16 deliver training to individuals in accordance
17 with our standards, including the Recommended
18 Practice T-2.

19 All API standards are reviewed and
20 approved periodically or in light of
21 circumstances calling for immediate action,
22 such as the incident in the Gulf. In

1 addition, API's Monogram Program provides for
2 the consistent and reliable manufacture of
3 equipment and materials used in the offshore
4 across the industry. We will conduct nearly
5 2,500 audits this year to verify that
6 manufacturers are complying with API quality
7 and manufacturing standards.

8 Since the accident the industry has
9 looked at every aspect of safety and taken
10 significant steps to improve operations.

11 Industry task forces staffed by the world's
12 leading experts have conducted a top-to-bottom
13 review of offshore drilling procedures, from
14 operations to emergency response to oil spill
15 containment and blowout response capabilities.
16 The task forces provided their recommendations
17 to the government which has used them to help
18 produce new safety regulations.

19 One of the primary recommendations
20 of the task forces is the development and
21 integration of safety systems and critical
22 documents for the lease operator and the

1 drilling contractor. Operators now use API
2 guidance, Recommended Practice 75 to prepare
3 safety and environmental management programs.
4 The task forces also recommended the adoption
5 of a safety case which is a comprehensive and
6 structured set of safety documents to ensure
7 the safety of a specific vessel or piece of
8 equipment. And the safety case has already
9 been discussed again and will be discussed
10 further by Dr. Spackman in a bit.

11 The safety case is recommended to be
12 integrated, a bridge, with the lease operator
13 safety management system through what is being
14 called a well construction interface document.
15 API and the International Association of
16 Drilling Contractors are working jointly to
17 develop guidelines for the interface document
18 and will be providing this document to the
19 Department of the Interior for consideration.
20 We are also looking to further enhance safety
21 through the creation of a new industry
22 Deepwater Safety Oversight Program.

1 To get to understand what happened
2 in the Gulf accident we're all looking to find
3 and rectify every possible safety shortcoming.
4 This is as it should be, but we must also
5 recognize the strengths of the existing system
6 that has helped prevent incidents for over 60
7 years in the Gulf. This system, expanded and
8 improved over the years, provides a solid
9 foundation to further enhance safety.

10 This concludes my statement. Thank
11 you.

12 MR. MOURE-ERASO: Thank you, Mr.
13 Milito.

14 The next person is Mr. Leimkuhler
15 from the Shell Oil Company.

16 MR. LEIMKUHLE: Good afternoon.
17 Thank you, Mr. Chairman. And it's -- it is
18 indeed a pleasure to be here today and discuss
19 with you how Shell utilizes a safety case in
20 the offshore Gulf of Mexico in our well
21 operations. So I have a presentation. I
22 don't know if it's going to be displayed.

1 MR. MOURE-ERASO: Sure. There you
2 go.

3 MR. LEIMKUHLER: So Shell has
4 been -- thank you.

5 Shell has been using an HSE case
6 since 2002 for our operations globally,
7 including in the Gulf of Mexico and the U.S.
8 A precautionary statement from our legal team,
9 basically: Do not buy Shell stock based upon
10 what I tell you today.

11 (General laughter.)

12 MR. LEIMKUHLER: Okay. So what's
13 the objective of a safety case? The four
14 objectives of a safety case that Shell
15 requires our drilling contractors to have --
16 and the first one is to demonstrate that the
17 HSC management arrangements, the programs are
18 there in place to ensure what -- the
19 specification and conduct of the well drilling
20 operations are fit for purpose and safe.

21 The second one is to demonstrate
22 that you've foreseen all the major -- what we

1 call top hazards -- they've been identified
2 and you have in place suitable, viable
3 barriers and controls so that the risk to
4 people, the asset environment and even the
5 company reputation is minimized. Demonstrate
6 that we've got good evacuation protocol for
7 these offshore structures so that in the event
8 of an incident we can get everyone off safely.
9 And then demonstrate a method of continuous
10 improvement for the management of those
11 hazards in the workplace.

12 In Shell there's -- we require this
13 for our drilling contractors to hold it.
14 There are seven parts to a Shell safety case.
15 There's the introduction, the overview, the
16 structure, the case, an overview of the
17 drilling contractor's safety management
18 system, the critical activities that need to
19 be in place to ensure the barriers and
20 controls are viable and who's responsible for
21 them, the description of the rig itself, it's
22 capability overview and its HSE critical

1 systems.

2 The part that I find the most
3 valuable is truly Part 5. It's the assessment
4 of major hazards that we do in what's called
5 the Bowties. We demonstrate clearly that the
6 major hazards are managed using effective
7 barriers and controls so that we contain and
8 manage our hazards. And then the remedial
9 action tracking. If the case has any gaps or
10 low-rated barriers do you have a plan to
11 address those? And then an overall statement
12 of fitness, where management actually signs
13 off on the case and accepts it.

14 To me the most valuable portion is
15 really the critical activities, Parts 3 and 5.
16 Do you have the right controls and barriers in
17 place as you drill your wells, as you
18 construct them in your operations? And do
19 people know their role in maintaining those
20 barriers? That, in my mind, is operationally
21 the key to risk reduction.

22 So taking a little bit further what

1 Eric had described, regardless of where you
2 operate, you need certain components to put it
3 all together. I already mentioned the
4 drilling contractor safety management system
5 and the safety case.

6 At Shell we have our own management
7 system; we have our own design standards. We
8 have an operational plan that we use to
9 execute the well. And then for each well we
10 have a specific risk register saying, What's
11 unique about this well that we need to be
12 concerned with.

13 We have what's called a bridging
14 document that makes sure everything comes
15 together. So you can synchronize the
16 management systems of the two companies. The
17 HSE critical activities are clearly
18 identified. And you even address the
19 interface hazards of the two companies working
20 together.

21 Eric discussed one of the things
22 that API's working on. So the Joint Industry

1 Task Force On Operating Procedures has
2 recommended a well construction interface
3 document. It is a bridging document that
4 brings all those same components but it's
5 actually specific to each well. So I
6 encourage you to take a good look at that.
7 It's a very good piece of work.

8 In my view the HSE case "Bowties" is
9 the heart of hazard assessment. So a Bowtie
10 is a way of looking at risk. So if you take
11 a look at a top event and you map out all the
12 pathways that that hazard could be released
13 and a top event occurs do you have good viable
14 barriers? Shell requires at least two rated,
15 verified barriers in place to address the
16 pathways that hazard could turn into an event.

17 And then should the event occur what
18 controls do you have in place to make sure the
19 consequences are not realized, so that they're
20 mitigated? So the barrier is designed to stop
21 the top event from happening. For well
22 control they're designed to keep the fluids in

1 place until you want to produce the oil and
2 gas. If the event were to occur the controls
3 are used to mitigate that top event so that we
4 may keep the consequences to the absolute
5 minimum.

6 The best practice is to design your
7 well and conduct your operations so that
8 sufficient barriers are in place to reduce
9 even the use of controls. For each barrier and
10 control to be valid an effectiveness
11 assessment has to be conducted. The
12 assessment results in identified critical
13 activities and tasks that the staff have to
14 carry out to maintain the effectiveness of
15 that barrier and control.

16 The key is that each position has
17 got critical tasks mapped to it in the case
18 and folks understand what their role is. All
19 the way down to the roustabout measuring mud
20 weight to the crane operator running the
21 crane, they understand what their role is and
22 what the key tasks are to make sure that top

1 hazard associated with their job doesn't
2 occur.

3 The goal is for each individual, Can
4 I link the case concepts to what I do? I call
5 that operationalizing the safety case. It's
6 what you do to ensure the HSE case is not in
7 binders gathering dust on the shelf.

8 And for that to happen what we've
9 learned over the years is two things have to
10 happen. The rig crews have to be involved in
11 drafting a VHSE case where they know,
12 understand, and agree that major hazards are
13 addressed and actually participate in the
14 developing of the barriers and controls,
15 identification and even the evaluation whether
16 that's a viable barrier.

17 Do they fully realize that everyone
18 has a role to maintain the barriers and
19 controls at their job? What they do actually
20 ties into major events that could impact the
21 operation. You need to keep the case
22 evergreen, ensure that the materials are

1 available to the crews at a level they can use
2 and understand. Can you personalize the
3 Bowtie?

4 So one of the things we learned
5 after Macondo was our crews were struggling
6 relating to the Bowtie. So we developed some
7 materials that they can relate a Bowtie-type
8 hazard analysis to things they do in their
9 lives. So have -- they have developed Bowties
10 for taking the family to Disney, they've built
11 Bowties for going hunting. So we -- they
12 relate that whole entire concept of barriers
13 and controls in making sure they are safe.

14 Another thing you need to is ensure
15 audits are effective to ensure that you've got
16 a proper utilization of the case and it's
17 effective to the people doing the actual
18 work -- it's relevant -- excuse me -- to the
19 people doing the actual work on an offshore.
20 And then also, use the case as a reminder that
21 safety is paramount and you can't balance HSE
22 and cost performance.

1 There's been a lot of talk and
2 discussion about the role and the need to
3 perform well but also perform safely. And
4 I've heard a lot of dialogue that there's --
5 it's presented as a balance. And if you look
6 at cost and safety or performance as a
7 balancing act I feel that's the wrong way to
8 look at it. Because it implies that we can
9 only optimize one at the expense of the other.
10 In our opinion that's not the way to look at
11 it.

12 HSE is a core value for us. As a
13 business, unlike some organizations, our
14 priorities change over time. Business
15 conditions change, priorities change. So
16 therefore, we don't identify HSE as a core --
17 as a priority. Rather, it's a core value.
18 It's something that doesn't change. And the
19 right way to look at it between safety and
20 performance is overall culture within which
21 you operate there is a frame. And that frame
22 is defined by your systems, your standards and

1 the overall culture that you and that drilling
2 contractor have developed. That's your
3 working environment. And it's defined by all
4 the standards that you agree upon through the
5 safety case that you're going to deploy to
6 manage those hazards.

7 It could be the pressure control
8 manual of your well design. Are the folks
9 competent? Do you have a way to measure that
10 and assess it? Are they fit for duty? Do you
11 have listing and hoisting standards. There's
12 a tremendous amount that make up a good,
13 competent program. But all of them define an
14 operating environment within which it's safe
15 to perform your operations. And you use all
16 those pieces of the puzzle to make sure you
17 define the frame so that your folks have got
18 a safe arena within which to operate and
19 perform their business to the expectations
20 that you have.

21 So in summary, the HSE case, it
22 really strengthens the barriers within your

1 HSE systems. On the well design standpoint
2 you really want to focus on working on what we
3 call the prevention side of the Bowtie. Does
4 your well design and procedures have the right
5 barriers in place to make sure your top events
6 are never released. And in the event that
7 they are, are you -- have emergency response
8 plans on the recovery side of the Bowtie, have
9 you got things in place to ensure you never
10 have to experience the maximum consequences?

11 At the end of the day the HSE case
12 in my mind helps strengthen the aspects of
13 your safety management system, whether they
14 are barriers and controls to make sure that
15 top event doesn't pass through all those
16 elements and actually occur. So an HSE
17 case -- it doesn't eliminate all of them. But
18 it strengthens each of those so that the holes
19 are just a little bit smaller and therefore,
20 the likelihood of an event passing through
21 each of those barriers successfully to the
22 point where the event occurs is lessened.

1 The HSE case is a great tool but
2 it's not the only tool to ensure proper
3 management of major hazards. Thank you.

4 MR. MOURE-ERASO: Thank you very
5 much, Mr. Leimkuhler.

6 The next person is Mr. Burget.

7 MR. PREBEN BERGET: Okay. Thank
8 you, Mr. Chairman, Board members and staff.

9 Thank you for the invitation to this
10 important public hearing on behalf of Statoil.
11 Safety is an important subject. It is in all
12 of our interest to learn from the Macondo
13 incident and other incidents to build a safer
14 and stronger operating environment.

15 In my introduction I will cover
16 three main topics, give a short overview of
17 Statoil and describe our efforts to ensure a
18 safe and reliable operations and finally,
19 highlight the few differences between U.S. and
20 Norwegian regulatory environment, which is
21 where we are coming from.

22 Statoil is not a household name in

1 the U.S. And let me start by saying a few
2 words about my company. We have 20,000
3 employees in 34 countries. Our U.S.
4 subsidiaries represent a significant and
5 growing presence. Going forward, we have
6 produced close to two million barrel oil
7 equivalents per day and around three-quarters
8 of that is coming from the Norwegian
9 Continental Shelf. We are among the world's
10 largest offshore operators and drill around
11 100 offshore wells a year, mainly in Norway on
12 the Norwegian continental shelf.

13 We are the second largest exporter
14 of natural gas to Europe. We also take part
15 in three of the world's large-scale carbon
16 capture and storage projects. We also like to
17 claim that we are one of Norway's biggest
18 hotel chains. In Norway we have about 5,000
19 beds on our offshore platforms, all with a sea
20 view.

21 Statoil started in 1972 with
22 operations exclusively in Norway. Since then

1 the company has been listed on the New York
2 Stock Exchange and in Oslo. And today we
3 operate worldwide. We currently produce
4 around 500,000 barrels outside of Norway and
5 our international production is ramping up
6 from fields in Brazil, the Caspian, North and
7 West Africa, North America. In Canada we are
8 set to start up production from our SAGD oil
9 sands project. We operate exploration wells
10 offshore the East Coast of Canada, and in
11 deepwater Egypt, Indonesia and East Africa.
12 Our ambition is to build a high-quality
13 portfolio of operated and non-operated
14 projects outside Norway.

15 North America is Statoil's most
16 important international growth area. And in
17 the U.S. upstream alone, through our US
18 companies, we have invested around 14 billion
19 U.S. dollars since 2001. The investments are
20 split between offshore and onshore assets.
21 Onshore we've made significant entries both
22 into the Marcellus and Eagle Ford shales,

1 teaming up with Chesapeake and Talisman,
2 respectively. We are also set to operate in
3 the Eagle Ford within two to three years.

4 Statoil USA has built up a material
5 position of leases, discoveries and producing
6 fields. We are currently one of the biggest
7 leaseholders in deepwater in the Gulf of
8 Mexico. And we have two new-build deepwater
9 rigs under contract for a Statoil to start
10 drilling. The main contributors to our
11 current production of around \$60,000 a day are
12 Tahiti Thunder Rock and the Independence Hub,
13 which are all partner-operated by others. We
14 also have Strong Partner operated product
15 portfolio under development, brought in Jack
16 St. Malo, Big Foot and Caesar Tonga. And
17 finally, we also partner in
18 in several prominent discoveries like Julia,
19 Knotty Head, Vito and Heidelberg.

20 Statoil is eager to get back to safe
21 and compliant drilling in the Gulf and we
22 currently have three drilling permit

1 applications awaiting BOEMRE approval. And we
2 believe it is important that the regulators
3 are given the funds and resources necessary to
4 perform their duties in a new environment.

5 Now a little bit about our efforts
6 to secure safe and efficient operations. In
7 recent years Statoil has spent significant
8 resources to improve our safety and
9 environmental performance. We have a
10 systematic approach to dealing with risk and
11 incidents. We split the focus based on the
12 incident potential. And examples of causes
13 for high potential incidents are loss of well
14 control, barriers against the reservoir. oil
15 and gas leakages from production plants or
16 pipelines and logistics incidents related to
17 transport of personnel, equipment or
18 hydrocarbons. In the U.S. you would probably
19 call a lot of these supposed safety cases or
20 operational safety.
21 All incidents are recorded and followed up and
22 the actual severity evaluated.

1 As is the case in the U.S.,
2 Norwegian regulations, rules and management
3 systems are shaped by culture, incident
4 circumstances and experiences. North Sea
5 incidents have been a major factor in the
6 development of our offshore safety regimes.
7 It is mentioned that a helicopter accident in
8 1973 was part of the reason why we gave put in
9 a requirement for survival suits. We had a
10 blowout in 1977 on the Ekofisk that led
11 authorities to increase a requirement to well
12 barriers towards the reservoir.

13 And it's already been mentioned,
14 that tragic accident in 1980 where 123 people
15 lost their lives on the Alexander Kielland
16 rig. And this was -- resulting in additional
17 structural strength requirements. We also had
18 a blowout of an uncontrolled well situation
19 on -- in 2004 on The Snorre A platform, which
20 led to our focus on compliance and leadership,
21 which I will return to shortly.

22 There are also more recent incidents

1 and near-misses that demonstrate that despite
2 a positive trend on HSE challenges remain and
3 need to be addressed. A key area identified
4 for improvement is assessment and
5 understanding of risk. Based on these
6 experiences and learnings from past incidents,
7 we have identified four areas for particular
8 attention to improve our HSE performance.

9 And leadership and compliance is the
10 first one. The second is improved
11 understanding and management of risk. Third
12 one, technical integrity -- or process safety
13 in U.S. terms -- and understanding of the
14 technical barriers. And the fourth one, more
15 effective work processes. On the leadership
16 and compliance side our thought is that
17 normalization of deviation is often identified
18 as an important underlying cause of incidents.

19 What this means is that with time
20 compliance with requirements have been changed
21 based on employee perception. For example,
22 activities are carried out in accordance with

1 the believed compliance requirements versus
2 all the details outlined in a procedure or
3 requirement. To improve Statoil has increased
4 the emphasis on leadership and how leaders can
5 enable their teams to do the right things. We
6 have an extensive leadership and compliance
7 training program associated with our work
8 processes. So far we have trained 1,500
9 leaders to find a practical approach to the
10 leadership role, being a communicator, role
11 model and coach for their team. The training
12 started with the executive management and has
13 cascaded to the whole organization.

14 Then understanding of risk. We are
15 now using serious incidents frequency,
16 including both accidents with serious
17 damage/loss and incidents with serious
18 potential as metrics to monitor our safety
19 performance. In addition, actual gas leaks
20 are a prime indicator of how we are doing with
21 respect to potential major incidents.

22 Over the last ten years we have

1 increased the focus on understanding the risk
2 through job safety analysis and our
3 understanding of the risk potential. We have
4 trained all our personnel in safe behavior
5 using case studies and real incidents to
6 ensure the right learning environment.

7 Then there is technical integrity.
8 We regularly conduct analysis of the state of
9 our onshore and offshore facilities. The
10 status of the plants is compared with design
11 criteria, barriers, revised regulatory
12 requirements and internal requirements. The
13 gaps are recorded as findings and are sorted
14 and followed up by each unit. The critical
15 findings are given priority and corrected
16 immediately, while the rest of the findings
17 are corrected according to their importance.

18 The progress of closing the findings
19 are closely monitored by means of dashboards
20 for each system or installation's key
21 performance indicators. This is repeated at
22 all levels of the organization, all the way to

1 the CEO.

2 And finally, effective work
3 processes. We have found that our procedures
4 and requirements often are complex and could
5 be improved for the personnel out in the
6 field. Therefore, we have launched several
7 initiatives to harmonize and simplify our work
8 processes.

9 Statoil currently has an ongoing
10 effort to review what we can learn from
11 Macondo. We must use such a tragic
12 incident -- accident as a source of learning
13 and improvement. We are carefully monitoring
14 developments based on publicly available
15 information.

16 Following conclusions and
17 recommendations from the ongoing
18 investigation, government and industry will be
19 better equipped to make any additional
20 improvements in offshore safety. The aim must
21 be to identify improvements within drilling,
22 containment, emergency response, and

1 environmental recovery.

2 There are no quick fixes to
3 improving safety and we must be open to learn
4 from other companies, other industries and
5 from Academia. We have taken an active part
6 in the joint industry task forces established
7 in May. Last year we organized a workshop on
8 High Reliability Operations with the Center
9 for Catastrophic Risk Management at the Haas
10 School of Business, Berkeley. We have also
11 reached out to companies and regulators in the
12 nuclear industry to discuss the potential of
13 HRO to take our HSE performance to the next
14 level. Additional joint workshops are planned
15 in the U.S. and in Norway.

16 Then finally, over to the comments
17 on the regulations in the U.S. and Norway.
18 Over the last few months, Norwegian
19 regulations have been frequently referred to
20 in the debate following the Gulf incident.
21 There is, of course, no one-size-fits-all when
22 it comes to offshore regimes and regulations.

1 Norwegian regulations are born and have grown
2 from a set of specific circumstances and
3 experiences.

4 Norway and the U.S. have their
5 unique social, cultural and political features
6 that have worked to shape national regulations
7 into what they are today. Differences between
8 regimes are sources of learning and
9 improvement across geographies, not of
10 normative debates about better or worse. We
11 leave it to the Norwegian Petroleum Safety
12 Authority to address and elaborate on the
13 regulations as such.

14 Let me share with you three
15 reflections from an operator's perspective
16 that perhaps can serve to highlight some of
17 the key features on the Norwegian Continental
18 Shelf. First, the extensive appropriate
19 cooperation between companies, regulators, and
20 employees. This is a fundamental building
21 block in the HSE work. There are rights and
22 obligations on the company, regulator and

1 employee side of this cooperation. The
2 relation between the three parties has been
3 developed over many years throughout the
4 Norwegian industry. A high level of trust and
5 good communication are keys to maximizing the
6 benefits from it.

7 Second, the so-called see to
8 requirement. The party responsible shall
9 ensure that HSE requirements are complied
10 with. The responsible party has to verify
11 that the contractors also comply with the
12 authority guidelines. This has led us to
13 follow some of our vendors very closely if
14 there are limitations in their internal
15 management system. This requirement also
16 reduces the staffing needs on the regulator
17 side.

18 Finally, there is considerable focus
19 on sound HSE culture. This sounds obvious and
20 common sense but it is very demanding to
21 implement on a daily basis. The best way to
22 build a strong HSE culture is through

1 application of high standards and the best
2 industry practices. So we are also very much
3 for that.

4 We are humble to the fact that
5 Norwegian solutions do not necessarily work
6 everywhere. Each petroleum province has its
7 unique features that must be catered for in
8 the way offshore activities are regulated.
9 Statoil has learned from its U.S. peers and
10 the U.S. safety regulators and looks forward
11 to continue doing so.

12 Each company and industry brings
13 their own set of experiences and practices to
14 the table. My hope for today is that the
15 exchange of knowledge, information and
16 experiences will produce mutual learning and
17 improvement. That will help in meeting the
18 ultimate objective we all share, safe,
19 reliable and compliant operations.

20 Thank you.

21 MR. MOURE-ERASO: Thank you, Mr.
22 Berget.

1 The next person is Mr. Spackman for
2 IADC.

3 MR. SPACKMAN: Thank you, Mr.
4 Chairman, members of the Board. May I have
5 the slides, please?

6 MR. MOURE-ERASO: Slides?

7 MR. SPACKMAN: Yes. Thank you.

8 MR. MOURE-ERASO: There you are.

9 MR. SPACKMAN: What I'm going to
10 primarily address today is the IADC UKHSE case
11 guidelines. The IADC UKHSE case guidelines
12 have been developed over a period of almost 20
13 years. When I first joined IADC almost 20
14 years ago my first assignment was to go to
15 Aberdeen to assist our members in working in
16 the North Sea to implement safety case
17 requirements within the North Sea region,
18 specifically with the UKHSE. A result of
19 these 20 years of work as a best practice
20 guidance on HSE case development aimed
21 specifically at mobile offshore drilling
22 units.

1 Contrary to what Dr. Hopkins
2 indicated this morning, IADC's view is that
3 the HSE case for a unit exists primarily for
4 that unit and the safety of its workforce. It
5 is not -- while it may serve to satisfy a
6 regulator or a client it exists for the unit
7 and its workforce.

8 Secondly, our guidance -- guidelines
9 were developed to assist the acceptance of
10 safety cases where they are required in
11 various jurisdictions. And there's
12 significant differences in jurisdictions as to
13 what they require. Some require safety only
14 to be addressed. Some require only major
15 hazards to be addressed. Some look at
16 environment. Some place regulatory
17 responsibility with different individuals,
18 employers, leaseholders, et cetera. So there
19 is a difference.

20 And finally, we're -- we aim to
21 reduce proliferation of differing requirements
22 by offering a guideline that can be picked up

1 by a regulator such as the one in Cuba to
2 apply a safety case should they decide to use
3 that regime.

4 In developing our HSE case, we were
5 looking firstly to a robust management system,
6 understanding that a robust management system
7 must underlie the safety case.

8 We looked around and what we chose
9 was the International Safety Management Code
10 that had been developed by the International
11 Maritime Organization and would be mandatory
12 for many of our members operated drill ships.

13 And for the rest of our safety case
14 we have used amalgamation of requirements from
15 national regulation and oil company best
16 practices for hazard identification and
17 control.

18 Joe had gone over the Shell
19 requirements. They are reflected entirely
20 within the IADC HSE case guidelines, because
21 Shell was one of the major companies requiring
22 an HSE case that we looked to to assure that

1 our document would be robust.

2 Why do we see that HSE case ought to
3 be used in the U.S.? Well, firstly, after the
4 Macondo incident a joint industry task force
5 came together and, both from the equipment
6 side and from the procedure side, made the
7 recommendation that the HSE case ought to be
8 adopted.

9 Secondly, that adoption was mirrored
10 by the Secretary of Interior's report to the
11 President in May. And finally, it's IADC's
12 view that the SEMS rule put out by BOEMRE in
13 October actually requires a safety case. It
14 requires a hazard analysis. It requires a job
15 safety analysis that's both the major hazards
16 and the workplace hazards. It applies to
17 mobile offshore drilling units and it adopts
18 a complete safety management system in the
19 terms of RP 75.

20 To enhance the HSE case guidelines
21 as developed by IADC, API and IADC are
22 developing a well construction interface

1 document guidance which should be out shortly.

2 It takes the traditional bridging
3 arrangement between the safety management
4 systems of the contractor and the oil company
5 operator and adds to them an agreement that
6 would be covered on the well basis of design,
7 the well execution plan and critical risk
8 assessments.

9 This type of approach is also being
10 suggested by IADC -- as the regulations are
11 changing in Australia -- to be adopted there,
12 as well.

13 IADC has completed a gap analysis of
14 API RP 75, as well as the BOEMRE's safety case
15 or SEMS final rule. And those results are
16 available on IADC's web site.

17 We found only minor gaps,
18 particularly with pre-startup review, which is
19 a special case of verification of critical
20 elements. Those recommendations for changes
21 to the IADC safety case guidelines based on
22 that gap analysis are being developed and will

1 be put forward for acceptance by our HSE case
2 users group in this fall at -- when it meets
3 in Aberdeen -- or in Amsterdam.

4 Looking at major hazards. We have a
5 mined map here for you. One of the challenges
6 for a MODU is that many of these major hazards
7 are not under the exclusive regulatory
8 jurisdiction of the coastal state oil
9 regulator in many jurisdictions.

10 And in the U.S., indeed many of
11 these are prescriptively covered by
12 regulations of the U.S. Coast Guard. So we
13 see a strong need for either Coast Guard and
14 MMS or BOEMRE cooperation or a significant
15 duplicative strengthening of BOEMRE's capacity
16 to work on risk analysis and mitigation.

17 On the low end, on the workplace
18 hazards largely without any regulatory
19 intervention, IADC's members working in the
20 Gulf of Mexico have had significant
21 improvement over the years, and we don't see,
22 except in the area of lifting and hoisting, a

1 major need for improvement.

2 I would like to address the issue of
3 deconfliction of jurisdiction. I have
4 mentioned the Coast Guard and MMS. This is a
5 picture of a North Sea installation at night
6 from a the view of a helicopter.

7 One of the major hazards is a
8 helicopter incident. And one of those
9 incidents has been demonstrated in the North
10 Sea not that long ago was the problem of
11 visual identification of the helo deck by the
12 helicopter pilot.

13 In this picture you'll see the helo
14 deck looks -- is quite identifiable by the
15 green lights. The standard, however, until
16 recently -- the green lighting became a
17 standard from the International Civil Aviation
18 Organization in 2009 based on research done by
19 the -- in the UK by the Civil Aviation
20 Authority there. The green lighting standard
21 for helo decks was adopted by the IMO for the
22 MODU code last year. And it's now a flag

1 statement requirement.

2 However, many coastal states,
3 including the U.S. have differing standards
4 and require prescriptively lights that still
5 alternate yellow, which is very difficult to
6 see in that type of environment and blue,
7 which attenuates in fog.

8 Workplace safety on the OCS is a
9 joint regulatory requirement or obligation for
10 both the bureau and the Coast Guard. And we
11 would like to emphasize that. The Coast Guard
12 needs to be involved. We have made the
13 following recommendations to BOEMRE, that the
14 agency needs to assess its resource
15 limitations in developing its approach to
16 implementation of HSE case, that it needs to
17 establish a means for an ongoing dialogue with
18 industry for its SEMS implementation and to
19 establish a multi-year implementation road map
20 that recognizes the complexity of the task of
21 safety case implementation.

22 Similarly, we've made

1 recommendations to U.S. Coast Guard. We've
2 asked them to assess their agency commitment
3 to their operations under the authority of the
4 Outer Continental Shelf Lands Act, to
5 establish a dialogue with BOEMRE on hazards
6 analysis with particular reference to those
7 matters that are traditionally under U.S.
8 Coast Guard jurisdiction and to update the
9 internet agency Memorandum of Understanding to
10 reflect any revised jurisdictional boundaries.

11 Finally, IADC remains committed to
12 working with industry stakeholders to
13 facilitate the well control interface document
14 and HSE case understanding and implementation
15 and to engaging with BOEMRE and the Coast
16 Guard to facilitate mutual understanding of
17 SEMS and HSE case expectations. Thank you.

18 MR. MOURE-ERASO: Thank you very
19 much, Professor Spackman.

20 The next person is Mr. Pitblado from
21 DNV.

22 DR. PITBLADO: Thank you very much,

1 Mr. Chairman. I also have some slides. Thank
2 you.

3 What I will be presenting this
4 afternoon is our view that it's possible to
5 achieve a step change improvement in major
6 accident performance. And by that I mean a
7 factor of ten improvement over what we're
8 doing today globally. The key points here is
9 we have this vision that a step change can be
10 attained. The regulations -- and we've heard
11 this before -- should be a mixture or a blend
12 or prescription and performance. The decision
13 making should be risk based. And there need
14 to be clear roles for regulator and industry.
15 So those are the key points of what I'll
16 present.

17 It's a little bit busy slide. But
18 what it shows is that -- and we've heard this
19 several times before -- that occupational
20 safety has improved by a factor of ten over
21 the last 20 years. Although you will see very
22 big differences between the best performers

1 and poorer performers. But everyone is
2 improving. But the overall is a factor of ten
3 improvement. I would say that my first job,
4 which was with Shell 30, 40 years ago, I was
5 told from my first day that safety was the
6 most important thing. And we all thought we
7 were doing a terrific job. And we heard from
8 Joe and the whole industry performance is we
9 have gotten ten times better than when I
10 joined, even though we thought we were doing
11 a terrific job. And I think we can also do
12 ten times better on major accidents.

13 I'll give you -- the bottom slide
14 shows major leaks as reported by the HSE in
15 their hydrocarbon leak database. And you see
16 those are down by a factor of ten on the
17 biggest leaks. Some of the smaller leak
18 categories don't do as well. And also,
19 there's been some tick upwards in the last
20 year or so. And maybe that's indicating a
21 floor has been reached.

22 But I would say if you look at the

1 middle one there are safety case regulations
2 in the EU for onshore plants. And when you
3 look at the MARS database major accident
4 reporting system there's been on improvement
5 at all in major accidents. We have a similar
6 result here in the USA with the RMP-Star
7 database maintained by EPA. No major
8 improvement on onshore major accidents.

9 Now, this is not something cast in
10 stone. The aviation industry has achieved
11 major improvements on airplane crashes. But
12 they still actually have a fairly poor
13 occupational safety record around airports,
14 apron accidents with vehicles crashing into
15 planes, occupational accidents in baggage
16 handling. So it's not inherent that
17 occupational safety is easy to work on and
18 major accidents are difficult. It depends
19 where you put the effort and how much effort
20 you put in.

21 Okay. This spells out some of the
22 approaches that we think are necessary. I

1 mentioned this blend of prescription and
2 performance. And we've heard that from the
3 regulators. There is no pure performance-
4 based regulation. It does need to be a blend.
5 All the main major accidents in the last few
6 years have highlighted technical, human and
7 organizational factors. And most of the
8 responses tend to be technical. I do include
9 in our proposal here addressing the human and
10 organizational piece, as well, to act on those
11 lessons we've learned.

12 You'll see that I've got a slide
13 highlighting that -- we show a holistic model
14 which is risks, controls and conditions.
15 There's the conditions of the controls. And
16 I'll show how they link together. Roles and
17 responsibilities again, defined and clear to
18 all.

19 And then something that we haven't
20 heard too much about which is shared
21 performance monitoring, which is the
22 collection of near real time barrier status,

1 making that available to offshore staff,
2 onshore staff, regulators, others through
3 modern ICT systems. And you may have heard of
4 this in Norway called integrated operations.
5 But it's quite an interesting idea.

6 A busy slide. And I won't say all
7 these words. But we also agree that the
8 regulators need to build adequate specialist
9 manpower. And we've heard several opinions of
10 how much effort that might take and how long.
11 But we do think that you can overgrow the
12 regulator, that the industry does actually
13 have a lot of talent and by having a safety
14 case style of approach you don't need as large
15 a regulator because you aren't going to be
16 doing as many inspections. And again, we
17 heard that from Magne a few hours ago where
18 they only do yearly inspections, in-depth but
19 yearly. And OSHA also, with its NEP program
20 also only did a few inspections, but in-depth.

21 All right. I think one of the
22 lessons from the North Sea is that both the

1 North Sea in the UK and onshore run a safety
2 case regime. But I showed you in the North
3 Sea they haven't had major accidents. They've
4 had challenges but they haven't had major
5 disasters since Piper Alpha and Alexander
6 Kielland. Whereas, onshore there continue to
7 be serious accidents. And so they both have
8 a safety case regime but there's a difference.

9 And I think the difference is in the
10 North Sea much stronger focus on safety
11 barriers than you see in the onshore regime.
12 Onshore regime is more around safety
13 management systems which mimics OSHA 1910 and
14 RMP. So I think there's a lesson there that
15 this extra attention to barriers with -- they
16 call them safety critical elements,
17 performance standards and written schemes to
18 keep all those functional -- that's not part
19 of the onshore regime. And yet -- so we see
20 big improvements offshore, we don't see big
21 improvements onshore although they both run a
22 safety case regime. So it's not safety case

1 per se, it's how you implement it.

2 I do want to say something about the
3 safety case regulatory regime. And I think
4 it's already been said to some degree. A
5 piece of paper doesn't make you safer. Okay?
6 And it's not that people have a piece of paper
7 with lies in it. But when we write a safety
8 case it's often years before the activity
9 occurs. So it's often the way we want our
10 safety regime to be and in practice it doesn't
11 happen that way. So we need to convert it
12 into a more barrier-based model which defines
13 those barriers and makes sure those are
14 operated.

15 And we think there's a difference
16 between design stage and operations stage.
17 Design time -- there's a lot of quantitative
18 things you have to decided. Separation,
19 firewalls, blast walls, firewater
20 requirements, drainage requirements,
21 ventilation rates. Those are quantitative
22 things. You need a quantitative study to do

1 that. and we think QRA is best practice. We
2 like the NORSOK standards at 13. We think
3 it's probably the best standard out there for
4 that.

5 During operations that quantitative
6 study is not useful. All right. It's got
7 numbers like 5.2 times 10 to the minus six.
8 That does not help people operate more safely.
9 They need a completely different risk model.
10 And that's the model I think we heard from
11 Shell. The Bowtie model we think is an
12 excellent model. Good basis for improving
13 safety, highlights the barriers, clearly
14 indicates responsibility. You can link it to
15 performance standards and you can also link it
16 to accident investigation.

17 Okay. How do you address technical,
18 human and organizational factors? As I said,
19 we've heard that in all the main recent
20 accidents. Purely technical assessments do
21 not address all the important failure modes.
22 And we heard from Texas City that occupational

1 safety culture is not the same as process
2 safety culture. I spoke to an oil major and
3 they described -- they have much greater
4 concern about whether an operator strains his
5 back opening a big valve than whatever happens
6 from the fluid that flows through that valve.
7 And that's a difference, you might say,
8 between a occupational culture and a process
9 safety culture.

10 And on the organizational side we've
11 got this issue around mindfulness of risk, how
12 you escalate decisions on difficult problems
13 before a decision has happened. Those are our
14 key issues that need to be addressed. And we
15 think they need to be.

16 A lot has been said around SEMS. We
17 think SEMS is very similar to OSHA 1910 and
18 also very similar to the onshore safety case
19 regime, the Seveso. They have not improved
20 safety. I don't think SEMS is enough. I
21 think you need to go the extra step. We heard
22 from Shell. You need this barrier model with

1 performance standards and clear
2 responsibilities. And that's not guaranteed
3 from SEMS. This is the model we suggest, risk
4 controls and condition with performance
5 monitoring, of course, and all that. All
6 those pieces are important. And we think that
7 a safety case can communicate that in a
8 transparent way.

9 This is just to highlight some of
10 the risk models. And I won't go through this
11 in too much detail. But the figure on the
12 left shows an oil spill covering basically all
13 the coast of Norway after three months. There
14 are risk models out there that can do these
15 difficult tasks. And there's no amount of
16 judgment that can deal with this. No one has
17 the experience of a huge oil spill lasting for
18 months. You need a model to do that and to
19 take the decisions as the amount of mitigation
20 systems you're going to put in place.

21 On the right-hand side there that's
22 a design decision. On the right-hand side it

1 shows the Bowtie model we heard from Shell.
2 We think it's a good model. And it's much
3 more clear to communicate. IADC uses this
4 model, too. And we think it's an excellent
5 way to go forward. The roles and
6 responsibilities. I think that's -- there
7 appear to be some issues here. And I think
8 the IADC work on the interface document is
9 going to make that a lot clearer. And I think
10 I'll just leave it at that.

11 What I wanted to say a bit more
12 about just before I finish is this idea of the
13 shared performance monitoring and decision
14 making. As it says there, the best risk model
15 is only a theory if it isn't implemented. The
16 Bowtie model does set out the objective but
17 you need to monitor that in some way. And we
18 think there are some ICT tools. We call it
19 People Process Plant Performance Perspective,
20 five Ps. But the idea would be to know that
21 the status of your barriers in near real time,
22 share that possibly with tools like

1 Sharepoint, include shore-based people, as
2 well as offshore people. And when you have a
3 difficult decision, just as we've discovered
4 in aviation and other industries, team work
5 leads to a better solution than a small number
6 of people who have a financial incentive on
7 one decision compared to another.

8 And we think there are tools like --
9 you may have heard -- OLF gave some
10 presentations here in the U.S. on what they
11 call integrated operations, which is decision-
12 room approach where you use IT tools to share
13 the information on the status of the barriers,
14 what the decision needs to be taken and then
15 several different people at different
16 geographic locations can all contribute to an
17 enhanced decision. So that's what we think
18 would be helpful.

19 And so I'll just conclude here then
20 that the role of the regulator -- it would be
21 to develop suitable regulations which allow a
22 fully risk-based approach, again, a blend a

1 prescription performance. We think a safety
2 case approach is correct but it will be
3 different at design and operations. And it's
4 asking too much of a single-risk model to do
5 both. Because it can't do both successfully.
6 So we think it will be quantitative at design
7 stage and qualitative in operations. And we
8 think the regulator should set a target of a
9 factor of ten improvement. It can be done.
10 And the regulator should make a clear
11 statement that's what it expects.

12 That then is a key role for the
13 regulator. We haven't heard too much about
14 that but it is setting the high standard which
15 the industry can then have something to work
16 towards. And then the industry, of course,
17 has to do its piece to try and achieve that.
18 But it's already done it for occupational
19 safety. The aviation industry has done it for
20 major accidents. We think it can be done and
21 we think it's economically possible. Because
22 very tool I've presented here is done by

1 somebody somewhere today. So it's not
2 theoretical. So that -- those were the key
3 points. And I think I've finished. Thank
4 you.

5 MR. MOURE-ERASO: Thank you very
6 much, Dr. Pitblado.

7 We have -- our next speaker is Mr.
8 Sember from ABS.

9 MR. SEMBER: Thank you, Chairman,
10 members of the Board, Investigative Panel.

11 I think much has been covered today
12 already. This has been very informative.
13 What I'm going to cover is just what we look
14 at, some of the approaches to safety. And
15 what I was going to start with was just ABS,
16 who are we and why are we even here. We're a
17 classification society headquartered in
18 Houston, Texas. And we've got 4,000 employees
19 worldwide, 300 engineers and surveyors here in
20 the Gulf of Mexico.

21 And we've been involved in the
22 offshore oil industry since 1947. That was

1 the year the first well was drilled offshore
2 on a floating facility. It was very basic,
3 taking a barge, mounting some onshore drilling
4 equipment and drilling the first well. But
5 even then that was a barrier and a challenge
6 at that time.

7 I can remember a few years ago --
8 what seems like a few years ago -- that 500
9 feet of water was deepwater. And we've
10 certainly gone way past that. And with that,
11 developing our rules and standards and
12 capabilities of being able to work in those
13 areas.

14 Another interesting thing is we do
15 have delegated authority as class societies do
16 from maritime administrations around the world
17 to do certain activities on their behalf,
18 along with that, involved with safety
19 regulations worldwide. Classing a drilling
20 unit that's going to operate in the North Sea,
21 either in a Norwegian sector and the UK sector
22 or in various other countries around the world

1 requires certain additional requirements above
2 class on the statutory side that might have to
3 be taken care of. So understanding and
4 knowing all of the different safety regimes is
5 a requirement that class societies have to
6 keep up with. Looking and saying which is
7 better or worse, I think what we've heard
8 today is certainly a valid approach in moving
9 offshore.

10 Now, we have been a market leader.

11 And I only say this because the majority of
12 the drilling units, certainly jack-ups and
13 floating systems have been classed by ABS. So
14 our experience has been quite versatile over
15 the years with the different facilities.

16 Now, this I would just say from
17 the -- looking at the chart on the side -- and
18 this is just a simplistic view of what we look
19 at in drilling. And again, you're looking at
20 a drilling unit. You have drilling facilities
21 on it, as well as then what the well program
22 is. And many cases -- and I think we heard

1 from Shell of how they handle and the
2 management systems -- but in some cases their
3 regulatory scheme doesn't cover all of those
4 or it might be split among different
5 jurisdictions as to who has control or review
6 of it, if there is any at all by a regulatory
7 agency.

8 I don't need to really go over the
9 different approaches, looking at prescriptive,
10 structured, precise expectations on one hand.
11 And when you talk about may conflict with new
12 technologies, as we move into deeper waters,
13 harsher environments we have new techniques,
14 innovations. If you have prescriptive
15 requirements that don't accept that change
16 very quickly you have to go through the
17 processes of evaluation, risk identification
18 and proving an equivalent level of safety
19 before you can move ahead. So it can be time
20 consuming but it can offer some changes.

21 On the goal-setting side certainly
22 it can account for new technologies, looking

1 at the risks and how you would identify the
2 risks and challenges. It can identify and
3 manage those risks and provide a mitigation as
4 you move ahead. It does require an oversight
5 of the verification agents as you would use
6 it. But it also requires, as we've heard, a
7 certain level of expertise in order to be able
8 to identify and actually evaluate what those
9 risks are and how it's being handled in a
10 management system. And again, the approach
11 should be to promote and achieve an improved
12 industry safety performance.

13 Now, I'm just going to list here
14 some of the things -- and I think they're just
15 a repeat of what's been said already -- but
16 looking at an effective safety regime,
17 certainly starting with a case of a
18 prescriptive requirement. But identifying the
19 party responsible for offshore safety. Which
20 party is in charge? Who has control? Who is
21 the regulatory body? Where is it split? How
22 are they actually interfacing? Specifying

1 clear goals for all stakeholders. What has to
2 be done? What are the requirements? Is it a
3 complete safety case? And what's the
4 definition of a safety case as far as it goes?
5 Or is it prescriptive with adding additions to
6 it? Requires the evaluation of the risks and
7 identification of the prevention and
8 mitigation measures.

9 All these are included. And I think they are,
10 as they've been explained today.

11 But we have to remember -- and I
12 think it was also stated that prescriptive
13 requirements certainly are the foundation of
14 safety. It has much experience, as far as the
15 design and some of the operational techniques
16 of this. So it's something that has to be
17 maintained. It can't just be disregarded in
18 going into a complete risk evaluation. And
19 you have to employee trained and competent
20 resources. And I think we've heard today that
21 certainly having the right number, the right
22 competencies, the right training, the right

1 experience are all very necessary. And it's
2 not something that can be achieved very
3 quickly.

4 Talking about budgets or do you have enough of
5 a budget to handle it, can you find them.

6 There's certainly a high priority for
7 everybody to employ these certain people and
8 personnel.

9 And again, the safety regime. What
10 it should foster is transparency of
11 operations, timely reporting of incidents or
12 indicators and certainly promoting improvement
13 in the safety culture. And I think going from
14 a prescriptive to a safety culture and a
15 safety regime is very important. But it is
16 going to take time.

17 I want to back up for a second. A
18 few other things that I would say. And I
19 think Robin mentioned this. Certainly provide
20 time to implement any safety regime. Avoid a
21 paper chase. This isn't just done to satisfy
22 a regulator, to show that you have a piece of

1 paper that can work. It's to change the
2 safety culture so that you have a way of life
3 in operating in a safety regime. And it can't
4 be done by rules. It has to be done by a
5 combination of all of the stakeholders. The
6 regulatory body, the stakeholders, not only
7 the operator, but a number of other
8 stakeholders who sometimes we overlook.

9 And we have to create a learning and
10 remembering environment. We have to take into
11 account lessons learned. We have to take into
12 account and use the information that we have
13 at hand. It's not good enough to just get it,
14 track it, make a statistic out of it and then
15 not put it to best use in improving the safety
16 culture.

17 The last thing I would look at --
18 and just to put this up -- and many times we
19 think about a safety regime where it's the
20 government, the owner, the operator, maybe a
21 class society. But all of these different
22 pieces have a part or an interest in the

1 safety regime. I think we have to start --
2 and we talk about technologies and we talk
3 about engineering -- we have to start with the
4 basics, with marine engineers, naval
5 architects being able to design and come up
6 with the analysis that can be accepted for the
7 new innovations, the deepwater applications
8 and drilling concerns.

9 The shipyards who have a piece of
10 being able to construct a quality product that
11 meets those requirements, as well as all of
12 the analyses that have been done. Taking from
13 there the operators and managers who are going
14 to take and actually operate it. But you also
15 have some industry groups or interest groups,
16 brokers and insurers who are -- have an
17 influence or an interest or an effect on the
18 actual safety regime that's being developed.

19 And we can't leave out certainly,
20 the governments, as far as what the regulatory
21 scheme is going to be. When you look at one
22 of these drilling units it's usually designed

1 to operate in certain areas. It will have a
2 certain flag that might be going to the North
3 Sea where you would have to have certain
4 additional requirements that would be taken
5 into account during the design and
6 construction. If it's going to operate in the
7 U.S. or other areas where you have a fairly
8 identified scheme then you'd have additional
9 requirements that you have to go through.

10 So this is just an idea to keep into
11 account that it's more than just one or two
12 people that are involved. And certainly, the
13 seafarers and offshore workers have a stake in
14 any offshore safety regime. So these are
15 all -- should -- all of these should be taken
16 into account at least by listening or by
17 seeing what the effect is from their point of
18 view. And that's it. Thank you.

19 MR. MOURE-ERASO: Thank you very
20 much.

21 I would like to thank Mr. Sember and
22 also, to thank all the members of the panel.

1 Now, we start our next line of
2 questions. I would like to say that please
3 don't feel compelled to every member of the
4 panel to answer all of the questions. So, you
5 know, if you feel very strongly that you have
6 to refer to one, do. But, you know, it's not
7 a requirement that there will be six answers
8 to every question. So in the interest of
9 time, probably we should do that.

10 So we are going to start with a
11 round of questions from the Board. And I will
12 ask Mr. Bresland first to start.

13 MR. BRESLAND: Thank you, Mr.
14 Chairman.

15 I guess in listening to all of the
16 presentations from the panel, which -- all of
17 which were very interesting, I'm not quite
18 clear if there's a consensus among the panel
19 members as to the use or the value of a safety
20 case. I know there was a lot of discussion
21 this morning from the regulators about safety
22 case. But just, if you could sort of think

1 about it again and just give your very brief
2 thoughts on the current status of regulations
3 in the offshore in the United States,
4 especially after the new regulations that were
5 proposed by BOEMRE back a few months ago.

6 MR. MOURE-ERASO: Maybe there are no
7 reasons to answer that question.

8 MR. MILITO: I think what we're
9 seeing is a continuation of a combination of
10 prescriptive and performance-based
11 requirements. A lot of folks will continue to
12 say that we have very prescriptive
13 requirements here. But I do believe that
14 embedded in the regulations there are a lot of
15 goal-setting type requirements that you'll
16 see. You have to have a log preventer that's
17 capable of sharing the pipe. Without getting
18 into kind of the details to how you do that,
19 you have to have the ability to effectively
20 respond to a spill or to effectively cap and
21 contain a blowout if it occurs. So we see a
22 lot of provisions in there like that that are

1 moving toward prescriptive but that are not.

2 And then you have your very
3 prescriptive type elements which, you know,
4 are something like a blowout, a preventer must
5 have four separate rams in it. These are the
6 types of rams you must have. And the new
7 requirements that have come out, you know, we
8 find a rule -- or -- closer to the
9 prescriptive type where you're getting into
10 the type of pressure tests you have to run,
11 the inclusions of two barriers for each flow
12 path for hydrocarbons. So I think -- and
13 ultimately, we're seeing a combination of
14 both.

15 And another area where you're
16 looking at the performance-based side is the
17 new requirement for a safety environmental
18 management system for an operator, which you
19 have to have the program in place. And we
20 have the API document which provides the
21 guidance how to have that in place. But
22 that -- it's also a performance-based. But

1 that -- it's also a performance-based metric.

2 So we're seeing a combination of both.

3 Mr. Spackman and I and Joe, we
4 talked about the joint industry task forces
5 that came together. So shortly after the
6 spill all the industry trades came together
7 and we brought together all the domestic
8 experts. And the industry -- the U.S.
9 domestic industry came forward and said, you
10 know, it's a good idea to adopt the safety
11 case here and to adopt the bridging document
12 in combination with the operator's program.

13 So I think that you see support, at
14 least domestically, for that. We understand
15 that any type of change like this takes a lot
16 of time. But again, it's more of a hybrid.
17 And there are strengths to that. There are
18 strengths to knowing that you have to have
19 this kind of BOP in place, as well as knowing
20 that you have to have the risk management
21 measures in place to adequately plan for any
22 kind of potential event. So I hope that's not

1 muddying it more. But once again, I think the
2 U.S. is a hybrid approach and will continue to
3 go down that path.

4 MR. MOURE-ERASO: Anybody else from
5 the panel?

6 MR. SPACKMAN: Yes. I think from
7 the perspective of the IADC HSE case and our
8 going forward with the HSE case guidelines in
9 the U.S. we're going on the presumption that
10 a safety case is the -- will be the norm. The
11 question is how is that tool going to be used
12 by the regulator for regulatory intervention.
13 Not whether or not the safety case is going to
14 be there but whether the regulator or
15 regulators are going to influence the outcome
16 of that safety case by setting specific
17 performance measures for hazards analysis.

18 MR. LEIMKUHNER: Speaking on behalf
19 of myself as a person who manages the
20 operations, as well as Shell, I think we
21 actually support the use of a safety --

22 MR. MOURE-ERASO: Excuse me. If you

1 could identify yourself for the tape?

2 MR. LEIMKUHLER: Oh.

3 MR. MOURE-ERASO: Before you start.

4 I forget to say that.

5 MR. LEIMKUHLER: Okay. I'm Joe
6 Leimkuhler, the Offshore Well Delivery Manager
7 for Shell.

8 MR. MOURE-ERASO: Yes.

9 MR. LEIMKUHLER: So from that
10 standpoint we really feel a case is a great
11 way to demonstrate you've managed the right
12 risk. And we really support it as long as
13 it's done in a fit-for-purpose appropriate
14 manner and it's not -- it's used in the right
15 way, it actually improves your operations and
16 not just a documentation exercise.

17 MR. GRIFFON: Yes.

18 MR. MOURE-ERASO: Mr. Griffon?

19 Oh, you want to add something.

20 Please.

21 MR. PREBEN BERGET: My name is Ole
22 Berget from Statoil. We are a bit cautious in

1 being precise sort of on recommending
2 something. And that's -- we had Humble coming
3 in as a new operator to the Gulf of Mexico.
4 And that's really -- but, of course, all our
5 legacy, all we have learned comes from this
6 kind of perspective and not safety case but
7 goal-setting approach was what our regulator
8 called it back on the Norwegian Continental
9 Shelf. So -- but, of course, we are familiar
10 with that and our internal procedures are a
11 lot based on that. And that's what -- the
12 legacy we are bringing along here.

13 MR. MOURE-ERASO: Mr. Griffon?

14 MR. GRIFFON: Thank you, Mr.

15 Chairman. I have a -- in light of what you
16 said about not having six answers, I have a
17 more targeted question possibly to Shell and
18 Statoil.

19 There's been a discussion about the
20 concerns about -- I think you just said it
21 actually about having a document that sits on
22 the shelf and gathers dust. And you went on

1 to say that, you know, at Shell you have and
2 evergreen process, where you're constantly
3 modifying and updating the safety case, which
4 I think also is important.

5 You mentioned another key component
6 was the safety culture. And I'm curious --
7 because we've heard this term again and
8 again -- at your facilities how does each one
9 of your facilities define safety culture and
10 further than that, how do you measure it on a
11 rig? Do you have metrics that you look at
12 that you can evaluate the safety culture of a
13 certain facility?

14 MR. LEIMKUHNER: If I had to define
15 one particular way to define a safety culture
16 is if the folks with the boots on the deck
17 managing the operation, if they see something
18 that isn't right do they stop the job and
19 intervene and ensure they don't start work
20 again until it's corrected. So we actually
21 monitor the pauses we take, we monitor and
22 track the stop-the-job interventions that we

1 occur. We call them heroes. It's when
2 someone stops the job to help every rig
3 operate safely. So we've had a program of
4 reward and recognition to make sure that
5 happens.

6 And to assess how strong that
7 culture is we've actually hired outside firms
8 to come in and do the culture surveys of our
9 rig crews and our locations and benchmark
10 that, not only against other oil companies
11 they have in their database but also, other
12 industries. We benchmark ourselves against
13 that. So it's internal assessments, internal
14 measurements, as well as outside auditors.

15 MR. MOURE-ERASO: Thank you.

16 MR. PREBEN BERGET: That question,
17 it was about safety culture. And I think
18 starting with the first one, capturing dust,
19 so that safety case. That's the clear
20 condition on our side of issue, even my
21 follow-up and my introduction we see as a
22 weakness with ourselves.

1 We are working to get everyone sort
2 of on top of that and forcing them internally.
3 That's been part of our extensive audit, and
4 so it's something we just continue to have to
5 focus on and keep working on.

6 On the agency culture side it's
7 really a challenge, and it's sort of moving
8 into the softer parts of our industry. It's
9 hard to regulate what people are thinking
10 about and what they're -- so there's a lot of
11 things sort of written about and wrote about.

12 But internally, that's what we do.
13 We do the safety and our assessment of the
14 safety culture internally on a regular basis.
15 And then that's been respected and worked on.
16 But it's not -- I don't think we have the
17 necessary solution available as of yet.

18 MR. MOURE-ERASO: Thank you.

19 A question that I have is for Dr.
20 Pitblado specifically. I am -- I wonder how
21 DNV determine when a particular practice is as
22 low as reasonable practical. I mean, we hear

1 the ALARP thing. But I wonder how your
2 company has thought out and specifically that
3 that's the case and that's what you are
4 observing and not something else.

5 DR. PITBLADO: I wouldn't say that
6 DNV has a unique method for that. But there's
7 fairly clear guidelines that have been issued
8 by both UK HSE and by NOPSA, which use the
9 ALARP approach and we really just follow those
10 guidelines as do the companies. The only
11 issues that are out there that -- ALARP
12 sometimes fails for very rare disaster kind of
13 events like we saw at Macondo. The risk is so
14 low in terms of how people think about those
15 risks that you can often not justify spending
16 very much money to reduce those risks. And so
17 we have some concerns that ALARP tends to be
18 much better for, you might say, routine major
19 risks. But it tends to be less effective for
20 the biggest risks. Because it doesn't -- as
21 I say, when you do the actual calculations for
22 risk reduction you can't spend much money to

1 reduce a very rare risk.

2 MR. MOURE-ERASO: I understand.

3 I would like to ask Mr. Wark.

4 MR. WARK: Yes. Thank you, Mr.
5 Chairman. We have a number of questions here.
6 One that jumped out at me which I will be
7 addressing to Mr. Spackman is do drilling
8 contractors adopt different standards of
9 safety depending on the regulatory regime that
10 they're operating under.

11 MR. SPACKMAN: It's a challenging
12 question. Obviously, there are drilling
13 contractors that are going to be influenced by
14 the environment in which they operate to
15 either attain higher or lower standards than
16 they would normally wish to attain. The
17 regulator plays a role in challenging safety
18 to a higher level. And those regulators that
19 traditionally challenge safety at the highest
20 levels -- and I would identify PSA Norway was
21 one -- are going to probably achieve a higher
22 safety standard from the same drilling

1 contractor operating in that environment than
2 they would where you might have an oil company
3 operator rushing to get things done in a
4 unregulated environment.

5 MR. MOURE-ERASO: Thank you.

6 Mr. Wright?

7 MR. WRIGHT: Thank you, Mr.

8 Chairman.

9 Based upon the quantitative analysis
10 that is done on the front end do I get a
11 consensus of agreement from you that the
12 Deepwater Horizon incident and the risk of the
13 blowout preventer not failing was assessed as
14 a low risk? That is to say, that they had
15 redundancy built into the blowout preventer,
16 they had multiple systems, multiple checks and
17 balances and therefore, may not have rated
18 that as a very high risk for that particular
19 endeavor, even though they were in deepwater.
20 So in the future if we have a safety case base
21 versus a performance -- or prescriptive base
22 is it going to make any difference if people

1 don't assign the right quantitative value to
2 those risks; i.e., they may not in fact do the
3 right assessment of that risk? You following
4 me?

5 DR. PITBLADO: Yes. Can I --

6 MR. WRIGHT: Please.

7 DR. PITBLADO: I think we had part
8 of the answer to that from some of the
9 speakers this morning, where, yes, you must
10 make assumptions when you do a quantitative
11 study. But what the regulators we heard from
12 this morning said, they're now requiring a
13 clear link between the design safety case and
14 the operation's case so that those
15 assumptions, in terms of effectiveness of
16 devices, procedures working, that in reality
17 during operations they actually happen that
18 way. And perhaps, Shell might have a view
19 with their safety case, how they make sure
20 that the design assumptions get translated
21 into operational reality.

22 MR. LEIMKUHNER: I think if you go

1 back and you take a look at this event here
2 and you relate back to the failure of the BOP
3 stack I just want to offer a note of caution.
4 The BOP stack is constantly being referred to
5 as having failed here. When the bottom line
6 is investigation's not completed. The
7 analysis of the stack is still ongoing.

8 There's some theories that are out
9 there that speculate the control system was
10 severed in the explosion and the stack worked
11 fine. It was the fact that the control system
12 was severed due to the explosion but hydraulic
13 power still remained. Thus, the auto-
14 disconnect did not work. So it may have been
15 a compromise of control system and not the
16 stack itself. So we -- it's very tempting to
17 form early --

18 MR. WRIGHT: I'm not jumping to any
19 conclusion. But I'm trying to make an
20 assessment with respect to whether or not when
21 you're doing your front-end analysis you're
22 actually addressing -- and my presumption is

1 that they --

2 MR. LEIMKUHLER: Okay.

3 MR. WRIGHT: -- didn't assign that a
4 very high risk because of all the redundancy
5 that had been built in. Granted, they had
6 umbilical connections as opposed to acoustic
7 signal connections so we'll never know since
8 they didn't have acoustic is my understanding
9 int his particular case. So they couldn't
10 have sent a signal down to slam home one of
11 the guillotines to stop the flow.

12 MR. LEIMKUHLER: That's correct, as
13 well. So to get back to your first question.

14 MR. WRIGHT: Yes.

15 MR. LEIMKUHLER: I think if you take
16 a look at a safety case approach to design and
17 operation and if you have that also, not in
18 the case but also in your operational
19 procedures and also your design so that you
20 always have to have two viable barriers. And
21 if your operational procedure states that if
22 one of those barriers does not fail, does not

1 test properly you don't proceed until you
2 always have two.

3 So when you're drilling you're
4 always relying upon two barriers. Number one,
5 the hydrostatic control of the fluid and the
6 BOP stack itself. So is the BOP stack
7 recognized as something that could fail?
8 Absolutely. So therefore, you always have to
9 have at least two viable barriers under a
10 safety case approach. And even -- it isn't
11 really a safety case approach, it's an
12 operational approach. You don't need to have
13 that -- you don't need to have a safety case
14 to always have that operational philosophy.
15 It just reinforces it.

16 MR. WRIGHT: Thank you.

17 MR. MOURE-ERASO: Thank you.

18 So we move to the Investigative
19 Panel for questions.

20 MR. HOYLE: Well, I want to ask a
21 blended question between the morning panel and
22 our afternoon panel. And to say that safety

1 case has been talked about but is of somewhat
2 limited value without a competent regulator.
3 This was the message from the morning. But a
4 competent regulator requires highly skilled
5 and experienced staff. That staff is
6 expensive. Is the -- in your view is the oil
7 industry supportive, desirous of a competent
8 regulator and are you willing to help pay for
9 a competent regulator?

10 MR. MILITO: This question's come up
11 recently and we, along with several other
12 trade associations, sent a letter to Congress
13 requesting full appropriations for the BOEMRE
14 so that they have the inspectors, the
15 permitters, the folks who do the environmental
16 analysis so they have the funding to do all of
17 that work. But we also believe that the
18 industry pays billions of dollars in
19 royalties, rentals and bonus bids. And those
20 monies to cover those expenses should come
21 from those revenues, a float of the
22 government. In 2009 and 2008 the industry

1 paid over \$30 billion to the government in
2 these types of revenues. So there's a
3 sufficient flow coming in to the government to
4 cover those expenses.

5 MR. HOYLE: Anyone else?

6 MR. SPACKMAN: Yes. Alan Spackman,
7 International Association of Drilling
8 Contractors. With respect to those portions
9 of what would be a hazards analysis under a
10 safety case that are undertaken by the Coast
11 Guard, we would note that the Coast Guard
12 already has a user-fee system in place that is
13 supposed to recover its costs and that there
14 might need to be an adjustment to that should
15 the Coast Guard actually undertake hazards
16 analysis under a safety case. But the system
17 is already there.

18 DR. PITBLADO: And one other
19 comment, if I could make it. In the class
20 societies, ABS, ourselves, are delegated
21 regulators on some aspects of offshore safety,
22 particularly for floaters. And we have a

1 normal commercial relationship with the oil
2 companies. They pay for the services. We
3 have a competence requirement imposed on us.
4 It's -- we don't choose to have a small number
5 of a large number of engineers. We -- in
6 fact, it's specified by EMSA, the European
7 Maritime Safety Authority. And that cascades
8 all around the world, in terms of we have to
9 have a certain number of competent engineers
10 on board depending on the size of the fleet
11 that we look after. And then that's paid for
12 by the industry.

13 MR. LEIMKUHNER: To answer your
14 question I think not only do we want a
15 competent operator, we have to have a
16 competent operator. It's not a question of
17 the fact that, Oh, we want some operator that
18 we feel is going to be flexible or malleable.
19 We don't want that. We want to have a
20 competent operator. The funding for that
21 needs to come, in our view, from all the
22 revenue sources this industry generates,

1 through lease bonus payments, taxation and
2 other revenues. The revenues are there. I
3 think it's a question of appropriations.

4 MR. HOLSTROM: My question is about
5 the barrier analysis that is done in practice
6 by your organizations and how you view that.
7 In our reviewing of various documents related
8 to barrier analysis one question that we have
9 is are you implementing more modern notions of
10 defense and depth, layers of protection or
11 safety instrumented systems that would look at
12 these layers or barriers and analyze how
13 independent they are, how reliable they are,
14 how are they tested and to ensure that when
15 you're testing barriers you're not testing --
16 while there may be several barriers in place,
17 you're only testing one barrier, we'll say,
18 with a pressure test like a negative or
19 positive pressure test.

20 Do you implement standards like
21 safety instrument systems, which is both an
22 international standard, as well as a U.S.

1 standard, ISA 84, which I understand is
2 somewhat different than API 14(c), I believe?
3 And do you implement things like layers of
4 protection and defense in depth where those
5 barriers are actually evaluated, in terms of
6 their reliability, in terms of percentage,
7 even a quantitative analysis?

8 MR. LEIMKUHLE: When you construct
9 and HSE case and you develop your Bowties to
10 manage the top hazards and you're relying upon
11 defined barriers and controls by definition in
12 the case you have to verify those barriers
13 have integrity and audit process and
14 certification of the barrier means you must
15 describe how you're going to actually verify
16 that. Not only that, they have to be
17 independent. So I can't just put the same
18 barrier in twice and call that two independent
19 barriers. So you need to be distinct,
20 independent in your audit process and also, to
21 build even classified as a barrier you have to
22 have means of verification and they have to be

1 tested on that actual barrier, not testing a
2 series of barriers and calling them all good.

3 DR. PITBLADO: I'd just add it is
4 perhaps -- the Bowtie is a pretty new
5 technique. It doesn't have the history that
6 some other techniques do. And there isn't an
7 international standard yet for how to do it
8 that address some of the issues you've raised.
9 So I think it's an area where that technique
10 will improve over the next few years. But
11 there are potential weaknesses that you've
12 just raised.

13 MR. MILITO: And one thing I'd like
14 to add is one of the recommendations that came
15 out of the joint industry task forces is to
16 look at well design. And API is now -- has a
17 committee that's working on a recommended
18 practice for well design. And there's a
19 separate chapter on barriers, barrier
20 philosophy, how you plan for the, how you
21 verify and accept them. So it's being
22 developed and we expect this standard to be

1 done in the first quarter of 2011. And
2 hopefully, it will something that will be
3 utilized by all of industry.

4 And it doesn't tell you how to drill
5 a well. I think Joe will let you know that
6 everybody has different ways of drilling wells
7 effectively so that they have strong
8 integrity. But what it does do is provide
9 kind of an outline of things to consider to
10 make sure you're hitting all the points and
11 you do have ultimately strong integrity within
12 the well.

13 MR. TILLEMA: I have a question
14 similar to Don's, but more looking for some
15 insight in the risk assessments and the risk
16 tolerance being used with these safety cases.
17 For those of you who have done a safety case
18 have you found that by doing a safety case and
19 the risk assessment that a drilling rig needs
20 a safety instrumented system?

21 MR. LEIMKUHNER: A safety
22 instrumentation?

1 MR. TILLEMA: Safety instrumented
2 system.

3 MR. LEIMKUHLER: Can you give me
4 more definition?

5 MR. TILLEMA: Well, I -- that's
6 probably answered my question.

7 DR. PITBLADO: Well -- and I don't
8 think that's being too fair. But what -- when
9 we do a risk assessment -- and, for example,
10 let's say you're talking about a typical area
11 where you might have a SIL, which is a gas
12 detection and ESD shutdown system. You would
13 do the risk assessment.

14 And if you find a release event
15 which is very serious risk and you have to
16 allow for a certain probability your ESD
17 system doesn't work -- and that may be a major
18 part of your risk, that it doesn't work -- and
19 then the SIL system would be part of your
20 response, we can improve the reliability of
21 the ESD system by a factor of five, factor of
22 ten by using the SIL system. And that would

1 reduce the risk.

2 So I think proper safety cases with
3 quantitative analysis and certainly, the kind
4 which we do for the Zed 13 standard would
5 often find a need for an instrumented safety
6 system, particularly on ESD systems, gas
7 detection systems, yes.

8 MR. TILLEMA: And so you have seen
9 safety instrumented systems implemented on
10 drilling rigs?

11 DR. PITBLADO: I can't answer that
12 for drilling rigs. I know for production
13 facilities, yes.

14 MR. TILLEMA: All right. Thank you.

15 MR. LEIMKUHNER: So the
16 instrumentation system that we deploy offshore
17 consists of what's known as a real-time
18 operation center where we monitor all of the
19 key critical parameters of the drilling
20 process itself. But we leave the automation
21 of the shut down and the actually physical
22 control of the process offshore on site. We

1 don't transfer that authority to the
2 monitoring systems onshore.

3 I found those systems to be
4 extremely valuable because what they now --
5 what they enable you to do is in the event you
6 have something you didn't expect in your
7 drilling process you can actually have real-
8 time monitoring of all your key parameters so
9 it enables you to do a very, very real-time
10 analysis. So you get the fastest recovery and
11 you get away from a trouble event so it
12 doesn't escalate.

13 MR. TILLEMA: Thanks.

14 DR. MacKENZIE: My question actually
15 stems from the presentation by Mr. Pitblado,
16 but I welcome any of the panelists to answer
17 it.

18 I was interested in how you
19 mentioned the issues of -- the technical human
20 organizational issues and how human
21 organizational needs to be addressed more
22 often.

1 And I was just curious. In a
2 comparison between the safety case regime and
3 a more prescriptive regime that we have here
4 in the states, do you feel that the safety
5 case approach deals with the human
6 organizational issues in a manner that's
7 different and/or better than what's happening
8 here?

9 DR. PITBLADO: I would say that
10 addressing the human and organizational
11 element is not yet a completely solved
12 problem. Okay? And there's some very able
13 people here in the U.S., both on the east and
14 the west coast in academia who have some very
15 useful ideas. We heard from the previous
16 speaker about some ideas from Berkeley which
17 are good. They fit, we think, fairly well
18 into risk assessments. And then the risk
19 assessments flow into the controls. And then
20 after that you monitor the condition.

21 So it does, we think, fit into the
22 context. I'm not sure if safety case is

1 inherently better than prescription on that.

2 But it's not obvious to me actually where

3 prescription would incorporate organizational

4 issues the way the prescriptive rules are

5 written currently. And at least you can get

6 it into the risk assessment.

7 DR. MacKENZIE: Thank you.

8 MR. MOURE-ERASO: So we move to a

9 second round here of the Board members.

10 We'll start with Mr. Wright.

11 MR. WRIGHT: I have no further

12 questions.

13 MR. MOURE-ERASO: Okay.

14 MR. WRIGHT: Thank you.

15 MR. MOURE-ERASO: I don't have

16 questions myself, either.

17 Does anybody on this side of the

18 table?

19 MR. BRESLAND: Yes. Yes.

20 I'm just following up on a comment

21 that Dr. Pitblado made. And I -- it's been

22 kind of gnawing at me ever since you said it.

1 And I just want to see if I understand what
2 you meant. You said that, you know, in
3 developing the safety strategy for a major
4 accident there are some accidents that are so
5 rare that it's very hard to figure out exactly
6 what you'd do to prevent them. But it would
7 seem to me that the accident that we are
8 investigating in the Gulf is really pretty
9 straightforward in terms of -- you know,
10 that's really what you want to prevent is an
11 explosion and a huge release of oil. Is that
12 what you meant? Or were -- is there something
13 else --

14 DR. PITBLADO: No.

15 MR. BRESLAND: -- that I didn't --

16 DR. PITBLADO: I didn't mean that if
17 that's how I interpreted. What I was saying
18 is that some of these major catastrophic
19 events are predicted to be so rare that
20 although you can envisage a solution you can't
21 justify spending that extra money because you
22 already believe the systems you've got in

1 place today are ALARP. And that's the
2 problem, that sometimes with the ALARP
3 standard people can't justify spending extra
4 money to put in good solutions which they
5 already know but aren't justified by that
6 particular standard. And that's why some
7 companies use a continuous improvement
8 standard rather than an ALARP standard.

9 MR. BRESLAND: Would this accident
10 fall into that category of so rare that you
11 couldn't figure out what to do about it?

12 DR. PITBLADO: Yes. I got to be
13 careful when I talk about this particular
14 accident. But I think the general comment is
15 true. And it's not only blowouts that are
16 rare. There are other major accident events
17 which are very rare. And if you apply a
18 straight ALARP test you'd probably be able to
19 convince yourself, if not the regulator, that
20 what you're doing already is enough when you
21 know there are things you could do which would
22 make that risk lower. But when you do the

1 calculations it's a cost comparison of risk
2 reduction for the amount of cost, in terms of
3 time, money and trouble, to implement a fix.
4 And at the end of the day that ends up as an
5 equation. And for rare events it's hard to
6 justify spending a lot of money. And so
7 that's what I meant. It's not that the
8 solution is too hard to find.

9 MR. BRESLAND: I think the Baker
10 Panel, in their discussions of this said you
11 have to balance between ALARP and staying in
12 business, you know, or going out of business.
13 That makes sense.

14 DR. PITBLADO: That's a good
15 comment.

16 MR. BRESLAND: Yes.

17 DR. PITBLADO: I think that's a good
18 comment.

19 MR. BRESLAND: Thank you.

20 MR. MOURE-ERASO: Mr. Griffon?

21 MR. GRIFFON: Yes. Just a -- this
22 is also a -- sort of tie in to the earlier

1 panel. This morning the regulators talked
2 about the tracking of near misses or
3 performance indicators and the sharing of that
4 information. And I think one of the panelists
5 said something to the effect that industry
6 seemed reluctant to share.

7 And I guess the question I would
8 have is, number one, do you track near misses
9 and performance indicators. The second part
10 of that would be do you share it within your
11 own company company-wide and then industry-
12 wide and with the public or regulator? I
13 guess that's mainly to the two industry
14 panelists.

15 MR. LEIMKUHNER: Yes. To answer
16 your question, absolutely. We certainly track
17 every incident that occurs within Shell. We
18 have a risk matrix, so we ram it. We do a
19 risk assessment of not only what happened but
20 what could have happened, and then we evaluate
21 and track those. And we look for trends in
22 that data and adjust our safety programs

1 accordingly.

2 So we've recently seen a huge
3 increase in the amount of dropped objects that
4 we had in our business, whether falling out of
5 the derrick or from lifting and hoisting in
6 crane operations, so we instituted a dropped
7 object prevention standard, which we found
8 very useful.

9 We also conduct a monthly meeting
10 with all of our contractors. We invite other
11 operators to also attend our meetings, and it
12 tends to be the ones who operate locally where
13 you're located. And we share incidents.

14 If we know of a major industry that
15 occurred in the industry we don't hesitate to
16 ask that company to come in once you've
17 completed your investigation and please share
18 with us what you find. And we're willing to
19 do the same for our major incidents.

20 Is there a formal industry-wide
21 program or protocol that enables that ensures
22 it happens? Not that I'm aware of. But that

1 doesn't mean it doesn't happen. I know on the
2 industry panels I work -- I'm the Deepwater
3 Technology Symposium Chairman -- we have a
4 separate section devoted solely for HSEs with
5 an emphasis on case studies and sharing
6 learnings from incidents.

7 So there's plenty of vehicles and
8 ways that industry enables that to happen.
9 And it does happen. I just don't know if it's
10 aware of -- that knowledge and awareness is at
11 a public level to where they have an
12 appreciation for all the efforts we do put in
13 to learn from incidents and share.

14 MR. GRIFFON: And is -- just to
15 follow up, how about with the regulator or
16 with the public? Is it -- information shared
17 at any level of that information shared?

18 MR. LEIMKUHNER: There's reporting
19 standards and requirements. Any time we have
20 an offshore incident that involves a crane,
21 whether a high potential near-miss or actual
22 incident with a crane, we're required to

1 report that. And then certainly, any injuries
2 to personnel are recorded and reported to both
3 MMS, BOEM and OSHA, as well.

4 MR. GRIFFON: Both those are all
5 sort of personal safety things that you've
6 mentioned so far as examples. How about
7 systems of safety performance indicators, you
8 know, releases or gas releases?

9 MR. LEIMKUEHLER: All gas releases
10 have to be reported. There's incident --
11 under the NPDES standards there's reporting
12 requirements for all hydrocarbon discharges
13 and releases that have to be reported.

14 MR. MILITO: I just wanted to add
15 that the BOEMRE -- well, MMS was doing this.
16 But the BOEMRE does a survey, the offshore
17 operators, and they track blowout incidents,
18 fires and explosions, spills by quantity and
19 number of spills. They track lost incident
20 workdays, fatalities. And all that is
21 available on their web site. So that's
22 another way that the regulator does it through

1 the collection of information from the
2 offshore operators. MR. PREBEN BERGET:
3 I don't have too much to add to it. That's
4 very much the same as you heard. And
5 Norwegian regulations are pretty clear on it,
6 and the PSA shares that. So we are very used
7 to what is being reported is being shared.

8 And then as I said also in my main
9 introductory comments, we have serious
10 incidents and potential incidents as part of
11 our key performance indicators. That's widely
12 shared internally in the company.

13 And we certainly find that those who
14 are working here that even in the partnerships
15 where we have others operating near-misses are
16 being shared. But, of course, I'm sure
17 there's potential of improving that sharing,
18 as well.

19 MR. MOURE-ERASO: Thank you.

20 Mr. Wright, you don't have any
21 additional questions?

22 MR. WRIGHT: No, thank you, Mr.

1 Chairman.

2 MR. MOURE-ERASO: Okay.

3 So I'll go to line of questions to
4 the investigators. And also, will ask them --
5 I believe you are accumulating the questions
6 from the public, so you could read them,
7 please.

8 MR. HOLSTROM: I have an additional
9 question. I think we have a couple -- at
10 least a couple more questions.

11 In the U.S. context I think it's
12 somewhat unique -- certainly, not -- maybe not
13 in the EPA context in the nuclear world -- but
14 in the oil sector it's somewhat unique to have
15 a public discussion of risk management and
16 risk acceptance concepts. Those of us who
17 have investigated accidents have certainly
18 examined risk acceptance criteria used by
19 different companies. And normally that's not
20 a public discussion.

21 My specific question is would you --
22 any of you be willing to accept ALARP

1 principles, for example, driving risk as low
2 as reasonably practicable as part of what you
3 would envision as a regulatory improvement or
4 some of you had spoken in favor of the safety
5 case. Would that be included within that
6 framework that you would support?

7 MR. LEIMKUHLE: Shell safety case
8 is developed to an ALARP standard already.

9 MR. HOLSTROM: Okay.

10 MR. SPACKMAN: Alan Spackman, IADC.
11 The IADC guidelines reference ALARP.

12 MR. HOLSTROM: Okay.

13 MR. HOYLE: I have one more
14 question. You talked -- Board Member Griffon
15 was asking about measures. What are you
16 measuring? And equal question is what are you
17 rewarding? I think this would be a question
18 for Shell Oil and Statoil. What safety
19 metrics are the basis for awards and bonuses
20 for your personnel?

21 MR. LEIMKUHLE: So offshore in the
22 Gulf of Mexico we do have an award division

1 for our rig crews. And if they don't meet any
2 of the operational goals for that well they
3 still have the opportunity to earn a safety
4 bonus every day. If they have any incidents,
5 whether it's anyone gets hurt, do we have any
6 spills, do we have any high potentials or do
7 we just feel the safety culture is not where
8 it needs to be we reserve the right not to
9 award a well bonus regardless of their
10 drilling performance.

11 So if you have two incidents --
12 first, any type of incident at all in your
13 business related to safety you automatically
14 lose half of your well bonus and you lose all
15 of it if you have two. And we still reserve
16 the discretion to make what we call a cultural
17 intervention by saying, Look, the attitude,
18 the mindset is not where it needs to be,
19 folks; the bonus is suspended. And we have
20 done both.

21 MR. PREBEN BERGET: It's a
22 complicated question to respond to. Our

1 rewards are based on delivery and behavior.
2 That's all. And so from our corporate
3 management they're 50/50 between the two of
4 them. And our behavior is rated on our
5 values. And part of our core values is
6 caring. An essential part of caring is HSE
7 performance instead of accident. So that goes
8 for us all over the world.

9 On top of that, on delivery we have
10 sort of actual HSE performance as a part of
11 that. So that goes for everything we do.
12 And, of course, these key performance
13 indicators, they are reflecting what kind of
14 operations you are a part of.

15 MR. HOLSTROM: Just as a follow-up
16 to that, the key performance -- I heard
17 accidents and I heard, you know, incidents
18 or -- how -- to what degree is that based on?
19 Reportable injury? Or does that include
20 concepts, maybe leading and lagging indicators
21 like safety-critical equipment or closing
22 action items or releases of hydrocarbons

1 leading and lagging indicators that may
2 indicate information related to a potential
3 for a catastrophic event?

4 MR. PREBEN BERGET: Let me start.

5 MR. HOLSTROM: Yes.

6 MR. PREBEN BERGET: This is a wide
7 variety, and I have to come back to you if you
8 really wanted to see the width of these key
9 performance indicators.

10 But one of them, from our
11 operations, I refer to technical integrity as
12 part of what we are measuring. Actually, we
13 have sort of metrics on keeping up our safety
14 systems, keeping them always up to -- and
15 that's being measured and that's being
16 followed up.

17 And on our operations that is one
18 of the metrics that they will need. So that
19 is an example. That would be a leading one,
20 I guess. Of course, it's all just on the
21 lagging one that they are on the incidents
22 frequency, but also serious incidents with a

1 potential is sort of a -- are indicator more
2 than what actually has happened.

3 MR. LEIMKUHNER: So at Shell the
4 answer is yes, because we use various measures
5 to evaluate the overall level of safety
6 culture on the rig, whether it's the -- what
7 we call the proactive effort index. These are
8 proactive efforts that folks do. And we
9 actually standardize that to man-hours. We do
10 track and monitor that as a measure as to
11 what's the overall safety culture on the rig.

12 I personally have taken one rig to
13 where we had two high potential incidents that
14 just were unacceptable; suspended the safety
15 program award system and bonus system for the
16 rest of the year.

17 And we didn't take the money away.
18 We challenged the crews to respond, saying,
19 Look, we still have -- I think it was -- eight
20 or nine months to go, if you can actually run
21 the operation I want you to run for the next
22 nine months we'll find a way to have an

1 event -- recognition event and return that
2 money. It's not finances. It's not that
3 aspect that's driving us to take that away.
4 It's the actual safety performance and what's
5 actually happening on the rig.

6 MR. LEIMKUHLER: Okay.

7 MR. TILLEMA: And just one more
8 question. For those of you that have safety
9 case and have done them does it consider
10 simultaneous operations like displacing mud
11 and offloading to a boat and if so, how is
12 that controlled?

13 MR. LEIMKUHLER: We have what we
14 call a simultaneous operations matrix which
15 dictates not only the level of simultaneous
16 operations but specifically which simultaneous
17 operations you can do concurrently together.

18 On my facilities all of my rigs
19 operate on production facilities. So we drill
20 from tension link platforms and spars where
21 there's also production ongoing at the well.
22 So the offload of fluids to a vessel is keyed

1 to other activities ongoing on that platform.
2 So it's fairly well regulated and understood.

3 MR. TILLEMA: And can be monitored
4 throughout that duration?

5 MR. LEIMKUHLE: Those types of
6 activities we use, they're permit-to-work
7 system such that when a permit comes forward,
8 Hey, I want to do this particular operation at
9 this time, the offshore installation manager
10 and other leaders on that location who
11 actually have to sign these permits will be
12 aware of the other things that are going on
13 and they will make the judgment, No, from a
14 signoff standpoint we're going to have to wait
15 and hold off on that until we complete this
16 other task.

17 MR. TILLEMA: Okay.

18 MR. MOURE-ERASO: Do you have some
19 questions for the audience that you --

20 REPORTER: Sure.

21 DR. MacKENZIE: Oh, I was just going
22 to have a point of clarification. Mr.

1 Pitblado, I'm not trying to pick on you. But
2 at one point I think -- correct me if I'm
3 wrong -- that you stated that the safety case
4 is actually what the company wants to be, not
5 exactly what it currently is at the moment.
6 Is that a accurate paraphrase of --

7 DR. PITBLADO: I said that was a
8 danger.

9 DR. MacKENZIE: That was a danger.
10 Okay.

11 DR. PITBLADO: Yes. But quite often
12 you do prepare your safety case -- well, you
13 have to before you start operations.

14 DR. MacKENZIE: Sure.

15 DR. PITBLADO: And it can be
16 aspirational if you're not careful.

17 DR. MacKENZIE: Okay.

18 DR. PITBLADO: And you have to
19 ensure that the operations truly reflect what
20 the safety case set as the desired level. So
21 in most cases people do operate their
22 facilities as per their safety case. But we

1 were commenting on is it just a piece of
2 paper. And the example would be --

3 DR. MacKENZIE: Sure.

4 DR. PITBLADO: -- that the
5 aspiration isn't attained in practice.

6 DR. MacKENZIE: Thank you.

7 DR. PITBLADO: Okay.

8 MR. MOURE-ERASO: The questions?

9 MR. HOLSTROM: We have some
10 questions from the audience and I'll just read
11 the questions as written. The first question
12 is how do groups like API measure the
13 effectiveness of their recommended safety
14 guidelines if these guidelines are only
15 recommendations and only voluntarily
16 implemented by their members.

17 MR. MILITO: Well, ultimately, it's
18 the regulator who decides whether or not to
19 make these requirements. And we -- like I
20 discussed earlier in my opening statement,
21 we've seen 80 of our documents adopted and
22 made into requirements by the regulator. In

1 addition to that, BOEMRE will come to us and
2 work with us and we'll come up with a document
3 that meets the needs of offshore operations.
4 So it's a green process. We continue to
5 evolve our documents.

6 And recently, in the past week we
7 came out with a revised version of our
8 Recommended Practice 65-2 which has to do with
9 proper cementing practices. That document
10 just came out this summer. And based upon
11 this incident we looked at the preliminary
12 findings and realized that we had some changes
13 we needed to make to make sure we have strong
14 cementing practices in place. So it's based
15 upon really what the demands are from the
16 regulators and the industry in looking at
17 operations.

18 MR. HOLSTROM: Okay. Next question.
19 This is for Shell, Mr. Leimkuhler. How has
20 the HSE case reduced incidents and how did
21 Shell implement the HSE safety case
22 perspective in its organizational culture?

1 MR. LEIMKUHLER: I think safety case
2 has probably done a good job of reducing a lot
3 of the higher -- high potential incidents
4 associated with the asset and the larger risks
5 associated with the project. We don't really
6 use a safety case to manage slips, trips and
7 falls. We have other programs that we use to
8 really help drive that incident rate down to
9 very low levels. The real value I find in the
10 case is really driving that two-barrier Bowtie
11 mindset throughout the -- not only the design
12 of the well but also the operational execution
13 of the well.

14 MR. HOLSTROM: Okay. Thank you.
15 Question from the audience. With the majority
16 of the major oil and gas operators having
17 operations worldwide and in a location where
18 safety cases are required why don't they
19 utilize this practice in areas where it is not
20 required? I guess what could be added to that
21 is if you do, you know, you can explain that,
22 as well. I assume that you don't.

1 MR. LEIMKUHLER: That's correct.

2 Since 2002 we've used a safety case globally
3 in our operations for oil well drilling.

4 MR. HOLSTROM: Yes, Mr. Spackman?

5 MR. SPACKMAN: Alan Spackman, IADC.

6 One of our members, early adopter of the
7 safety case approach was a drilling contractor
8 that had no operations in any area where that
9 HSE case was required. They made that
10 commitment to develop and HSE case based on
11 their own corporate identification of it as an
12 appropriate tool for regulating hazard.

13 MR. LEIMKUHLER: I guess as an
14 additional comment, we've worked with a lot of
15 drilling contractors in the Gulf of Mexico to
16 where the first time they used a case is --
17 this was Shell because we require it. And
18 I've always been impressed by the number of
19 drilling contractors that after they leave
20 Shell, they still utilize the case because
21 they recognize the value of it. Even when
22 it's not required they still say, Look, this

1 is a good piece of business for us, we realize
2 the value in it. And they take ownership of
3 it.

4 MR. HOLSTROM: Okay. We received an
5 additional question that was inquiring about
6 potential well control or blowout incidents
7 that may have occurred recently in both Norway
8 and in the North Sea, I believe, in the UK
9 jurisdiction that may have involved perhaps
10 Shell and Statoil?

11 It's hard to tell from the question.
12 Is there anything, you know, any -- if you are
13 aware of such incidents are there any lessons
14 learned that could be described from those
15 incidents that would be useful? Or how do you
16 share such lessons learned?

17 MR. PREBEN BERGET: I'll comment
18 shortly. We have an incident on the Norwegian
19 Continental Shelf, called Gullfaks, that is
20 currently under investigation by Norwegian
21 authorities. And I'm sure that will be shared
22 and is already shared on the PSA home page

1 what was the cause of it. And so it's pretty
2 open.

3 This actually was a near miss, in
4 the sense that it was not a blowout, but it
5 gets a lot of attention and we are -- being a
6 small country and then the oil business being
7 very important for us, it's very evident all
8 over the country what is ongoing.

9 MR. HOLSTROM: Okay.

10 MR. LEIMKUHLE: At Shell there was
11 an incident in the North Sea. I'm not exactly
12 sure exactly when it happened. But the
13 particulars of it was there were downhaul
14 barrier that failed. The flow occurred. The
15 BOP stack worked. High pressure fluids were
16 circulated in the well and the well was
17 successfully killed. So the barrier concept
18 worked. And things -- I'm still waiting for
19 the final report on exactly what happened to
20 the barriers down in that well.

21 MR. HOLSTROM: Okay. Thank you.

22 The next question is please comment

1 on possible differences in complying with a
2 goal-based regime in offshore U.S. from other
3 regimes worldwide.

4 MR. MILITO: I think one thing
5 you're seeing -- and it's been in the regs
6 here in the U.S. -- is certification that
7 companies have to do to show that they're
8 meeting the requirements. We're seeing in the
9 new interim firewall that's come out. We saw
10 that in the NTL that came out. So
11 essentially, companies will have to retain
12 third-party independent certifiers like DNV or
13 ABS to come on board and demonstrate that this
14 BOP will fit the intended purpose in this
15 particular operation. And that is one thing
16 that I've noticed more recently being kind of
17 a trend with our regulations here is that you
18 have to use third-party certifiers to come in
19 and check that box.

20 MR. HOLSTROM: Okay.

21 This is sort of a related question.
22 It's directed at Statoil but I think it could

1 be directed at all the panel participants.

2 And it's a question about the effectiveness of
3 inspections in different regulatory regimes
4 around the world. What are your observations
5 about the effectiveness of inspections by the
6 regulator?

7 MR. PREBEN BERGET: How can they --
8 well, yes. As you heard from the PSA,
9 inspections is not -- they are going in to a
10 major part of our audits and verification.
11 That's the way they're doing this. So this
12 was debated quite a lot this morning, I guess.
13 And we have a good understanding of -- so --
14 and we are in general pleased with that. I
15 think it's working well. But, of course,
16 whatever we are, we are first and foremost --
17 an obligation is to live by the standards of
18 the country or the operation where we are. So
19 coming to the U.S. we, of course, respect this
20 way of working. Still, we live by our -- sort
21 of number one is to live by the country's --
22 their agents, rules and regulations. And on

1 top of that we also apply our own procedures.

2 So --

3 MR. HOLSTROM: Okay.

4 And additional question. We've
5 heard of commendable practices to identify
6 communicated control risks through safety case
7 and ALARP demonstration processes by industry
8 panelists. Could the precursor conditions
9 that occurred on the Deepwater Horizon have
10 occurred if your company -- in your company
11 and if so, what barriers might have
12 effectively prevented the catastrophic loss?
13 Can these be generalized to other major
14 accident hazards?

15 MR. MILITO: I think there's a
16 reluctance because folks are waiting for the
17 ultimate conclusions from this incident before
18 they start analyzing their own practices and
19 ultimately making those types of opinions.
20 We -- we're expecting end of March the Board
21 of Inquiry of the Coast Guard and the MMS to
22 come out with their investigative report.

1 This CSB report will be coming along down the
2 line, as well as the National Commission.
3 So -- and we're also seeing what's coming out
4 from the individual companies. So it's a
5 matter of not making those types of opinions
6 until we know all the facts.

7 MR. HOLSTROM: Here's a -- an
8 additional question. How are corporate boards
9 being held accountable for safety culture? I
10 guess a follow up to that would be is there --
11 are there safety discussions or safety
12 presentations, accountabilities,
13 responsibilities in board of directors. And
14 that perhaps could go to Statoil and Shell.

15 MR. PREBEN BERGET: Yes. I think I
16 mentioned it in my introduction that a lot of
17 these parameters are rolling all the way up to
18 our CEO.

19 MR. LEIMKUEHLER: I can tell you
20 within Shell from the upper management the
21 expectation of the role safety plays in the
22 operation as it being a core value and not

1 something that's a priority that may be
2 subject to changes is clear throughout. The
3 safety expectations of how you manage your
4 operations within the Shell safety framework
5 that I've laid out is a clear expectation.
6 And we're held accountable for departures from
7 that.

8 So we have full detailed
9 investigations on not only real incidents, but
10 high potential incidents that go up to the
11 highest levels of the company. And there's
12 certain things to where if we ask for a
13 department from the standards it needs to go
14 to the highest level of the company, including
15 the president. That's the degree of awareness
16 they want to have if we are going to
17 consciously depart from the safety framework
18 that we have laid down.

19 MR. HOLSTROM: Okay. Thank you.

20 That's all the questions.

21 MR. MOURE-ERASO: Yes.

22 Okay. So I've been asked that we

1 need a five-minute break, and we'll come back
2 here in five minutes to start the last panel.

3 Yes. Before we leave I would like to --

4 (Whereupon, a short recess was
5 taken.)

6 MR. MOURE-ERASO: Thank you very
7 much. I think we are ready to get started.
8 The last panel of the day is what we call the
9 Union and Worker Panel. We are especially
10 thankful to the participants that they would
11 like to join us and discuss from the point of
12 view of the workers the regulatory situation
13 in offshore drilling.

14 We have in this panel Mr. Mike
15 Wright, who is the Health and Safety and
16 Environmental Director of the United
17 Steelworkers. We have Mr. Roy Erling Furre,
18 representative from the Norwegian Union of
19 Energy Workers, also known as S-A-F-E, SAFE.
20 We have Mr. Glenn Trimmer, who is the
21 Secretary-Treasurer of the United Steelworkers
22 Local 4959 in Alaska; and Mr. Fritz Guenther,

1 President of the United Steelworkers Local
2 4959 in Alaska.

3 So the first panelist is Mr. Wright.

4 So, Mr. Wright, please proceed.

5 MR. WRIGHT: Thank you. This on?

6 Yes. Chairman Moure-Eraso, distinguished
7 members of the Board and staff of the CSB,
8 thank you for the opportunity to participate
9 in this important public hearing.

10 My name is Mike Wright. I'm the
11 Director of Health, Safety and Environment for
12 the United Steel, Paper and Forestry, Rubber
13 Manufacturing, Energy, Allied Industrial and
14 Service Workers International Union. And I
15 promise never to read that whole name again
16 this hearing. We are the USW for short. We
17 represent 850,000 workers in the sectors I
18 mentioned and many others. But for this
19 afternoon the important name of that -- the
20 important word in that long name and the
21 reason I read it is the word, Energy.

22 30,000 of our members work in the

1 oil sector, the vast majority in refineries.
2 Although you will hear today from two of our
3 members who work in production on Alaska's
4 North Slope. Altogether, our members account
5 for about two-thirds of refinery capacity in
6 the United States.

7 At the outset let me say that unlike
8 my three colleagues on this panel and many
9 other presenters today, I have never worked in
10 the oil industry. While the USW and its
11 predecessor unions have done a great deal of
12 work on refinery safety and even more on
13 process safety generally, we do not represent
14 workers on the offshore oil platforms in the
15 Gulf of Mexico. No union does. And the
16 industry has worked hard to keep it that way.
17 So I'm not going to talk this afternoon about
18 kicks and blowout preventers and cementing and
19 drilling mud.

20 Instead, I want to make three simple
21 points. First, the problem isn't confined to
22 BP. Second, the problem is confined to

1 offshore exploration and production. And
2 third, we can learn a lot about safety
3 management and mismanagement and the culture
4 of the oil industry by looking at what's
5 happening in refineries. Because in the end
6 it's all one industry.

7 So let me talk about refineries.

8 Most of our members in oil came through a
9 merger with a union called PACE. That merger
10 was finalized nine days after the BP Texas
11 City disaster. And Texas City consumed much
12 of our effort over the next several years. In
13 the analyses and reports that followed Texas
14 City the CSB produced its report on the
15 accident itself, of course, and the Baker
16 Panel reported on safety management in all of
17 BP's American refineries.

18 We decided to take a look at the
19 industry as a whole through a survey of our
20 local unions in the 71 refineries operated by
21 22 different companies whose workers we
22 represent. The findings are detailed in our

1 2007 report, Beyond Texas City. We asked
2 about four hazardous conditions that helped
3 caused the Texas City accident and asked
4 whether they existed at other refineries and
5 whether management had taken effective steps
6 to address them.

7 Those conditions were atmospheric
8 venting, inadequate management of
9 instrumentation and alarm systems, sighting
10 temporary structures near process units and
11 allowing non-essential personnel in vulnerable
12 areas during start ups and shut downs. We
13 also looked at emergency response programs.
14 90 percent of surveyed refineries had one or
15 more of those hazardous conditions. 43
16 percent had three or more. 70 percent
17 reported inadequacies in the emergency
18 response programs. Those data were collected
19 nine months to a year after the Texas City
20 accident. Yet 87 percent of our locals
21 reported that the overall management of
22 process safety in their refineries was still

1 not effective enough. Incidentally, that last
2 critical condition I mentioned, non-essential
3 personnel in vulnerable areas was one reason
4 why seven people died in the Tesoro Anacortes
5 accident on April 2 of this year, more than
6 five years after Texas City.

7 In my career in the USW I've been
8 able to work on safety issues in a wide
9 variety of industries, steel, non-ferrous
10 metals, mining, rubber and plastics, paper,
11 chemicals, forestry, nuclear fuels, general
12 manufacturing. I know of no industry where
13 the gap between the intrinsic hazard of the
14 process on the one hand and the quality of the
15 industry programs addressing that hazard on
16 the other hand is so wide.

17 That's not because oil industry
18 safety programs are so bad in comparison to
19 other industries. Indeed, they are somewhat
20 better than the average safety programs across
21 all industries. But they tend to be the kind
22 of ordinary programs aimed at trips and

1 sprains and injuries in general, mostly by
2 exhorting workers to just work safely often
3 through programs that focus primarily on
4 worker behavior instead of finding and
5 addressing the kind of system failures capable
6 of causing catastrophic accidents. It was
7 macabre in the aftermath of the Anacortes
8 accident to hear the industry praising its
9 excellent safety record based on OSHA
10 recordables as if spraining an ankle was
11 equivalent to being burned to death.

12 But the real problem is evident when
13 you compare the ineffectiveness of those
14 safety programs to the magnitude of the
15 hazard. Mining, for example, has a higher
16 death rate among workers. But a mine accident
17 is confined to the mine while a worst-case
18 refinery accident can affect thousands in the
19 surrounding community. And no mine accident
20 is capable of causing the kind of
21 environmental damage that was caused by the
22 Deepwater Horizon blowout.

1 Kim Nibarger, a member of our
2 Health, Safety and Environment Department, and
3 a former oil worker describes a refinery as
4 follows. Kim said, "Take a gallon of gasoline
5 in a sealed metal can. Get your barbecue
6 grille good and hot. Now put the can on the
7 grille. Multiply that by a million. That's
8 a refinery."

9 Of course, refineries have hazards
10 beyond hydrocarbon fires and explosions. On
11 October 4 of this year a worker died in a
12 hydrogen sulfide release at the Exxon Mobil
13 refinery in Chalmette, Louisiana. And the
14 greatest community hazard of all is the
15 possibility of a total loss of containment
16 accident releasing hydrogen fluoride from an
17 HF-catalyzed alkylation unit. In EPA's
18 modeling the lethal plume goes beyond the 25-
19 mile limit of the model. A full release in a
20 populated area could spill or injure more than
21 a million people unless they evacuated in
22 time.

1 A far safer system using solid acid
2 catalysts as a replacement for HF has been
3 demonstrated at the pilot stage. But to date
4 we know of no refinery planning to build such
5 a unit. Most have not even converted to the
6 somewhat safer, although not safe enough
7 modified HF system in which the boiling point
8 of the HF system is raised by certain
9 additions.

10 Of course, the oil industry goes
11 beyond many others in its system for setting
12 voluntary standards, the American Petroleum
13 Institute. Many of those standards are
14 strong, well-reasoned and useful. But
15 overall, that system isn't good enough. The
16 fundamental problem with voluntary standards
17 is that not everybody volunteers.

18 For example, API recommends the use
19 of diesel engine air intake shutoff valves to
20 prevent explosions cause by runaway engines in
21 hydrocarbon gas or vapor releases. Such
22 measures are the law in the European Union,

1 Canada, Mexico, even China. But there are no
2 federal regulations in the U.S. governing that
3 hazard. Only an API recommendation. So most
4 engines in most refineries lack these
5 protections. The main supplier of such
6 systems tell us that they have sold ten times
7 as many to refineries in Canada where they are
8 required by law than in the U.S. where they
9 are not.

10 Even where an API recommendation is
11 widely followed it may have loopholes that
12 completely negate its intent. An infamous
13 example is the API Recommended Practice 753,
14 which was developed in response to a CSB
15 recommendation that the API bar trailers and
16 other portable buildings from potentially
17 dangerous locations. The API responded and
18 wrote an excellent standard in all respects
19 except one. It specifically exempts light
20 weight fabric enclosures. So in many
21 refineries the trailers in dangerous areas
22 have simply been replaced by tents.

1 The impact of these failings is
2 evident in the industry's performance.
3 Several years ago the USW set up a system for
4 tracking serious process safety incidents in
5 oil refineries. We use whatever published
6 sources we can access. But we also rely on
7 reporting from our members.

8 In 2009 we recorded 45 serious
9 process safety incidents, fires, explosions,
10 releases. Five workers died in USW
11 refineries. Things are not getting better.
12 This year we recorded 49 serious incidents
13 through December 7 with 11 deaths. That's
14 exactly one a week. Each of those incidents
15 resulted from a loss of at least one and
16 usually several levels of containment or
17 protection.

18 And every week we get calls from our
19 members about dangerous conditions.

20 Dangerously thin piping carrying high pressure
21 hydrogen, temporary pipe clamps that seem to
22 have become permanent, pipe clamps on top of

1 pipe clamps, cracked process vessels like
2 coker drums, decisions by management to run
3 critical systems even where the
4 instrumentation is broken or some of the
5 safety systems are inoperable.

6 And if you need more examples on
7 Monday the USW joined a number of community
8 and environmental organizations in Louisiana
9 to release Common Ground II, a new report on
10 safety in that state's 17 refineries. Using
11 data from the Louisiana Department of
12 Environmental Quality the report charted an
13 average of ten accidents a week reportable to
14 the Department since 2005 involving releases
15 of hazardous materials exceeding the
16 reportable threshold. BP doesn't operate a
17 Louisiana refinery. The biggest offenders
18 were Exxon Mobil, Calumet Lubricants and
19 Citgo.

20 We in the USW have tried to address
21 these problems. In 2008 and '09 in our
22 contract bargaining we proposed comprehensive

1 language on process safety and on fatigue
2 caused by the massive overtime the industry
3 relies on. The companies would not agree to
4 any mandatory programs and made it clear that
5 they would take a strike rather than agree
6 with the union on safety.

7 When the CSB recommended that the
8 American Petroleum Institute and the USB work
9 together on the issues of fatigue and metrics
10 the API insisted on doing it through their
11 normal voluntary standards process. They
12 assured us that everything would be done by
13 consensus. And so we gave it a good-faith
14 try. But instead of working through
15 disagreements the industry simply called for
16 votes. Where it was there unions -- it was
17 the USW and two unions, mostly representing
18 contractors -- against 12 or more industry
19 representatives. And, of course, we lost
20 every time.

21 After trying to make the process
22 work for more than a year we finally gave up

1 in frustration and left the talks rather than
2 put our name on inadequate standards. The two
3 recommended practices, API 754 and 755, are
4 marginally better than nothing. But they are
5 not good enough. If the industry had engaged
6 in real consensus discussions they could have
7 been so much better.

8 After Texas City the USW applied for
9 an received a grant from OSHA to do process
10 safety training for oil workers. We wrote
11 training manuals and curriculum, all of which
12 was reviewed and approved by OSHA. We offered
13 the training to a number of refineries. It
14 would have been free. We only asked the
15 company to continue to pay their employees
16 their regular wages for the several days of
17 training. That was all. They refused even
18 that. One of the excuses was that they
19 couldn't spare anyone from their regular jobs.
20 We ended up presenting the training in smaller
21 doses at conferences for workers who would
22 come on their day off -- days off and in other

1 industries.

2 I don't mean to say the situation's
3 uniformly bleak. Fifteen U.S. refineries
4 participate in the USW's Triangle of
5 Prevention Program, which includes systems of
6 safety training for the entire workforce,
7 along with intensive incident investigation to
8 find and fix hazardous conditions. But that's
9 15 refineries out of 71.

10 We are currently in quiet
11 discussions with parts of the industry on
12 other improvements. So far those discussions
13 are mostly talk. And there's an old saying
14 that talk is cheap. But another word for
15 cheap is cost effective. We believe talk is
16 cost effective. And we are willing to talk to
17 any company, any trade association so long as
18 there's a chance that talking will lead to
19 greater protections for our members and for
20 the communities that surround our work places.
21 As Monday's Louisiana report shows, we've also
22 made common cause with environmental and

1 community groups concerned about refinery
2 hazards.

3 So what's the path forward? First,
4 we have to fundamentally change how we
5 regulate this industry, not just offshore and
6 not just in exploration and development, but
7 all the way through refining. I said earlier
8 that there's a dangerously wide gap between
9 the inherent hazards of the oil industry and
10 the effectiveness of the industry's safety
11 programs designed to address them. There is
12 an even wider gap between the hazards of the
13 industry and our regulatory programs.

14 A nuclear meltdown might be worse
15 than a catastrophic release of HF. But the
16 nuclear industry is regulated by the NRC, an
17 independent agency with real power and
18 resources that sometimes shuts down hazardous
19 operations.

20 Mining is a dangerous industry, but
21 mining has MSHA with a stronger law and far
22 more resources per worker than OSHA. The oil

1 industry has OSHA and EPA for refineries and
2 the Department of the Interior for offshore
3 drilling.

4 OSHA does its best, and the recent
5 National Emphasis Program has led to real
6 improvements. But OSHA simply doesn't have
7 the resources to give the industry the level
8 of attention over time, nor does the EPA Risk
9 Management Program, despite an excellent staff
10 and strong commitment.

11 Offshore the situation is even
12 worse. The new Bureau of Ocean Energy
13 Management Regulation and Enforcement doesn't
14 have the staffing, the resources, or the
15 regulatory tools to do the job.

16 Last week the Wall Street Journal
17 reported that the Bureau could only pay new
18 inspectors half of what they could make
19 working for the industry. And the proposed
20 federal pay freeze is not going to help that.

21 And the Bureau is the wrong place.
22 In mine safety we learned 35 years ago that

1 you can't put the same department that handles
2 industry promotion and collects fees in charge
3 of safety. That's why we took mine safety out
4 of the Department of the Interior and created
5 MSHA in the Labor Department. That lesson
6 should also apply to offshore oil. We should
7 also put aside American exceptionalism and
8 look closely at the programs in the UK and
9 Norway. Those programs came at great cost,
10 the 1988 Piper Alpha disaster, which took 167
11 lives. They deserve serious consideration.

12 Let me add one other thing that
13 would make oil exploration and development
14 safer. And that's unionization. I'm not
15 saying that unionization automatically
16 increases safety or that all union plants are
17 safe. Texas City was a unionized plant.

18 But we can bring fresh eyes, a fresh
19 approach, and experience in other industries
20 to the table. More important, we give workers
21 a real voice in workplace conditions. We can
22 encourage people to report safety problems,

1 and we can protect them when a manager doesn't
2 like it.

3 In fact, managers themselves
4 sometimes bring us problems, quietly,
5 secretly, anonymously, when they can't get
6 upper management to address them and when they
7 believe we can. And sometimes we can and do.
8 The other panelists this afternoon will go
9 more deeply into what they've been able to
10 accomplish through their unions.

11 Let me close by saying that I
12 believe in the oil industry. In the five
13 years I've been privileged to work on oil
14 issues, I've come to know hundreds of
15 dedicated oil workers, union and management
16 alike. And I think we can solve these
17 problems.

18 I was trained as an engineer, and I
19 think engineers can do anything. But it's not
20 just an engineering problem. The industry
21 doesn't lack for technical confidence or
22 worker commitment to safety. And I think the

1 previous panel clearly demonstrated that
2 technical competence and that commitment to
3 safety.

4 What we need, though, are effective
5 management programs with strong union
6 participation backed by effective regulations
7 enforced by well resourced and independent
8 agencies. We have a long way to go. But we
9 can get there. Thank you.

10 MR. MOURE-ERASO: Thank you very
11 much, Mr. Wright.

12 The next person is Mr. Roy Erling
13 Furre, from the Norwegian Union of Energy
14 Workers.

15 MR. ERLING FURRE: Thank you very
16 much, and thank you very much for the
17 invitation. My speech will have a main focus
18 on worker involvement, ALARP, and the safety
19 case.

20 The oil history does have some
21 turning points that have led to great changes
22 and improvements in the safety regulations.

1 Among them is the Alexander Kielland and Piper
2 Alpha that we heard about earlier today. They
3 led to many important changes in both
4 regulation and the safety approach. In UK the
5 safety case was introduced after the Piper
6 Alpha.

7 In Norway we have also experienced
8 large changes without accidents. Around the
9 year 2000 a spokesman from the industry said
10 that the safety had never been better. They
11 used lost time accident rates, LTA, in order
12 to prove it. The unions and authorities were
13 offering another opinion. We all were worried
14 about the safety. Our safety delegates and
15 union reps gave us a warning about the
16 negative safety development.

17 At this time the oil price was very
18 low and the companies did much downsizing and
19 cost cuts that weakened the safety conditions.
20 The political response to this was so strong
21 that it gave many new initiatives in the
22 safety systems. We did establish most of our

1 central tripartite arenas at that time, and
2 fortunately we also got a lot of BBS programs
3 at that time, behavior-based safety.

4 The Norwegian working environment is
5 empowering the unions and the safety
6 delegates. The petroleum regulations -- they
7 also have a clear demand of employees in union
8 involvement in all phases of the petroleum
9 activities.

10 Establishing development of
11 management system should also be done with
12 contribution of the employees and their
13 elected representatives. The regulations also
14 demand that all necessary information about
15 risks and decisions shall be given to the
16 workers' representatives.

17 The main agreement between the
18 employees and the unions is also regulating
19 mutual acceptance and agreement about
20 cooperation and involvement.

21 The workers' involvement can be
22 described in three levels. One, the central

1 tripartite, two is the elected workers in the
2 companies. That's safety delegates and union
3 representative but it also is the Working
4 Environment Committee. That is quite
5 important in Norway. And the third is the
6 user/worker involvement at each workplace at
7 the lowest level.

8 The union must, of course, establish
9 communication between all these three levels
10 in order to get the right knowledge and
11 understanding of the challenges. The
12 tripartite arenas are a very good place to
13 identify problems and issues that need to be
14 addressed. In that way we can solve a problem
15 before it actually is evolving to be a problem
16 and before accidents happens. Working
17 together in tripartite arenas is not well
18 described in any literature. So these arenas
19 have to be developed in cooperation between
20 the three parts. It may take some time before
21 they work properly. I, myself are represented
22 in almost of these tripartite arenas in

1 Norway.

2 I'll say some more about ALARP and
3 risk reduction. It's my advice to avoid
4 that -- all the cost benefit of analysis leads
5 to not implementing the risk reductions that
6 are identified.

7 It's important that the hierarchy of
8 controls that is used and the systematic way
9 we identify and reduce risk and accidents are
10 clearly defined and understood by everybody
11 involved.

12 In the ALARP processed it's a
13 reversed proof order. It shall be proved why
14 we don't need to implement and identify risk
15 reduction measure. In the system is a goal-
16 setting regulations and worker involvement.
17 This can lead to very much pressure against
18 all the decision-making processes. Therefore,
19 it must be frames that lead to protection
20 around the workers that are involved in an
21 ALARP process.

22 I will continue with the safety

1 case. After the Piper Alpha disaster the UK
2 introduced the safety case. This is a
3 systematic way to do a risk analysis.

4 In a similar way we do have safety
5 case also in Norway but not in the same manner
6 as in the UK. So it's more similar ways, what
7 we call the process around the Acknowledge of
8 Compliance, the so-called AOC. That's an
9 acknowledge from the PSA. And a handbook for
10 the AOC process is published, also standards.
11 SAFE thinks that both approaches will lead to
12 better safety and a good process with better
13 risk understanding and risk reduction.

14 The demands on worker involvement
15 are that the worker representative shall
16 comment to AOC on any deviations from any --
17 from the regulations. That's a good way to
18 keep up the focus on the risk that is
19 identified.

20 The main safety delegate is often
21 used for this purpose. In addition to the
22 risk analysis process in the safety case, in

1 there you'll see the PSA is also inspecting a
2 rig prior to give the final AOC. So in these
3 days the world's largest flotel is laying
4 passive in Norway awaiting to get the AOC,
5 because they are lax in the procedures and
6 maintenance system.

7 The worker involvement is not as
8 good in the UK as in Norway. The unions in
9 the UK are weakened. It would be difficult
10 for a local worker representative to write a
11 comment in a safety case report that will lead
12 to increased costs.

13 The lack of unions in the United
14 States oil industry can also lead to the same
15 problems. Who will dare to write the critical
16 comment in a safety case report if the unions
17 and the authorities fail to make a system with
18 worker representatives that are under the
19 protection or care of the union when it could
20 be possible to make this work? The quality of
21 the involvement will decide how good the
22 workers' contribution will be.

1 The technological evolution and the
2 more demanding exploration in deeper water
3 makes it necessary to also develop new and
4 better ways to perform risk analysis like a
5 safety case.

6 The Norwegian regulations are mostly
7 goal setting. And we do need a lot of hard
8 work from the safety delegates and the unions
9 in order to lift up the goals to where the
10 safety level should be.

11 Adapting the Norwegian regulations
12 regime without the tripartite and union system
13 could be dangerous and should not be directly
14 copied. This could lead to self-regulation of
15 the industry. So it will also make it very
16 difficult to make a legal prosecution after an
17 accident.

18 SAFE wants the law process in the
19 safety case lead us to focus on risk reduction
20 and the use of hierarchy of controls. This is
21 an important way to getting out of a loop with
22 the use of behavior-based safety.

1 The use of behavior-based safety
2 incentives, punishment and reward thinking
3 will only lead to narrow focus on slips,
4 trips, falls and the use of PDA, and it would
5 be difficult to address working environment
6 and avoiding disasters and major accidents
7 under such a scheme.

8 And U.S. have very much competence
9 and experts in both the unions, the government
10 and the industry that should make it possible
11 to design or run a safety system that will
12 prevent disaster like the Deepwater Horizon.
13 All authorities and industry in the world will
14 learn from this accident.

15 It's important that when the
16 investigation report from the United States
17 Chemical Safety Board is finished that all
18 affected parts in the whole world should
19 understand the lessons learned from the
20 investigation and implement learning points in
21 their regulations and safety systems.

22 It's also a good idea to export the

1 Norwegian safety delegate systems with
2 protection of the union as in the Working
3 Environment Act. A safety delegate in Norway
4 can stop any work that he thinks is an
5 immediate danger to life and health.

6 But we worry that we still don't see
7 any companies that voluntarily adopts that
8 safety delegate systems when they go abroad.

9 The Norwegian working conditions
10 with good salaries and 14 days on 20 days off
11 also makes offshore working places attractive
12 and makes it easy to recruit highly-skilled
13 workers and it secures stability, competence
14 and training. It's also one of the most
15 important building bricks in any safety
16 systems. So we must have good systems to
17 secure that.

18 We all need to look at the
19 regulations and the inspection systems. The
20 U.S. BOEMRE must keep up a high inspection
21 rate until the collective safety delegate
22 system based on a competent union is

1 established.

2 The way we use indicators should
3 also be looked at in order to find indicators
4 that focus on actual risk level instead of
5 just being a source to safety awards. It is
6 necessary to inspect the plans and procedure
7 for maintenance. We feel that the incentives
8 from the HR departments in the companies is
9 encouraging cutting expensing unnecessary
10 investment and maintenance. That's why it's
11 a safety hazard.

12 And the way the procedure is
13 designed and used is also important how easy
14 it is to do a good job. We have seen
15 procedures that are designed to put blame on
16 and responsibility to the workers if an
17 incident happened and new procedures is
18 written instead of having a few but good
19 procedures. Thank you very much.

20 MR. MOURE-ERASO: Thank you very
21 much, Mr. Furre.

22 I would like now call Mr. Trimmer

1 from the United Steelworkers from Alaska.

2 MR. TRIMMER: Mr. Chairman. We
3 represent around 320 operators and
4 maintenances workers who work for BP in
5 Prudhoe Bay, Alaska, which is the biggest oil
6 field in North America. I've worked in the
7 petrochemical industry for about 34 years in
8 refineries, chemical plants and the last 22
9 years as an operator for BP in the oil field
10 at Prudhoe Bay. While we're not an offshore
11 unit, we have a lot of similar operations.

12 I guess one o the challenges today
13 was to come up with just ten minutes of -- to
14 talk about -- we certainly have a lot more
15 than that. But we'll try to confine it to the
16 three things that we were asked to talk about.
17 I'll start off with the employee involvement
18 in company health and safety performance and
19 accident prevention and overtime and fatigue
20 issues. And then Brother Guenther will talk
21 about preventative maintenance.

22 I'd like to start with the health

1 and safety. I would say that our company has
2 a health and safety program where they address
3 a lot of different issues. But what we came
4 out of yesterday was one of the members said
5 the things that are reported and measured are
6 the things that are -- matter and are
7 manipulated. And those -- I talk about those
8 things that we keep track of and that are
9 reported and their possibility in being
10 manipulated. I would say have a two-prong
11 approach which is the carrot and the stick.

12 Around two years ago we got a new
13 president for BP Alaska. And he told us his
14 mandate was to reduce the amount of incidents,
15 accidents and environmental accidents in
16 Alaska. They set about reviewing current
17 safety policies with employees and started a
18 program of disciplining employees for
19 violations. They put up posters and gave out
20 little cards to carry around in your pocket.
21 And in our opinion it was a program on just
22 driving down the numbers. As a result,

1 employees were driven away from reporting
2 accidents and near misses for the fear of
3 being disciplined.

4 An example of that is we had had a
5 vehicle accident where a contractor was
6 seriously injured and broke his leg and didn't
7 report it for over three hours. When asked
8 why he hadn't reported it, he stated he was
9 afraid he'd be fired. So when it was -- this
10 came apparent that, you know, he was hurt bad
11 enough that he had to seek medical attention
12 it was reported. So as a union, we confronted
13 BP's president with their safety program
14 concentrating on discipline and driving down
15 this reporting. And his response was, We may
16 have gone too far in concentrating too much on
17 the discipline aspect. I would say in
18 fairness to them in the last year they've
19 moved away from that and moved more towards
20 the carrot approach.

21 But they create a computerized
22 readout that's gone over daily in our morning

1 meetings that we have prior to, you know, our
2 work day starting every day. And our first
3 line supervisors go over a set of numbers.
4 They have a matrix that they come out and it's
5 a readout and they go over and it has a
6 recording of the last 24 hours and -- of
7 recordable illnesses, first aids, fires, near
8 misses, vehicle accidents, spills, PSM
9 violations, leaks, such as that.

10 And on this matrix it has a set of
11 goals that are -- each work area has a set of
12 goals that they're supposed to meet. It tells
13 you whether or not you're exceeding or
14 reaching those goals or you're falling short.
15 And those goals are based on bonus, on how
16 much money you're going to get paid at the end
17 of the year and why -- what -- we've heard
18 testimony today about incentive programs. And
19 I think they can be a good thing. It's a
20 balancing act on whether or not it's going to
21 be something that's positive or something that
22 drives away reporting because it's going to

1 cost you money.

2 Which brings me to the carrot
3 portion of it, I guess. On October 18 of this
4 year we got a letter from Bob Dudley, who's
5 our new CEO. And in it he says all employees
6 are entitled to -- it's a forth quarter focus
7 on safety and compliant operations. And in
8 the letter Mr. Dudley states that the sole
9 criteria for performance awards for our
10 operating business in the fourth quarter will
11 be performance safety.

12 As an employee who at the end of
13 this year is going to be involved in this
14 bonus program, we asked as a union and as an
15 employee what portions of that safety readout
16 that we hear every day in our morning meetings
17 is going to affect that performance bonus. Is
18 it going to be, you know, as simple as a first
19 aid or a sickness or is it, you know, a fire
20 or an explosion or what parts of those? I
21 would say that as the fourth quarter has just
22 about ended, we haven't got that information

1 yet. So Mr. Dudley's letter come out and I
2 would say that the result was we were all
3 under the impression that anything that could
4 be reported was going to affect that safety
5 bonus at the end of the year. And I'm not
6 saying that that was his intent with the
7 letter. But I believe anyways that that's the
8 result of it.

9 I'd say also the reason I know that
10 this doesn't work, the stick approach, the
11 discipline approach is that over the years, in
12 the 30 plus years that I've been in this
13 industry they've -- they companies have hired
14 safety professionals to come in and give us
15 classes and everything and those safety
16 professionals have told us that disciplining
17 people for reporting accidents is not a way to
18 get people to report. But they -- a message
19 that I've heard loud and clear, but I don't
20 think the companies have.

21 Safety procedures. I just want to
22 touch on this briefly in the short amount of

1 that time that we have -- is in the last 20
2 years our company has hired outside
3 contractors for the most part to come in and
4 write our safety procedures and technical
5 documents. The result has been that the
6 material that they provide us they feel meets
7 their regulatory requirements. But it's not
8 material that we use. The -- they're
9 computer-based programs that are created by
10 somebody who's never worked for the company,
11 who doesn't work in our operation, doesn't
12 understand our operation and we don't use them
13 in the day-to-day running of the operation,
14 such as procedures on starting up plants and
15 things like this. And these came up in a
16 recent OSHA audit that we had this last
17 summer.

18 And I would say just recently now
19 the company has made some changes where we're
20 actually using operators that are company
21 operators that work in the plant for the first
22 time now starting to write those procedures

1 and technical manuals. But they're -- what
2 we've been telling them as a union is -- for
3 these last 15 years is that they should have
4 been able to provide both, met their
5 regulatory obligation and provided us with a
6 tool that we would actually use. But I'm not
7 sure why, based on what we heard they paid for
8 these outside consultants over the year, why
9 they've chose to take that tack.

10 I would also say we've heard a lot
11 of things today about the Baker Report, the
12 CSB's report from the Texas City incident.
13 And I would comment on BP's approach towards
14 exploration versus refining. Well, where I
15 work at -- the well pads facilities -- BP in
16 the past has asked OSHA for help in
17 determining that where the well pads were they
18 wouldn't be covered by PSM because they didn't
19 process oil actually, they only drilled it.
20 Where the facilities -- which is where I
21 work -- are covered by PSM standards.

22 The recent Texas City accident

1 resulted in a ten-point agreement between the
2 union and the company to address the issues
3 that were brought out in the Baker Report and
4 the CSB report. Initially, BP said that --
5 they told us that those would extend to all of
6 their facilities. And as time passed and we
7 got farther away from the Texas City accident,
8 we have in the production filed tried to
9 discuss with BP the implementation of the ten-
10 point plan on the things that we thought
11 applied to us up on the North Slope. And
12 their response was is that that ten-point plan
13 didn't cover exploration, like we were some
14 entirely different entity.

15 And, you know, one of the issues on
16 there -- a big issue to our local union has
17 been the creation of a full-time health and
18 safety, you know, union position, which is
19 covered in all of the refineries in the lower
20 48 that are represented by the Steelworkers,
21 which we have not got the company to agree to
22 on the North Slope.

1 The other important thing I just
2 wanted to touch on is -- I think -- is the way
3 we transfer custody to the drilling outfits
4 that come on the well pads and drill wells.
5 We have union employees that work on these
6 well pads as operators. And they -- they're
7 the ones that permit all the work, use the
8 company's permitting process for any of the
9 work that's being done on that in their given
10 work area, which is the well pad. But BP has
11 a policy in Alaska where they literally
12 transfer that custody -- that operator
13 transfers that custody of the drilling company
14 and that custody transfer stays in effect
15 while they're on that pad drilling that well.
16 It's not like a normal permit, where we --
17 every 12-hour shift we renew the permit for
18 the work that's going on in that area. I
19 think that's an important point.

20 I wanted to also touch just a little
21 bit on their training program. We don't feel
22 we have a formal training program. We don't

1 have a training department. Twenty years ago
2 we had an apprenticeship program where BP
3 trained operators up and maintenance people
4 through this apprenticeship program. Through
5 budget cuts and, you know, the price of oil
6 going up and down well, safety and training
7 and those type of things are always the first
8 things they cut. And we haven't had a
9 training department in 15 years.

10 Now, when they hire a new employee,
11 they come to the facility, they're assigned to
12 a mentor at that facility and, you know, the
13 company monitors every couple of years whether
14 or not they're qualified on a job. But it's
15 up to the mentor in each facility where they
16 work to develop their own training program to
17 advance that person.

18 Overtime and fatigue issues. In
19 2008 after several years of high overtime the
20 union made a request for information from BP
21 on the amount of overtime we were working as
22 compared to the industry standard. What we

1 found was we were about double what the
2 industry standard had been in the last three
3 years. This last year we've on the North
4 Slope finally started hiring people at a
5 faster rate than that they were leaving.
6 Also, the study showed that the majority of
7 the overtime that was being worked were 18-
8 hour shifts, not working so on your day off.

9 BP's changed its policy somewhat
10 about working 18-hour shifts in that you
11 needed upper management's permission to work
12 an 18-hour shift. The result was there a
13 shift to working 16-hour shifts to get around
14 the new policy, which goes back to what we
15 said before. When you start measuring things
16 people find ways to manipulate them and get
17 around them. People could work unlimited 16-
18 hour shifts.

19 An example, our production control
20 where we have the main control room that
21 operates. The average overtime per person
22 through December 1 of just this year is --

1 unscheduled overtime is 446 hours, which is
2 about 21 percent, almost triple the industry
3 standard. And we have cases where people have
4 worked two weeks shifts of 16 hours a shift
5 every day. And I would say that not a
6 reasonable person thinks that fatigue's not an
7 issue for somebody working 16 hours a day 14
8 days in a row.

9 I'll turn the mike over to Fritz to
10 speak about preventive maintenance. I'd like
11 to close with just saying I guess we all have
12 our reasons for being here today. But I
13 didn't want to go today without saying that
14 the reason the steelworkers are here is there
15 were 11 people killed, not just an oil spill.
16 And if there's something that we can say or do
17 today that helps that from not happening
18 again, that's why we're here. Thank you.

19 MR. MOURE-ERASO: Thank you, Mr.
20 Trimmer.

21 Mr. Guenther?

22 MR. GUENTHER: Chairman Moure,

1 members of the Board and members of the
2 Investigative Committee, my name's Fritz
3 Guenther, and I'm actually the Chief Steward
4 of Local 4959 in Prudhoe Bay, Alaska, not the
5 president. I've been a BP employee Prudhoe
6 Bay for 31 years. All of those 31 years in
7 maintenance on the western operating area. In
8 the western operating area we currently
9 operate three crude oil processing facilities.
10 Today numbers are we produce about 180,000
11 barrels a day of crude oil, 4.2 billion
12 standard cubic feet of gas per day and
13 approximately 350,000 barrels of water.

14 A little maintenance history about
15 Prudhoe Bay and the western operating area.
16 From 1979 to 1994 the maintenance philosophy
17 was heavily weighted towards preventative
18 maintenance. We have a small predictive
19 maintenance program at the time, as well. In
20 the mid-80s the facilities doubled in size
21 through gas handling expansion, produced water
22 handling expansion and gas lift programs.

1 In the mid-90s following the
2 certification of our union management had a
3 directive to quote don't grow the union. The
4 hiring of hourly employees, operators and
5 maintenance techs came to an abrupt halt.
6 That coincided with the doubling in size of
7 our facilities and the equipment we were asked
8 to maintain and operate. At the same time,
9 due to demographics, we experienced a high
10 retiree rate. And as you can expect, the
11 number of -- work doubled and the number of
12 people was going down. It wasn't long before
13 our work backlog started going through the
14 roof.

15 We went from a heavily preventative
16 maintenance program to a reactionary
17 maintenance program where all we did was
18 basically run around and fix emergency
19 breakdowns all hours of the day and night. It
20 got to the point where a simple work order
21 scheduling code would not get work done. You
22 needed to code the work request as an E to get

1 work done. That evolved into three different
2 E codes to get work done, an E-1, 2 and E-3.
3 And that stands for Emergency Work Orders.

4 In 1995 the issue of not having
5 accurate and up to date P&IDs was also brought
6 to management's attention. Instead of fixing
7 this their answer was to post signs on the
8 documentation room doors that said that,
9 Documents contained herein are for historical
10 reference only. Current management at that
11 time justified the staffing levels by saying
12 that industry standards state that seven to
13 ten man days of back log are optimum. And to
14 reach this level maintenance managers moved
15 literally hundreds of PM -- Preventative
16 Maintenance Work Requests and procedures into
17 what they termed abeyance. In other words,
18 they weren't going away, they just weren't
19 getting done.

20 State of disrepair included all
21 systems, including mechanical, electrical and
22 specifically, our fire and gas protection

1 systems. Repeated attempts to get management
2 to take action went nowhere. The never-ending
3 response from them was, We're working on it.
4 Fearing a catastrophic event, hourly workers
5 brought concerns to -- not only to management
6 but started going to outside agencies, which
7 did little to put pressure on getting the work
8 done and the problem solved. Eventually we
9 started going to the media.

10 2005 the president -- the Texas City
11 explosion happened and people started paying
12 a little of attention to us. We still weren't
13 getting things done. Then the oil transit
14 spill in Alaska happened and now management,
15 as well as the regulatory agencies and the
16 media were paying attention to us. The
17 ombudsman's office was created to address
18 worker concerns. Management made pledges to
19 address the massive overtime issues and worker
20 fatigue. The union used Judge Sporking and
21 his investigators with mixed results.

22 Today the good news. Fire and gas

1 system upgrades are ongoing, the hiring rate
2 as Brother Trimmer alluded to, exceeded
3 attrition rates in most areas. But it took
4 five years to get this done. Safety-critical
5 PMs are being identified and being worked back
6 into our system. Accurate system descriptions
7 and operations manuals for our facilities are
8 now being drafted. But it took fatalities to
9 get this done, not a simple request to
10 management.

11 We still got some outstanding issues
12 at Prudhoe Bay. Corrosion is the big one.
13 Prudhoe Bay was designed for a field life of
14 approximately 25 to 30 years. Well, we're
15 there. We've got lots of pipelines that have
16 patches on them. We've also got lots of
17 pressure vessels that have not been taken out
18 of service and inspected internally for over
19 15 years.

20 PM's. We still have lots of field
21 devices such as pressure, temperature switches
22 and vibration monitors on our rotating

1 equipment that have not been calibrated or
2 function tested in over 15 years. Our HSE
3 position that we started requesting at the
4 contract negotiations in 1998 is still
5 outstanding. We still do not have a full-time
6 health and safety representative position.

7 And as a closing statement I'd tell
8 everybody in this room that the costs
9 associated with a catastrophic event -- most
10 of you go home. You may spend a few uneasy
11 hours in front of Congress or regulatory
12 agencies but you still go home at night to
13 your families. We might not be so lucky.
14 Thank you.

15 MR. MOURE-ERASO: Thank you very
16 much, Mr. Guenther.

17 And I would like to thank the whole
18 panel, Mr. Wright, Mr. Furre, Mr. Trimmer and
19 Mr. Guenther. And I think we move to the
20 questions from the Board members. I would
21 like to start this time to my right.

22 Mr. Wark, you have some questions?

1 MR. WARK: Thank you, Mr. Chairman.

2 One of the recurring themes in our
3 investigations in tragedies like this has to
4 do with excessive overtime, fatigue and a
5 question as to how much that may have played
6 a role in the accident, the tragedy. It
7 certainly was one of the issues at BP Texas
8 City. I've heard that -- well, I guess I'd
9 like to ask this question first and then maybe
10 a follow up.

11 And that is, Mr. Trimmer, you
12 mentioned that there's like, 446 hours cap on
13 overtime.

14 MR. TRIMMER: Not a cap.

15 MR. WARK: Huh?

16 MR. TRIMMER: Not a cap, no.

17 MR. WARK: Oh, I thought --

18 MR. TRIMMER: That's just to date.

19 MR. WARK: Okay.

20 MR. TRIMMER: That's what they were
21 as of December 1 --

22 MR. WARK: Okay.

1 MR. TRIMMER: -- in one work area.

2 MR. WARK: Are you forced to work
3 this overtime? Are the workers forced to work
4 this overtime or is it something which is
5 maybe tolerated or desired because of
6 financial issues?

7 MR. TRIMMER: I'd say the answer is
8 both. Our contract doesn't allow the company
9 to force us to work on our days off, you know,
10 being that we're in a remote location and, you
11 know, when your two weeks off or your one week
12 off come you're allowed to go home and you
13 can't be forced to stay. When you -- once
14 you're up there, whether or not you work an
15 18-hour shift could be a condition of being
16 forced. I have been forced to work 18-hour
17 shifts. So I guess it's yes and no.

18 MR. WARK: I see. Well, I've asked
19 this question before in other public hearings
20 we've had on investigations that we've
21 completed and released, and I've had it
22 explained to me that -- kind of the way you

1 have, that it's a kind of two-headed horse
2 here and that there are financial issues where
3 overtime is built in and in some cases would
4 be -- determine whether somebody -- the
5 workers got a house loan or things like that.
6 Is that accurate, as far as you know, or not
7 so?

8 MR. TRIMMER: I would say that
9 would -- you know, about the individuals'
10 financial situations, whether or not they
11 think they need to work overtime or not, I
12 would say is that our normal schedule is a
13 seven-day work week, 12 hours a day, and you
14 work in that, you work 84 hours and 40 of that
15 is straight time and 44 of it is overtime.
16 And that's not what I'm talking about. This
17 446 per person is -- it would be unscheduled
18 overtime above and beyond your normal 84-hour
19 work week.

20 MR. WARK: I see.

21 MR. TRIMMER: So, you know, if your
22 hourly rate is X, it's -- you know, you can

1 make 40 hours of straight time and 44 hours
2 overtime.

3 MR. WARK: And I think I detected
4 from what you were saying that you do consider
5 excessive overtime a fatigue issue and a
6 safety issue. Is that right?

7 MR. TRIMMER: Absolutely.
8 Absolutely. We've gone to the ombudsman.
9 We've gone to the newspapers about this. And
10 as a result, I think that and along with what
11 had happened in Texas City, what we've seen
12 this year finally is a increase in our numbers
13 and that they're hiring more people than are
14 leaving.

15 Up until, I'd say, this year they
16 were leaving a higher rate than we were
17 hiring. And the union had come to the company
18 in several labor management forums and
19 complained about the amount of overtime and
20 the lack of personnel.

21 MR. WARK: Okay. Thank you.

22 MR. WRIGHT: Could I say one thing

1 quickly about overtime? I think -- if we're
2 looking at the difference between voluntary
3 and involuntary overtime, I think most of us
4 would maintain that the involuntary overtime
5 is more dangerous. And that's for two
6 reasons.

7 One is fatigue, obviously, and the
8 other is distraction. You want to be at your
9 kid's baseball game, and suddenly they tell
10 you you got to work a double. There is a
11 level at which any overtime becomes dangerous.
12 And we may have reached that in -- both on the
13 North Slope and in some of our refineries.

14 But in general we think that
15 involuntary overtime is worse than voluntary
16 overtime. We do think, though, that sometimes
17 it's -- the distinction between voluntary and
18 involuntary overtime is a little hazy.

19 For example, I know of cases where
20 somebody's asked to work overtime. It's
21 essentially voluntary but you know if you
22 refuse it the next person in the line is going

1 to be essentially told he or she has to work
2 overtime and they may be fatigued and they may
3 have, you know, something to do at home and
4 you don't want to put them in that position so
5 you quote volunteer for the overtime. So it's
6 not a bright line between the two. But in
7 general, where you can make the distinction,
8 forced overtime is worse.

9 MR. MOURE-ERASO: Thank you.

10 Mr. Griffon?

11 MR. GRIFFON: You're changing the
12 order here. Yes, trying to keep us alert.

13 Yes. For -- this is probably mainly
14 directed at -- to Mr. Furre, only because it
15 touches on the safety case. But others may
16 have an opinion, as well. I wanted to hear a
17 little more about the level of involvement of
18 the workers, worker representatives in the
19 design and implementation of the safety case
20 and then whether you feel it is effective and
21 adequate and is, in your opinion, working.
22 And then the -- another part of that would be

1 I think in your comments, if I heard it
2 correctly, you mentioned that in some cases
3 the ALARP is used to prove that you don't need
4 further safety systems. Maybe I misunderstood
5 that comment. But I wanted to also understand
6 if the workers had a role in sort of defining
7 what is as low as reasonably achievable or
8 practical in this case. Not like the nuclear
9 industry, achievable. In that little phrase
10 there is a couple things that I think are
11 subjective, the reasonable and practical part.
12 And I wonder if the workers have a role in
13 defining that during the safety case
14 development. So --

15 MR. ERLING FURRE: Oh, yes.
16 According to the regulations the workers shall
17 be involved in every level. The
18 regulations -- or the listing up how a
19 worker's involvement should be done -- and
20 it's at every -- any level from planning we're
21 going through and risk elevations and so
22 forth.

1 But what you're talking about, the
2 ALARP process, was a misunderstanding. The
3 ALARP process states that if you find in the
4 risk reduction a measure it should be
5 implemented. But what I said, that it's --
6 I'm afraid that the cost benefit analysis
7 could be misused to avoid implementing those
8 measures. So that was a worry that we are
9 about.

10 When it comes to involvement in the
11 connection of safety cases, it could vary a
12 lot from company to company, the quality of
13 involvement, from the absolute best until a
14 little bit poor. So we can find the whole
15 range of quality on the involvement.

16 But we also do see from company to
17 company that they have different approaches to
18 how they understand the issues, the ALARP
19 process, for instance. So there should be
20 some work to make things very clear what we do
21 expect.

22 MR. GRIFFON: And just to follow up

1 on the ALARP. Have you had experiences where
2 you believe that the union was sort of pushing
3 for a stronger technology or option that was
4 viewed by the company cost-prohibitive and
5 therefore wasn't implemented? Are there cases
6 like that that -- disputes like --

7 MR. ERLING FURRE: Well --

8 MR. GRIFFON: -- that that arose
9 during --

10 MR. ERLING FURRE: Oh, of course.
11 The regulations in Norway are goal setting, so
12 that means that they have to be interpreted.
13 So if someone -- you have a cost-cut focus and
14 incentives that makes them want to cut costs
15 in order to reach their bonus, the fight can
16 be quite tough to reach this goal.

17 So our safety delegates and union
18 representatives need to be very active. If
19 they don't be active, it's a high risk that
20 the level they land on is quite low.

21 MR. GRIFFON: Thank you.

22 MR. MOURE-ERASO: Thank you, Mr.

1 Griffon.

2 I will ask Mr. Wright to ask some
3 questions.

4 MR. WRIGHT: Thank you, Mr.
5 Chairman. I address my question to Mr.
6 Wright, although I think it's already been
7 answered, but I'll ask anyway.

8 I was going to initially ask whether
9 or not the union personnel were involved in
10 the development of safety case analysis in the
11 offshore industry. But from what you tell me
12 there is no union representatives in the
13 offshore industry. So that being said, let me
14 ask what your thoughts are about the
15 effectiveness of the safety case methodology
16 or scheme in reducing risk and improving
17 safety.

18 MR. WRIGHT: My own view is that
19 it's a very good approach but it's not a
20 panacea. We also think that, for example, the
21 process safety management standard's a pretty
22 good approach. I think the safety case has

1 certain advantages over it. But we -- but PSM
2 used right can keep a facility pretty safe.

3 We've seen people pencil-whip
4 process hazards analysis a lot. We suspect
5 you could do that with the safety case
6 approach, too. You would -- detecting that
7 and responding to it depends on a strong
8 regulatory agency.

9 I should say that a safety case
10 approach isn't all that foreign to the U.S.
11 experience. I'm not sure if this was covered
12 this morning. But it's very similar to what
13 EPA does during -- in its basic permitting
14 process under the Clean Air and Clean Water
15 Act. So it's something that we're familiar
16 with. We think it works well there. We think
17 it's certainly worth looking at and probably
18 adopting here.

19 MR. WRIGHT: Thank you.

20 That's all I have, Mr. Chairman.

21 MR. MOURE-ERASO: Mr. Bresland?

22 MR. BRESLAND: Thank you, Mr.

1 Chairman.

2 This is a question for Mr. Wright.
3 But it's really based on a comment that Mr.
4 Guenther made about the BP ombudsman. And I
5 know that applies across the board in BP. But
6 that's probably as much as I know about it.
7 But what has the union's experience been with
8 the ombudsman, in terms of its effectiveness?

9 MR. WRIGHT: I don't know a lot
10 about how we've responded to it in the BP
11 situation. We represent workers in a lot of
12 different companies in a lot of different
13 industries. So I think the experience on the
14 North Slope is going to have to sort of stand
15 for itself. I do think that we've generally
16 supported ombudsmen and we've seen where they
17 can work. We've also seen situations where it
18 acts more as a -- I was about to say safety
19 valve but it really doesn't promote safety.
20 It gives people a place to complain but
21 nothing really happens.

22 We think the best -- we still think

1 the best place for -- when we talk to one of
2 our members about, you know, What do you do if
3 you spot a hazard, the first thing you do is
4 go to your supervisor and make sure that they
5 know that hazard exists. And the second thing
6 you do is you go to your union safety rep.
7 Because, you know, ultimately that union
8 safety rep is going to have some independence
9 and some backup and be able to address that
10 issue. If there's an ombudsman, as well
11 there's nothing wrong with using the
12 ombudsman. But, you know, we think a strong,
13 independent union is really the key.

14 MR. TRIMMER: I'd like to add to
15 that. We've used the ombudsman frequently in
16 Alaska. And I'd say that the results have
17 been mixed. He's been helpful in some areas,
18 been not able to help us in other areas. My
19 understanding is BP is thinking about
20 discontinuing them right now. We've been
21 better with it than we've been without it.

22 I wanted to try to answer one of the

1 questions you asked Mr. Bresland in the other
2 panel, which was about the blowout preventer
3 and the low probability. I would say that
4 what BP has told us is that in our process
5 hazard analysis post the Deepwater Horizon
6 accident is that we needed to concentrate more
7 because they felt that was a low-probability
8 high-impact and that they needed to address
9 that in their future process hazard analysis
10 because of what happened there. So -- I don't
11 know if that helps.

12 MR. BRESLAND: Okay. Thank you.

13 MR. MOURE-ERASO: Thank you. I have
14 some question for Mr. Trimmer. As we have
15 discussed in the United States, the tool that
16 we have in general industry for prevention is
17 the process safety management.

18 And in the conversations that we
19 have yesterday you were telling me about your
20 experience about trying to get the process
21 safety management to be applied to the
22 circumstances of your operation in

1 production -- oil production. I wonder if you
2 can tell us that experience and if you were
3 successful and moved that along to get PSM to
4 cover this operation.

5 MR. TRIMMER: Eventually we were.
6 And this has to go back almost ten years ago
7 now. We filed a CASPA, which is a Complaint
8 Against the State OSHA. We had filed several
9 complaints with Alaska OSHA on BP and didn't
10 feel like our concerns were being addressed.
11 As part of that CASPA that we filed in the
12 closing that we had where we sat down with the
13 state the field manager for BP asked for
14 assistance from state OSHA on how they could
15 have the drill sites, the well pads exempt
16 from PSM standard because they didn't treat
17 any oil out there. And OSHA was helpful with
18 them to get that done.

19 And there was a time that OSHA made
20 a ruling that the well pads wouldn't be
21 covered by PSM and they weren't. I would say
22 since then that hasn't changed in that, only

1 in that BP has voluntarily included that in
2 their PSM program now. But it's still our
3 understanding they're under no obligation --
4 regulatory obligation to do that for the well
5 pads.

6 MR. MOURE-ERASO: Thank you.

7 I have another question. This is
8 for Mr Wright. You described to us your
9 experience on participating in discussions
10 with API to discuss the possibilities of
11 developing some standards on fatigue and
12 metrics of the PSM. And you described very
13 well in your statement how it develops and how
14 it became impossible for the union to stay in
15 there. And my question is since this is one
16 of the tools that we have, which is the
17 voluntary standards, how you conceive, how do
18 you think that will be possible in a fruitful
19 way to participate in those discussions in
20 which you are called to be one among 12 in an
21 APA situation, for example.

22 MR. WRIGHT: Well, we're not against

1 participating in involuntary standards -- I'm
2 sorry, I didn't say that right -- in voluntary
3 standard programs -- there's a space between
4 the in and the voluntary. We've done it a
5 lot. We've done it through ANSI, for example.
6 We're currently doing it in a revision of the
7 ANSI C-10 standard, which covers essentially
8 management -- safety management systems. And
9 we've been involved in other ANSI standards,
10 as well.

11 I'm a little -- we were a little
12 shocked by our experience with the API because
13 the API is accredited as an ANSI standard-
14 setting body. What happened to us with API
15 would not have been tolerated in the other
16 ANSI processes that we've been involved in.
17 They really are consensus processes. They try
18 very hard to reach agreement. That's not to
19 say that they never take votes. But it's
20 really at the end of a very long discussion
21 where everybody really tries to reach
22 consensus. In this case it was at the

1 beginning of the process.

2 We've, you know, essentially
3 considered talking to ANSI about this and
4 suggesting that maybe API should not be
5 accredited since they violate the ANSI -- what
6 we see as the ANSI protocols. We haven't
7 really come to that decision yet. We would
8 recommend that the Board not accept these two
9 standards as being responsive to its mandate
10 which we saw as asking the union and the API
11 to work together. We thought that meant
12 working together as equals. But the API
13 insisted on this process under which they
14 retained all of the power to decide what was
15 in the standards.

16 Having said that, the standards are
17 better than nothing. But my fear about them
18 is that if they -- that for the foreseeable
19 future that they will preclude doing something
20 better. And we think we need something
21 better, both on metrics and on fatigue.

22 MR. MOURE-ERASO: Thank you.

1 I would like to move to the
2 Investigator's Panel.

3 Please, Mr. Holstrom, start?

4 MR. HOLSTROM: My first question is
5 to the whole panel, and it touches upon
6 meaningful participation in safety programs
7 that are designed to prevent major accidents.
8 We -- I think many of us are aware that the
9 process safety management standard in the U.S.
10 has an employee participation provision. We
11 understand from the presentations that
12 occurred today, both by Mr. Furre but also by
13 the -- by Mr. Ognedal that there are employee
14 health and safety reps positions in Norway in
15 the Norwegian system. What I would like to --
16 the question I would like to ask is for those
17 that are the U.S. representatives, do you
18 think that a mandatory --

19 And, Mr. Furre, you can correct me
20 if I'm wrong.

21 -- but a mandatory health and safety
22 rep position would create a situation where

1 there's more meaningful participation in these
2 major accident prevention initiatives and
3 programs. And the other side of that is, is
4 it you experience in the U.S. that you do have
5 or don't have meaningful participation in
6 major accident prevention programs. And when
7 I say that I'm referring things -- to things
8 like meaningfully participating in accident
9 investigations, meaningfully participate in
10 hazard -- process hazard analysis, management
11 of change reviews and those types of
12 activities.

13 And then, Mr. Furre, I'm interested
14 in you describing your experiences of how your
15 participation, you know, of your union and the
16 health and safety rep system has made -- what
17 specific differences have you seen and if you
18 could provide some examples of that, either
19 positive or negative.

20 MR. ERLING FURRE: Yes. According
21 to the Norwegian law it's -- there's no way
22 around it. You do have to have this safety

1 delegate system. That means that there's no
2 way you can manipulate away from it, so you
3 have to have it no matter what.

4 So this means that so much a part of
5 the Norwegian culture, it's well established,
6 that oil companies will accept it and use it.
7 But sometimes we do see that there is some
8 resistance in letting them far enough in on
9 the things that ought to be discussed.

10 So the collective pressure from the
11 unions and the safety delegate are very
12 important in order to make this function. So
13 we -- almost every time this is meaningful and
14 good processes.

15 But we do -- have seen some examples
16 of not meaningful processes. But we are
17 trying to fight them away. And we are sure
18 that we are on the right track on how to solve
19 these problems. Yes, so can highly recommend
20 that to establish such a system.

21 MR. TRIMMER: I would say we do
22 participate in accident investigations. Yes,

1 we think a mandatory health and safety rep
2 would be meaningful. But I would just say
3 about our relationship with the companies on
4 health and safety in general we have health
5 and safety language in our contracts.

6 Most of the oil industry does that
7 we represent through national oil bargaining.
8 They call for joint health and safety
9 committees and spells out how they would
10 operate and what their limitations are.

11 That language entered into the
12 national bargaining contracts in 1968 due to
13 a strike we had with the oil industry and
14 virtually remains unchanged since then.

15 We have tried through collective
16 bargaining to update that language to make it
17 more meaningful in today's environment, but
18 we've not chose to strike yet to get there,
19 and the industry has -- is not been agreeable
20 in changing that language.

21 In just our last contract we came up
22 with a full comprehensive change to the health

1 and safety language and it was as strike issue
2 to the company.

3 MR. GUENTHER: I agree with Glenn.
4 I think nationwide language that would put
5 workers on any committees like that, as long
6 as they're equals at the table with management
7 would be a good thing. Currently, in the
8 management that we have at Prudhoe Bay has
9 been very open about asking us to participate
10 in accident investigations. That was not
11 always the case. There was a time period
12 there when we had to assert our right to be
13 there and literally force our way into the
14 room. But with the current managers we have
15 right now they're -- we don't have that
16 problem.

17 MR. WRIGHT: Let me just add that
18 when we negotiate a new contract when we've
19 just organized a facility the first two things
20 we try to get in safety are a safety committee
21 with union safety reps and second, the right
22 of workers to refuse unsafe work. So we think

1 safety reps are absolutely critical. It's a
2 little hard to see how you would do it in a
3 non-union facility. Two issues there. One is
4 who picks them. If there isn't a union to
5 pick the person how do you ensure that they're
6 independent from management? And second, how
7 do you protect them when management doesn't
8 like what it hears? But in a unionized
9 facility that's, to us, absolutely key to
10 safety.

11 MR. MOURE-ERASO: Mr. Hoyle?

12 MR. HOYLE: Thank you. This is a
13 question for Mr. Wright. The steelworkers
14 union has experienced many major incidents in
15 the oil industry. Do you see any particular
16 similarities between the causes of these
17 incidents and the findings that have been
18 reported thus far in Deepwater Horizon? And
19 if you have seen similarities could you
20 describe some of those for us?

21 MR. WRIGHT: The only thing I know
22 about Deepwater Horizon is what I've read in

1 the reports that have come out so far and in
2 some of the reporting, especially the really
3 excellent reporting -- and I'm -- this may
4 sound strange to friends of mine because I'm
5 not a big fan of the editorial policy of this
6 newspaper. But the Wall Street Journal has
7 done really excellent reporting on the
8 Deepwater Horizon.

9 I think we -- it's a little hard to
10 answer because we don't know quite enough
11 about Deepwater Horizon, we don't know why
12 the -- because it's been said we don't know
13 how -- why the blowout preventer failed. But
14 it appears that what we've seen in a lot of
15 accidents, not just process safety accidents,
16 but just sort of more routine accidents, was
17 operating that day on that rig. They were
18 behind schedule, they were trying to get it
19 working, get it operational, they made
20 decisions to cut corners, they decided to skip
21 some critical tests.

22 We've seen that a lot. We've

1 seen -- I mean, even in accidents that don't
2 make the newspapers beyond -- you know, beyond
3 the county in which they occur, we've seen
4 people killed in the same way, something
5 breaks at 3:00 in the morning, you need to get
6 it fixed, you need to get that unit into
7 production and you throw some maintenance
8 workers at it, you cut corners and people die.
9 And that's clearly related to what happened on
10 the Deepwater Horizon.

11 Ultimately, it's a failure of -- in
12 all these accidents it's a failure of
13 management to properly assess the risks, to
14 properly respond to the risks and to make
15 safety a priority. Even when you think the
16 risk is relatively low, low doesn't mean zero.
17 So, yes, I think there are similarities but
18 we'll have to wait till the reports are
19 completed to see all of the similarities. I
20 don't think we'll -- I don't think we're going
21 to find this is -- in its root causes that
22 this is a absolutely unique accident. I think

1 we'll find the root causes are depressingly
2 similar to many of the other accidents we've
3 seen, not just process safety accidents but
4 normal accidents.

5 MR. MOURE-ERASO: Mr. Tillema?

6 MR. TILLEMA: Yes. My question is
7 related to the different regulatory regimes
8 and workers' awareness and involvement with
9 risk assessments and hazards. And so in
10 general if you could just comment on whether
11 or not workers view the blowout preventer as
12 a failsafe device I think that would be really
13 helpful for me. Both regimes, yes.

14 MR. ERLING FURRE: Oh, yes. The
15 blowout preventer is one of the very most
16 important devices that you have in drilling.
17 My own brother is working as a subsea engineer
18 and doing work and maintenance on the blowout
19 preventer. So I discussed a lot with him the
20 importance of that. But there are also many
21 other systems that are important. But it's --
22 that is a barrier that need to be trusted.

1 You cannot have failures in the blowout
2 preventer no matter what.

3 MR. TILLEMA: Yes. I guess my
4 question is more -- I mean, I personally would
5 consider a failsafe device a device that when
6 it failed would be in a safe condition. And
7 from talking to various workers we understand
8 that many of them actually felt that the
9 blowout preventer would fail in a safe
10 direction. And I'm interested in if that's
11 true of workers in general in your country.

12 MR. ERLING FURRE: Well, I really
13 haven't experienced actually that situation in
14 Norway.

15 MR. TILLEMA: Okay.

16 MR. ERLING FURRE: But they do tell
17 us that -- well, the regulations say that
18 there shall be at least two barriers. And
19 sometimes they do have more. And -- but when
20 they are in the middle of a drilling operation
21 that is expensive. If one of them fall away
22 and we have two left they still do continue.

1 So -- but I cannot go beyond two barriers.

2 So --

3 But I do have one worry. That is
4 that the -- as when we go into more and more
5 deeper water, more difficult conditions,
6 colder, more -- it will be more and more
7 expensive to do these operations. And when
8 you are worried about that does the systems --
9 can they be trusted, can they fail? In order
10 to find that out they sometimes do have to
11 pull all equipment and the blowout preventer
12 up. And that would be very, very expensive.
13 And then the system is incentive system, where
14 the decision makers do get money if they keep
15 on the face. This could be a very dangerous
16 situation.

17 MR. TILLEMA: Uh-huh.

18 MR. TRIMMER: I mean, I've -- I
19 would only add to that is that it's outside my
20 normal expertise. But in facilities and
21 refineries and in the oil field valves that we
22 have, they normally, whether they're air

1 controlled, electronically controlled or
2 hydraulically controlled, fail in the safe
3 position.

4 Why this didn't do that, I'd leave
5 the oil industry -- up to them to tell you
6 why. I know in our oil field we have surface
7 safety valves on producing wells. They
8 operate under hydraulic pressure. In a loss
9 of that hydraulic pressure they would close.
10 My understanding is that's not the case with
11 this. And I'd leave it up to them to explain
12 to you why.

13 MR. TILLEMA: Okay. Thank you.

14 MR. MOURE-ERASO: Ms. Johnson?

15 MS. JOHNSON: Thank you. I just
16 wanted to ask Mr. Trimmer, who discussed
17 process safety a little bit earlier.

18 I was hoping you could just clarify
19 for me what types of safety standards apply to
20 drilling, production, exploration, operations
21 in Prudhoe Bay and how effective you think
22 they are in protecting health and safety and

1 what might need to be improved.

2 MR. TRIMMER: Well, effective.

3 They're effective if they're used. We have
4 PSM standards in the facility that I work in.
5 But they're not documents, they're not tools
6 that we use. If the company creates those
7 tools to meet their regulatory obligation only
8 they're pretty useless. Hopefully, we're
9 moving currently from a position of that to
10 where it will meet their regulatory obligation
11 and actually be a tool that we use.

12 We -- like I said, the facility I
13 just -- I work at we just had a PSM audit this
14 last summer. One of the things I told the
15 OSHA investigator was is that these documents
16 weren't relevant. And that's a requirement of
17 PSM. But I would say that the citations that
18 came down, I didn't read any of them that
19 said, This document is irrelevant. I mean,
20 they did say about our operating tables and
21 that, that we needed to redo those because
22 they weren't -- they didn't meet their

1 specification. But I was talking about all of
2 our computer-based training that we have and
3 recertification.

4 So I would say is that in fairness
5 to the company that I work for, in the last
6 few months we're moving towards where we
7 should be. But I would say, you know, PSM has
8 been out for a long time. And for the last 20
9 years we've had this computer-based training
10 that's -- has very little to do and is not a
11 document or -- that's relevant to what we do,
12 nor do we use it. And in that case it's
13 useless.

14 MR. MOURE-ERASO: I think we are
15 going to go directly to audience questions.

16 Have you received some?

17 MR. HOLSTROM: Yes, Chairman Moure-
18 Eraso. I have. The first one is to Roy
19 Furre.

20 How does the safety system in Norway
21 allow for learning from previous catastrophic
22 accidents?

1 MR. ERLING FURRE: Well, we do have
2 some regulations that stands that all
3 information in connection with investigation
4 reports and so on should be available. And we
5 also do have in the regulation that the risk
6 for major accidents shall be analyzed. It's
7 regulated in the regulations how this should
8 be worked.

9 MR. HOLSTROM: Okay.

10 Another question for Mr. Wright.

11 Earlier in your testimony you
12 mentioned safety regulations other countries
13 may have made mandatory but are voluntary in
14 the U.S., such as the runaway diesel emergency
15 shut-off valves.

16 If the U.S. versus Canadian sales
17 numbers you mentioned are correct, clearly the
18 API recommendations are not enough. What are
19 the biggest obstacles to passing legislation
20 or implementing mandatory regulations such as
21 with the runaway diesel emergency shut-off
22 valve?

1 MR. WRIGHT: The biggest obstacles
2 to passing legislation I don't think I have to
3 tell this audience. We are in Washington,
4 D.C. And that's probably enough.

5 Regulation? That kind of regulation
6 would probably have to come -- at least with
7 respect to onshore refineries, would have to
8 come from OSHA. The OSHA standard-setting
9 process is just sclerotic. It can take years
10 and an incredible amount of staff time for
11 OSHA to set a new standard.

12 Along with the Chemical Safety
13 Board, we urged, for example, OSHA to write an
14 emergency temporary standard venting gas
15 flows. And I talked to some of the OSHA staff
16 afterwards, and they sort of explained what --
17 they had looked at it and what kind of
18 resources they would have to bring to that
19 effort, taking away from things like
20 combustible dust, which was the -- which was
21 a previous CSB recommendation.

22 So I think the legislative barriers

1 are pretty obvious. The barriers from a
2 regulatory sense are just that the process is
3 so long, requires such resources. And every
4 health standard and almost every safety
5 standard OSHA has ever written has been
6 challenged in court. So it takes legal
7 resources, as well. And there are just so
8 many things to address.

9 MR. HOLSTROM: How do each of the
10 panelists perceive the impact of the Chemical
11 Safety Board's Texas City report and
12 recommendations, including those on safety
13 culture at BP? Have there been any measured
14 improvements in BP's approach to safety?

15 MR. WRIGHT: I guess I should start.
16 First, we think that the CSB's report on Texas
17 City was the best analysis of a particular
18 accident in depth that I think I've ever seen.
19 There's some that I think are probably equally
20 good. Some of the work that Andrew Hopkins
21 has done on specific accidents are equally
22 good. But as the product of a regulatory --

1 or of a government agency, it was a superb
2 report. And I think the Baker Panel came up
3 with a report that looked at sort of safety
4 management and safety culture in a company, at
5 least nationwide, better than anybody else has
6 done it before or since.

7 It has had an impact. I think
8 it's -- BP, I think, is a much safer company
9 because of it, at least in the refineries.
10 I'm not sure the lesson's got offshore. But
11 the ten-point program that we negotiated with
12 BP, the work we're doing with them now, I
13 think, all came as -- well, really all came as
14 a result of 15 people dying in Texas City.
15 But the kind of midwife for that process was
16 the reports that the CSB and the Baker Panel
17 did. So it's had an enormous impact.

18 It's had less of an impact on other
19 companies, I think. And that's unfortunate.
20 I think a lot of oil companies have tended to
21 see Texas City and see Deepwater Horizon as
22 sort of a one off. It's real easy for them to

1 say, Oh, that's BP, that's not us. But what
2 we've seen through our work in the oil
3 industry is that, at least in the refining
4 sector, the hazards exist, the accidents
5 exist, the problems exist throughout the
6 entire sector, it's not just one company. And
7 therefore, other companies, I think, need to
8 do more to learn from those reports.

9 MR. GUENTHER: I'll have to throw
10 myself at the mercy of the CSB and say that I
11 haven't read your report yet, but I will. But
12 we've recently implemented a control of work
13 standard which is going to improve safety in
14 our plants greatly.

15 MR. MOURE-ERASO: You could watch
16 the movie, too. Have a movie on the report.

17 MR. TRIMMER: Well, I've seen the
18 movie and read the report. So I would say
19 that it has had an impact. I would have
20 though it had a bigger impact than it has.
21 Maybe it would if Congress would give you guys
22 the authority to put some of them in jail.

1 Maybe it would have a bigger impact. But I'd
2 say that it's not sustained. You know,
3 they've got a short memory. I don't think
4 it's a coincidence that we've had an Alaska
5 oil spill, a Texas City explosion and this
6 latest disaster all from the same company. I
7 don't think anybody thinks that's a
8 coincidence.

9 What I've seen recently with BP is
10 the changes that have been made and the money
11 that was being spent now on issues that came
12 out of Texas City are going to move the other
13 way again. You know, they just had an oil
14 spill. It's going to cost them a lot of
15 money. And what we're seeing now is, you
16 know, there's new charts coming out. And this
17 is the budget for next year and these are the
18 things that are going to fall below the budget
19 now because of the constraints of what this is
20 going to cost them. So they have a short
21 memory.

22 MR. ERLING FURRE: Yes. We also

1 have BP in Norway. The -- most oil industry
2 did learn much from the BP Texas report. All
3 companies were discussing it and it made very
4 many discussions. And it was, of course, very
5 important in Norway, especially for the
6 process places, also.

7 But we do hear from BP that they are
8 using very much of the same safety systems
9 that was described in the report, the stop
10 cards, the LTA focus and the behavior-based
11 safety approach. And we also heard at this
12 very difficult to raise questions that will
13 cost money when it comes to safety. So I
14 still think they have much to learn.

15 MR. HOLSTROM: I think this is our
16 last question. It's for Mr. Turner.

17 Please clarify if you are also
18 discouraged from reporting process incidents,
19 as well as injuries in the new BP safety
20 program implemented after the Deepwater
21 Horizon incident in April.

22 MR. TRIMMER: We're not discouraged,

1 though.

2 MR. HOLSTROM: Okay.

3 That's the last question.

4 MR. MOURE-ERASO: We have put in a
5 request from the public to make a statement.

6 So is --

7 Mr. Arthur Schwartz, if you could
8 please step over to the microphone here so
9 people -- or that microphone. That's fine,
10 yes.

11 MR. SCHWARTZ: Mr. Chairman, members
12 of the Board --

13 MR. MOURE-ERASO: I don't think it's
14 on. Help is on the way.

15 (Pause.)

16 MR. SCHWARTZ: Do I use one of
17 these?

18 MR. MOURE-ERASO: Oh, you can get --
19 yes.

20 MR. SCHWARTZ: Okay. Thank you.
21 Mr. Chairman and members of the Board, my name
22 is Arthur Schwartz. And I speak today on

1 behalf of the National Society of Professional
2 Engineers, NSPE. NSPE appreciates the
3 opportunity to comment before the Chemical
4 Safety and Hazard Investigation Board today.

5 NSPE commends the U.S. Department of
6 the Interior for enacting additional safety
7 measures in the aftermath of the BP Deepwater
8 Horizon offshore oil rig explosion earlier
9 this year. Offshore oil drilling, however is
10 an inherently risky activity. And as the BP
11 oil spill demonstrated, an accident exposes
12 the public and the environment to potential
13 catastrophe.

14 The combined high-risk nature of
15 offshore drilling and accompanying possibility
16 for disaster necessitates an additional degree
17 of protection for the public health and
18 safety.

19 NSPE believes that licensed
20 professional engineers should have a direct
21 supervision over all engineering design,
22 operations and maintenance of offshore oil

1 rigs. Professional engineers are licensed by
2 the government, which requires them to meet
3 and maintain technical and professional
4 competence standards.

5 Professional engineers are also
6 bound by a code of conduct to protect the
7 public health, safety and welfare above all
8 other considerations. Safety can be
9 compromised when employees feel compelled to
10 put obligations to their employers before
11 ethics.

12 Professional engineers are unique in
13 two ways. First, professional engineers are
14 accountable to the state that licenses them,
15 ensuring that a professional engineer's
16 paramount obligation is to the public and not
17 to the employer.

18 Like physicians and attorneys,
19 professional engineers who violate their
20 professional code of conduct will lose their
21 license to practice, causing immeasurable
22 damage to their reputation and career. For

1 professional engineers the threat of the loss
2 of a license carries greater weight than
3 continued employment with one company.

4 Second, when professional engineers
5 make decisions they are taking full personal
6 responsibility for those decisions.

7 Professional engineers sign and seal plans as
8 individuals and are personally accountable and
9 responsible for the soundness of those plans.

10 This personal accountability and
11 responsibility renders professional engineers
12 resistant to outside pressure and motivates
13 them to hold fast to critical design,
14 operation and maintenance standards.

15 Because of their proven competence,
16 based on their education, examination,
17 qualifications and experience and because
18 their legal obligation to the public health,
19 safety and welfare NSPE recommends that
20 offshore oil rigs employ professional
21 engineers to supervise all engineering design,
22 operation and maintenance decisions. This

1 will help to improve adherence to offshore oil
2 drilling standards and reduce the potential
3 for future disasters. Thank you.

4 MR. MOURE-ERASO: Thank you very
5 much, Mr. Schwartz.

6 Is there anybody else that want to
7 have a statement?

8 (No response.)

9 MR. MOURE-ERASO: Okay. So I would
10 like --

11 There is one.

12 MR. POJE: Hi. I'm Gerry Poje. I'm
13 a --

14 MR. MOURE-ERASO: I'd like to
15 recognize Mr. Poje as a former member of this
16 Board. So --

17 Okay, Mr. Poje.

18 MR. POJE: I think on behalf of
19 everybody who's here today, I want to thank
20 the Board for organizing this meeting. This
21 has been very generous contribution from all
22 the panelists into elucidating a very complex

1 area, but one that is extraordinary urgent.

2 I'm personally gratified that the
3 Board has matured to this point in time,
4 having been there at the very beginning, to
5 see it grappling with what is perhaps its
6 largest investigation.

7 The BP Texas City event is a
8 extraordinary event that was studied and
9 generated important recommendations that we've
10 already heard testimony about, but this is now
11 a platform above that.

12 And I think the ability to shape new
13 regulatory regimens in the offshore platform
14 arena, if you do it wisely and well as an
15 institution, it will help shape and
16 strengthening of safety in the onshore arena,
17 because we will now have a mirror to hold up
18 to the onshore system that is also in
19 desperate need of improvement, as we've heard
20 from a number of the most recent panelists.

21 So I'd like to thank you for doing that.

22 But I'd also like to urge us all to

1 recognize how humbling the experience was
2 today of seeing this vast array of experience
3 and knowledge paraded before us. And I
4 challenge my successors on the Board to be as
5 equally studied as the staff will have to be
6 in delving into these details, that we need to
7 run as fast as we can absorbing everything
8 that was said today and more in order to bring
9 this to fruition as a CSB investigation as
10 rapidly as possible.

11 The reason as rapidly as possible is
12 so important is that the signal is waning
13 already to create needed change in our society
14 from this terrible tragedy.

15 And the clock ticks and we lose the
16 power of good work by this institution and all
17 the generous people who have shared their
18 information with us today. So I urge you to
19 do what you can to hurry up and absorb
20 everything that was said today and more and
21 move the investigation as rapidly as possible.
22 Thank you.

1 MR. MOURE-ERASO: Thank you, Mr.
2 Poje.

3 I would like to thank the panel of
4 union members and workers. I appreciate your
5 statements and your sharing with us your
6 experiences. This has been a very insightful
7 and informative day.

8 In closing I would like for us to
9 echo what Mr. Trimmer says, that we owe to the
10 workers of the Deepwater Horizon platform, the
11 11 workers that died, we owe them to remember
12 them. They are a reflection of the fact that
13 this is a terrible tragedy.

14 We at CSB have said that the health
15 and safety rights of workers are human rights
16 and the worst denial of human rights is for a
17 person to lose their lives when they are
18 working.

19 We at CSB are committed to
20 conducting a thorough examination of all the
21 factors that led to this explosion. Those
22 factors will include the quality and

1 effectiveness of past and current regulations
2 on offshore drilling in this country with
3 recommendations for improvements if the Board
4 deems that necessary.

5 In my view there have been far too
6 many accidents in recent years in the energy
7 industry, as we have discussed today. Our
8 accident investigations over those years half
9 the time show lax enforcement of rules and
10 many times has shown great gaps in safety
11 procedures and hazards analysis.

12 We are in the process of identifying
13 the root causes of the Deepwater Horizon
14 explosion. Our commitment to the public is
15 that we will develop those in due course and
16 as an independent agency we will make those
17 public.

18 I want to thank each of the Board
19 members here for their comments and their
20 spirited conversation. I would like to thank
21 also the diligent members of the Investigative
22 Team that are sitting with us here, as well as

1 the support systems in our Washington office
2 that make this meeting possible. All of us
3 share a strong interest in preventing future
4 accidents and are dedicated to completing this
5 investigation.

6 I will again like to thank all
7 today's participants and the audience for
8 their presence, their patience, their
9 attention and participation.

10 With that, this meeting is
11 adjourned. Thank you.

12 (Whereupon, at 5:11 p.m., this
13 meeting was adjourned.)
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This is to certify that the foregoing transcript

In the matter of: Regulatory Approaches to Offshore
Oil and Gas Safety

Before: Chemical Safety & Hazard Investigation Board

Date: 12-15-10

Place: Washington, DC

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