Deep Space Deep Ocean Remarks

Good Morning.

I'm particularly pleased to be on a panel about Risk Management and Reliability. Like so many of you, I am intrigued by the conference theme – of Deep Space and Deep Ocean. These are two very different fields of endeavor, and yet, they lend themselves to many parallels.

- Both realms are unforgiving and the consequences of failure are high.
- Both rely on the interaction of human beings and cutting edge technology.

- Both rely on well established procedures to manage risk, and yet must have the flexibility to adapt to unforeseen circumstances.

Along these lines, I have recently been spending a lot of time on the potential for oil and gas exploration in the Arctic – and there the parallels to deep space become even tighter – for you must bring what you will need with you. Like space exploration, the Arctic forces us to address the *logistical* obstacles to success, as well as the *technical* ones.

I, of course, represent the perspective of a regulator, one charged with overseeing the activities of a highly technical industry, an industry that is known for

innovation *and* for its ability to operate in ever more challenging and austere environments.

As regulators, we view our primary purpose as making sure offshore oil and gas activity is conducted safely and in an environmentally responsible way. Put in its purest form, our role is to manage risk - to reduce it to the lowest practicable level while allowing industry to efficiently perform its purpose.

If we do this correctly, it will also serve to build public trust in industry's activities. This is important. After all, those who operate on public lands are responsible to the owners. And as we have seen in recent years, there

is little public tolerance for error that results in environmental damage.

Fortunately, there are sound business reasons for those who engage in offshore activity to focus on risk reduction. Prevention, while not cost free, is almost always cheaper than cure. The ability to maintain schedule without interruption, and the avoidance of crushing liabilities, are major incentives to make safe operations a priority.

So from that perspective, there is commonality of purpose between regulator and the regulated:

The nexus between the two *<u>is</u>* risk management.

As many of you are doubtless aware, soon we will mark five years since the *Deepwater Horizon* tragedy. This event had a profound effect on the industry, on the public, and upon us as a regulatory body. In fact, my Bureau was created in response to that event - to provide a laser focus on safety and reducing risk. So, not surprisingly, I have been asked with increasing frequency as the date approaches, what has changed? What are we doing differently?

In response, I can, and do, point to new regulations and technical standards- some of which are already published, while others that are still forthcoming - all designed to make sure that the best technology is brought to bear and that the likelihood of another

incident is reduced. New regulations are, naturally, enforced through technical permit reviews and onsite inspections, which are all designed to lower risk. All of this is very much in line with traditional regulatory approaches.

I also point to new standards for response capability, in the event there is a release of oil from a well, and without question, we are in a far better position today than we were five years ago, should the same type of event occur again.

But I also stress that what is fundamentally different today is a focus on safety culture, the recognition that it is the people, from corporate boardrooms to the deck

plates who determine the company's priorities, influence how work is performed, and who make decisions - often under the stress of competing pressures.

Safety culture is a shared focus by us as regulators and by the industry, and it is by no means a new concept. It did not originate with the *Deepwater Horizon* tragedy, but it has taken on a far greater sense of urgency than ever before.

Looked at in this way, the *Deepwater Horizon* incident reflected many of the findings of other high profile disasters, such as the Space Shuttle Challenger, or Three Mile Island, or any number of airline incidents.

After events like this, there is inevitably a lot of soul searching by everyone involved or affected. There are numerous studies into what led to the event, and how the causal chain might have been broken. *If only one or another element had been different…* And of course, there are recommendations to address the observed shortcomings. Although there are always numerous technical recommendations coming from the reviews of such incidents, invariably, they also underscore how a culture of safety is the indispensable characteristic when high technology is used in complex processes.

Technical regulations are comparatively straight-forward. The utility of improved materials, equipment

and systems, can be readily gauged. And when we develop standards and regulations, they *ideally * leave room for further improvement. To the extent possible, they are couched in performance-based language so that today's technology is not locked in to the point of precluding newer, and potentially safer, innovations. People are a different matter. Seeking to influence safety culture is far more elusive, because it is a function of how people think and their priorities.

We can, and we have, required offshore companies to address workplace safety through a Safety and Environmental Management System, or SEMS, plan. This is a post *Deepwater Horizon* initiative. It requires companies to assess vulnerabilities, their policies and

practices, and to develop a plan to address them and actively manage them. But there is a limit as to what a regulator can do to create a mindset focused on safety.

Ultimately, Risk at this level is owned by the operator!

We can as regulators verify that plans exist, and see that they are audited. We can assist in sharing best practices. All of this is being done. And there are many positive developments that we can point to. And to give credit where it is due, there are many in industry who were far ahead of regulators on this front. They have had safety systems in place for many years, and have been actively using them to control their risks.

But there are others who view the requirement for a plan as just another compliance item; something which can be satisfied with a plan on the shelf, but which does not affect the way they perform work. This, of course, completely misses the point. These companies are no safer than before; yet, they hold the rest of the industry hostage. When dramatic failures occur, the entire industry comes under increased scrutiny, not just the individual companies involved.

This may not be fair, but it is reality. And by the way, the regulator comes under intense scrutiny as well. And that is why we all have a shared interest in safety

culture, in managing risks, and normalizing best practices throughout the industry.

So we have a regulatory framework that encourages the development of a safety culture, and there are clearly many companies leading and demonstrating the value of this emphasis. But it is uneven. So what can we do as operators and regulators focused on reducing risks?

Risk-based Inspections: One area that we are exploring is a far more comprehensive approach to risk-based inspections. It is intuitively obvious that not all operators are the same; they vary in their own approach to risk. Likewise, not all facilities are the same, and not all activities are equally complex. It

stands to reason then that our regulatory approach should account for those differences, including the level of commitment by a company to its own safety management plan. Companies that use their plans to actively manage risks, and have the performance records to back that up, can and should be looked at differently that those which do not. In short, we are looking to *incentivize* safety conscious behavior, approaching comparatively higher risk operators differently than comparatively lower risk operators. One of the delimiting factors will be their observed commitment to their SEMS plan.

Emerging Technology: Emerging technology offers another opportunity for continual collaboration

between operators, equipment manufacturers, and regulators. Presently, we tend to consider the safety implications of new technology once it is presented to us in the form of a permit application. Even though we have good people engaged in the review work, it is too late in the game at that stage. It does not serve us, or the industry, well…especially when one considers that the pace of technology tends to outstrip not only our regulations, but even in many circumstances, consensus-based industry standards. This means we must go to first principles, use robust failure analysis techniques, and develop a clear understanding of safety margins. Better that all of this is initiated well before a company seeks permission to proceed on a particular project. That is why we are in the process of

developing a technology center in Houston, where they can work with original equipment manufacturers and operators to gain a workable understanding of the technology and its limits, and how it may affect work processes, well in advance.

It is also why we contributed to the establishment of the Ocean Energy Safety Institute at Texas A&M University, to serve as a neutral forum to explore technical matters that are not elsewhere being addressed within the industry, but could have widespread benefits.

Information sharing. We can always do a better job of information sharing. Individual companies do a great job of collecting and analyzing information based on

their own experiences. However, few are comfortable sharing that information, even if it could benefit the industry overall. Here is where I should insert a lawyer joke, but I will refrain in the interests of time. You get the concern, I am sure. What if we could find secure ways to collaborate on this more? Wouldn't that improve overall safety awareness?

Fortunately, mechanisms are being developed within the industry to achieve this – and I applaud them.

BSEE is also finalizing a near-miss reporting system, whereby safety information can be entered with absolute assurance of anonymity, for the express purpose of analyzing trends and providing useful

information to anyone interested in improving safety management. This is based upon a similar initiative within the aviation industry, which has dramatically improved safety, even though they already had an enviable safety record.

Of course, there are the lessons learned from actual incidents. We have shared these in the past, typically in the form of safety alerts, but I believe we can do a better job of processing what we are seeing and making that available. Increasingly, we are seeing that poor communications, unfocused priorities, and an overall lack of safety mindedness lie behind the incidents we investigate. Sharing what went wrong is useful if it can prevent others from repeating the same experience.

So, one quick story, then I will conclude….

I was recently was in conversation with a gentlemen in industry and asked him what he would do in the event he received an alarm on a particular safety system. His immediate answer is that he would check to see if the system sensors were working properly because sometimes they can give false positives, and then as if to correct himself, said that he would of course treat the threat as real until he could verify the sensors' operation. I think I would have felt better if he had made the latter statement first. Better still if he could have pointed to a well-defined and well-understood safety process that would inform worker responses in such a situation. But it points out that we still have

work to do. Despite lessons learned over the years, in many cases, we still see the potential for disconnects between data received and action taken; a lack of clear understanding of how safety barriers must be maintained; and the great potential for risks to be mischaracterized.

So, we are all in this together.

Safety culture and risk management is a shared responsibility.

We can, and should, collaborate, share information, and use risk management practices to make operations safer.

In our view, as we approach the 5 year mark after the *Deepwater Horizon* tragedy, the best way we can honor the memory of the 11 men who were lost, is to do everything we can to prevent anything like it from ever happening again.

Thank you!