

U.S. DEPARTMENT OF TRANSPORTATION

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GAS PIPELINE ADVISORY COMMITTEE  
(TECHNICAL PIPELINE SAFETY STANDARDS  
COMMITTEE)

AND

LIQUID PIPELINE ADVISORY COMMITTEE  
(TECHNICAL HAZARDOUS LIQUID PIPELINE SAFETY  
STANDARDS COMMITTEE)

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JOINT MEETING

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WEDNESDAY  
OCTOBER 22, 2014

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The Joint Meeting convened in the  
Washington Georgetown Marriott, West End  
Ballroom, 1221 22nd St., N.W., at 9:00 a.m.,  
Colette D. Honorable, presiding.

GAS PIPELINE ADVISORY COMMITTEE MEMBERS:

COLETTE D. HONORABLE, Chair  
DENISE M. BEACH  
LINDA K. BREATHITT  
MARK BROWNSTEIN  
CHERYL F. CAMPBELL  
J. ANDREW DRAKE  
SUSAN L. FLECK  
ROBERT W. HILL  
DONALD J. STURSMAN  
RICHARD L. WORSINGER  
JEFF C. WRIGHT  
CHAD J. ZAMARIN

LIQUID PIPELINE ADVISORY COMMITTEE MEMBERS:

VADM BRIAN SALERNO (Ret.)  
LANNY W. ARMSTRONG  
C. TODD DENTON  
TIMOTHY C. FELT  
MICHELE F. JOY  
RICHARD B. KUPREWICZ  
CHARLES LESNIAK, III  
RONALD G. McCLAIN  
CRAIG O. PIERSON  
CARL M. WEIMER

DEPARTMENT STAFF PRESENT:

JEFF WIESE, Designated Federal Official  
LINDA DAUGHERTY, PHMSA  
STEPHEN DOMOTOR, PHMSA  
JOHN GALE, PHMSA  
DAVID LEHMAN, PHMSA  
ALAN MAYBERRY, PHMSA  
DAVE MURK, PHMSA  
STEVE NANNEY, PHMSA  
KATE ROSENBERG, PHMSA  
CAMERON SATTERTHWAITE, PHMSA  
CHERYL WHETSEL, PHMSA  
DAVE MURK, PHMSA

ALSO PRESENT:

DR. PAULA GANT, Deputy Assistant Secretary,  
Office of Oil and Natural Gas,  
Department  
of Energy  
PAUL ROBERTI, Commissioner, Rhode Island  
Public  
Utilities Commission  
DR. JAMES WHITE, University of Colorado,  
Institute of Arctic and Alpine Research

T-A-B-L-E O-F C-O-N-T-E-N-T-S

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P R O C E E D I N G S

9:06 a.m.

1  
2  
3 MR. WIESE: Good morning,  
4 everyone. Hope you had a fun night last  
5 night; I know the bulk of you were here in the  
6 hotel. Some people like us decided, let's  
7 take the Metro yesterday and so we got soaked  
8 between here and the Metro. So I would  
9 recommend today, take a cab, use Uber or  
10 something like that.

11 But I apologize for bringing you  
12 into a town where the weather is so bad; but  
13 thank you again so much for your service.  
14 Before we go on the record and start the  
15 transcription, I thought I would just mention  
16 a couple of things really quickly. Again, for  
17 those of you who yesterday put up, please just  
18 put up with me.

19 I want to point out that there  
20 will be some new people in the crowd. Every  
21 time we start a meeting by telling people how  
22 to get out of here in the event of an

1 emergency. Our safety moment of the day is  
2 use the doors to your right, over here; not  
3 the ones behind you. Those take you into some  
4 hallways for the staff. So go down the  
5 escalators or the fire door in the far corner  
6 there, gather in the lobby and there will be  
7 people from the hotel up here and in the lobby  
8 directing you. But that's the general route  
9 out. The comfort moment is restrooms are just  
10 out the door right over here, so that should  
11 be no problem.

12 Today we've got a number of  
13 interesting panels. The first one, in  
14 particular, I think that you will find  
15 fascinating, but my goal today and I want to  
16 work for you; because most of you are from out  
17 of town, is to get you out of here at 3:00.  
18 That's our goal. I know a number of you have  
19 to catch flights. So if you want to adjust  
20 your flights and get home a tad earlier,  
21 that's up to you; but I know I have the able  
22 assistance of the Commissioner from Arkansas.

1 We will, she will nicely manage to get us to  
2 a 3:00 close.

3 So I think with that, Cheryl any  
4 other housekeeping matters that I, no?

5 MS. WHETSEL: No.

6 MR. WIESE: Okay. Adjust your  
7 phones. Okay? Besides that, there are, there  
8 is a sheet on the registration table with  
9 restaurants nearby for lunch. We'll give it  
10 a reasonable lunch; we'll gauge out the  
11 progress we're making about whether it's an  
12 hour and a half or an hour. But I'm very much  
13 looking forward to today, so with no further  
14 ado, I will turn it over to my colleague from  
15 Arkansas.

16 CHAIR HONORABLE: Thank you, Jeff,  
17 and good morning everyone. I hope you had a  
18 good evening, not too much fun, okay? We've  
19 got a lot of work to do. And while we do want  
20 to get you home safely and in an expeditious  
21 way, I certainly don't want to cut off any  
22 dialogue or the questions that you might have,

1 this is what we came here to do.

2 So I greatly appreciate your  
3 attention yesterday and most of all, your  
4 involvement and your participation. It's  
5 great when we have a lot of tent cards up. So  
6 this is your day as well; this is why we're  
7 here. So I don't want to limit discussion or  
8 questions in any way.

9 But to the extent that we're able,  
10 we would like for you to be able to return  
11 home, particularly with the rainy weather that  
12 we're having today. And also, please remember  
13 than when you speak, we would like for you to  
14 please state your name first, because we are  
15 making a record of the proceedings here today,  
16 and I'd like to welcome you back to the Joint  
17 Meeting of the Gas Pipeline Advisory Committee  
18 and the Liquid Pipeline Advisory Committee.

19 And we'll begin with agenda item  
20 number one, a briefing on Methane Emission  
21 Reduction and I'll turn it over to Jeff for  
22 introductions, but I wanted to thank the

1 panelists who made time to be here today; some  
2 of them who I know very well. And this is a  
3 great, great topic for this joint committee to  
4 take up. So without further ado, Jeff.

5 MR. WIESE: Great. Thank you so  
6 much, Colette. I just have a couple of quick  
7 remarks to set this up. We asked to establish  
8 this panel because it's a topic that the  
9 committee, it's very germane to the work that  
10 we do; but we haven't ever talked about it in  
11 the past, other than just as a side note on  
12 other discussions we've had.

13 Yet, my guess is many of us in  
14 this room have been involved for some time in  
15 this topic. So it seemed appropriate, you  
16 know, for us to kind of collect advice from  
17 you, but to start, I assume we'll have  
18 continuing discussions on this topic, given  
19 its importance I think that everyone here as  
20 well as to the administration, but I thought  
21 we would start with some basics.

22 Again, I don't like to assume that



1 everyone is at the same point of knowledge, so  
2 to begin with, what I'd thought we'd do is  
3 kind of a primer. So I reached out, I  
4 thought, who would do the primer? I reached  
5 out to the National Academy of Sciences. We  
6 do business with them a lot and I said, who's  
7 really good fact-based, science-based, neutral  
8 sort of person? And it was immediately they  
9 recommended Dr. Jim White. So I called Jim  
10 and he was kind enough, after some badgering  
11 from me to agree to come in and I consider it  
12 a high accolade if the National Academy is  
13 referring him.

14 So, just real a quick bio, I've  
15 got a panel that's comprised this morning for  
16 you of Dr. White, Dr. Paula Gant from the  
17 Deputy Assistant Secretary at DOE and friend  
18 of many of ours for many years, and Paul  
19 Roberti, another one of our friends. Paul is  
20 Commissioner from Rhode Island. So I thought  
21 we would start out with Professor White, we'll  
22 go to Paula and then to Paul.

1                   But I will pause, I think, after  
2 each of these speakers and, you know, take  
3 some questions for the speakers. And when  
4 that's done, I've asked a couple of people  
5 here, Mark Brownstein will be speaking as well  
6 on this panel, forgive me, since I recruited  
7 him for the committee on this topic and this.

8       Sorry, Mark. It's early. I did go down and  
9 get coffee. So Mark will be presenting as  
10 well in EDS interests in measurement and  
11 monitoring. Sorry about that.

12                   So we'll do that. Let's pause and  
13 let you take questions of all these people and  
14 then I've asked a couple people on the  
15 committee to kind of talk a little bit about  
16 the work that they've been doing; that we  
17 think that contributes.

18                   So I'll start out with Dr. White.  
19 Dr. James White, Professor of Geologic  
20 Sciences, the University of Colorado/Boulder  
21 and Fellow and Director of INSTAAR, the  
22 Institute of Artic and Alpine Research. I'm

1 not going to read through the long cycle, but  
2 Jim has talked to me before. He's been  
3 involved in methane monitoring and measurement  
4 for quite a few years. I'll let him give you  
5 any other quick tips on himself, but again I  
6 consider it a high accolade to be referred by  
7 the Academy and I want to thank him for taking  
8 time out of his schedule.

9 DR. WHITE: Thank you very much,  
10 Jeff. Thank you, Madame Chairwoman. I would  
11 point out that Jim White is a very common  
12 name, so you probably should check to make  
13 sure you got the right one. I don't know, I  
14 have worked with the National Academy.

15 Jeff asked me to give you sort of  
16 a very brief overview on climate change, what  
17 we know, what we don't know. So I'm going to  
18 stick to the basics. I'm going to stick to  
19 simple physics. I'm not going to try to go  
20 into models and stuff like that. I don't do  
21 modeling. I go to places like Greenland and  
22 Antarctica and drill ice cores and look

1 thousands of years into the past to try to  
2 understand how our climate system works. I've  
3 also since the early 1990's measured the  
4 isotopes of methane in the atmosphere. I've  
5 been affiliated with NOAA's monitoring of  
6 methane in the atmosphere. So I'll make some  
7 comments specific to methane as I go through  
8 my talk. But I will also talk broadly, more  
9 broadly about climate change in general.

10 I always like to start with a  
11 slide of where we are; actually, this is a  
12 picture of the other side of the world. You  
13 can make out India on the left there. I like  
14 to show pictures like this for a couple of  
15 reasons: One is this is Typhoon Haiyan from  
16 last year, from 2013; this is a pretty big  
17 storm. If you actually lay it over India,  
18 it's about half of India. But you also see  
19 all these orange things, and these are lights,  
20 obviously; and those are powered almost all,  
21 as you know, by either coal, oil or natural  
22 gas. And India and China are countries that

1 use far less energy per capita than the  
2 industrialized countries. So a global view  
3 would show you that the industrialized world  
4 lights up the night even more than these  
5 countries do, but these countries are the  
6 places where growth is happening; China in  
7 particular. Huge growth in use of fossil  
8 fuels; and India is not far behind, and with  
9 a billion people moving into the use of fossil  
10 fuels, they'll need something like four to  
11 five times more energy, total energy in the  
12 future because just growing from where they  
13 are and their use of fossil fuels, which is  
14 very low per capita, up to some level in the  
15 future.

16                   With all the environmental  
17 changes, we want to know a lot, but three  
18 basic things: How fast are things going to  
19 occur, how big is the change going to be  
20 eventually, and how likely is it to happen?  
21 These are the same sort of questions we ask  
22 when we buy insurance. So knowing these

1 things, we can do very important things, like  
2 manage risk, provide resilience, etc. So as  
3 I go through my talk, I'm going to move back  
4 to these issues of fast, how far or how big  
5 and how likely. So we'll keep moving back to  
6 those. And again, I'll try to keep it simple;  
7 and that's why I threw in this slide to remind  
8 myself to keep it simple.

9                   So let's start with, you can  
10 actually understand how our climate system  
11 works in about three minutes. So in the next  
12 three minutes, we're going to understand how  
13 our climate system works. Not getting into  
14 the details of, how Washington's weather works  
15 or Colorado's weather works or South America,  
16 whatever. Just looking at the globe, if you  
17 wanted to determine the temperature of our  
18 planet all you would need to know are three  
19 things: You would need to know how much  
20 energy we get from the sun, because we're a  
21 sun-driven planet. There's very little energy  
22 that comes out of the Earth, some by

1 radioactive decay and some by friction between  
2 tectonic plates, but we'd be a very, very cold  
3 planet if it weren't for the sun.

4           You need to know then how much of  
5 that sun's energy is reflected back to outer  
6 space; and that's reflected by things like  
7 clouds, aerosols, volcanos when they go off  
8 are very good at producing sulfate aerosol,  
9 which makes ice crystals and cools the planet  
10 off. And the obvious one is things like sea  
11 ice and land ice, etc. So, and that's what we  
12 call a positive feedback; because the colder  
13 the planet gets, the more ice you have, the  
14 more snow you have and the colder the planet  
15 gets.

16           A third thing you need to know is  
17 the amount of greenhouse gases. The  
18 greenhouse gases are just sort of a colloquial  
19 term for those gases that absorb the Earth's  
20 energy; not the sun's energy, the Earth's  
21 energy. So the sun's energy as it passes  
22 through the atmosphere, warms the planet up.

1 The planet warms up to some point and then  
2 radiates energy into outer space. Everybody  
3 radiates energy. I noticed on TV this  
4 morning, they were pointing little  
5 thermometers at everyone's head who was coming  
6 into the United States, for obvious reasons.  
7 And those thermometers are simply reading the  
8 radiation emitted by those human beings; and  
9 you can calculate your temperature quite well  
10 by knowing what frequency of radiation we all  
11 radiate.

12 So greenhouse gases don't care  
13 about the sun's incoming radiation, they  
14 absorb the Earth's radiation as it goes back,  
15 as it tries to go back to outer space. They  
16 absorb infrared radiation. The number one  
17 greenhouse gas with a bullet is water vapor;  
18 it makes up about half of the greenhouse  
19 effect. CO2 is about a quarter. And then the  
20 other quarter is made up by methane, which is  
21 an important part of that quarter. Nitrous  
22 oxides, CFC's, other smaller amounts of gases.



1 In terms of how they're growing, methane is  
2 actually one of the ones that we're watching  
3 very, very carefully; because it is growing  
4 faster than CO2 and given it's about twenty to  
5 thirty times more powerful than CO2 per  
6 molecule, likely to take over CO2 at some  
7 point in the future. And I'll talk about  
8 that, because I think there's good reason to  
9 believe that it might actually happen.

10 So if you know those three things,  
11 you can actually, I should back up. You  
12 actually calculate the temperature of the  
13 planet; and physicists did this back in the  
14 1800's. There's a lot of really classic  
15 physics worked out at that time. We do get  
16 variations in all of these things, so the  
17 amount of energy we get from the sun that  
18 varies because the orbit of the Earth varies.  
19 So if we're farther away from the sun, we have  
20 ice ages; if we're closer away from the sun,  
21 we have warm periods, like we're in now. And  
22 the pacing of the elliptical shape of the

1 orbit is a very important part of climate,  
2 particularly the last million years. The  
3 Earth has the amount of reflectivity on the  
4 planet changes so when a volcano goes off,  
5 it's very obvious. You can look at the  
6 temperature pattern over the last hundred  
7 years, you can spot all the major volcanos  
8 that occur.

9           And the amount of greenhouse gas  
10 in the atmosphere varies. You go back sixty  
11 million years ago and greenhouse gases were,  
12 CO2 for example, which today is 400 parts per  
13 million, pre-Industrial, about 280 parts per  
14 million. Sixty million years ago was probably  
15 a couple thousand parts per million. So it's  
16 been high in the past. It's not gone much  
17 lower than 180 parts per million for  
18 interesting reasons that we can talk about.

19           This slide just reminds us that we  
20 don't get enough energy from the sun to be a  
21 liquid planet; we're too far away. So the  
22 Earth's temperature without greenhouse gases

1 are essentially without an atmosphere, if you  
2 want, is about -18 degrees C. You can measure  
3 that with satellites; that's what physicists  
4 calculated. I think it's too cold for  
5 advanced life. And I do ice core work, so.  
6 The Earth's temperature, however, that you can  
7 take with thermometers or with satellites  
8 around the world is about +15, which is a nice  
9 cozy planet. It's not too hot at the equator  
10 and it's pretty darn cold but not too cold, at  
11 the poles.

12                   And the difference between that -  
13 18 and that +15 is greenhouse gas. We can  
14 calculate that, we know that quite well. It  
15 raises the temperature of the planet by about  
16 33 degrees Celsius, about 60 degrees  
17 Fahrenheit; and really makes the planet  
18 habitable. So if somebody complains about  
19 greenhouse gases, just pause for a moment and  
20 think, well they actually make it possible for  
21 us to be here.

22                   So it's a very, greenhouse gas is

1 a very integral part of the energy balance of  
2 the planet and the energy balance of the  
3 planet or the energy at the surface of the  
4 Earth, is indeed climate. That's the simplest  
5 definition of climate is how the energy at the  
6 surface of the Earth, how much there is and  
7 how it's distributed. Whether it's  
8 evaporation, whether it's sensible heat,  
9 whether it's leaves moving, whether it's that  
10 rain that's pouring outside.

11 So if we add lots of greenhouse  
12 gases to the atmosphere, the Earth's climate  
13 will definitely change. We know this; this  
14 is, again, simple physics. Because the  
15 physics of greenhouse gases absorbing energy  
16 is actually we know better than gravity, and  
17 we all, you know, next time you feel the urge  
18 to deny simple physics, try denying gravity.  
19 I do a little exercise in the class I teach on  
20 energy and the environment where I have a  
21 student stand on a chair. And I have, I talk  
22 about this thought experiment. What if I push

1 the student off and the students will say,  
2 well she'll jump off and land on her feet.  
3 Well, we'll tie her feet together. Tie her  
4 hands together, you know, we'll do whatever.  
5 And they, you know, this is 18 to 22 year old  
6 set; they love this stuff. You know, they  
7 talk about you'd smash your face, blood, guts,  
8 you know. Definitely an injury here. And  
9 then I point out to them that in twenty-  
10 something years of doing this exercise in  
11 class and countless times in public, no one  
12 has ever raised their hand and said, so and so  
13 won't fall.

14 So we, and we get that. We  
15 understand that you simply cannot deny  
16 physical laws; you know, this is not something  
17 you can pass a law against, this is not  
18 something you legislate. If Congress could  
19 pass a law against gravity or could change the  
20 gravitational constant, we could all lose  
21 weight immediately. And they haven't done  
22 that, so.

1                   This is a context of human change.  
2           I put CO2 on here, it's in red; and your CO2  
3           is up about 30 percent from where it was.  
4           This is CO2 levels going from today, going  
5           back 400,000 years; each of these high  
6           periods, what we call interglacial periods.  
7           A couple things you can notice on here. Most  
8           of the time in the last million years, has  
9           been cold. We spent time in what we call  
10          glacial periods, large glaciers covering  
11          Canada, wiping out the National Hockey League,  
12          stuff like that.

13                   Methane also follows a similar  
14          pattern, although with more excitement; and  
15          methane has that excitement because it's very  
16          tied to the hydrologic cycle. Methane is  
17          primarily produced by anaerobic bacteria in  
18          swamps and places like that. It has, however,  
19          increased much more than CO2. Methane has  
20          tripled in the atmosphere since the Industrial  
21          Revolution. So our impact on methane is much  
22          larger than our impact on carbon dioxide; in

1 part because methane is lower in  
2 concentration. But also in part because our  
3 production of methane mostly by rice  
4 cultivation and by domesticated animals  
5 burping their brains out, has a larger percent  
6 of the flux relative to natural.

7 So what are the impacts? What do  
8 we know will happen? So I've broken the  
9 impacts into what we know will happen and what  
10 do we think will happen. And you know, if you  
11 read the IPCC and these other reports, you get  
12 words like very likely and probabilities and  
13 stuff like that. I'm going to talk to you  
14 like a human being and not a scientist. We  
15 know these things are going to happen, right?  
16 The physics are so simple that this is going  
17 to happen. So, 50 percent of the energy in  
18 the lower atmosphere is expressed as heat,  
19 sensible heat. So if we increase the amount  
20 of greenhouse gas in the atmosphere, we know  
21 we're increasing energy in the atmosphere, the  
22 odds of it warming up are very, very, very,

1 very, very high. All right? So it's going to  
2 get warmer.

3           It will also mean more  
4 evaporation. So more energy in the atmosphere  
5 means there's actually going to be more rain  
6 globally. Now that rain might fall in the  
7 ocean, might not do as good on the land, but  
8 it will on the whole, rain more in the future.  
9 And it has been raining more. Another thing  
10 that will definitely happen is that sea level  
11 will go up. And I'll talk more about that,  
12 because that has implications for  
13 infrastructure along the coast that I think  
14 you folks in the pipeline world ought to know  
15 about. But again, the physics are so simple  
16 here that when you warm the planet, you are  
17 going to raise sea level. The ocean's going  
18 to acidify, because we're putting CO2 in the  
19 atmosphere; that's happening today.

20           And the other thing that's going  
21 to happen, and it happens slowly, fortunately,  
22 because I don't think this is going to happen



1 rapidly. Is that carbon in the form of CO2  
2 and methane is going to be released as  
3 permafrost melts in cold regions of the world.  
4 That's something that has normally happened as  
5 the planet has warmed and cooled in the past.  
6 Interestingly, it's the ratio of methane to  
7 CO2 that's really important here. And we  
8 don't know what that ratio's going to be.

9           What do we think will happen?  
10 There's a whole bunch of things that we think  
11 will happen; here's just ones I've listed. We  
12 think it's going to get drier in the western  
13 U.S. I live in Colorado, that's very  
14 important to me. We think there will be  
15 changes in the weather. It's going to be both  
16 colder and warmer because of the changes in  
17 jet stream, changes in circulation patterns.  
18 We think it will be drier in some places,  
19 wetter in others. We think there will be  
20 bigger storms; there's actually evidence for  
21 this today, as there is more energy in the  
22 atmosphere, you'll have bigger storms that

1 rain more per event. That has implications  
2 for infrastructure in terms of sewer runoff  
3 and stuff like that. And we think there's  
4 going to be more heat waves. There's a bunch  
5 of other stuff that we think's going to  
6 happen, but that energy's going to be  
7 redistributed around the planet in interesting  
8 ways.

9           Is it surprising that human beings  
10 are changing the planet? I get this question  
11 a lot. I used to get this question from my  
12 dad, and we used to have long conversations  
13 about this. So I started to collect metrics  
14 for humans running the planet. We're very  
15 impressive. We're the biggest cause of change  
16 on the planet by far. Here's just a couple of,  
17 you know, there's a bunch of them in here,  
18 I'll just talk briefly about the first one  
19 here and if we have time, I can come back to  
20 the second one. This surprised me. My  
21 friends in the geological science business  
22 added up how much dirt flows through rivers

1 and through dust in the atmosphere, and they  
2 compared that to the amount of dirt that we  
3 move by mining activities. Just by mining  
4 activity. We move ten times more dirt than  
5 nature does every year. So the natural  
6 erosive processes that wear mountains down and  
7 keep these mountains from getting higher and  
8 higher, we move ten times more dirt per year  
9 than nature does. Which impressed me. And I  
10 can come back to this. This has to do with  
11 nitrogen fertilizer and I don't know if I'll  
12 have time to come back to it; but this is, I  
13 think the one that really makes my jaw drop is  
14 the fact that we human beings really are equal  
15 to all the bacteria on the planet in terms of  
16 fertilizer production. Nitrogen production,  
17 which is like, that's really strange.

18 We can try this. So how fast, so  
19 we did, the National Academy probably fingered  
20 me because I was the lead author on a report  
21 in which we looked at abrupt change. And one  
22 of the abrupt changes is happening today is,

1 is sea ice loss. And this is a little movie  
2 prepared by NASA and NOAA and I like it  
3 because it makes a couple of examples here.  
4 So what you're going to see here is the movie  
5 cranks up is the circulation of the Arctic  
6 Ocean and the Arctic atmosphere circulation as  
7 ice spins around. And in the natural, in the  
8 world before it got warmer, ice would come  
9 around Greenland here, it goes out in the  
10 Atlantic, it sinks the Titanic, it does other  
11 stuff. But the white stuff here is old ice,  
12 and the blue stuff is young ice; and what's  
13 happened as time goes by and you'll see a big  
14 change in 2007. It's episodic. Is that the  
15 old ice, which is meters and meters thick, is  
16 being shoved out and it's not been cold enough  
17 to replace the old ice with more old ice. And  
18 we end up with an Arctic Ocean that has pretty  
19 much one year ice covering a lot of it. So if  
20 you remember what that looked like in the  
21 beginning, it was mostly white, which is  
22 multiyear ice, able to survive a warm winter.

1 And what we have now in the Arctic in the  
2 wintertime, it still freezes over in the  
3 wintertime. We have mostly one year ice,  
4 which is capable of melting, to a large  
5 extent, any given summer when you have enough  
6 warmth and when you have the right wind  
7 conditions.

8 An example of this, this is the  
9 Great Lakes, to give you an example. So this  
10 is Lake Erie, which I used to pick on Rhode  
11 Island, but not anymore, so. This is New  
12 Jersey, roughly. And this is February 27,  
13 1973; Lake Erie is frozen over. March 13, two  
14 weeks later; Lake Erie is almost entirely ice  
15 free. And if you've lived in an area where  
16 you have lakes, abundant lakes, you'll know  
17 that this happens in the springtime, it just  
18 seems as though the ice goes away very  
19 quickly. And that happens because the  
20 atmosphere warms, the water also is melting  
21 the ice, and then the wind comes along and  
22 stirs the drink and you end up with ice being

1 removed very rapidly. That's what's happening  
2 in the Arctic today. And now keep in mind that  
3 the three things, class, that controls  
4 climate: How much energy from the sun, how  
5 much reflectivity there is. So we're trading  
6 white ice in the Arctic for blue ocean; which  
7 is about the biggest trade you can make from  
8 an energy-absorbing point of view. That's why  
9 a lot of climate scientists are focused on  
10 what is going on today in the Arctic; because  
11 what happens in the Arctic doesn't stay in the  
12 Arctic. It's totally the opposite of Las  
13 Vegas. It begins to impact the entire  
14 northern hemisphere, because it changes the  
15 energy budget of the northern hemisphere.

16 So why should you care about  
17 Arctic sea ice? There's a bunch of reasons  
18 why you should. This thing that you folks  
19 have lived through called the Arctic Paradox;  
20 where cold air leaks out of there because the  
21 jet stream slows down and can't bottle up cold  
22 air anymore. A lot of political stuff. The

1 Russians dropped a flag at the North Pole.  
2 Whoopee. There's more ships, there's more  
3 resource extraction going on up there; and in  
4 red here, I put the permafrost is melting.  
5 And it's being aided in warming up by the fact  
6 that you now have blue ocean in the summertime  
7 along the coast much longer into the fall than  
8 you used to have. And the folks who live in  
9 Alaska can, I mean, this is something they  
10 know. This is very real change, a very easy  
11 change to see. This is a distribution of  
12 permafrost. Just pointing out a couple  
13 things. One is that most of that permafrost  
14 is in Russia; the second amount is in Canada.  
15 But we in the United States have a lot of  
16 permafrost; and I've talked about folks,  
17 talked about this with folks in the State  
18 Department; pointing out that, you know, as we  
19 talk about carbon agreements globally, we own  
20 a lot of stock here that is going to be coming  
21 out. And how this stuff gets counted in the  
22 future is an interesting question. Just to

1 scale you, this amount of carbon is equal to  
2 all coal, oil and natural gas put together.  
3 And it will, as the planet warms up, melt;  
4 because it did it in the past. And we have  
5 very good evidence. At warm periods in the  
6 past, only a couple of degrees warmer, trees  
7 were growing all the way up into these islands  
8 right here, on both sides. So this was, very  
9 clearly, a much warmer place and permafrost  
10 was gone because trees don't grow that well in  
11 the really frozen permafrost.

12 Just pointing out to you that we  
13 are monitoring very carefully what's happening  
14 here. We don't have enough sites, I think, to  
15 do that very well, but we have enough that we  
16 can tell you that even though methane is now  
17 increasing in the atmosphere, this is methane  
18 from since 2000 from the NOAA data. It  
19 actually plateaued for a while and there was  
20 a whole bunch of papers written, including  
21 some by me; and we don't really know why this  
22 happened, which is an interesting problem.



1 But methane is going up in the atmosphere  
2 again since 2006 or 7, it's been going up  
3 again. It's going up again, and this is the  
4 isotope, I won't go into details here, but  
5 basically if this goes down while this goes  
6 up, this has to be anaerobic. It has to be  
7 rice, it has to be swamps, it has to be more  
8 rain. It is not Arctic permafrost that's  
9 melting and putting that methane into the  
10 atmosphere. We all think that this is going to  
11 happen in the future; as a matter of fact,  
12 it's going to happen in the future. But it  
13 isn't happening yet.

14           Some thoughts then. Ours is a  
15 water planet. It takes time for water to heat  
16 up. One of the most, I'd say, the second most  
17 important message I have to give you today  
18 about climate change is that the impacts, that  
19 is, it will be warmer, come after the causes,  
20 which are increased greenhouse gases by at  
21 least fifty years or more. And that's because  
22 water is out there. And it doesn't take a

1 whole lot of experimentation. I have  
2 students, another thought experiment. Put two  
3 pots on the stove. Put two cups of water in  
4 one and no water in the other. Turn the heat  
5 on equally. Walk away for a couple minutes,  
6 come back. Thought experiment. Put your  
7 finger in both and you will burn your finger  
8 in the one with no water, and the one with  
9 water in it, you barely feel it's a little bit  
10 warmer. Energy is neither created nor  
11 destroyed. So where did all that energy go?  
12 That, on the water side? Well, it goes into  
13 warming water up because water has an enormous  
14 heat capacity. So this is an interesting  
15 problem, because it creates, even though today  
16 we have about 400 parts per million CO<sub>2</sub>, and  
17 I'll show you what that means from a climate  
18 point of view. We don't have a 400 part per  
19 million CO<sub>2</sub> climate yet. It will take a long  
20 time for the ocean to warm up to express that  
21 400 part per million CO<sub>2</sub> climate. And it's  
22 always going to be a lag of at least a

1 generation; and that causes what's called  
2 intergenerational inequity. And a lot of what  
3 we talk about in climate change today has to  
4 do with ethics. What we're doing to our, with  
5 the problems we leave to our kids. And will  
6 they do the same thing? Will they leave our  
7 grandkids the same kind of problems? So this  
8 is an interesting problem. And it's, the time  
9 frame is long enough, it's certainly longer  
10 than the political time frame. But the time  
11 frame is long enough, it's really an  
12 interesting problem.

13 Let me talk a little bit about sea  
14 level rise. This is probably the most  
15 inevitable result of a warmer planet. And  
16 this one, I want to talk about it because the,  
17 as a paleoclimatologist, I sort of yawn when  
18 I look at sea level rise curves. But the, it's  
19 something that we haven't gotten out into the  
20 public domain, the importance of a dynamic sea  
21 level on our planet. So the physics behind  
22 sea level rise are simple. So as you warm

1 water up, water expands; and that's not  
2 trivial in an ocean that's several kilometers  
3 deep. So as the ocean warms up, sea level  
4 rises. The other thing that happens is that  
5 a warmer ocean and a warmer air melt land ice.  
6 And on our planet, there's a trade always  
7 going on between water on land, as ice, and  
8 water in the ocean. And that trade goes back  
9 and forth as our climate changes. As our  
10 planet cools off, we tend to grow ice on the  
11 land. That ice came from the ocean and so the  
12 sea level drops. During the last glacial  
13 period, for example, sea levels were 120  
14 meters lower than today; almost 400 feet. All  
15 right? So that's a lot of water that got  
16 taken out of the ocean and made into ice. As  
17 our planet warms up, sea level rises. So  
18 120,000 years ago, we were slightly warmer  
19 than today, maybe a degree on average for  
20 globally. Sea level was about 5 to 7 meters  
21 higher than today. Meters. So that's 15  
22 feet. So then I'll show you what that looks

1 like in the next few slides. But this is very  
2 important, because the small changes in  
3 temperature eventually translate into large  
4 changes in sea level and that's just the way  
5 our planet functions, because of this trade  
6 between land ice and the ocean.

7 This is just a figure showing you  
8 the fidelity, I've used CO2 here, by  
9 temperature can be substituted for this; and  
10 sea level showing that over the last 500,000  
11 years, I apologize the direction of time is  
12 now going this way. That's what  
13 climatologists do. These are again the  
14 interglacial periods that you see here. But  
15 the, what's important to note on this is that  
16 these are the difference between an  
17 interglacial period and a glacial period,  
18 which is about 6-7 degrees Celsius. Sea level  
19 changes here are on the order of 120 meters.  
20 All right? So you can get a scaling right  
21 away that, at one degree of sea level, one  
22 degree of temperature change is something on

1 the order of 15 to 20 meters of sea level. And  
2 keep in mind that the IPCC target is 2 degrees  
3 Celsius, all right?

4 Sea level is rising, a meter by  
5 the end of this century is a conservative  
6 current estimate. It's conservative. And  
7 there's a whole lot of implications for this.  
8 In the Abrupt Climate Change report, we talked  
9 about this infrastructure failure is a key  
10 threshold in sea level rise. So as, you can  
11 talk about, okay, Miamians will move from  
12 these wet spots here to these drier spots.  
13 But you all know how cities work, and you know  
14 the underground pipelines, the power lines,  
15 the sewer systems. The infrastructure of  
16 cities are really what begin to fail as sea  
17 level rises. And that becomes a real serious  
18 problem. And these failures could indeed be  
19 abrupt changes in the system; that's probably  
20 one of the biggest fears we have is that you  
21 will have problems in the infrastructure, the  
22 system not functioning abruptly.

1                   Interestingly, current plans. For  
2                   example, there's a big meeting in New York  
3                   City recently. Typically go out to 2050 with  
4                   little or no recognition that sea level rise  
5                   will continue. So sea level rise is not going  
6                   to go a meter by 2100 and then stop there.  
7                   The how far part of this is really important.  
8                   And how far is in the neighborhood of 10 to 20  
9                   meters. So with 400 parts per million CO2,  
10                  I'll show you a curve here in a minute; that's  
11                  the sort of level we'll expect in, and it will  
12                  take a couple hundred years, a few hundred  
13                  years, to do that. But what's really  
14                  important is that sea level rise, if we allow  
15                  this to go unchecked, will mean a continuous  
16                  and strategic retreat to that how far level.  
17                  So, it's interesting that folks are thinking  
18                  of building twenty billion dollars' worth of  
19                  hardening against sea level rise, and at that  
20                  point, you go, okay now what? You guys spend  
21                  another, we all know the number will be even  
22                  bigger. But it's going to be a continuous

1 fight. And at some point, you think, well,  
2 you know, are we going to, we're going to give  
3 up. Miami, for example, is a city that you  
4 simply can't save. It's a city that's built  
5 on sand and coral and you put a dike around  
6 Miami and water just comes up underneath it.  
7 It's completely porous under your feet. The  
8 City of Miami actually hired some Dutch  
9 engineers who told them that and charged them  
10 a few hundred thousand bucks, so. Wish I had  
11 that gig.

12 This is a nice compilation, just  
13 showing you very briefly and roughly speaking  
14 that here's the global mean temperature; our  
15 average today of 15. Here's sea level.  
16 Again, if you go back to the Glacial Period,  
17 which was about 6 or 7 degrees colder, about  
18 120 meters. Going forward to a warmer planet.  
19 If you melt all of the ice, if you melt  
20 Antarctica, here's the Eocene, forty million  
21 years ago, that's when the Antarctica began;  
22 it's about 80 meters of sea level rise. The



1 last time the Earth had 400 ppm CO2, which is  
2 what is in the atmosphere today, is a period  
3 called the Pliocene, which was about three  
4 million years ago. And you can sort of gauge  
5 across here; that's about 20 meters of sea  
6 level rise. This is the IPCC forecast for the  
7 year 2100 temperature. There's no reason that  
8 we can think of for this point not to migrate  
9 up towards that line. It will take hundreds  
10 of years to do so, because fortunately, ice  
11 doesn't melt quickly. But again, it's a  
12 strategic and phased retreat that we're  
13 thinking about, rather than, I still think we  
14 can do something about this. But it is  
15 interesting that this is something that a lot  
16 of people really don't want to hear about, but  
17 if you look at, if you study the history of  
18 the planet, this is just how our planet  
19 functions.

20 So I point out to my class, don't  
21 get depressed, you can have some fun with  
22 this. This is what 20 meters of sea level

1 look like. I always ask them what's really  
2 important about this part of Florida? I'll  
3 ask you folks that. Disney World. Right. I  
4 heard the words, Disney World, right? So it  
5 turns out that Disney World is high and dry at  
6 20 meters of sea level and really importantly,  
7 you can sail the Disney Princess right up to  
8 the Magic Kingdom. All right. So there are  
9 winners and losers in climate change. I  
10 always get sad because I learned that  
11 Louisiana looked like a foot and it's  
12 unfortunately, you know, I hate to say it, but  
13 an amputated foot at that point. Nonetheless,  
14 you get the picture. And I also like to show  
15 this slide, because as I tell people, this is  
16 the only thing you'll remember about what I  
17 say. There's a state lurking over here and  
18 you folks in the northeast know which state  
19 that is? Delaware. Right. Now what was the  
20 first State of the Union? Delaware. They're  
21 really, really, really proud of that. So if  
22 you want to remember ultimate sea level rise,

1 all you have to remember is first in, first  
2 out. Okay? If you can remember FIFO, you can  
3 remember ultimate sea level rise.

4 I had to pick on Rhode Island  
5 here. This is just a little bit of me getting  
6 up on a soapbox here. I think it's time to  
7 rethink the global conversation; and it's  
8 certainly a national conversation, and really  
9 stop blaming fossil fuels. Yes, CO2 is causing  
10 a lot of climate change, but the fossil fuel  
11 providers get a lot of grief for that and I  
12 find that rather odd; for two reasons. One  
13 is, it's not just about fossil fuels. And  
14 this is a really important message for  
15 methane. Methane, the human methane fluxes  
16 are primarily rice cultivation and  
17 domesticated animals. So we have a little  
18 program where we drive around the front range  
19 of Colorado and we have a little Piccaro  
20 Methane Analyzer in the back and we're trying  
21 to ground truth the aircraft measurements.  
22 The biggest signals we see are feed lot

1 operations; concentrated feed lot operations.  
2 CAFO's. We do see some leakage from pumping  
3 operations from methane, natural gas  
4 operations; we also see landfills. But the  
5 biggest spikes we see are CAFO's. And the  
6 nitrous oxide is produced by bacteria when  
7 they get an abundance of fertilizer. As I  
8 told you, the one example I had to skip there  
9 is that human beings have doubled the amount  
10 of nitrate and ammonia in the Earth's system.  
11 And some nitrous oxide is going up and it's  
12 going up rapidly. These two things together  
13 roughly equal CO2; and they're largely tied to  
14 food. Not energy. So one of the key messages  
15 for the future is that we're going to have to  
16 deal with climate change. We have a large  
17 environmental footprint. We got to deal with  
18 it. Because we're not going to get out of the  
19 food eating business. We may get out of the  
20 fossil fuel business at some point down the  
21 road, but we're not going to get out of the  
22 food eating business. All right? You simply

1 can't, I can't imagine a world like that,  
2 although some of my futuristic friends talk  
3 about it.

4           So I think, you know, whatever  
5 strategies we have to deal with climate change  
6 in the future has to get out of being wrapped  
7 around the axel of just fossil fuels. The  
8 other important point I want to make here is  
9 that fossil fuels supply 80 percent of our  
10 energy. And I've always found it odd that  
11 blaming the supplier of a basic need is odd.  
12 All right? In other words, I ask my class  
13 this: I mean, do we blame farmers for  
14 obesity? Farmers are out there producing  
15 calories. Right? Why aren't we crabbing the  
16 farmers, you're producing too many calories?  
17 And I think we know the answer. We know it  
18 because we know that there's a lot that  
19 happens between the production of calories and  
20 how we consume it. We inject ourselves, and  
21 we say, I need to be responsible for how I  
22 consume those calories. We don't have a

1 sensible energy policy, and so we can't inject  
2 ourselves in between the providers of that, of  
3 energy and the result of that energy. So my  
4 big message here is, we certainly need a  
5 sensible energy policy and we need a sensible  
6 approach to what is really happening; and it  
7 is really happening. So I will stop there.

8 MR. WIESE: Very good; thank you,  
9 Professor White. I actually have some  
10 questions myself, but I think we've conferred  
11 and think that we won't get through our agenda  
12 if we don't save questions for the end of the  
13 panel.

14 So with your permission, I just  
15 ask you to queue them up. Okay? So what  
16 that, I think we'll shift now to Dr. Paula  
17 Gant. I haven't been calling her Doctor, I  
18 realize I'm going to have to become more  
19 formal, Paula.

20 Paula is the Deputy Assistant  
21 Secretary for Oil and Natural Gas in the  
22 Department of Energy's Office of Fossil

1 Energy. Deputy Assistant Secretary, Dr. Gant,  
2 administers domestic and international oil and  
3 gas programs; including policy analysis,  
4 liquefied natural gas import and export  
5 authorization.

6 Paula has a long history, I think  
7 many here in the room probably know her. She  
8 worked with the American Gas Association and  
9 Duke Energy in the past, has served as faculty  
10 on Louisiana State University, University of  
11 Louisville. So with that, I think I would ask  
12 you to welcome Dr. Paula Gant. Thank you,  
13 Paula.

14 DR. GANT: Thanks, Jeff. Five  
15 minutes-ish?

16 MR. WIESE: Whatever, five, ten.

17 DR. GANT: Great. Good morning,  
18 everyone. It's nice to see a lot of friendly  
19 and familiar faces, and it's great to get a  
20 current primer on the climate science. I  
21 thought that was really insightful and makes  
22 me glad that I don't have to try to make this

1 interesting to college students. I don't know  
2 that I have the innovation that you do, Dr.  
3 White.

4 So I'm going to talk about methane  
5 from a couple of different angles; focusing on  
6 not bovine flatulence, but natural gas, our  
7 domestic natural gas abundance; and talk about  
8 why from an administration perspective,  
9 methane matters in that regard. And then how  
10 that relates to some of our objectives around,  
11 addressing climate change and working to  
12 mitigate the impacts of it.

13 So, why does methane matter? It  
14 turns out that we have a lot of natural gas,  
15 a lot of proven reserves of natural gas in  
16 this country. And thanks to decades of  
17 continual innovation and technological  
18 advance, we can get it out of the ground very  
19 effectively and thanks to the 2.4 million  
20 miles of pipeline infrastructure we have in  
21 this country, we can get it to markets around  
22 the country very safely, efficiently and



1 reliably. And because of that, we have an  
2 incredible opportunity to make good use of  
3 this resource in ways that allow us to  
4 underpin our economic security, our national  
5 security, and our environmental quality. And  
6 when I think about what the challenges for us  
7 at this point in time from a policy  
8 perspective, and my opportunity to serve on  
9 behalf of the President, it's really to help  
10 insure that as a country, we realize that  
11 promise. And that's what President Obama has  
12 us focused on, is making sure that we're  
13 thinking about our natural gas resources in  
14 ways that insure that we are developing them  
15 prudently. By prudently, we mean that we get  
16 the most out of the resource, we produce it  
17 efficient and that we also minimize impacts on  
18 other natural resources; our air, our land,  
19 our water, and our local communities.

20                   And the upside is tremendous; the  
21 downside risk we think is completely  
22 manageable; and it's our responsibility now as

1 policy makers to insure that we're conducting  
2 the basic science and analysis and  
3 constructing policies based on that that  
4 insure that the resource is developed  
5 prudently. And that it's used efficiently.

6 So when we think about why methane  
7 matters, one of the things that I want to  
8 point to is the President's Climate Action  
9 Plan, where he called out the importance of  
10 reducing methane emissions as a powerful way  
11 to take action on climate change. As  
12 Professor White pointed out, methane is a much  
13 more potent greenhouse gas than carbon,  
14 particularly in the short term. And the  
15 challenge for us is to make sure that we put  
16 that methane to good use and derive an  
17 economic growth in providing energy, rather  
18 than having it released into the atmosphere.

19 So, to that end, the President  
20 directed an interagency group to develop a  
21 methane strategy for reducing methane  
22 emissions across the economy. Within that

1 strategy that was released this past spring,  
2 the Department of Energy is very much focused  
3 on reducing methane emissions from natural gas  
4 systems; and that's what I'm going to talk  
5 about today. And the driver here is the  
6 understanding that our domestically abundant  
7 natural gas resources are going to underpin  
8 our economic growth and our quality of life  
9 for decades to come. And we're expanding our  
10 use across our economies, whether it's heating  
11 homes and buildings, industrial processes, or  
12 for large scale power generation. And we want  
13 to make sure that that expanded use of natural  
14 gas is actually a win for the climate, not  
15 just for our economy.

16 So our work is focused on looking  
17 at ways that we can accelerate reductions in  
18 methane emissions from natural gas systems.  
19 And at the Department of Energy, we're  
20 currently primarily focused downstream of  
21 production; so this is largely focused on the  
22 pipeline infrastructure that you spend a lot

1 of time thinking about. And the Environmental  
2 Protection Agency is very actively engaged,  
3 looking right now at how to best reduce  
4 methane emissions from production.

5 So the Secretary of Energy,  
6 Secretary Moniz convened a series of round  
7 tables this past spring, that were really  
8 intended to focus a conversation downstream of  
9 production, looking at natural gas storage,  
10 transmission and distribution infrastructure.  
11 And get an understanding of what the data  
12 tells us, what we know about where those  
13 methane emissions, leakages are occurring, and  
14 what efforts are underway to continue to  
15 improve what we know. And the good news is  
16 that we know quite a lot. The data on methane  
17 emissions, leakages from natural gas systems  
18 has improved greatly in recent years, in some  
19 part due to the mandatory reporting required  
20 by the Environmental Protection Agency, but  
21 also due to actions that natural gas utilities  
22 and pipeline transmission companies have taken

1 to get a better sense of where these leakages  
2 are happening, some of it driven by the types  
3 of regulations that you discuss here, the  
4 regulatory approaches that are driven from a  
5 safety perspective. So while there are always  
6 things that we can do and are continually  
7 underway, as Dr. White mentioned, to get  
8 better understanding of what leakages are  
9 actually occurring and how you true up these  
10 measurements that you do at the source of the  
11 leakage with these atmospheric measurements.  
12 So these top-down versus bottom-up analysis.  
13 Well, there's a lot of work that continues to  
14 go on to improve what we know. We know a good  
15 bit. And in this regard, I'll also give a nod  
16 to the work that Mark Brownstein and the team  
17 have been doing at EDF over the past couple of  
18 years; teaming with companies across the  
19 natural gas value chain as well as many  
20 academic institutions and national labs across  
21 the country. That has contributed greatly to  
22 the science in understanding what leakages are

1 occurring.

2                   And it's been very helpful, and  
3 that collaboration, in I think helping to  
4 center this conversation and bringing it out  
5 of conjecture or hyperbole into a science-  
6 based understanding of where leakages are  
7 happening so that we can focus our  
8 conversation on continuing to take actions to  
9 reduce those. So, thanks to Mark and the team  
10 on that.

11                   The other thing the Secretary  
12 wanted to make sure that we had a conversation  
13 around was what are the leading practices? I  
14 mentioned the voluntary actions that companies  
15 have taken as well as, as you know, from a  
16 pipeline perspective, the things that you  
17 would do to reduce leakages are driven first  
18 and foremost by public safety. So getting an  
19 understanding of how pipeline and the  
20 distribution companies commitments to safety  
21 are actually are resulting in, how is that  
22 impacting the trend of methane leakages from

1 natural gas systems?

2                   And again, the news is quite  
3 encouraging there. There's a great deal of  
4 leadership happening among companies as well  
5 as since the President's call to action with  
6 the Department of Transportation in 2011 on  
7 accelerating infrastructure, modernization and  
8 replacement efforts, I think the data  
9 demonstrates that we're seeing great results  
10 from that in reducing leakages from the  
11 systems. And I know I'm sort of preaching to  
12 the choir on this one; because this is the  
13 work that you're focused on. So leading  
14 practices and industry leadership.

15                   And then the third thing that the  
16 Secretary wanted to hear from the broad group  
17 of stakeholders that were convened is, what  
18 can DOE do to help this? And we'd like to be  
19 able to continue our work on measurement so  
20 that we can demonstrate what the trend is.  
21 Many of us believe there is a declining trend  
22 of methane leakages from natural gas systems.

1 And we want to know what we can do to focus  
2 the conversation on how we can accelerate that  
3 decline. Where can we invest smartly to  
4 accelerate the rate of leakage reduction, if  
5 you will. Because we know there are so many  
6 efforts that are already focused on doing  
7 that.

8 So some of the things that came  
9 out of the Secretary's efforts, where we're  
10 focused is, there's a request for information  
11 and comments on the possibility of doing a  
12 compressor efficiency rulemaking. There is  
13 also an effort underway with the Office of  
14 Fossil Energy, where I work; and the Advanced  
15 Manufacturing Office in EERE. We're having a  
16 workshop in Pittsburgh in November that's going  
17 to look at the technologies available and  
18 needed for leak detection and repair for  
19 pipelines. And our focus here in on remote  
20 leak detection and measurement in particular,  
21 as well as alternatives to, for example,  
22 hydrostatic testing. So you wouldn't have to



1 blow down these pipelines in order to do the  
2 testing.

3 And we're going to be taking input  
4 from the industry and stakeholders on what is  
5 next needed and what is the best type of  
6 research for the Department of Energy to be  
7 conducting in this area. And we have a new  
8 infrastructure R and D program that assuming  
9 Congress gives us all budgets that we very  
10 much hope to be able to kick off next year.

11 And all of that feeds into a  
12 partnership that we have elevated with NARUC,  
13 thanks to Chairman Honorable's leadership, and  
14 Commissioner Roberti; where we're going to  
15 look specifically at how our R and D program  
16 can contribute to improved safety outcomes and  
17 efficiency for our natural gas distribution  
18 infrastructure. And PHMSA is a partner with  
19 us in that as well. So we're very much  
20 looking to make sure that one, we know what  
21 the research gaps are and we've identified the  
22 ones where the Federal government should be

1 working; and that ultimately, those research  
2 outcomes are useful in supporting regulator's  
3 efforts to enact good sound public policy.  
4 Whether that's with a regulatory requirements  
5 that PHMSA is considering from a safety  
6 perspective, or whether that is the efforts  
7 that NARUC commissioners are making to insure  
8 continued safe, reliable, efficient and  
9 adequate infrastructure; serving our homes and  
10 communities.

11 So we're in the process of  
12 receiving inputs on where that R and D should  
13 focus. We expect by the end of the year,  
14 well, not expect, will be required in December  
15 to submit a recommendation to the Secretary  
16 and he's very eager for us to get busy on it.

17 The final thing I would say is,  
18 when we think about reducing methane leakages  
19 across the natural gas system, again, the goal  
20 here is to insure the full promise of this  
21 incredibly clean and abundant domestic fuel.  
22 But when we think about how best to do that,

1 I would offer that there are, along the  
2 natural gas value chain, there are a spectrum  
3 of levers or tools or approaches that can be  
4 brought to bear. And we're very much thinking  
5 about not a homogenous approach to that value  
6 chain. But what is the right tool and what is  
7 the right approach, depending on which piece  
8 of equipment, which operational model, which  
9 commercial or regulatory incentives that  
10 you're looking at.

11 And I raise this because as you  
12 all well know, when you work your way down  
13 from exploration and production to delivery  
14 and you look at pipeline infrastructure, the  
15 primary driver for investments in pipeline  
16 infrastructure, whether it's ongoing  
17 maintenance or new expansions; is primary  
18 driver is public safety.

19 And when we talk about public  
20 safety and how we best maintain our systems,  
21 that is informed greatly by the conversation  
22 you have here with PHMSA, and the regulations

1 that come out of PHMSA that then get  
2 implemented at a State level as you all know.  
3 And those investments happen with the approval  
4 of State regulators around the country.

5 So we're very much interested at  
6 the Department of Energy of understanding how  
7 our technology and our research can be brought  
8 to bear to inform that conversation as well.  
9 Because we think that a prime driver in  
10 achieving the maximum benefits for natural gas  
11 is reducing methane leakages; and the way you  
12 get there is thinking about safety first.  
13 Which is what you're doing here in all of  
14 these conversations.

15 So I'm happy to take questions  
16 later, and thanks for a chance to be here. I  
17 appreciate it.

18 MR. WIESE: Thank you, Paula. I  
19 think you can see the relevance of what we're  
20 talking about. Paula, I think captured it  
21 very well. I'll use that as a segue way to  
22 talk about, just for a second about Mark

1 Brownstein and invite him for his comments.

2 We've been in this conversation  
3 for a while; we've got people in the room, I  
4 know Bob Smith is here. Our R and D program  
5 has been involved in this for probably five or  
6 six years. And the EPA used to come to our  
7 forums and we would talk about these issues.

8 We funded a few projects in the  
9 area, but as I mentioned to the Committee  
10 yesterday, it just, we have an opportunity  
11 where a lot of things are coming together  
12 right now that can really kind of snowball on  
13 each other and allow us to make significant  
14 progress on multiple fronts at one time. I  
15 think Paula did a great job of capturing that;  
16 but one of the keys in her remarks were the  
17 science-based understanding. And honestly, I  
18 think we make progress faster when people  
19 start agreeing on the facts, and we get out of  
20 the hyperbolic realm. I was attracted to Mark  
21 on that basis. Mark was doing some really  
22 interesting work as far as I was concerned, in

1 terms of trying to take a science-based  
2 approach to better understanding methane  
3 measurement and monitoring. I'll let him  
4 describe the work that they were doing, but  
5 it's sort of what attracted me to him and I  
6 knew this would be an issue we'll be talking  
7 about for years. So, he was kind enough, I  
8 invited him to join the Committee and he was  
9 kind enough to volunteer.

10                   So Mark will be with us for a  
11 while and you'll get a chance to get to know  
12 him better. He introduced himself quickly,  
13 but for the record, Mark is Associate Vice  
14 President and Chief Counsel of the U.S. Energy  
15 and Climate Program at the Environmental  
16 Defense Fund, where he leads EDF's natural gas  
17 efforts. He specializes in utility-related  
18 issues, including transmission development,  
19 wholesale and retail electric market design,  
20 rate reform, power plant siting, investment.  
21 I would just say that Mark also, kind of  
22 interestingly, has a background in utilities.

1 So I think he understands the world that we're  
2 talking about on a daily basis.

3 So I'll close on my introduction  
4 to Mark, but also I apologize for saying, I  
5 forgot to mention, it would be discourteous of  
6 me not to thank Paula. Paula has been very  
7 helpful to us in trying to get other people  
8 mindful of the importance of the regulations  
9 that this group is entertaining and will  
10 entertain hopefully soon. But with Paula's  
11 help, we're really hoping to push that to you  
12 very soon. So these conversations will go on.  
13 So with no further ado, Mark, thanks so much.  
14 Appreciate it.

15 MR. BROWNSTEIN: Well, thank you.  
16 So I already moved up my train by an hour, so  
17 I will talk quickly. Cognizant of the fact  
18 that we do want to try to end on time, but if  
19 you'll indulge me for just a few minutes. We  
20 already had, you know, a great presentation on  
21 the science, so I won't dwell on this because  
22 I won't even be able to do it justice, given

1 the excellent presentation we had. But this  
2 is just a way that we often use to try to  
3 represent to policy makers what we were  
4 talking about just a moment ago.

5 Methane is far more effective at  
6 trapping the Earth's, you know, radiation than  
7 carbon dioxide itself. Now one thing, the  
8 other thing that we do know about methane is  
9 that it does decay in the atmosphere much  
10 quicker. Right? This is one of the reasons  
11 why historically we have focused as a  
12 community on reducing carbon dioxide  
13 emissions. This is the gas that the basically  
14 stays in the atmosphere over many, many  
15 generations; some of it as we now know settles  
16 out into the ocean, but much of it stays in  
17 the atmosphere.

18 Methane disappears much quicker.  
19 But for the time that it is present in the  
20 atmosphere, and I should say by the way, that  
21 methane breaks down to carbon dioxide, all  
22 right? So it's not like it disappears



1 entirely it turns into something else. But  
2 for the time that methane as methane is in the  
3 atmosphere, it is far more effective at  
4 trapping the Earth's radiation than carbon  
5 dioxide, and so therefore, right, we argue  
6 that a comprehensive strategy to deal with the  
7 climate issue requires you to address both CO2  
8 and methane emissions. For all of the reasons  
9 we talked about.

10 This is a graphic from a paper  
11 that was released in December of 2013 in the  
12 Journal of Science, and it basically is making  
13 the argument, that you need to focus both on  
14 the long term climate forcer, carbon dioxide;  
15 and what we now call the short term climate  
16 forcers, methane, black carbon, others; but  
17 primarily methane. And that you get a  
18 synergistic effect.

19 We talked a moment ago about you  
20 know, what happens when more open ocean is  
21 exposed, you know, is exposed. You lose the  
22 reflective surface of the ice, okay? You get,

1 you create more dark surfaces that absorb more  
2 solar radiation and reflect more back up into  
3 the atmosphere, right? The reason why we focus  
4 so much on methane is that methane can  
5 accelerate. Because it's a short term warmer,  
6 it can accelerate those phenomena. And so we  
7 talk about methane as a strategy to  
8 controlling the rate of warming. Carbon  
9 dioxide is ultimately controlling the total  
10 amount of warming that we see over  
11 generations. And that's the reason why we want  
12 to do both.

13 The other reason why we focus on  
14 methane is because, frankly it's relevant to  
15 the whole conversation of whether or not  
16 switching to natural gas is a good thing or a  
17 bad thing in terms of a climate strategy. My  
18 colleague, Ramon Alvarez, authored a paper  
19 with a number of his colleagues; this was in  
20 the proceedings in the National Academy of  
21 Sciences back in April of 2012, that tried to  
22 take a look at, what do methane emissions mean

1 in the context of our efforts to switch to  
2 natural gas as a strategy to reduce greenhouse  
3 gas pollution overall. And the conclusion that  
4 Ramon came to is that, because of the effect  
5 that methane has, both in the short term and  
6 the long term, relative to carbon dioxide, the  
7 argument is that leak rates across the natural  
8 gas supply system are relevant, to whether or  
9 not switching to natural gas is good or bad  
10 strategy for reducing our overall impact on  
11 the climate.

12 Ramon concluded that a leak rate  
13 of 2.7 percent is about the breakeven point  
14 between coal and natural gas, for example. If  
15 you're talking about switching from natural  
16 gas from diesel to natural gas, which is  
17 happening in many parts of the country today  
18 simply on the price differential between  
19 natural gas and diesel fuel, at least up until  
20 recently. The leak rate has to be below 0.08  
21 percent.

22 Now, there's a great deal of

1 debate right now as to what is the actual leak  
2 rate across the natural gas supply system. And  
3 what do I mean when I say the natural gas  
4 supply system? I'm really talking about from  
5 well to burner tip. So that's everything,  
6 right? That's the well, that's the gathering  
7 and processing, that's transmission and  
8 storage, that's local distribution and in the  
9 case of the natural gas vehicles, it's even,  
10 we've even taken a shot at trying to figure  
11 out what are the leak rates with the fueling  
12 infrastructure and with the vehicles  
13 themselves. Okay, and I'll talk more about  
14 that in a minute.

15 But suffice it to say, right, that  
16 EPA's current estimate is, is that the leak  
17 rate is somewhere about 1.2 to 1.3 percent.  
18 That's based on the greenhouse gas  
19 inventorying that they do. Much of that is  
20 based on reports that many of you in industry  
21 file. Now, many people think that the rates  
22 are higher than that. The basic concern is

1 that we don't, other than these estimates that  
2 EPA have done, we don't really have good data,  
3 and so one of the things that we embarked on  
4 two years ago was a project to try to get  
5 better data. Paula alluded to this, but  
6 basically, we've got sixteen different studies  
7 that are in process. Some of them have  
8 already been published, some of them are well  
9 on their way to being published and they look  
10 at each point in the value chain. Production,  
11 gathering and processing, transmission and  
12 storage, local distribution and as I said, we  
13 even have a study now looking at vehicles and  
14 fueling infrastructure.

15 Each one of these studies is being  
16 led by a major research university, so in this  
17 case, University of Texas, here, Colorado  
18 State University, here, Colorado State  
19 University, Washington State University. This  
20 one is University of West Virginia. In each  
21 case, we were partnering with relevant players  
22 in that part of the business. So for example,

1 on local distribution, we've been working with  
2 our friends at National Grid, with Xcel, here  
3 and transmission and storage, Kinder Morgan  
4 has played a role. And what we're doing is,  
5 is we're getting access to sites and we're  
6 doing basically bottom-up measurement. And  
7 each study is being done using a protocol that  
8 is peer reviewed by science, by scientists.  
9 The results, the interpretation of the results  
10 are also peer reviewed. All of the results  
11 wind up in papers that are published in peer  
12 reviewed scientific journals. So we're trying  
13 to keep this as straight down the middle, as  
14 fact based as possible.

15 At the same time, we understand  
16 the bottom-up studies, going out to actual  
17 facilities and doing measurement may not give  
18 you the full picture. You're only as smart as  
19 what you know. You could only be as effective  
20 in understanding the footprint of an industry  
21 based on bottom-up measurements when you have  
22 a reasonable understanding of all the places

1 where leaks could occur. But to gut check our  
2 work, we have also been doing overflight work,  
3 where we outfit aircraft with methane sensors  
4 and they will fly over a basin and we use  
5 these top-down measurements to compare to our  
6 bottom-up measurements. And sure enough, we  
7 see a difference.

8           When we do the overflights, we see  
9 leak rates, you know, in the 2 to 4 percent  
10 range; where the bottom-up might suggest a  
11 leak rate closer to what EPA's estimating. So  
12 what accounts for the difference? How much of  
13 that is difference in methodology? How much  
14 of that is overflight's capturing sources that  
15 the bottom-up studies don't capture? We're in  
16 the process now of working with NETL in what  
17 we call a synthesis paper; taking a look at  
18 all the data that we've collected, both from  
19 the overflights and from the bottom-up work to  
20 better understand why those differences in  
21 readings occur. And to try to create a  
22 synthesized view of what the overall emission

1 rate across the region would be.

2 We expect that most of these  
3 papers, if not all of them, will be submitted  
4 for publication by the end of this year and  
5 therefore hopefully, all of them will be out  
6 in the public domain within the first or  
7 second quarter of next year.

8 At the same time, we are also  
9 looking at what we currently know about  
10 methane emissions, where they come from and  
11 the technologies that are available to address  
12 it. Our view is that yes, we can always get  
13 better data, but we already know enough to  
14 know that there are opportunities to reduce  
15 emissions across the system, even if you  
16 accepted EPA's, what I'll call low end  
17 estimate of 1.2 or 1.3 percent. That's  
18 telling us that we still have work to do, if  
19 we want natural gas to be a low carbon  
20 alternative to oil or coal.

21 And so, that begs the question,  
22 well what can we do? So we commissioned ICF



1 International to do a study in which they  
2 looked at a range of reduction opportunities  
3 again across the industry, the technologies  
4 that were currently available. We asked them  
5 to make no heroic assumptions about cost of  
6 technologies or effectiveness of technologies.  
7 They worked with over forty different  
8 participants in industry to ground truth their  
9 assessment of the technologies and the cost.  
10 And what you have here is a cost curve. This  
11 is in dollars per ton of CO<sub>2</sub>e reduced. So  
12 that's the metric. The width of the bar is  
13 the magnitude of the opportunity. And I'm  
14 sorry it's a little hard to read, but for  
15 example, this wedge here is substituting high  
16 bleed pneumatic devices for low bleed  
17 pneumatic devices.

18 Here, this has to do with going  
19 from wet seal compressors to dry seal  
20 compressors. And what you notice is, is that  
21 for some of these opportunities, there's a net  
22 payback. In other words, the gas that you're

1 saving at four dollars an Mcf, make it  
2 profitable to engage in these reduction  
3 opportunities. These actually imply that  
4 there's some additional cost to industry. But  
5 we would argue that this is marginal at cost  
6 to industry. The ICF study concluded that we  
7 could make a 40 percent reduction in methane  
8 emissions across the natural gas supply chain,  
9 well to burner tip. 40 percent reduction for  
10 a penny per thousand cubic feet of gas  
11 reduced. A penny. Now that's not to say that  
12 any one company's compliance costs would be a  
13 penny. But if we're sitting here as policy  
14 makers, if we're thinking about here what our  
15 cost effective opportunities to solve the  
16 problems that we were just talking about, this  
17 is pretty damn cheap.

18 Now I will note that some of the  
19 most expensive stuff you can do in this  
20 panoply of, is reducing leaks on local  
21 distribution. So if you were doing this in  
22 step ways, step fashion order, you would spend

1 much more of your time early on the production  
2 side, on the gathering and processing side on  
3 the transmission and storage side; the more  
4 cost effective opportunities are there. But  
5 even still, changing out or tightening up or  
6 metering and regulation stations yields a cost  
7 of \$41 per ton of carbon reduced. That's  
8 actually pretty cheap when you're talking  
9 about carbon abatement.

10 So local distribution is not the  
11 first thing you would do, if you're talking  
12 about reducing leaks across the natural gas  
13 supply chain. But if you're taking a step  
14 back and you're looking at all of the things  
15 that we have to do to get to a low carbon  
16 economy, it's still a pretty good bet.

17 For that reason, we have spent a  
18 lot of time thinking about how to do a better  
19 job of understanding emissions from across the  
20 natural gas supply chain including local  
21 distribution. I should say parenthetically  
22 that one of the things that we hope our

1 studies do in addition to gaining greater  
2 insight into the total amount of emissions  
3 across the natural gas supply chain, is the  
4 studies are also helping to pioneer new ways  
5 of monitoring methane emissions, which are  
6 good, I think, not only for the science, but  
7 we hope ultimately lead to process  
8 improvements in industry itself.

9 Better measurement techniques lead  
10 to better management techniques. We often  
11 say, you can't manage what you don't measure;  
12 and so improving measurement is a way to  
13 improve management. The work that we're doing  
14 now with Google is an example of that. We  
15 have outfitted three of their street view cars  
16 with methane monitoring technology. And we  
17 have been driving city streets monitoring  
18 methane emissions across utility systems.

19 I'll quickly walk you through.  
20 This is a screenshot of the methane maps that  
21 we have produced to date. You can see here,  
22 it's a little hard to see, this is Boston.

1       Staten Island got cut off here. This is  
2       Indianapolis, so the first thing that I can  
3       tell you is, Indianapolis is an example of the  
4       system that has spent the last twenty years  
5       investing in replacing its older cast iron  
6       pipe. They're largely done. As a  
7       consequence, when we drove their system, we  
8       got four leaks. Boston, older infrastructure,  
9       much bigger challenge. I should note that,  
10      both national grid and regulators of  
11      Massachusetts are acutely aware of this and  
12      taking steps to address it. But it's a big  
13      challenge. Older system, more leaks. The  
14      good news is, is that we know that with  
15      investment we can address this problem.

16                 The second point I make about  
17      these maps is, is that we not only worked to  
18      map leaks; that in and of itself is not  
19      particularly innovative. We know that the  
20      industry already does this. The value that we  
21      think we add with this work is, is that we've  
22      worked with Colorado State University to

1 develop an algorithm that helps bin the leaks.

2 And why is that important?

3 Because our view is, is that aside from  
4 knowing the inventory of leaks, if we can do  
5 a better job of sizing the leaks, right, we  
6 can begin to think in a more sophisticated way  
7 about where to deploy limited capital dollars.  
8 If you only have so much money that you can  
9 spend in any given year for leak repair and  
10 replacement, number one, by all means, let's  
11 fix the ones that are immediate safety  
12 problems. Utilities already do that. But to  
13 the extent that you can go beyond simply a  
14 safety approach, focus your resources on those  
15 leaks which are greatest; and thereby work  
16 down your inventory getting the, pardon the  
17 expression, the biggest bang for the buck.

18 We have worked very hard to  
19 express this data, not in terms of safety, but  
20 in terms of climate. So for example, if you  
21 went to this site and you clicked on what high  
22 means, you would learn that a high emission,

1 here's an example of one. A red dot. The  
2 emissions coming from this site is the  
3 equivalent of driving a car more than 9,000  
4 miles every day. That's the greenhouse gas  
5 pollution equivalent of what that red dot  
6 means. The yellow dots are between 9,000 and  
7 1,000 miles, I'm sorry. The orange ones are  
8 9,000 and 1,000 miles, the yellow ones, is  
9 basically the equivalent of driving a car  
10 between 1,000 and 100 miles a day. So even the  
11 quote-unquote "small leaks" represent big  
12 greenhouse gas pollution reduction  
13 opportunities.

14 The map, you can click down and  
15 you can see with specificity where the leaks  
16 are and again, the sizing. So again, if we  
17 were advising National Grid on where to devote  
18 their first dollar in fixing a leak, we'd say  
19 let's get after this one over here. And  
20 again, the whole idea behind these maps is  
21 first of all, to raise public awareness. We  
22 often find that when we're working with public

1 service commissioners, they're challenged by  
2 the fact that they get folks coming into rate  
3 cases who say, hey, why are we putting any  
4 money into the gas system at all? I'm senior  
5 on a fixed income, I'm a large commercial or  
6 industrial customer; I don't want to spend one  
7 dollar more on rates than I have to. Our view  
8 is that you can't ask the public to invest in  
9 new infrastructure if they're not aware that  
10 there's a problem to be solved; so part of the  
11 reason for these maps is to raise awareness so  
12 that people understand the challenge and also  
13 the opportunity that's in front of us. But  
14 then also to use this technique to help the  
15 utilities develop strategies that are very  
16 easy to explain to customers as to why we're  
17 devoting money here as opposed to here or  
18 here.

19                   And so again, the whole idea  
20 behind our work is yes, let's better  
21 understand the magnitude of the problem.  
22 Let's understand the opportunities that are in



1 front of us, but let's also create some  
2 methodologies that can help us do this in the  
3 most cost effective way possible. Thank you.

4 MR. WIESE: Okay, thank you very  
5 much, Mark. Trying to be mindful of the need  
6 for a break, but I think what we'll do is with  
7 your permission, we'll go through at least, we  
8 have three quick presentations from  
9 stakeholder groups, starting with Paul  
10 Roberti. And with your permission, we'll try  
11 to go through those quickly and then take a  
12 break. It seems like logical and we'll come  
13 back and quick questions for people before we  
14 move on in the agenda. But thank you all.

15 So if I can, I'll introduce Paul  
16 Roberti to those of you. I don't have a  
17 formal bio for Paul, but I've known him for  
18 some time. Paul's a Commissioner from the  
19 State of Rhode Island, but as importantly to  
20 this committee, Paul is the head of the  
21 Pipeline Safety Task Group at the National  
22 Association of Regulatory Utility

1 Commissioners. So Paul and I run into each  
2 other all over the place. I know Paul has  
3 worked with Colette for a very long time and  
4 some of the other Commissioners on the  
5 committee on these issues, and I welcome him.  
6 Thank him for coming.

7 MR. ROBERTI: Good morning.  
8 Thanks, Jeff for that introduction. It's  
9 really good to be here today. Again, my name  
10 is Paul Roberti; I'm a Commissioner with the  
11 Rhode Island Public Utilities Commission, and  
12 I serve as Chair of the National Association  
13 of Regulatory Utility Commissioners, their  
14 subcommittee on pipeline safety, and I'm  
15 speaking in that capacity today.

16 As you know, much of the pipeline  
17 safety work at NARUC that we've accomplished  
18 over the last five or six years is because of  
19 Colette's leadership and passion for this  
20 issue. And I think we have accomplished a  
21 great deal in the last five years, and I  
22 personally want to thank her for all that she

1 has done for the organization in bringing this  
2 issue front and center in prime time before  
3 the organization.

4 CHAIR HONORABLE: Please forgive  
5 my interruption, but I would have to share  
6 that with you, because you've been an  
7 incredible, incredible spokesman for the  
8 Association and advocate. Please forgive the  
9 interruption, but I had to share that with  
10 you.

11 MR. ROBERTI: Thank you. Now  
12 before I get started, I should probably  
13 provide a little bit of background on NARUC as  
14 an organization. We are a national  
15 association representing more than two hundred  
16 utility regulators in all fifty states. Our  
17 members are responsible for assuring that  
18 consumers pay fair, just and reasonable rates  
19 for safe and reliability service. We are a  
20 nonpartisan, consensus-driven organization  
21 that brings together our members so that we  
22 can educate and share best practices between

1 and amongst the fifty states.

2 With PHMSA, NARUC, NARUC members  
3 play a key role in insuring natural gas  
4 companies deliver their product safety to  
5 consumers. The majority of our state pipeline  
6 safety inspection work force personnel are  
7 employed by the respective public service  
8 commissions. Through our meetings and  
9 committees, NARUC gives staff and  
10 commissioners across the country a venue to  
11 share best practices and lessons learned so  
12 that we can assure that the utilities we  
13 regulate are putting safety above all else.

14 We share with PHMSA the mantra of  
15 safety first; but there are environmental  
16 benefits to running a safe and efficient  
17 system. For the safety inspectors, their core  
18 responsibility is making sure that the  
19 regulated companies are following applicable  
20 requirements and constantly checking for leaks  
21 throughout their systems. Having spent time  
22 with inspectors and commissioners over the

1 last several years in my role as Chair of the  
2 subcommittee, I know personally how committed  
3 we are to safety and insuring that the  
4 utilities we regulate are operating a safe and  
5 reliable system.

6 No one understands more than our  
7 inspectors that leaks in general are  
8 problematic; but we also understand that not  
9 all leaks are created equal. For instance,  
10 the leak in a densely populated urban setting  
11 is very different and poses a much greater  
12 risk than a leak in a cornfield. So when it  
13 comes to methane emission reductions, we  
14 believe that safety programs can and do have  
15 an environmental benefit on the natural gas  
16 system as a whole. After all, a safe system  
17 is a clean and efficient one.

18 Over the last several years,  
19 nearly all states have focused on accelerating  
20 the pace of pipeline replacement. Thirty-  
21 eight states now have some kind of rate  
22 mechanism encouraging utilities to proactively

1 replace and repair outdated infrastructure.  
2 And those that do not already have replaced  
3 their outdated pipes or they have other  
4 approaches to doing so. Either way, these  
5 programs provide utilities with dedicated  
6 revenues that are being used to target the  
7 highest risk segments of the system. This  
8 insures that the leaks with the potential to  
9 cause the most damage are fixed at the outset,  
10 while providing enough resources to replace  
11 other sections as needed. These programs are  
12 an important element of our safety programs,  
13 but the onus is still on the utilities to  
14 operate and manage their systems safety, no  
15 matter what kind of regulatory mechanism is in  
16 place.

17 I am confident that we are making  
18 progress at replacing the outdated  
19 infrastructure, which I have said, translates  
20 into environmental benefits. NARUC is also  
21 involved in some Federal efforts aimed at  
22 reducing methane emissions from the pipeline

1 system. As we heard from Dr. Gant this  
2 morning, President Honorable and I also have  
3 participated in the White House-sponsored  
4 roundtables on methane emissions from  
5 pipelines. We expressed to them what we are  
6 expressing to you today; safety is job number  
7 one. NARUC members are economic and safety  
8 regulators, but again, the more outdated pipe  
9 we replace, we will inevitably make the system  
10 cleaner and more efficient.

11 An important outgrowth of these  
12 discussions was a new arrangement we signed  
13 with DOE on natural gas infrastructure  
14 modernization. The partnership is still in  
15 its very early stages, but the concept is for  
16 DOE to provide and fund resources, grants,  
17 workshops and other forms of technical  
18 assistance to NARUC and its members, so that  
19 new technologies and practices for measuring  
20 system leaks and making repairs can be put to  
21 work. There's not a lot more that I can offer  
22 on that front, except to say that we are

1 looking forward to working with DOE on what I  
2 think is going to be a very important and  
3 productive initiative.

4 To conclude, going forward, I see  
5 NARUC, PHMSA and our inspectors at the  
6 National Association of Pipeline Safety  
7 Representatives continuing our focus on the  
8 safe and reliable operation of the nation's  
9 natural gas infrastructure. NARUC and State  
10 agencies have been at the forefront of safety  
11 regulation for decades and all of our members  
12 are pursuing policies aimed at replacing the  
13 highest risk pipes first. On behalf of NARUC,  
14 thank you for the opportunity to speak to you  
15 today, and I certainly look forward to  
16 answering any questions you may have.

17 MR. WIESE: Thanks so much, Paul.  
18 Paul is actually a good example, between Paul  
19 and Colette, I can't think of two  
20 Commissioners I would rather work with.  
21 Honestly. I have worked with both for a long  
22 time. I think the work that we have just been



1 talking about is going to rely on us working  
2 together and having good partnerships. And so  
3 strengthening the relations as these two have  
4 done for the past five-plus years, is going to  
5 be critical to our success.

6 So, with your indulgence, we've  
7 got two more. I have asked both presenters if  
8 they would be succinct, so that we can get to  
9 you a break and come back for some Q and A.  
10 But maybe we'll start, in deference start to  
11 Sue. Just ask Sue to talk a little bit about  
12 what gas distribution is doing in this area  
13 and then Chad, I've asked to speak a little  
14 bit about what gas transmission is doing, just  
15 to kind of queue it up. So Sue?

16 MS. FLECK: Thank you, Jeff. Sue  
17 Fleck with the Gas Committee. The natural gas  
18 distribution companies have been doing a great  
19 deal around emissions reduction, not on  
20 purpose. It's about safety and driving  
21 safety. But certainly the voluntary efforts  
22 through the EPA STAR programs for more than

1 decade have had many companies engaged  
2 voluntarily doing things above and beyond  
3 pipeline replacements, to drive down the  
4 amount of gas that's being emitted into the  
5 atmosphere accidentally. But some of the  
6 things that we are really focused on going  
7 forward around, you know, coupling safety with  
8 emissions reduction is modernizing of  
9 distribution systems. We've talked about it  
10 on many different forums, but it's really all  
11 about getting that older leaky pipe out of the  
12 ground. When I look at the maps that Mark  
13 just showed, Boston versus Indianapolis, I  
14 have Indianapolis envy. I want Boston to look  
15 like that. And when I look at the maps, I  
16 know those are cast iron mains and I know that  
17 they're capturing little leaks at every joint.  
18 I wasn't surprised to see it; I'm very  
19 disappointed, but certainly we're all driving  
20 the modernization to improve safety and you  
21 get that great emissions reduction benefit  
22 along with that safety improvement.

1                   In addition to that, we are laser  
2                   focused on damage prevention programs across  
3                   the industry. It's something that we've  
4                   talked about in these committees over and over  
5                   again. Every damage, I mean, any damage  
6                   releases a lot more gas to the atmosphere than  
7                   an unfortunate leaking cast iron joint. So  
8                   you got to drive damages down to nothing, and  
9                   we're doing the best we can around that.  
10                  We're working on new and increasing methods to  
11                  reduce the amount of gas lost during blow-  
12                  downs. As we replace these systems, the old  
13                  pipes have to be blown down for the new pipes  
14                  to get in. So we're using draw-down  
15                  compressors and trying to drive some research  
16                  in that area to find other ways to capture  
17                  that gas and put it back in the pipe. We're  
18                  improving on our directed inspection and  
19                  maintenance programs at gate stations and reg  
20                  stations. We're using composite wrap, we're  
21                  looking at using composite wrap to improve  
22                  pipeline defects rather than blowing down the

1 system to perform a permanent repair. So  
2 we're looking at ways to do that. Obviously,  
3 getting rid of the high bleed pneumatic  
4 devices. The bang for the buck there is  
5 pretty tremendous and I think a lot of  
6 companies on the distribution side have done  
7 that through their voluntary efforts in the  
8 EPA STAR Program over the years. So we've  
9 already kind of gotten pretty far ahead on  
10 that.

11 Repairs. We can't replace all the  
12 pipe. I can't replace all that pipe you saw  
13 in my map in five years or ten years; it's  
14 going to take me twenty years, so in that  
15 interim period, we're going to use some of  
16 this volumetric measurement on leaks to figure  
17 out which ones to repair in the meantime.  
18 We're going to try to do that really well.  
19 And we're hoping to be able to get to move  
20 forward with opportunities to line pipe  
21 instead of having to replace it all. When we  
22 talk about those larger diameter cast iron

1 mains that are 24 inch, 48 inch; these big  
2 gigantic pipes. Replacing them may not be the  
3 right solution, but if we're going to go with  
4 lining methodologies then we need to find some  
5 way to be able to report that differently and  
6 get credit for those efforts where the  
7 existing EPA reporting programs would still  
8 count that pipe as legacy pipe, as cast iron  
9 or bare steel or whatever.

10 So I think there's some real  
11 opportunities here to continue to modernize  
12 with replacement programs where appropriate,  
13 repair, until you can get that replacement  
14 done. Drive research to help us get new  
15 lining methodologies, better blow-down control  
16 methods, and better measurement of leakage, so  
17 we know where to point our resources. And  
18 then to continue with our inspection and  
19 maintenance programs and damage prevention  
20 programs.

21 So that's kind of really, I'm  
22 talking fast, I've got my New York hat on

1 today. But what I'm trying to indicate here  
2 is distribution companies are doing a lot,  
3 have been doing a lot, and will continue to do  
4 a lot to drive safety; and along with safety,  
5 you get that great environmental benefit, so  
6 thank you.

7 MR. WIESE: Thank you.

8 MS. FLECK: Was that short enough?

9 MR. WIESE: Yes, that was great.  
10 Excellent. Chad?

11 MR. ZAMARIN: Thanks, Chad Zamarin  
12 with Cheniere Energy. I'll try to be even  
13 shorter. Because I think one key message at  
14 least that I've seen in the transmission  
15 industry is that a targeted approach is  
16 important. So I think that the presentations  
17 earlier about data is key. What we see when  
18 we look at a transmission system is, that  
19 there is a less than 0.01 percent leakage and  
20 emission rate across transmission volumes.

21 Leaks are down over 94 percent  
22 over the last thirty years, so the work that's

1       been done that the PHMSA team and the industry  
2       has been partnered on, it has been effective  
3       and when you take a step back and look at the  
4       transmission industry, we see that the vast  
5       majority of remaining emissions come from the  
6       compressor stations. It's from either  
7       operational blow-downs that, if you've ever  
8       seen one, will put to shame any leak that  
9       you're going to try to attack. It's really  
10      remarkable, actually, the amount of gas that  
11      we have to vent at times to do certain  
12      activities.

13                       So when we think about  
14      regulations, it's a different facet to  
15      consider that, for example, we're going to be  
16      spending a lot of time on the testing of  
17      legacy pipelines. And to pressure test a  
18      pipeline often requires a blow-down or  
19      evacuation of that pipeline, and that's a  
20      significant emitter, much more impactful than  
21      anything else that happens along a pipeline  
22      system. And key to keep that in mind as we

1 think about activities that we're going to be  
2 driving from a regulatory perspective.

3           So for us, the two main factors,  
4 so of that 0.01 percent of emissions that  
5 occur more than 70 percent of that is due to  
6 operational blow-downs and exhaust emissions  
7 from compressors. So if we focused on two key  
8 areas, it's how can we better, more  
9 efficiently operate transmission systems to  
10 reduce evacuations of pipelines and how can we  
11 continue to improve the emissions, controls  
12 and efficiency of our compressor fleet. By  
13 far, the most impactful.

14           So with that, I will also mention  
15 just one last thing. The interstate  
16 transmission companies are going to be putting  
17 out a guideline. There's a standard referred  
18 to as a Directed Inspection and Maintenance  
19 Program, an EPA recognized methodology for  
20 targeting your investment and activities to  
21 better reduce emissions and while most  
22 operators do that already, one of the efforts



1 that are underway inside of INGAA is to put  
2 out a formal guideline that will help  
3 operators to understand the data, target the  
4 activity and better reduce emissions. That's  
5 it, thanks.

6 MR. WIESE: Very good, Chad.  
7 Thanks so much. And then you, Sue. One of  
8 the things I'm hoping, by queueing this  
9 discussion up and inviting your questions in  
10 just a minute, Colette and I have conferred,  
11 by the way, and decided that if you have to  
12 take a break, you're going to have to take it  
13 when we're going to go to Q and A, wrap this  
14 panel up before we take a formal break. And  
15 she is the boss, so I'm listening.

16 But one of the things that I'd  
17 like to continue the conversation in future  
18 meetings, I would like your advice on how to  
19 focus the conversation. Because listening to  
20 Chad and listening to Sue and others here,  
21 it's the role of technology. What's the role  
22 of technology? And some of you have heard me,

1 my soapboxes were really grossly  
2 underinvesting in that. You know, we really  
3 need to step up our game in R and D. The  
4 technology can be part of the solution that  
5 leads to a far more efficient outcome?

6 I agree with you entirely the  
7 opportunities instead of blowing down fifteen  
8 miles of pipe how to capture that, how to  
9 reduce that impact is important. So let's at  
10 least one of the topics we'd like to talk  
11 about in the future is the role of technology  
12 and how can we kind of amp that up? Thank  
13 you.

14 CHAIR HONORABLE: Thank you, Jeff.  
15 And I'd like to thank all of our presenters.  
16 Wonderful, wonderful presentations. A lot of  
17 great information. Thank you, Professor. I  
18 made lots of notes. All right, now's your  
19 time. Please put your tent cards up if you  
20 have questions for any of the speakers. And  
21 I see Don can't wait. Go right ahead, Don.

22 MR. STURSMAN: Surprise, surprise,

1 ain't it? Don Stursma, Gas Committee. As an  
2 Iowa farm boy, I can attest that the digestive  
3 systems of cows and horses have gaseous  
4 byproducts. But whenever I hear animal  
5 contributions to methane, raised as a climate  
6 change issue, there's, the first question I  
7 have, which I need to set up a little bit; is  
8 that for much of the history of land life on  
9 Earth, we've had vast herds of herbivores  
10 roaming the planet.

11 I know enough about dinosaur  
12 digestion now, I know the Jurassic was a very  
13 noisy, smelly place. So is there any, has  
14 anybody attempted to figure out whether  
15 domesticated animals produce a methane level  
16 that's any way outside of the normal  
17 background level for having herbivores on the  
18 planet?

19 CHAIR HONORABLE: Sounds like a  
20 professor question.

21 DR. WHITE: It's a great question.  
22 And it's always a struggle to figure out

1 what's natural and then what is anthropogenic  
2 on top of that. The short answer is that  
3 globally, there's a lot of domesticated  
4 animals; and when we add, we've added large  
5 numbers. That has, and when we add those  
6 domesticated animals, we certainly add little  
7 methane producers.

8           Probably the question then would  
9 be how many methane producers have we removed  
10 from the system, in the natural sense; and  
11 that's a harder number to get a handle on.  
12 But we do know that when you add cows and when  
13 you add other ruminants, you will add methane  
14 to the atmosphere. So the short answer to your  
15 question is we know we're adding more methane.  
16 We don't, the balance between the loss of the  
17 natural methane producers and the growth of  
18 the, those that we use for food, that's a  
19 really interesting question. I don't think we  
20 know the answer to that.

21           CHAIR HONORABLE: All right, Rich,  
22 and then Jeff.

1 MR. WORSINGER: Thank you. Rich  
2 Worsinger, City of Rocky Mount, representing  
3 APGA. Excellent, excellent presentations;  
4 thank you so much. I think just as I looked  
5 around the audience, you had captured  
6 everybody's attention. Obviously these are  
7 topics we all read about and hear about and it  
8 was great to have, especially for you  
9 Professor, a down to earth explanation of it.  
10 Thank you.

11 Just two comments. The public gas  
12 industry typically repairs all the leaks that  
13 we encounter, whether they are Class 1, Class  
14 2, or Class 3 leak. We've just learned  
15 through the years that it's best for our  
16 customers. Even if there's that Class 3 that  
17 we just have to monitor every six months, we  
18 typically repair them. So we're ahead of the  
19 curve I think, on that.

20 Second thing. Just to I guess, a  
21 point of information. Lost and unaccounted-  
22 for gas, as we call it in the gas industry,

1 that does not mean its gas leaks. A lot of  
2 that is simply the accounting difference  
3 between the large meter, large sophisticated  
4 meter at our supply point, our gate station;  
5 and then the various meters at our customer  
6 homes, which are not as sophisticated. A lot  
7 are not temperature compensated.

8           And one other thing that DOT can  
9 help us with, I believe when we report our  
10 losses, sometimes they are not a loss; it's  
11 simply the difference, the accounting  
12 difference between one year you had what  
13 appears to be a large loss. The difference  
14 between when you're billed from your supplier  
15 and then the month later when you bill your  
16 customers, and sometimes it appears you make  
17 gas. It just balances everything out. But if  
18 I'm correct on this, DOT, if we are reporting  
19 it as a negative loss, has us report that as  
20 a zero. And that could help, if you allowed  
21 us to actually report that as a positive  
22 number, it will indicate that it's not as

1 large a number as you think it is.

2 CHAIR HONORABLE: Thank you.  
3 Jeff, and then Cheryl.

4 MR. WRIGHT: Jeff Wright, FERC.  
5 Dr. White, that was a great presentation. One  
6 thing stood out in listening to Dr. Gant's  
7 presentation, you know, it articulates the  
8 administration's position and where we're  
9 going. What tantalized me at the very end,  
10 you said, what is a sensible energy policy? Do  
11 you have, I mean, in a very brief time, do you  
12 have a couple idea there?

13 DR. WHITE: No. No. Policy is  
14 not my area of expertise. I can, as a  
15 scientist, I can help provide policy makers  
16 with the facts and information they need; and  
17 I hope they use those facts and information.

18 I think though, that the, one of  
19 the problems we have is that we, and we always  
20 seem to like to blame the boogeyman, you know?  
21 Ebola's a nice example of that. I don't see,  
22 a hundred people a day die from the flu. So

1 there are big problems and then there are the  
2 flashy problems. And I think the argument  
3 today seems to be about flashy things, the  
4 bright, shiny objects. And so I guess my one  
5 policy contribution would be, let's go back to  
6 the basics and let's actually look at what's  
7 really out there. And then try to do  
8 something about that. Privately, maybe I can  
9 unleash a whole bunch of stuff on you, but as  
10 a private citizen, but no.

11 CHAIR HONORABLE: Professor, your  
12 restraint is quite admirable. We don't see  
13 that too often around here. Cheryl?

14 MS. CAMPBELL: Cheryl Campbell  
15 with the Gas Committee. Not a question so  
16 much as probably more of a statement. First  
17 of all, I just cannot agree more that the gas  
18 in the pipes is the best place for it. That's  
19 my favorite place for it. And we talk about  
20 that a lot internally.

21 We've worked a lot with EDF and  
22 others on the data side; we're very interested



1 in getting the numbers right and understanding  
2 that information so that we can all make the  
3 right decisions. So any work that we can  
4 continue to do to get the data and understand  
5 the data correctly, we're very much interested  
6 in collaborating and participating with.

7 And Jeff, we're very interested in  
8 more technology to help us continue; so I  
9 appreciate PHMSA and others trying to, you  
10 know, push that R and D and that technology  
11 side. Frankly, I've been known to say  
12 regularly, I need technology to help save me  
13 in a couple of areas, and I think this is one  
14 of them that we're very interested in. But I  
15 also want to throw one comment out that's just  
16 a perspective for Xcel Energy. We're a combo  
17 utility and we have limited resources. I mean,  
18 we talked about that before. And when we look  
19 at our carbon footprint, less than 1 percent  
20 of our carbon footprint comes from our gas  
21 systems. And we are a top ten gas utility in  
22 the U.S. on the basis of size. So we do spend

1 a lot of time focused on our other issues  
2 around carbon footprint and have done a lot in  
3 the last five or ten years to reduce that,  
4 continuing to do that going forward. And we  
5 do participate in EPA Gas STAR and all those  
6 voluntary programs.

7 I think we've made a lot of  
8 progress, but we do still struggle with that  
9 dynamic, right? Of the vast majority of our  
10 carbon footprint on our issues are not related  
11 to our gas systems at all. And I would suspect  
12 that most other combo utilities have similar,  
13 have a similar balance.

14 CHAIR HONORABLE: Thank you.  
15 Carl?

16 MR. WEIMER: Carl Wiemer, Pipeline  
17 Safety Trust. I think one of the gorillas in  
18 the room that I get addressed with all the  
19 time and I'm going to try to put Dr. White on  
20 the spot a little bit. Is we've heard a lot  
21 of things. The presentations were great. I'm  
22 glad to hear that all the utilities are doing

1 what they can to keep the gas in the pipe;  
2 that's important.

3 EDF's doing some great work. But  
4 I know even EDF has come under criticism from  
5 others within the climate discussions about if  
6 all we're talking about is keeping the gas in  
7 the pipe, we're kind of ignoring a larger  
8 problem which Dr. Gant addressed about  
9 insuring the full promise of our fuels. Well,  
10 the full promise at this point seems to be, I  
11 was intrigued with your map to begin with,  
12 where you showed India and China kind of in  
13 the dark. Well, the full promise right now  
14 seems to include export of these fuels to  
15 light up China and India. And I wondered if  
16 you had an opinion about the wisdom of that.

17 DR. WHITE: Okay. Can't get me to  
18 step in something here, huh? Yes, as a fellow  
19 human being on the planet, I find it very  
20 difficult to say to India and China, you  
21 cannot industrialize. And industrialization  
22 today, given the technology we have, is

1 largely driven by fossil fuels. So just from  
2 a, I guess a fairness point of view, I would  
3 argue that it's very difficult for me to  
4 understand how we could do that. How we could  
5 limit that. On the other hand there's  
6 certainly capability of developing alternative  
7 technologies, being a leader in that; and then  
8 exporting those technologies. We should be an  
9 exporter of wind technology and solar  
10 technology, etc. Other countries are doing  
11 that and making a lot of money doing it. And  
12 we're not. So I think we're leaving some  
13 money on the table there in terms of industry.

14 But the basic answer to your  
15 question is that for, I can't see a good  
16 strong reason for saying no we should not  
17 export that, other than, as you folks know,  
18 these are limited resources and there's, some  
19 strategic reasons for keeping what we have.  
20 Or at least keeping a lot of what we have, in  
21 order to keep our energy future brighter and  
22 safer and easier to handle. Because we all

1 know the disruptions can handle, so. There's  
2 a couple of sides of that, but. Does that  
3 answer your question?

4 MR. WEIMER: Partially.

5 MR. WIESE: To be continued. Now,  
6 we're going to have a lot more discussions on  
7 this and be happy to have Dr. White back. I  
8 found that fascinating as well and I  
9 appreciate your contributions. I know we have  
10 one more comment. I'm stepping in temporarily  
11 as the Chair to acknowledge our friend Rick  
12 Kuprewicz for his question.

13 MR. KUPREWICZ: Friend, okay. A  
14 couple observations, excellent discussions and  
15 presentations this morning I fully support  
16 those. A couple references I think to kind of  
17 put everything in perspective from a public,  
18 and the public has a hard time understanding  
19 that.

20 First of all, it's not illegal to  
21 leak natural gas. End of subject. It's not  
22 even illegal to leak hazardous leaks in

1 natural gas, okay? And so that's kind of the  
2 mind frame that you have to kind of put  
3 everybody on all sides of the fence on.  
4 Because to be fair to industry, some are way  
5 ahead of this curve; others are trying to get  
6 up to it. So it can be a real challenge if  
7 you're trying to have that debate. A lot of  
8 this was uncovered in terms of the hazardous  
9 leaks, the many years of discussion and the  
10 development of DIMP regulation.

11 And finally, the definition of a  
12 hazardous leak in that regulation was a, it  
13 didn't just happen. There was a lot of  
14 interaction that was going on there, a lot of  
15 push back, give; and even today, there are  
16 operators despite the great advances made in  
17 the DIMP efforts, who still don't map their  
18 hazardous leaks. And I think they're rare, I  
19 hope they're rare; many of others in the room  
20 here are probably way ahead of that curve. So  
21 that's a big place that you have to move,  
22 whether you be the public, PUC, a rate payer,

1 or a company.

2           The other thing, and I've said  
3 this many times, is in all this technology  
4 discussion and all this, hoping for a magic  
5 bullet? One, safety isn't free nor is it a  
6 blank check to go ask for two or three billion  
7 dollars and you can't defend it. So as a  
8 public person, I have to just kind of watch  
9 everybody. I live in Microsoft Country and  
10 they always live on software's great. Okay.  
11 Well, why is it not bug free? And they're  
12 making great, they're making billions of  
13 dollars, so I'm not taking that away from  
14 them. So be careful in trying to set up the  
15 public that you have this magic bullet. Given  
16 the challenges of you'd need to understand  
17 where your problem is and whatever.

18           I really like the discussions I  
19 hear again, I like to think of a success story  
20 involving many people over the years in the  
21 DIMP of the collaboration and the  
22 constructiveness. I cannot emphasize the

1 importance of trying to solve a problem  
2 working together; knowing that no one solution  
3 will get you there. You've got to watch for  
4 what I call junk science; and I didn't see any  
5 of that today. And I'm not making those kinds  
6 of things. But it's an easy, dangerous trap  
7 if you're looking for the magic bullet  
8 especially.

9           And I love the analogy of the  
10 gravity example. I've seen that used in cases  
11 where people were under oath, and experts, and  
12 having to have them point it out, well you  
13 just committed something called perjury. Or  
14 you've just, you've got to explain why you  
15 repealed the law of gravity. And those people  
16 were under oath. So it's an easy trap to fall  
17 into. So I think there's some real  
18 willingness on all sides here to move this  
19 ball forward, but understand the ballgame's  
20 just kind of getting started here and you may  
21 be trying to work out the rules. That might  
22 take a while.



1                   So I think the public needs to  
2 understand while these are generational  
3 issues, there's no real quick fix here and if  
4 someone comes across saying we have one,  
5 they're going to probably get challenged.  
6 Anyway, I appreciate the extra chance to have  
7 a presentation today, I thought it was very  
8 informative. And thanks again.

9                   CHAIR HONORABLE: Very good. I  
10 don't see any other tent cards. Okay.

11                  MR. BROWNSTEIN: I know I've  
12 probably overstayed my welcome, but I just  
13 want to offer two thoughts. Since we're on  
14 the topic and since Jeff teed up the idea of  
15 so what can we take away from the  
16 conversation? I fully agree that a focus on  
17 technology is important. As we have talked  
18 about, it's not just technology to fix leaks  
19 or new technologies that prevent them, but  
20 it's also the monitoring technologies.

21                   I think it's incredibly important.  
22 But I go back to the conversation we were

1 having yesterday about management systems  
2 being a technology. All right? And one of  
3 the things that we're finding universally  
4 across our studies is that you can basically  
5 put this into two buckets. Do you have the  
6 right technology in place to minimize  
7 emissions? And then do you have the right  
8 management systems in place to make sure that  
9 operation and maintenance is being done?

10                   There is a, the evidence has  
11 increasingly showing, that what I'll  
12 characterize as poor operation and maintenance  
13 practices leads to emissions. You'll hear in  
14 the popular press about fat-tail emissions or  
15 a few sources are responsible for a majority  
16 of emissions. That's largely because we're  
17 finding out in the field that valves get stuck  
18 open and they stay open for two or three days  
19 until someone finds them. Maybe someone  
20 doesn't even find them. And it's that sort of  
21 stuff. So if we could make sure that as we  
22 talk about technology, we also go back to the

1 conversation we were having yesterday about  
2 management systems and operation and  
3 maintenance. I think we will make a big  
4 contribution. So that's number one.

5           Number two is, I can't emphasize  
6 enough how important it is to get a regulatory  
7 approach. The rule that's currently stuck in  
8 limbo, we need to move that forward; in  
9 particular we need to focus on gathering  
10 lines. I hear anecdotally repeated from  
11 producers, the gathering lines are inadequate  
12 to the task. This is not only a question of  
13 how much gas we're flaring as opposed to  
14 putting to constructive use. But it's also  
15 the fact that gathering lines are either  
16 undersized for the volumes of gas that are  
17 currently being sent through the system and  
18 that is causing pressure relief valves to be  
19 working overtime.

20           Or we're risking catastrophic  
21 failure of gathering lines because they're  
22 being over pressurized and they weren't meant

1 for what they're being currently asked to do.  
2 The fact that we don't even have a good  
3 inventory of gathering lines in this country  
4 is like incredible to me. Even more so now  
5 because so much of this gas production is  
6 taking place in populated areas. And I only  
7 invite some of you to come join me for a tour  
8 of the Marcellus and you see all these  
9 gathering lines running past people's farms  
10 and small communities. I mean, gas production  
11 is no longer a out in the hinterlands kind of  
12 deal. And the gathering lines are in close  
13 proximity to where people live and the fact  
14 that we don't have a handle on this is just a  
15 huge challenge.

16 So I would just, for the record,  
17 would urge that whatever needs to happen in  
18 order to get forward progress on your  
19 regulations as it relates to gas  
20 infrastructure that we need to really get a  
21 move on with that.

22 CHAIR HONORABLE: I'll give Jeff

1 the last word.

2 MR. WIESE: Hear, hear. That's  
3 all I have to say is hear, hear. So.

4 CHAIR HONORABLE: Brian?

5 VICE ADMIRAL SALERNO: Thanks.  
6 Actually, I have a question; it's probably an  
7 ill-informed question. But in all of the  
8 discussions, what I'm hearing is there's a  
9 great societal need, you know, to solve the  
10 problem of emissions. But also it's a  
11 relatively small percentage of the volumes  
12 that are transmitted.

13 So I guess my question is, is  
14 there, is are the percentages so small, and I  
15 heard 1 percent, that it doesn't really  
16 represent a significant economic loss to the  
17 operator to be a compelling reason to invest  
18 in the R and D and the technology to capture  
19 it. So what's the driver here? Is it a  
20 societal need to prevent the emissions because  
21 of the issues that were discussed on climate  
22 change? Or is there an economic reason to

1 invest in fixing this problem? And I haven't  
2 really heard anything that really addressed  
3 the economic component.

4 MR. BROWNSTEIN: So a little, so  
5 let me just give you, so the ICF study, which  
6 I commend to you, suggested that 40 percent of  
7 the reduction opportunity that they  
8 identified, had a net payback for industry  
9 making the investment. Okay? 60 percent by  
10 extension, 60 percent was a net cost. Okay?

11 Now, of that 40 percent that had a  
12 net payback, then you have to ask yourself the  
13 question, what's the opportunity cost?  
14 Because we often get asked this question, and  
15 sometimes industry even offers this as a  
16 reason why we don't need regulation. Look,  
17 hey, we produced a product, our job is to get  
18 the product to market. We have every  
19 incentive in the world to deliver it. That's  
20 true up to a point. But the fact that you can  
21 earn an 11 or 10 percent return fixing a leak,  
22 has to be taken into consideration; if you

1 could take that same dollar of capital and put  
2 it into drilling a new well that gives you a  
3 30 or 40 percent return.

4 So yes, both activities are  
5 profitable, but the opportunity cost causes  
6 you to put the capital into drilling the new  
7 well as opposed to investing and maintaining  
8 your existing infrastructure. So even where  
9 you see that the opportunity is quote-unquote  
10 "profitable" there's a reason why companies  
11 wouldn't invest the money. And that's the  
12 fundamental reason why we think at the end of  
13 the day, you need a regulatory approach;  
14 whether it's through safety standards such as  
15 PHMSA could do or EPA is currently considering  
16 regulations under the Clean Air Act.

17 CHAIR HONORABLE: I'm going to  
18 call on Sue. I think she has, I thought you  
19 guys would want to pipe up, here.

20 MS. FLECK: Yes. I think, and  
21 this is Sue Fleck, representing the Gas  
22 Committee. I think this safety driver is

1 innate in the companies, in most of the  
2 companies, distribution companies across the  
3 business. We want to keep the gas in the pipe  
4 because we want to sell it; but we want to  
5 keep the gas in the pipe because of the risk  
6 to the public, the risk to our employees, and  
7 safety regulations help us do things in a more  
8 programmatic way. But we would be doing the  
9 right thing largely in absence of regulations.  
10 The environmental benefit is a different  
11 thing. It's kind of a layer on top and it's  
12 a great thing that's moving forward. But  
13 safety drives us and it's in our DNA. It's,  
14 we want to fix those leaks, we don't want our  
15 product in the atmosphere and we are, most  
16 companies, most employees and most companies  
17 are laser focused on doing that, so.

18 CHAIR HONORABLE: I'll call on  
19 Chad. Thank you. I would also say, we should  
20 remind ourselves that we're talking about  
21 different buckets. The production bucket,  
22 transmission, distribution. So you've heard,



1 I think, a distribution point of view. Chad?

2 MR. ZAMARIN: Thanks. Chad  
3 Zamarin, Cheniere Energy. And yes, I just  
4 want to reinforce that I fundamentally  
5 disagree with the concept that we would trade  
6 activities based on just economic drivers. We  
7 are absolutely, I think we've said it as an  
8 industry, committed to zero from a safety  
9 perspective.

10 We're also, as a company and I  
11 think generally as an industry, committed to  
12 environmental stewardship. And that's not in  
13 the context of whether it's a good profit  
14 center. That is the fundamental ticket to do  
15 business in our industry and I think we  
16 generally believe that being a good operator,  
17 a safe operator from an environmental and a  
18 safety perspective is just the cost of  
19 admission to get to compete for the projects  
20 that earn us a return. So I fundamentally  
21 think that if we focus on regulations and  
22 activities around this table, I would dispute

1 that that would be a bad framework to apply to  
2 how we need to regulate. We should regulate  
3 based on what makes sense as an industry from  
4 a safety and environmental perspective; not  
5 because we believe that decisions aren't going  
6 to be made from an economic perspective.

7 I think we've come a long way from  
8 those days. Certainly, I think that we've  
9 proven that in the safety arena and I think  
10 this conversation that we're starting, we  
11 should start collaboratively in good faith  
12 from an environmental perspective as well. So  
13 I just would say that that's how we make those  
14 decisions and I think also to Colette's point  
15 also, most of us around this table are not  
16 involved in upstream production; we're not  
17 kind of competing internally against different  
18 places to put our money. But again, I still  
19 think that I can tell you I've never sat in a  
20 room and thought about whether or not I could  
21 make more money, you know, not spending, you  
22 know, not trying to save a life or minimize a

1 release versus going and putting that  
2 investment somewhere else. Thank you.

3 CHAIR HONORABLE: All right. I  
4 know you all will be back after our break, but  
5 before we do--

6 DR. GANT: Chairman Honorable,  
7 Chair Honorable, can I have a beg for you for  
8 the last, last, last word very briefly?

9 CHAIR HONORABLE: Oh, indeed.

10 DR. GANT: I'm sorry.

11 CHAIR HONORABLE: Dr. Gant, of  
12 course.

13 DR. GANT: Just to extend out some  
14 of this last discussion and Jeff's question  
15 about what's next. And the point raised about  
16 management systems. We're very interested, in  
17 addition to our technology work, in the  
18 conversation around how do we take the data  
19 that we're gathering and apply it in a way  
20 that allows us to improve our decision making  
21 about operational practices?

22 And this gets down to very unsexy

1 things like work force scheduling, how you  
2 schedule crews, how you get to more  
3 modernization, get beyond the leaks. So we're  
4 very interested in this. And this is a big  
5 data question, right? We're gathering a lot  
6 of data.

7 So to the point, how do we bring  
8 it to bear to actually get more out of the  
9 current investment dollars we're spending?  
10 Because we're spending a lot already. And so  
11 this isn't a, this, the implication is not  
12 that nothing is being done; it's how can, to  
13 Mark's point and Cheryl's, there's competition  
14 in the board room for capital. We all know  
15 that. So let's start with how we get more out  
16 of what we're already spending, given that  
17 that has been accelerated.

18 So I just put that call there,  
19 we're very interested in this, and this is a  
20 key part of the conversation that we're having  
21 with NARUC and PHMSA; is again, how do we get  
22 more out of what we're already doing. Thank

1     you.

2                   CHAIR HONORABLE:  Thank you, and  
3     that really is a great note on which to end,  
4     because I think it brings us back to a point  
5     that maybe Rick or someone made about  
6     collaboration.  And so I think something we  
7     share around this table is doing what we do  
8     better.  So thank you for helping us wrap it  
9     up.

10                   With that, we will take a break  
11     until 11:15; but before we do that, I want to  
12     ask you to help me thank this great panel.  It  
13     was a great discussion.

14                   (Applause.)

15                   Well done.  I think we could have  
16     gone on another hour.  But in the interest of  
17     time, we'll take a break now and return at  
18     11:15.

19                   (Whereupon, the above-entitled  
20     matter went off the record at 11:05 a.m. and  
21     resumed at 11:18 a.m.)

22                   MR. WIESE:  I'm going to reconvene

1 the meeting. Colette had to step out for a  
2 call that she couldn't avoid, so she said she  
3 would be back as soon as she can; and she's  
4 deputized me to act in her stead. I know it  
5 is scary for people, but fortunately my  
6 deputies are next, my trusty deputies. We're  
7 going to be talking about the subject  
8 Performance Metrics. You heard, correct?

9 MS. DAUGHERTY: Yes.

10 MR. WIESE: Okay. You heard a lot  
11 of discussion about data and fact-based. We  
12 have been working with the industry, some of  
13 the advocacy community and others to try to  
14 establish a suite of performance metrics that  
15 we could agree to and we have asked Alan and  
16 Linda to come in and give us an update on that  
17 project. So with no further ado, I'll turn it  
18 over to Linda. Thank you.

19 MS. DAUGHERTY: So we had a great  
20 opening this morning. We've talked about very  
21 controversial issues. This will be a step  
22 down in controversy, I hope. But you heard

1 several people talk about the importance of  
2 the safety of pipelines and how that leads to,  
3 if you can keep a pipeline, keep the gas or  
4 the liquid in the pipeline that leads to  
5 overall safety and good environmental  
6 stewardship.

7 Well, what we're going to talk  
8 about is a task that Jeff assigned to Alan and  
9 I last year. He said to us, he would like us  
10 to identify six to twelve metrics that reflect  
11 the performance of the national pipeline  
12 infrastructure. And the part in the parens  
13 and the regulator was added by the teams later  
14 on that said, hey, overall performance needs  
15 to look at how well the regulator is doing  
16 their job as well.

17 So, by the way, we're going to  
18 move really quick. We have way too many  
19 slides for the time allotted; and this is  
20 going to be a tag team between Alan and I, so  
21 we'll just keep rolling. So when we started  
22 looking at the various issues, we identified

1 that we needed to look at the infrastructure  
2 performance, regulatory oversight and we  
3 needed to consider what data we have and what  
4 data we needed in the future. There were two  
5 teams that were developed: One has been much  
6 more active, Alan's gas team. The liquid team  
7 has intermittently been active. Recently we  
8 had some proposals from individuals that I  
9 think we're going to be looking at.

10 I'm going to flip through this.  
11 You've seen this before; basically the  
12 composition of the teams. We had regulators,  
13 we had industry representatives, trade  
14 association representatives. We also had some  
15 pipeline safety advocates, which we very much  
16 appreciated their input. An interesting fact  
17 is that performance measures are the topic of  
18 the day; everyone is interested in measuring  
19 how well an entity does. Companies have  
20 performance measures for their companies.  
21 PHMSA has measures for how well PHMSA is  
22 doing. As a regulator, when we look at how



1 well the infrastructure is doing, we look at  
2 both national trends and we look at operator  
3 trends. We use data in a variety of ways.  
4 These measures primarily look at the national  
5 level approach. The liquid team started with  
6 identifying what the big questions are. What  
7 do, if we want to get six to twelve metrics to  
8 describe to all stakeholders how the hazardous  
9 liquid pipeline infrastructure is doing, we  
10 want to know what the big questions are. What  
11 do people want to know, and then try to figure  
12 out what metrics would provide answers to that  
13 question. And then, do we have the data that  
14 supports those metrics? And if we don't, what  
15 are the gaps? What do we need to fuel long  
16 range? You want to talk about the gas here?

17 MR. MAYBERRY: Yes. In light of  
18 the gas team, which I led, we started with the  
19 data we currently collect and then we  
20 identified, what are our objectives? And then  
21 what's the data available? And screens that  
22 you would use for the data and you'll see that

1 in some of the examples we'll have. And then  
2 what are the normalizers? That's a topic  
3 we'll talk about, too; because that's one we  
4 had a lot of debate about. And that's really  
5 how we came up with how we proceeded. In the  
6 end, we kind of end up in the same place,  
7 though.

8 MS. DAUGHERTY: Yes. That's the  
9 ironic part; it just kind of migrated towards  
10 each other.

11 MR. MAYBERRY: Right. And I just,  
12 I might add to that, we were lucky enough; I  
13 know we met, we had a pretty good productive  
14 day when we last saw Carl Weimer one day over  
15 at the AGA office. Christina, my co-chair, we  
16 were just able to get a lot of work done. So  
17 we did identify a number of measures that we  
18 wanted to get your input on. And by the way,  
19 we have a lot of slides here; we're not going  
20 to go through every one, but it's there for  
21 you to look at outside of this meeting. But  
22 we just, to establish the record.

1 MS. DAUGHERTY: And the slides are  
2 not final nor are they completely agreed-to by  
3 the teams; but they are arranged in a way  
4 where you can see similarities between the  
5 liquid and the gas.

6 MR. MAYBERRY: And also, we're  
7 going to mention too, that we talked about the  
8 membership of the teams. Also within PHMSA,  
9 I know Linda led the liquid team and then I  
10 was the gas. We also had representatives from  
11 PHMSA on the team as well, and I think here  
12 today we've got Kate Rosenberg from our  
13 office, the Chief Safety Officer, who is  
14 represented on the gas team. And the liquid  
15 team, too.

16 As far as, and we went over this,  
17 this is a review of last time. It's different  
18 types of data we collect. We'll just in the  
19 interest of time, move on. As far as the  
20 objectives, now this is where Linda and I  
21 threw what we, what I will call a conference  
22 committee; we kind of merged the objectives

1 that both teams had, which were very similar.  
2 First off, protect the people and the  
3 environment. I think on the gas team, we  
4 called that protect human safety but it's the  
5 same, same picture there. On the gas side, we  
6 had maintain pipeline safety. We're going to  
7 show examples under each one of these  
8 objectives of what the measures would be.  
9 Protect high consequence areas through  
10 integrity management. And then monitor, smart  
11 modernization of infrastructure. And then  
12 last but not least, effective regulatory  
13 oversight. That one continues to be a  
14 challenge. Linda and I have some, we have  
15 some examples here today but that's one that  
16 we're really pushing to get, to show some good  
17 measures on.

18 MS. DAUGHERTY: We also have,  
19 before we go to this slide, we also have a lot  
20 of questions for the advisory committee; and  
21 I don't think we're going to have sufficient  
22 time to really vet these out, so we would, as

1 we present them or as we mention them or as  
2 other things come to your mind, please do  
3 write them down. Alan and I and the teams  
4 would like to really mull over your advice and  
5 thoughts on this. Some of these are kind of  
6 thought-provoking. So the first part we  
7 talked about of that set of objectives was  
8 protecting people.

9 MR. MAYBERRY: Yes. Protecting  
10 people, or human safety. What we've got here  
11 is an example, just from the very top of one  
12 of the metrics we came up with, involving  
13 incidents. And these are what we classify at  
14 PHMSA as serious incidents or incidents  
15 involving a fatality or inpatient  
16 hospitalization.

17 And this just shows you the trend  
18 from 2005 to the last full year. We have  
19 normalized it, incidents per a thousand mile;  
20 and then also have a breakdown there. We  
21 anticipate that this metric, if it ends up  
22 being a final metric and we're kind of, this

1 is kind of one we came up with; would be a  
2 static metric that resides on our website.  
3 Initially, all these metrics would be ones  
4 that are just static on the website. Our idea  
5 down the road is that within these metrics,  
6 you could click, do a lot of clicking to get  
7 down levels to get deeper into the data. Here,  
8 obviously you have the overall metric of  
9 numbers or rate of incidents, and then the  
10 causal factors there over time.

11 MS. DAUGHERTY: By the way, some  
12 of these do not have the causal factors, just  
13 in the interest of time. It's something that  
14 can be readily supplied.

15 MR. MAYBERRY: Right. And another  
16 thing, by the way. We debated, there's just  
17 so much data out there. Even though we  
18 discounted saying, okay, we're not going to  
19 consider that for this dozen or so metrics,  
20 didn't mean that we weren't going to use it,  
21 it just wouldn't be a top tier metric.

22 What we're talking about here are

1 really top tier metrics. Another one on gas  
2 transmission and protecting human safety or  
3 people, were significant incidents. This is  
4 a larger grouping of incidents that happened  
5 out there. These were basically reportable  
6 incidents. Again, normalized per thousand  
7 miles and the time of constraint was 2005  
8 through 2013.

9           Again, looking at, this is one  
10 that was a later metric we developed, I know,  
11 working with Carl and his people, is what I  
12 refer to as the bathtub curve. It looks at  
13 the vintage pipe and the incidents that occur,  
14 the rate that occurs in the particular vintage  
15 pipe. As you can see, there is a higher  
16 occurrence of pre-40's, in pre-40's pipe and  
17 then later, modern pipe as well. And that  
18 reflects in what we're saying, as far as  
19 incidents that happen out there; either early  
20 in the life cycle or very late in the life  
21 cycle.

22           Another one, protecting HCA's; now

1 this is another objective through integrity  
2 management here again on gas transmission. We  
3 have rates on the left hand chart, significant  
4 instance outside of HCA is represented by the  
5 red and then inside HCA is represented by the  
6 blue. And then the causal factors, working  
7 down as well. Another one. Same objective.  
8 Looks at number of repairs made. Now you  
9 can't read that, I apologize for the--

10 MS. DAUGHERTY: Fine print.

11 MR. MAYBERRY: Fine print. But we  
12 have immediate repair conditions, which are  
13 the, or one year conditions which are the blue  
14 which we started collecting in 2010. And  
15 immediate repair conditions, represented by  
16 the red. Again, this deal with integrity  
17 management and repairs that are made. This is  
18 not leaks, or it could be leaks, but it's  
19 repairs that are made within the HCA or  
20 outside of an HCA. Or within an HCA, sorry.

21 MS. DAUGHERTY: One issue, when  
22 you look at repairs made, you have to keep in



1 mind is that integrity management is cyclical.  
2 ILI runs, various things are done on a  
3 periodic basis. So when you see the up and  
4 downs on the repairs, that may be because  
5 certain runs were not conducted in a period of  
6 a few years.

7 A company, for example, may run a  
8 ILI tool once every five years. Well, they're  
9 going to have a peak in when they do the  
10 repairs. So you're going to see, it's not a  
11 consistent steady flow year after year.  
12 Although on a national level, you would think  
13 it would eventually kind of merge down to a  
14 nice little cycle; you're still going to have  
15 some carry-over from the initial cycle  
16 requirements when operators must to their  
17 initial runs and then do it every five to  
18 seven years.

19 MR. MAYBERRY: And another thing  
20 you don't see with these charts right now are  
21 narratives explaining; you just hear us kind  
22 of giving an initial perspective, if that.

1 The assignment right now, the gas team is to  
2 assign narratives to these charts and okay,  
3 what is this telling us? What does this mean?

4 Okay, and this is again with high  
5 consequence areas. The breakdown of ILI  
6 detectible and ILI or non-ILI detectible leaks  
7 that are repaired in those areas. ILI  
8 detectible would generally be something like  
9 a corrosion leak. ILI non-detectible would be  
10 say, third party damage. Just examples of  
11 those. Again, going back to 2005. We kept  
12 consistent with that time frame of going back  
13 to 05.

14 Protecting people, another  
15 objective. This relates to, I mean, similar  
16 to what we started with. Incidents on gas  
17 distribution. Again, similar to transmission.  
18 We have this per million miles. I mean, with  
19 gas distribution, your normalizer is per  
20 million miles. We had a lot of debate over  
21 how to do that, but ended up with million  
22 miles just because the numbers become more

1 reasonable that you're dealing with on the Y-  
2 axis there.

3 MS. DAUGHERTY: One of the things,  
4 I'll jump in and mention, you will have seen  
5 a lot of charts that talk about significant  
6 incidents. That is a standard term that we  
7 use on our website relating incident results.  
8 We did not use that here. We separated  
9 significant incidents have fatalities and  
10 injuries, plus an environmental compact on the  
11 liquid side, which might be a spill volume  
12 release. And there's also a cost issue. The  
13 cost of the impact of the incident. And so,  
14 in these particular slides, both teams have a  
15 proposal which we're all reviewing about  
16 considering separating that. Looking at the  
17 impact to people, the impact to the  
18 environment and we haven't yet looked at the  
19 cost side. I'm looking at Alan, I'm not sure  
20 if the gas team has done that.

21 MR. MAYBERRY: We did.

22 MS. DAUGHERTY: But that is a

1 change and we do, the liquid team has a  
2 proposal from the liquid industry to not  
3 include cost.

4 MR. MAYBERRY: By the way, just as  
5 a general metaphor, on the gas side, as you  
6 might expect and as you've probably seen  
7 before, excavation damage is the leading cause  
8 in those pie charts we have there. Similarly,  
9 on gas transmission, actually excavation  
10 damage was the leading cause here, too now.  
11 We are dealing with very small numbers,  
12 especially on the gas transmission side, as  
13 far as numbers of incidents. So you're  
14 dealing with ones, tens, very small numbers  
15 over the network.

16 MS. DAUGHERTY: Okay, so here's  
17 something that's really interesting. When you  
18 look at the liquid incidents involving a  
19 fatality or inpatient hospitalization and you  
20 normalize it per thousand miles on the liquid  
21 side, what I did is I took the thousand miles,  
22 which the gas team did. And we're trying to

1       come up with metrics that people can look  
2       across the industry and say, okay, it's  
3       normalized by a thousand miles here, it's  
4       normalized by a thousand miles on gas side.  
5       The rates look a little awkward. And one of  
6       the questions that we'll pose her to you in a  
7       minute is about normalization; whether a  
8       thousand miles or a million miles, what is  
9       best for the reader to understand what's  
10      actually going on relative to the  
11      infrastructure?

12                        So here you've got rates. Again  
13      2005 to 2013, for the hazardous liquid lines.  
14      National level. Okay? So, I mentioned this,  
15      you've also got to look at context and think  
16      how the reader will understand what's actually  
17      going on. So, a moment ago I showed you the  
18      rates. For the liquid side, look at these  
19      numbers. These numbers are fairly low. Is it  
20      easier for the reader to understand the impact  
21      of the hazardous liquid pipeline  
22      infrastructure to people by listing the number

1 of people that were either a fatality or an  
2 inpatient hospitalization?

3 So to be specific, in 2007, there  
4 were fourteen people that were either fatally  
5 injured or ended up in the hospital because of  
6 a hazardous liquid incident. Versus the rate  
7 we had a few pages back. So to put it in  
8 context, this whole issue of trying to explain  
9 what does this actually mean. The lighter  
10 gray color is the actual number of people that  
11 died due to lightning strikes over those time  
12 periods. I got that from a NOAA website. So  
13 when you look at the overall impact to people,  
14 you can see the relative amount of fatalities.

15 Now, I can tell you, if you were  
16 one of the fatalities that occurred, if your  
17 family member was involved in one of those  
18 pipeline incidents, that other lightning  
19 strike doesn't matter. I'm not saying this to  
20 take away from the impact; we have to get to  
21 zero. But it does put it into context. So the  
22 question to the group is, do we want to

1 consider using context measures when we put  
2 things up on our website?

3 I'm going to move right into  
4 protecting the environment. Now when we  
5 traditionally think about the impact of  
6 pipelines on the environment, we automatically  
7 go to hazardous liquid pipelines. They can  
8 contaminate with spills from liquid pipelines  
9 can contaminate the soil. They can  
10 contaminate water with some pretty tragic  
11 incidences. And very serious context to our  
12 sensitive areas. However, we heard this  
13 morning about potential impact to the  
14 environment from gas lines, and I think Alan  
15 will talk about that in a minute. So many of  
16 you are going to look at this and you're going  
17 to say, well that's a funky number up there.

18 Hazardous liquid accidents over  
19 238.1 barrels. How the heck did you come up  
20 with that? That is actually the ten thousand  
21 gallons which is referenced by other agencies;  
22 we just picked that out of the air. It could

1 be fifty barrels. It could be 200 barrels.  
2 It could be 500 barrels. We don't know what  
3 the right number is. So obviously, input  
4 would be good. Our current reporting criteria,  
5 we have a 5 gallon, we have a 50 barrel, we  
6 have different definitions. But for reporting  
7 on a national infrastructure level, what would  
8 be appropriate? Look at that beautiful trend.  
9 I had to tell you, I should have cut that down  
10 to keep with the 2005 through 2013, but I  
11 couldn't help myself; I thought that was such  
12 a nice downward trend. I kept it.

13 The other issue that we'll be  
14 talking about is what do you exclude from the  
15 reports? If you were looking at impacts to  
16 soil and liquid, you might want to exclude  
17 CO2, HVL's. HVL's traditionally don't have a  
18 whole lot of impact on the soil or waterways.  
19 You can have an anhydrous ammonia spill that  
20 kills a lot of fish, but traditionally,  
21 generally, the major impact is from the non-  
22 HVL. So the question is what do you include



1 and what do you exclude?

2 I already mentioned here, another  
3 major issue on the liquid side; the other  
4 proposal we have is should we separate  
5 releases within an operator's control versus  
6 releases into the long distance right of way?  
7 For example, if a company spills a thousand  
8 barrels of gasoline on the right of way, it  
9 might get into a river. It might be close to  
10 the public. It could have a very close impact  
11 to the general public, okay? If they spill a  
12 thousand barrels into containment at a pump  
13 station, does it have the same impact? And is  
14 it important to distinguish between those two?  
15 Another question for the advisory committee to  
16 think about and provide feedback to us on.  
17 This is the normalized significant accidents.  
18 That is the people and the environment piece  
19 put together. You see that the trend is just  
20 kind of wobbly. This is a rate, this is not  
21 the actual numbers. This is per thousand  
22 miles.

1                   There is a proposal, I already  
2 mentioned this earlier, there's a proposal to  
3 remove the significant definition and just  
4 talk about fatalities and injuries and then  
5 also a release volume.

6                   So just to recap and talk about  
7 this. The cost factor. If we produce metrics  
8 on our website that say this is how the  
9 hazardous liquid and the hazardous, excuse me,  
10 natural gas pipeline infrastructure is  
11 performing, should we include cost? Should  
12 that factor in or should we just look at the  
13 impact to people and the environment? Also, I  
14 mentioned a moment ago, liquid releases should  
15 be excluded. CO2 or HVL's? And then the  
16 onsite/offsite. And Carl, as a note, I had  
17 kept in my mind a comment you made, and I  
18 think it came up earlier. Is this whole idea  
19 is, let's say you do have a thousand barrels  
20 that spills into containment on a pipeline  
21 operator's property. You're going to have  
22 fumes, you're going to have vapors and that

1 can migrate off site.

2 If you have containment in the  
3 vicinity of the public. In other words, in  
4 the middle of a city or close by. Some of  
5 those fumes are going to migrate. You can  
6 have migration of impact. How do we capture  
7 that? How do we think about it? What is the  
8 overall impact? Something to mull over. You  
9 want to add?

10 MR. MAYBERRY: Yes, I mean, really  
11 what we, as far as the gas team really worked  
12 with the data we had and we didn't really  
13 consider the cost factor. I mean we, down the  
14 road we're looking at, you know, additional  
15 data that we need to collect and consider.  
16 And perhaps cost could be one of them.

17 MS. DAUGHERTY: The one bullet I  
18 would like to point out here, we had a  
19 question about how could we develop a metric  
20 to assess operator's response time. That was  
21 an item in our last reauthorization. This was  
22 an issue that's come up on several major

1 pipeline incidents, San Bruno, Marshall,  
2 Michigan. How long does it take an operator  
3 to respond to an incident and how can we  
4 minimize that? That has an impact on the  
5 impact to people. Well, we know that might be  
6 a good idea to report on. How do you capture  
7 that data? What should we be measuring? What  
8 are the ticks that we start counting?  
9 Something to think about.

10 MR. MAYBERRY: By the way, just a  
11 two second time out. I know we're feeding you  
12 with a fire hose and as I recall from some of  
13 our meetings when we flip through metrics and  
14 go a little bit too quick, it's like a lot to  
15 take in. So we realize we're feeding you with  
16 a fire hose, but you know, outside of this  
17 meeting if you have input, we'd welcome that.

18 MR. WIESE: I wonder if we might  
19 just not send their presentation out to the  
20 members and give them some time to think about  
21 it in a calmer moment, too.

22 MR. MAYBERRY: Yes. Because there

1 was at least one or two meetings where, hey,  
2 there's feedback and we're moving a bit too  
3 fast, because we're working on it.

4 MR. WIESE: Who said you we  
5 removing too fast?

6 MR. MAYBERRY: You said move fast,  
7 though. That's the charge. Okay, and this  
8 one really relates to methane emissions if you  
9 will. Related to leaks eliminated. This is  
10 a number that's reported to PHMSA; here again  
11 normalized for a thousand miles. These are at  
12 least repaired in the distribution system;  
13 again going back to 2000, well goes back to  
14 2005 but in this case we started collecting  
15 for the hazardous leaks in 2010. And then  
16 these are causal factors for the pie charts  
17 that cover the cost for those. Again,  
18 corrosion is a big one related to leaks  
19 eliminated.

20 Maintain pipeline safety  
21 excavation damage. A key issue, this is the  
22 leading cause of injury and harm to people in

1 all of pipelines, so here's a measure for that  
2 that we felt was important to have there. Per  
3 thousand tickets shown on the, of course, this  
4 is one where we have two normalizers per  
5 thousand tickets on the right Y-axis. And  
6 then the left is just the number of incidents  
7 involving excavation damage.

8 MS. DAUGHERTY: On those, we'll  
9 just flip real quickly through a bunch of  
10 slides here that looks at HCA's. You know,  
11 this is, how do we provide additional  
12 protections for high consequence areas? So  
13 reassessment intervals, how often are they  
14 assessed? What about repairs? And then a  
15 moment ago I mentioned that, assessments go in  
16 cycles. You see that in the numbers. It's a  
17 natural and it shows up.

18 The other thing is, any time you  
19 produce data, it's subject to  
20 misinterpretation. People won't know what it  
21 means. And so we have to do a very good job  
22 of providing the narrative of what this does

1 say and what it doesn't say. Does it mean  
2 that, you know, a bunch of companies were  
3 slacking off in 2011? I don't think so.

4 MR. MAYBERRY: This just relates  
5 to the inventory of what's out there in the  
6 trends obviously modern infrastructure is  
7 rising or you know, the gradual decline in  
8 older infrastructure. Again, moving on. The  
9 amount of bare protected, unprotected steel.  
10 For transmission. Here's for distribution,  
11 casts and wrought iron. We already have this  
12 information on our website, by the way. Many  
13 of you are familiar with.

14 MS. DAUGHERTY: And that applies  
15 to the conversation we had this morning.

16 MR. MAYBERRY: Right.

17 MS. DAUGHERTY: We've got to the  
18 two. Here's the two interesting ones. How do  
19 you measure, how effective a regulator is?  
20 You could probably say whether you think that  
21 PHMSA is doing a good job or is not. How do  
22 you measure our effectiveness? Well, we

1 struggled that with ourselves. So we have up  
2 there compliance actions. Well, what does  
3 that really tell you? You look at those  
4 numbers, they go up and down. Does that tell  
5 you if an operator, excuse me, if that trend  
6 is going down, meaning fewer enforcement  
7 items; does that mean operators are more  
8 compliant or does that mean that PHMSA is not  
9 doing as aggressive or thorough inspection?

10 What does it mean? You don't  
11 know. Jeff, says don't go there, don't go  
12 there. So what, think about what you would  
13 think is a meaningful measure of regulatory  
14 performance. Congress asks us every year, or  
15 they used to ask us every year, how many civil  
16 penalties did you assess? What does that  
17 mean?

18 Civil penalties, if you have a  
19 major pipeline accident and you have harm to  
20 people. You can have one incident that can  
21 really skew your overall results and it can be  
22 a large civil penalty. What does that mean



1 relative to everything else?

2           The other item is how many times  
3 do we send people out? Okay, what this tells  
4 you is that we send out people to do a lot of  
5 inspections; it doesn't tell you how big the  
6 inspections were. Right now we have  
7 inspections that may run from five days to a  
8 team of five people that spend eight weeks  
9 with an operator; depending on the size of the  
10 system and what we're looking at. So they  
11 vary. So what information is useful to you to  
12 evaluate what her PHMSA is doing its job or  
13 not? Things to think about.

14           MR. MAYBERRY: Our goal is to get  
15 this done by year's end, as far as finalizing  
16 these metrics. Right now, we're assigning  
17 narratives to the metrics, at least the ones  
18 you've seen on the gas side. The gas team  
19 does have a meeting right before the Pipeline  
20 Safety Trust Conference on November 19th.  
21 Hopefully, we'll address final loose ends, but  
22 you never know and hopefully by that point, I

1 expect by that point, we'll have enforcement  
2 metrics to have a good robust discussion on.  
3 And then the liquid team is still looking at  
4 the acceptability of what you've come up with  
5 so far. And again, by year's end is our goal.

6 MS. DAUGHERTY: That's it.

7 MR. MAYBERRY: So anyway, our goal  
8 is to give you an update. We had spoken about  
9 this last time and that's about it.

10 MR. WIESE: Great, thank you, Ms.  
11 Daugherty and Mr. Mayberry. I still want to  
12 know who said you were going too slow, so.  
13 Since I gave them the end of the year to  
14 finish this up and we keep checking back in,  
15 I know they're working really hard on it; I'm  
16 just teasing them for a moment in public. And  
17 I myself have a lot of views on some of those  
18 measures.

19 I'll just say one and then I'll go  
20 to anyone who wants to ask, make a comment or  
21 ask a question. I've long wrestled with this  
22 notion of enforcement metrics as a measure,

1 performance measure; and the reason for that  
2 is, I believe the right goal for enforcement  
3 is zero. And that means it's very, until you  
4 talk it through, people get shocked by that.  
5 But if the system is performing, people are  
6 protected, they are safe, they are not being  
7 injured, we're not losing product into the  
8 environment. The operator's fundamentally,  
9 probably in compliance. Our goal is to  
10 protect people and the environment. So we had  
11 a four hour argument with the Government  
12 Accountability Office on this and I lost; and  
13 they put out a report saying that we ought to  
14 be tracking our civil penalties. Well hey, I  
15 issue a couple more civil penalties and to  
16 them it's a success. But to me, and I think  
17 Brian shares our pain; I'm not sure that  
18 that's really societally that that's a very  
19 effective measure. So I'll get off my soapbox  
20 and invite the members of the committee if you  
21 have a comment or question for these two.  
22 I'll start with Chad.

1 MR. ZAMARIN: Chad Zamarin,  
2 Cheniere; I thought it was a really good  
3 presentation and I just, to your comment,  
4 Jeff, I think we all, I like the idea that the  
5 proof is in the output. And so the statistics  
6 you were showing on actual incidents, you  
7 know, that's something that we're all  
8 accountable for and that's how I think we  
9 measure ourselves.

10 It's hard to think of inspection  
11 as a leading indicator that we're inspecting  
12 safety into the system. I think generally  
13 that's not kind of the case, so I like the  
14 idea that those more operational metrics be  
15 both for your sake and ours. So when people  
16 measure us as an industry and as a regulator  
17 that that's really what matters. What's the  
18 end result? How many tickets did you issue,  
19 but how many people did we send home safe  
20 every day. Thanks.

21 MR. WIESE: You'd be surprised  
22 though, on the operational measures how people

1 will gauge their regulator's failure by an  
2 industry failure. You know, you failed. How  
3 did you fail? You know? As I point out to  
4 them, we don't operate pipeline systems.  
5 We're here as a deterrent, but we don't  
6 operate the pipeline systems. The  
7 responsibility is, I know you guys believe  
8 that and own it as the operators. The  
9 regulators to try to shift behavior. So I  
10 think Sue was next?

11 MS. FLECK: Sue Fleck on the Gas  
12 Committee. Just two comments, basically:  
13 Appreciate the update and it looks like we're  
14 moving in the right direction, but it does  
15 look like you have predominantly lagging  
16 indicators and not so many leading indicators.  
17 So that's something that you want to work on,  
18 because maybe that's why we see a gap  
19 sometimes in the performance. But the  
20 indicators aren't showing why. So I think you  
21 need a better mix.

22 And my second comment is really a

1 suggestion. Look at safety management  
2 systems. We're looking at safety management  
3 systems and we're looking at the different  
4 risk control categories and we're trying to  
5 find metrics that tell us how we're doing in  
6 each category; and it's helping us kind of  
7 quit measuring the stuff we can measure and  
8 measure the stuff we ought to be measuring.  
9 So you're trying to use existing data and I  
10 applaud you for that, because you're  
11 collecting it, you want to use it; but look at  
12 the safety management system stuff and it  
13 might trigger some ideas of other metrics that  
14 would have some real value around evaluating  
15 the performance of a company and why they get  
16 the results they do. And I think there could  
17 be some value there. We're finding it.

18 MS. DAUGHERTY: I completely agree  
19 with that. As a matter of fact, I know the  
20 liquid team did try to look at leading  
21 indicators. You know, ideally we'd be at  
22 predictive; but we're not there yet. But some

1 of the things that were brought up were the  
2 near-miss reporting, you know? How do we get  
3 there? We're going to have to collect data.  
4 What kind of data do we collect on that? Who  
5 holds that? Who holds that information? Does  
6 PHMSA need to collect it or is there another  
7 mechanism to have someone else collect it? How  
8 do we get to those where we can have uniform  
9 information?

10 MS. FLECK: That may be a way to  
11 engage the NAPSR folks and have the states  
12 they're collecting some of that kind of  
13 information and have them bubble it up to the  
14 State pipeline safety regulators. I don't  
15 know, I'm just spitballing here, but there may  
16 be an opportunity there to engage them.

17 MR. MAYBERRY: On the gas team, we  
18 did look at leading indicators and actually we  
19 still have to have more discussion on some of  
20 the indicators, like assessments, integrity  
21 management assessments by IOI and other  
22 methods like that. We've had a pretty robust

1 conversation about that. We do have the  
2 repairs made which you could say is like the  
3 leading indicator, the way of integrity  
4 management.

5 MR. WIESE: As I shift over to  
6 Chuck, I'll just add in, remember the goal of  
7 this particular project was to identify six or  
8 twelve measures that will be across everyone.  
9 Kate and then Chief Safety Officer's office at  
10 PHMSA are also looking at a lot more measures,  
11 working with us, that we're going to put on  
12 the PHMSA website. But we expect these  
13 measures to be transparent to an operator  
14 level. You should be able to see how the  
15 operator is doing on that, once we agree on  
16 that metric. The rest of them, I think we all  
17 realize are a little loosey-goosey, you know?  
18 It's really hard to hold people accountable to  
19 some of those measures, but they're worth  
20 looking at, at an industry level. So with  
21 that, maybe I'll turn to Chuck.

22 MR. LESNIAK: Chuck Lesniak,



1 liquids committee. Just a couple of responses  
2 to some of the questions you posed. And I'll  
3 take a look at the presentation and maybe  
4 provide some more feedback. But on the  
5 whether or not costs ought to be included, I  
6 think yes. I think it's an important  
7 management tool and it's also, those costs get  
8 passed on to the rate payers. And so, I think  
9 that's important. It's not that you're  
10 prioritizing costs over public safety or  
11 environmental protection, but I think it's an  
12 important management tool.

13           Whether or not spills within an  
14 operator's property should be included, I  
15 think yes. There are air impacts. Just  
16 because you're in containment doesn't mean  
17 that there's not a release. One the largest  
18 environmental contamination incidents I've  
19 ever deal with, all the spills were within the  
20 operator's property. There were pipelines  
21 coming into a tank farm, there had been  
22 decades of releases. They had ten feet of

1 product on top of groundwater. So, and a lot  
2 of those were spills within containment.  
3 Their containment was really crummy.

4 Response time? Yes. It's one of  
5 the biggest indicators, in very large  
6 releases, response time is so often related to  
7 that. And so it measures how effective a  
8 pipeline company is operating their system.  
9 And the inspections are tough. I like the  
10 concept of inspection days, inspection man  
11 hours, that kind of thing. But I like what  
12 you're doing. I think you're going in the  
13 right direction. And I think there also ought  
14 to be a narrative to go with each of these  
15 that you put up; because, to provide context.  
16 Some of these numbers change dramatically  
17 based on regulatory or policy initiatives, and  
18 I think it provides that context. It's  
19 important for the reader.

20 MR. WIESE: Okay, thank you,  
21 Chuck. Mark?

22 MR. BROWNSTEIN: So let me second

1 the idea that spills within an operator's  
2 property should definitely be included. The  
3 fact that containment catches the product and  
4 therefore you don't have a bigger problem is  
5 really of no consequence in the same way that  
6 you say the air bag deployed and I wasn't  
7 hurt. Right? But you still had a crash. And  
8 so I think you need to look at this. If part  
9 of the goal here is to create not only public  
10 accountability, but also give companies  
11 information that they can use to drive process  
12 improvement. I think you have to go right to  
13 the source and hold them accountable for that.

14 The other point that I would make  
15 is, I apologize, I walked in a little late and  
16 I saw that slide up there that compared, you  
17 know, leaks to, or spills to lightning  
18 strikes. I'm not quite sure what the point of  
19 that exercise is, but I don't think it's a  
20 very useful one. You know, comparing, you  
21 know, comparing something to an act of God,  
22 okay? I don't think is a very useful metric.

1 You know? We have to all live with acts of  
2 God; there's nothing we can do about that.  
3 But we can definitely do something about the  
4 rate of discharges to the environment or  
5 spills. And I think the point is that we are  
6 trying to drive this down to zero. And to that  
7 widow, to that child who's now motherless or  
8 fatherless, it really is of no consequence  
9 that the risk of lightning strikes are that  
10 much greater.

11 MR. WIESE: And I think Linda  
12 acknowledged that. That slide was about  
13 fatalities from different sources and I think  
14 we sort of agree with you. We wrestled with  
15 that forever. The point of it is, she was  
16 asking is it useful in a context setting to  
17 say it's not the greatest risk on the face of  
18 the earth, and that's how much effort do you  
19 put into it. But I think we do recognize and  
20 we have not ever used those publically for the  
21 same reason that you just said.

22 MR. BROWNSTEIN: Yes, I don't

1 think it's, I don't think it's PHMSA's place.

2 MR. WIESE: Right, yes.

3 MR. BROWNSTEIN: Much less a smart  
4 thing to do politically.

5 MR. WIESE: Right. I will say to  
6 both Chuck and to you on the issue of  
7 containment. I want to make sure that we  
8 weren't unclear. We do intend to report that;  
9 but what we were asking was in the top six or  
10 twelve measures, should we do ones into  
11 containment if in fact the job was to protect  
12 the public and the environment. I'm with you  
13 that some of them go bad, but other tank farms  
14 have a liner underneath in it, impermeable  
15 liner. There's a lot of money involved in  
16 cleaning that up, and it is a failure that  
17 should be measured and monitored. The  
18 question was, should it be one of those top  
19 six or twelve metrics that are reported  
20 transparently. But they should definitely be  
21 tracked. So I think with that, wait a second,  
22 I think Carl was jumped, yes, I think Rick was

1 up there. And Chuck will put his down.

2 Thanks.

3 MR. KUPREWICZ: Just a couple  
4 observations. You have to be real careful  
5 about the response time. I think it's  
6 important that you have some sort of parameter  
7 there, because people are going to ask that  
8 anyway. The problem is in the qualification.  
9 And then I want to be sure to inject here,  
10 it's easy to overreact to response times. If  
11 you have a conflict, this is for the liquid  
12 pipeline operators, between emergency response  
13 plan and an oil spill response plan. Which  
14 one gets priority, folks? Do I have to answer  
15 that? Okay.

16 You may be in a situation where  
17 you are not going to be allowed to enter an  
18 oil spill response teams. They're that  
19 dangerous. And so a lot of the public doesn't  
20 understand that, but if you've got a choice  
21 between saving lives or spilling oil, you  
22 don't want to be in either one. But you

1 better be focusing on saving lives, first,  
2 because you get into all kinds of  
3 complications there. And there will be places  
4 where you just cannot send, the nature of  
5 where it is or what it is; and so that's going  
6 to be something you're going to have to  
7 wrestle with as you try, if you move that  
8 metric up to response time, which sounds like  
9 you do need to do that. But it's going to be  
10 a real Pandora's box here. Thank you.

11 MR. WIESE: Thank you, Rick.

12 Maybe we'll go to our friend here, Ron.

13 MR. MCCLAIN: Ron McClain, liquids  
14 committee. I thought it was very interesting  
15 presentation. I have to say that a couple of  
16 those terms and trends are puzzling. I'm sure  
17 you're puzzled by the data, too; but you know,  
18 I hear a lot of focus on trying to get these  
19 metrics right, and I think that's important.  
20 But it's also a case where the perfect is the  
21 enemy of the good. And we should be able to  
22 pick a few metrics that are meaningful and

1 normalized for either throughput or mileage.  
2 And I would lean toward having six rather than  
3 twelve, Jeff. But just pick some things that  
4 are very meaningful. Let's not set in stone  
5 that you can't come back and learn and  
6 improve. So I think the meetings you have  
7 scheduled with gas and liquid is a very  
8 positive way to go about that. Lean toward  
9 fewer, but also it's not set in stone. So we  
10 just pick them and move on and see does that  
11 tell the story or not.

12 MR. WIESE: Thank you, Ron. And I  
13 note your use of the phrase meaningful, for  
14 those of you who don't recall, we have  
15 recommendations from the National  
16 Transportation Safety Board to develop and  
17 deploy and use in shaping individual  
18 operator's performance, a suite of meaningful  
19 metrics.

20 MR. MCCLAIN: And they are  
21 required as part of the Safety Management  
22 System as well.



1 MR. WIESE: Agreed.

2 MR. MCCLAIN: You have to build  
3 those in to measure yourself. So this thing  
4 kind of fits together perfectly in the end.

5 MR. WIESE: It does. Carl?

6 MR. WEIMER: Carl Weimer, Pipeline  
7 Safety Trust. I just wanted to say first off  
8 to Linda and, that I didn't script my fellow  
9 public members today. I'm the only public  
10 member on both the gas and the liquid data  
11 teams and it was quite heartening to hear some  
12 of the public members haranguing on some of  
13 the same things I have been saying. So there  
14 you go. I was the one that was kind of pushing  
15 for some kind of a metric on regulatory  
16 performance, because I think that's only fair.  
17 And I don't think we've really come to any  
18 agreement on what that metric would be some of  
19 the things about field days and inspection  
20 days might be valuable.

21 The one reason I just wanted to  
22 make the committee clear on why we thought

1 that was important is, PHMSA's put up some  
2 data on metrics on like the State Regulatory  
3 Authorities. And if you look at that, it's  
4 pretty kind of unfounding because you'll see  
5 some states that will find hundreds of  
6 probable violations and then there will be  
7 kind of a corresponding number of compliance  
8 actions. You'll see other states that will  
9 find hundreds or even thousands of probable  
10 violations and then it lists no compliance  
11 actions. So it seems like probable violations  
12 to compliance actions is some sort of a metric  
13 that tells you something. I'm not sure what  
14 at this point, though.

15 MR. WIESE: Okay, I think I'm  
16 going to; I'm going to exercise my privilege  
17 as Chair of closing this out and adjourning  
18 you for lunch by saying that we've had that  
19 conversation, Carl, with the states for the  
20 past couple of years. The states operate in  
21 a different manner than we do. I should be  
22 clear, just so we're all on the same

1 wavelength, we are not economic regulators.  
2 We are safety regulators. So we're going to  
3 lean in to that. The economic regulator has  
4 the opportunity of inducing a change in  
5 behavior in other ways. And so the states are  
6 right now working on that. I think you  
7 invited some to your annual meeting. By the  
8 way, Carl's annual meeting is in New Orleans,  
9 the 18th and 19th?

10 MR. WEIMER: 20th and 21st.

11 MR. WIESE: I was close. 20th and  
12 21st. It's always a good time. I would  
13 encourage you, if you haven't thought about  
14 going down to his meeting, to do so. We'll be  
15 webcasting the meeting for Carl so that if you  
16 can't go, you can see a lot of the stuff  
17 that's happening. But I think the states are  
18 going to come forward in your meeting and talk  
19 about some of what they're doing that's not a  
20 civil penalty, but is still really an  
21 enforcement and a change in behavior. So, at  
22 any rate, I'm going to exercise a little

1 discretion here since the Chair is not here.  
2 She might get even with me later, but I'm  
3 going to beg Dave Lehman's indulgence. Dave's  
4 back here somewhere. And say we'll take up  
5 oil spill response plans when we get back here  
6 at, I'm also going to cut it a little short,  
7 1:00 o'clock. How does that sound? Very  
8 good. Thank you so much. See you at 1:00  
9 o'clock.

10 (Whereupon, the above-entitled  
11 matter went off the record at 12:03 p.m. and  
12 resumed at 1:05 p.m.)

13 MR. WIESE: Okay, welcome back  
14 everyone. We'll get going so that we can get  
15 you out in your appointed flights and trains.  
16 So I think, I really don't have much to add  
17 other than we're going to try to be a little  
18 more punctual than I was when Colette had to  
19 step out for a teleconference. Things went to  
20 hell and of course Jeff of course mismanaged  
21 the meeting, things went long. So I'm looking  
22 forward to having her back here. I'll turn it

1 back to Chairman Honorable.

2 CHAIR HONORABLE: Thank you, Jeff.  
3 You really know how to make a Commissioner  
4 feel wanted. I hope you all had a great lunch.  
5 Thank you for those of you who returned  
6 promptly. I'm sure the stragglers are en  
7 route. We'll begin now with what is listed on  
8 your agenda as Agenda Item 3, Oil Spill  
9 Response Plans by David Lehman.

10 MR. WIESE: With your permission,  
11 I'm going to set Dave up and then let him do  
12 the presentation. That way, Carl can beat on  
13 me or instead of Dave. Oil spill response  
14 plans, Dave will kind of get into a lot of  
15 what we have done to sort of modernize this  
16 program.

17 But my two seconds are to segue  
18 way into this for Dave is to say that this is  
19 a program that we have administered for over  
20 twenty years. We have worked pretty  
21 studiously over time to make it a process. And  
22 I think the process, to be honest with you,

1       went stale. Our world has changed in that  
2       twenty years and this didn't keep up.

3                       After Deep Water Horizon, the  
4       administration asked every agency to go back,  
5       anyone who touched oil, go back and look at  
6       how you're doing this. One of our  
7       reauthorization hearings from right around  
8       that time, must have been 2010; one of the  
9       Congressmen in one of our jurisdictional  
10      committees made Administrator Quarterman  
11      promise him that she would go back and look  
12      through the whole program. We did that. We  
13      engaged some people, outside expertise, we  
14      began talking with the other agencies to find  
15      out what they were doing to benchmark what we  
16      were doing and where we needed to fix it.

17                      And it's my pleasure to introduce  
18      Dave Lehman. Dave sort of had a lot of this  
19      dumped in his lap and I think he has just done  
20      a stellar job of really pulling it out of the  
21      spiral. So with that, I'll turn it over to  
22      Dave.

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MR. LEHMAN: Thank you, Jeff.

Again, Dave Lehman, I'm the Director of the Emergency Support and Security Division. I have been in this position permanently for about nine months now. And when I came to be the Director, Jeff basically says, what we're trying to do is revisit, revitalize and reengage with the oil spill response plan. So I'm using Jeff's words here; and the flow of this will go towards to what we're doing in each of these areas. I'll touch upon each of those areas, some of the accomplishments that we've had, and some of the challenges we still have to face.

In revisiting it, Jeff had mentioned a lot of that was done when the work had already begun, when I showed up, to really review and re-engineer the Office of Pipeline Safety's oil spill program. In revitalizing it, we did dedicate resources. We also had a backlog, so we brought some additional resources to bear on a temporary basis, to get

1 rid of the backlog. And then we're also re-  
2 engaging. As Jeff had mentioned, we had moved  
3 towards working with our other Federal  
4 partners; also the regulated industry and the  
5 response community. And we're also getting  
6 out there and participating in more oil spill  
7 response drills and exercises.

8 In revisiting it, we came in and  
9 we found that there was over, PHMSA had over  
10 eight hundred plans in its inventory; and when  
11 they really went through the plans, we found  
12 that nearly four hundred of them were unique  
13 plans in the sense that they weren't  
14 duplicates, they weren't plans that had been  
15 superseded by others. And so we found that  
16 there was four hundred plans that needed to be  
17 reviewed. And when I showed up, there were  
18 twenty-four of those plans that had been  
19 reviewed completely from the end to end. We  
20 streamlined the program and made it repeatable  
21 procedures, and that's through standard  
22 operating procedures that we created. They're



1 in near-final form right now. We are still  
2 working on a few of the little kinks with  
3 them, but.

4 The previous program had nearly a  
5 hundred questions they would go through to try  
6 to answer whether or not the oil spill  
7 response plan was appropriate in the sense  
8 that it met the OPA 90 Oil Spill Act of 1990.  
9 And also the regulations found in 49 CFR Part  
10 194. And what we found is, they were asking  
11 several. Questions and looking for areas that  
12 were really outside the scope or outside the  
13 bounds of the regulations. So we really  
14 streamlined those and focused on what the  
15 regulatory requirements were.

16 And then we also, in the process  
17 of it, determined, looked at performance  
18 measures. Not as the performance measures  
19 that we were discussing earlier this morning,  
20 but in the sense of what's the appropriate  
21 number of people, how much time should it take  
22 to review the plan, what are the key items

1 that must be in the plans. What are areas  
2 that, if you will, are gray areas in the  
3 regulations. The regulations, for instance,  
4 say that you need to have training, everyone  
5 has to be trained in the plan. Does that mean  
6 that the plan needs to have a section on  
7 training? The regulations are gray there.  
8 Fortunately, all the plans do have sections on  
9 training.

10 So those are areas that we  
11 recognize and started to look at performance  
12 measures. And we found how much time it took  
13 to review an average plan. And part of it, we  
14 also, as Jeff had mentioned, went to  
15 benchmarked, what other agencies are doing.  
16 We use a similar process as what the Coast  
17 Guard has implemented and that is having a two  
18 tier review process. So the first review is  
19 done by one individual and the secondary  
20 review is done by a separate individual, so  
21 you're not checking your own work, in essence.  
22 And all the reviews are now being conducted by

1 Federal employees, so that's kind of a key  
2 point. In the past, we have had contractors  
3 do this; but in the revamped program, it is  
4 Federal employees that are performing the  
5 reviews.

6 The primary reviews really were  
7 looking for the, do they meet the regulatory  
8 compliance aspects of it? Do they have all  
9 the required elements? So when you go through  
10 Part 194, do they have what it states in 194?  
11 The second review is first for quality  
12 assurance. Did the primary reviewer get  
13 things right? And if you found deficiencies,  
14 did they really, how egregious were the  
15 deficiencies? And also did they sufficiently  
16 review certain key elements. And I'll discuss  
17 about the key elements a little bit later on.

18 Then we also trained a cadre of  
19 headquarters' staff. And we trained them both  
20 on what the OPA 90 requirements were, how we  
21 fit within the regulatory framework in the  
22 National Contingency Plan, what the National

1 Response Teams responsibilities are; regional  
2 response teams. So we trained folks on that.  
3 Then also, then we trained them on 49 CFR.  
4 What do the regulations require? And then, of  
5 course, on our standard operating procedures  
6 and the processes and procedures we use to  
7 review the plans. So we trained 26 staff  
8 within PHMSA and we also brought in some help  
9 from the Federal employees up at Volpe on a  
10 temporary basis. Trained them to perform  
11 reviews and in the reviews, we had the more  
12 experienced individuals performing the  
13 secondary reviews and then the, if you will,  
14 the newer, newer to the review process,  
15 reviewed, did the primary review. So that  
16 gave us a good checks and balances in the  
17 quality control.

18 We also established policy for,  
19 we've had numerous requests, FOIA requests,  
20 for facility response plans; and under 49 USC  
21 60838, it says that we need to protect some of  
22 the information in these plans. So following

1 along with that, we protect, to exclude from  
2 public disclosure proprietary security  
3 sensitive information, specific resources and  
4 then the worst case discharge, both in volume  
5 and location. We needed to strike a balance  
6 between what is the public's right to know and  
7 also to protect any responders as well as the  
8 organization, to make sure that they can have  
9 a successful response to an oil spill. So we  
10 were trying to balance that.

11 We will soon be posting that  
12 policy on our website. There's a site within  
13 the PHMSA website that has lists of all  
14 policies that are publicly disclosed,  
15 disclosable. To show it's real, there is a  
16 copy of it. If anyone wants it, they can look  
17 at it; it is available to take a look at. And  
18 also, one of the other things that came out  
19 in the last year is we can now enforce 49 CFR  
20 Part 194, because previously the OPA 90 had  
21 been left out of our enforcement abilities.

22 As mentioned, we streamlined the

1 review process. This is kind of a condensed  
2 down, so this rolls up into the standard  
3 operating procedures. Really, I won't go into  
4 great detail; this is available in the  
5 proceedings for this. But I kind of wanted to  
6 note a few things. When we check for  
7 completeness, it's not the same as the primary  
8 and secondary review, did we get the files,  
9 did the electronic files come in with all the  
10 parts that they said they were supposed to  
11 have and the like. The other thing is  
12 assigning priority. We have a first in/first  
13 out policy on that one. However, we do  
14 recognize that there are certain times when,  
15 if it's a brand new, unique plan for a new  
16 pipeline that's becoming operational, we would  
17 like to get that reviewed in a very timely  
18 manner. So those go to the front of the line.

19 We also, in mentioning with the  
20 performance appraisal, just performance  
21 measures, I wanted to say that it is our goal  
22 to have a plan reviewed and some type of

1 recommendation out of it within two months of  
2 receipt. And so that's from the time it's  
3 logged in, we do a primary review, secondary  
4 review, and you see under the review, really  
5 the secondary reviewer provides a  
6 recommendation to me, whether or not the plan  
7 should be approved or whether or not  
8 corrections, deficiencies were found that  
9 require corrections. Also, during the review  
10 process, those plans that we found have  
11 deficiencies and the secondary reviewer who  
12 made those recommendations, will review any  
13 incoming plans with corrections to make sure  
14 that the corrections were made in accordance  
15 with the recommendations that we have made.

16 So, moving on the revitalized part  
17 of the program. What we've done is really  
18 created more of a sustainable program. We  
19 have dedicated staffing, both, we have  
20 contractors to help us with some of the  
21 preliminary redactions. It is still the FOIA  
22 Officer, a Federal employee that applies

1 redactions and my staff also reviews to make  
2 sure that they follow the policy documented I  
3 mentioned earlier. We've also better  
4 integrated the oil spill program with other  
5 aspects of our program. One of the bigger  
6 pieces, and I understand you had a discussion  
7 about this in the information collection.

8 We have integrated with our  
9 National Pipeline Mapping System, and one of  
10 the items in the information collection is to  
11 sit there and look and see if we can get the  
12 FRP's associated with the pipelines, and that  
13 really helps with, in many instances,  
14 specifically with identifying the correct  
15 spill plan, should a spill occur, in order to  
16 provide it to the Federal on-scene coordinator  
17 that might be going to that.

18 We've integrated into the  
19 inspection enforcement, as I mentioned, we now  
20 have the authority to enforce this. And we've  
21 identified key items that the inspectors  
22 should look at when they have them. The first



1 one is, do you have a plan? And then also one  
2 of the items in the plan is to look at, it has  
3 a qualified individual. Who's the qualified  
4 individual? Is that person current? Are they  
5 available when contacted? And then throughout  
6 this whole process, working with the Volpe  
7 staff, the other agencies and also internal  
8 staff and the enforcement staff, we've  
9 collected and shared and applied the lessons  
10 learned so we continually improve the program.  
11 If we have a question in our standard  
12 operating procedures, does this make sense?  
13 Is this understandable what we are looking  
14 for? We are continuously improving that.

15 And then as noted, we have the  
16 policy so that we can increase the program  
17 transparency and we have produced the plans  
18 online, once they have been approved. And  
19 here's an example of the National Pipeline  
20 Mapping System. What we've done is, we linked  
21 response plan to the pipeline units; so if an  
22 FOOSC, Federal On Scene Coordinator needs a

1 plan, we can use the NPMS to rapidly identify  
2 which plan, if it's not readily apparent to us  
3 when that occurs. We also use this as a way to  
4 sit there and find plans that might be  
5 missing. So were there operators out there  
6 that had not provided a plan to PHMSA and this  
7 process identified four or five companies that  
8 had not provided a more recent plan. So this  
9 allowed us to bring them into compliance. Also  
10 it helps the inspectors determine which FRP is  
11 associated with the lines that they were  
12 inspecting. So that was a very good  
13 undertaking and it's one that we plan to  
14 continue.

15 In the area of re-engagement, we  
16 have re-engaged with our Federal partners. We  
17 have been engaged in many ways with many of  
18 the organizations, Coast Guard, EPA and BSEE;  
19 but through the ICOPAR Program and also the  
20 National Response Team, but the pipeline  
21 safety has really reengaged in the sense of  
22 the National Response Team and also with the

1 National Scheduling and Coordinating  
2 Committee, and that's the one that looks at  
3 exercises in spills. But we've been expanding  
4 really the role of that coordinating committee  
5 because really you have all the players in oil  
6 spill in that one committee, so that is our  
7 opportunity to vet ideas as well as concerns  
8 that we have had in oil spills. And we've  
9 also, with the National Response Team, our  
10 regions have engaged more with the Regional  
11 Response Teams. Right now, the Regional  
12 Response Teams, many of them are updating the  
13 area contingency plans. They've asked for oil  
14 spill response plans so that they can look at  
15 the worst case, discharges, locations, and  
16 where the pipelines are. So we've provided  
17 access to the National Pipeline Mapping  
18 System, the FPR, so that they can better  
19 create area contingency plans.

20 And we have improved  
21 communications, we believe, with the regulated  
22 industries. First of all, we have an open

1 dialogue now, when we find deficiencies and  
2 such. We will work through with the regulated  
3 industry to make sure that their plan meets  
4 the regulatory requirements and has the key  
5 elements in it. And we have been more engaged  
6 and documenting our participation in drills  
7 and exercises; and both from my staff's  
8 participation on it as well as our inspectors  
9 in the field offices.

10           Hopefully, all of you are aware  
11 of, in our reengagements, part of the  
12 reengagement is to better communications. We  
13 have issued two advisory bulletins that are  
14 directly related to the FRP's. The first one,  
15 as Jeff had mentioned, is right after the Deep  
16 Water Horizon and most recently this January,  
17 we had the advisory bulletin for improvement.  
18 And the five key elements, which I think I  
19 thought I had a slide in here, if not, I will  
20 go back; were mentioned in that advisory  
21 bulletin. With the National Coordinating  
22 Scheduling Committee, we've been working to

1 update the National Preparedness Response  
2 Exercise Program guidelines or PREP  
3 Guidelines. Most plans submitters say that  
4 they follow the PREP Guidelines, and so we are  
5 a member and we represent DOT on that  
6 Committee. And as I mentioned, it's the key  
7 players with oil spill response plans.

8 The Coast Guard has taken the lead  
9 on publishing the guidelines and we expect  
10 that there will be, there has been one Federal  
11 registered notice already, saying that the  
12 requesting comments and now a draft will be  
13 soon submitted, probably within the next sixty  
14 days. So I highly recommend you keep an eye  
15 out for those. The more substantial changes  
16 really were in the area of the Coast Guard and  
17 BSEE; although some minor changes were made  
18 for DOT including for our other modal partners  
19 in Federal Motorcarrier and Federal Railroad  
20 made some minor edits to their sections as  
21 well.

22 Drills and exercises: We

1 participated during fiscal year 2014 in more  
2 than twenty oil spill exercises. The  
3 exercises include those that were operator-  
4 led. We participated in an area exercise up  
5 in Michigan; several of the pictures of the  
6 two top pictures are actually from an area  
7 exercise from Michigan, and the operator  
8 involved was Enbridge. And we participated in  
9 that. Linda Daugherty was also there.

10 We've been invited to participate  
11 in other Federal agencies government-  
12 initiated, unannounced exercises, or GIUE's.  
13 The photograph with the individuals in it,  
14 that was actually from a GIUE exercise that we  
15 participated in, in the Santa Monica area. It  
16 also included our State partners in  
17 California.

18 We've also been participating in  
19 planning for the 2015 Spills Of National  
20 Significance, or SONS. And what's really  
21 unique about this SONS exercise is that it's  
22 one of the first times that I can remember,

1 I've been associated with the National  
2 Response Team since the last nineties.  
3 They've always either been arctic or gulf or  
4 off shore; this one's inland. And several  
5 scenarios were presented, some from pipeline  
6 and also from rails. And I'm not, the  
7 committee that the decides which of the SONS,  
8 decided it will be an inland SONS. I do not  
9 know the specific scenario at this time that  
10 they have chosen; but look forward to that as  
11 well.

12 So some of the results, we have  
13 SOP's now. Standard Operating Procedures for  
14 reviewing; and we've eliminated the backlog.  
15 Of the four hundred plans that we cataloged,  
16 97 percent of them have been reviewed. And  
17 close to 90 percent have been approved at this  
18 time. The others are in the state of working  
19 out deficiencies that we identified.  
20 Approximately half of the plans that we  
21 reviewed had deficiencies that we identified  
22 in them, and we have asked the operators to

1 correct them. And here are the key elements  
2 that I had mentioned earlier. These are also  
3 in the Advisory Bulletin. First of all, did  
4 they have a qualified individual and  
5 alternate; the one that can say, yes bring the  
6 resources. I always call it the bellybutton  
7 for the operator. Did they have appropriate  
8 worst case discharge calculations? And that's  
9 the areas, do they have the pipeline worst  
10 case historical discharge as well as breakout  
11 tanks? We expected to see all three of those  
12 in their plans, and that was one of the key  
13 areas that we looked at. And then once they  
14 determine the worst case discharge, did they  
15 have their appropriate resources to respond  
16 within the time frame required under the  
17 regulations? So the 6-1/2 hours or 12 hours,  
18 based on the location. So we looked at that.  
19 And we would, if we did not feel comfortable  
20 that they had the resources, we would not  
21 approve their plan.

22 We also, borrowing upon the Coast



1 Guard with response resources, we really  
2 looked at the U.S. Coast Guard's  
3 classification, OSRO Classification. So if  
4 you have an OSRO, that was Coast Guard  
5 classified, and this is specifically really  
6 good along the coastal regions that we look at  
7 making sure that they have the response  
8 resources. There, they would not be required  
9 to provide us a copy of the whole list of  
10 elements for those that are more inland. If  
11 they did not provide us a list of the response  
12 resources, then we would require them to  
13 provide that to us beforehand. And then also,  
14 did they identify the sensitive areas? And  
15 then a key was, and kind of it was mentioned  
16 earlier today, did they understand what safety  
17 is at the site? We don't want people getting  
18 hurt during a response. So those, if you  
19 missed any of those, I would not approve a  
20 plan.

21 Others, there might have been,  
22 we've had a few plans that they still had RSPA

1 in them. I'm going to approve the plan, but  
2 I'm going to tell them please fix RSPA, get it  
3 out of there. Some of the others might have  
4 had the instance of the training, the  
5 regulations that's kind of a gray area in  
6 their regulations. If they mentioned training  
7 but they said we're going to submit it any  
8 time it's changed, we would tell them, no,  
9 this is the real requirement; but I'm not  
10 going to sit there and deny approval for that  
11 reason. We will note the deficiency, but it  
12 was not one of the areas that would cause a  
13 failure.

14 Another thing we have created is  
15 the ability to provide these plans to on scene  
16 coordinators. The on scene coordinators, we  
17 were able to get a plan for a recent spill  
18 down in Caddo Parish within five minutes of  
19 the request. So, and they were able to review  
20 it before they were even on scene. So that's,  
21 I think that's a great capability that we've  
22 been able to establish. And then insuring more

1 compliance and as we noted, the redacted  
2 plans, we have a hundred and eighty plans  
3 currently posted. It's a laborious effort.  
4 We have had plans that are anywhere from four  
5 hundred plans, but we've actually had one plan  
6 that was over five thousand pages. And that's  
7 a lot of pages to look through to make sure  
8 that sensitive information, and also private  
9 information is not in there. Home phone  
10 numbers and such as that. I do question  
11 whether or not a five thousand page plan is  
12 implementable or you could train your staff to  
13 use it. Our regulations are silent there.  
14 So, but that's one of the areas through  
15 outreach, we believe we can do.

16                   So, what's our path forward?  
17 We're going to continue to address the NTSB.  
18 I think you've seen some of these before. We  
19 wanted to continuously improve the review  
20 process, continue to integrate with the other  
21 areas of pipeline safety and to continue with  
22 drills and exercises. And we are engaging

1 with regional response teams, area committees,  
2 and others; both in drills and also in helping  
3 them in their planning activities.

4 With that, do you have any  
5 questions?

6 CHAIR HONORABLE: The floor is  
7 yours.

8 MR. KUPREWICZ: Rick Kuprewicz, on  
9 the liquid committee. I apologize for the  
10 rude interruption I had earlier with your  
11 presentation. One of these days I'll figure  
12 out how to work that iPhone. As long as Apple  
13 quits changing the damn operating systems.

14 I thought I heard you say that on  
15 the worst case discharge cases, you focused in  
16 on three areas? If I heard that correctly  
17 could you just reiterate those please?

18 MR. LEHMAN: Yes. First, if there  
19 was a break in the pipeline, how much time it  
20 would take, it goes to the response time as a  
21 little bit discussed earlier. How long before  
22 they detect it and shut it down? And then how

1 much would drain down from that? And we did  
2 question some of the responses. We also found  
3 one operator that said, well this one site  
4 that has the worst case discharge, we leave it  
5 at Friday afternoon and we won't know there's  
6 a spill until Monday morning. And I said, I'm  
7 not going to approve that plan. They changed  
8 their operating procedures, thankfully and  
9 worked with our enforcement folks as well,  
10 because that also violated other sections of  
11 our regulations.

12 So the pipeline piece, so the  
13 drain down. Some used very sophisticated  
14 models. California has very sophisticated  
15 models for determining the pipeline worst case  
16 discharge; we accept that. Those type of  
17 models. We do want them to provide a  
18 description of the models they used. The  
19 other one is historical discharge, worst case  
20 discharge. We've only had one instance where  
21 the historical discharge was greater than that  
22 were calculated, but we do require them to

1 show us that information. Then the other one  
2 would be break out tanks, according with the  
3 regulations.

4 CHAIR HONORABLE: Thank you, Rick.  
5 Any other questions? Well done, Dave. Thank  
6 you. I think I'll defer to Jeff, here.

7 MR. WIESE: I just wanted to thank  
8 Dave for continuing my habit of alliterating,  
9 so. We have alliteration for all aspects of  
10 our business; this was on our oil spill  
11 response plan. It's the R's. We're working  
12 our way through the alphabet. Dave's done a  
13 great job. I just want to thank him for all  
14 he has done; he really reengaged that program.

15 MR. LEHMAN: Thanks.

16 CHAIR HONORABLE: Hear, hear. And  
17 we're right on schedule. I understand now  
18 we'll take up Agenda Item Number 4. We'll  
19 have a briefing on constructions issues, both  
20 reversal and conversion of service by Alan  
21 Mayberry.

22 MR. MAYBERRY: Thank you, Madame

1 Chair. The topic I'm going to discuss; we  
2 thought it would be important to come back to  
3 you today to give you an update on where we  
4 stand related to oversight on construction and  
5 particularly as it relates to, you know, as  
6 far as the replumbing of America, as I've  
7 heard it called. These are being done out  
8 there with pipelines, especially in regards to  
9 reversals, conversions and then also part of  
10 changes. Since we last met, there has been  
11 some activity in this area as far as things  
12 that we've done to deal with this issue.

13 I might also add, last year I was  
14 on a panel with the Pipeline Safety Trust. I  
15 think, Rick Kuprewicz, you were on that panel.  
16 I found that you were very entertaining panel  
17 mates, so I'm sure you'll have some input on  
18 this topic, too. I know last year, it was  
19 certainly very relevant on this. Just sort of  
20 what I plan to go through, will flow, just  
21 various topics. I only have a few slides  
22 here. There are a few pictures, I thought

1 that since we're after lunch, maybe some  
2 pictures will help here; especially related to  
3 construction.

4 For this one here, perhaps you've  
5 seen it before. This is a slide we use quite  
6 often. It's like motherhood and apple pie for  
7 us. Some people might even call it the  
8 liturgy of the agency, I guess. But how we  
9 hold operators responsible for operating safe  
10 systems. We do influence that operation,  
11 obviously, through oversight, through the  
12 issuance of regulations, through inspections,  
13 and then we also strive for, to impact  
14 operator performance beyond the regulations;  
15 because as we all know, the regulations  
16 represent a minimum standard. So we did that  
17 through participation in teams, or in  
18 Standards Committees and issuing advisory  
19 bulletins, for instance; which is one thing  
20 that I will be talking about here as far as  
21 something we have done in the last couple of  
22 months.



1                   So what are we talking about?

2                   Like I said, this is a replumbing of America  
3                   that's going on right now, and its related to  
4                   the new sources of oil and natural gas; either  
5                   pipelines that are being reversed to pipelines  
6                   that are being converted from natural gas to  
7                   crude oil or natural gas to other products and  
8                   vice versa. Although I must say what I have  
9                   seen the most of is conversion to liquid  
10                  products transportation, particularly crude  
11                  oil. And obviously, there's increased  
12                  importation of Canadian crude as well as the  
13                  domestic production has been a particular  
14                  focus these days.

15                  We've been monitoring the  
16                  situation and we're out there. Related to  
17                  construction, traditionally, and some perhaps  
18                  have heard me say this, traditionally before  
19                  about 2007, we spent about 8 percent of our  
20                  inspection time on construction inspections.  
21                  And here more lately, it's been more in the  
22                  30, well 20 to 30 to 40 percent range of

1 inspection time. And that is actually a metric  
2 that Linda and I are talking about, too; as  
3 far as how much inspection time we're spending  
4 on things like construction, incident response  
5 and O&M. But we do have that and it's  
6 definitely ramped up in the last several  
7 years.

8           Of course, more recently, just for  
9 the energy boom that's going on and the  
10 pipelines are being built and pipelines are  
11 being converted in service. Here's a map.  
12 Perhaps you've seen this before. I grabbed  
13 this from the EA website. Just shows you  
14 where all the shale plays are in the lower  
15 forty-eight. In particular, you've heard of  
16 Marcellus, you've heard of Bakken, Eagle Ford,  
17 Barnett, you know, and others. There are  
18 numerous plays that are going on out there,  
19 which is contributed to the influx of energy  
20 and we're flushing energy right now in the  
21 U.S.

22           A little primer on sort of the

1 code behind what we're talking about. Well,  
2 first I'm going to talk about reversals, which  
3 is one, like I said; conversions and then  
4 product changes. Reversals are not, and this  
5 is where pipeline, our flow is going in one  
6 direction and either supply changes or market  
7 condition changes where you need, instead of  
8 moving to the Philadelphia area, for instance,  
9 you need to move product to the Gulf Coast  
10 region. Pipelines are reversed to account for  
11 the changes in the market, and where the  
12 product needs to go to the end user.

13 Our code doesn't specifically  
14 address, the term reversals, however, in our  
15 Integrity Management Plans, in an O&M,  
16 operators need to consider that. Certainly an  
17 integrity management, as a reversal changes  
18 the threat profile of the pipeline, such as in  
19 the impact on cyclic fatigue in particular for  
20 liquid lines. We need to take that into  
21 account in their Integrity Management Program.  
22 And just what that impact is on the pipeline.

1 Certainly with overpressure protection and the  
2 location of where you're monitoring pressure,  
3 also can change with a reversal. A control  
4 and management, just how the pipeline is  
5 operated obviously changes. And operator  
6 qualifications and other issues, as far as you  
7 need to make the program relevant to the  
8 product that's being transported.

9           What Dave covers, spill response  
10 plans, certainly that needs to be addressed,  
11 too. Related gas pipelines, especially with  
12 how MAOP may have been determined, Maximum  
13 Allowable Operating Pressure, if it was  
14 determined using pressure gradient, that needs  
15 to be looked at as well and considered in  
16 whether or not it's even a good thing to do  
17 for that particular pipeline. And then we as  
18 an agency have been dealing with special  
19 permits and addressing, and actually have a  
20 few more questions that we have relevant to  
21 reversals when they come up for renewal.

22           Service conversions are addressed

1 in code and what are we talking about with  
2 service conversions? That is when a product  
3 or when a pipeline changes from liquid to  
4 natural gas, or from natural gas or gas to  
5 liquid. So that is covered in certain  
6 procedures an operator must go through; not  
7 unlike some of what I just talked about. It's  
8 things you would expect related to integrity  
9 management. There's also a records  
10 requirement in there as well. I'll come back  
11 to that, because I have an order issue here.

12 Product changes. Where we're  
13 going from say, refined products to crude oil;  
14 that was a project that we dealt with that  
15 some are familiar with, in Texas, with the  
16 Longhorn Project. That was a reversal project  
17 that involved that, just that right there as  
18 far as refined products to crude oil and  
19 reversal in direction, too. Again, that's not  
20 specifically addressed in code, however, and  
21 that is like from one liquid product to  
22 another liquid product. However, again, like

1 reversals, it needs to be considered in the  
2 plan and in your spill response program.

3 Now, let's shift gears here a bit.

4 Oh, I'm sorry, I need to go back to one I  
5 skipped. In September, we issued an advisory  
6 bulletin, and this is in the aftermath of a  
7 couple failures, or more than a couple of  
8 failures. A few failures and then inspections  
9 where the inspectors; we thought it would be  
10 important to remind operators of what  
11 considerations need to be made when they're  
12 considering reversing a pipeline or changing  
13 the product. We outlined a couple points in  
14 particular that were important to consider,  
15 like I mentioned grandfathered lines and  
16 natural gas lines; as far as considering the  
17 pressure test that was done. You know,  
18 perhaps that validation of MAOP is not  
19 relevant if it was established using a  
20 pressure gradient.

21 The second bullet there is,  
22 there's some other legacy pipe, particularly

1 like low frequency ERW pipe or lap welded  
2 pipe, pipe of unknown seams, where you might  
3 have a seam factor that's considered in your  
4 design formula of less than one, that needs to  
5 be considered as well. And then there are  
6 other perhaps they are obvious if the pipeline  
7 has a failure history, a leak history, perhaps  
8 stress corrosion cracking or internal  
9 corrosion. Maybe that's one that wouldn't be  
10 a good candidate for a reversal; maybe it  
11 would be better to replace the pipe.

12                   And then finally, pipelines,  
13 natural gas lines that operate above 72  
14 percent SMYS. No, I'm not really talking  
15 about the newer ones that were installed under  
16 the alternate MAOP rule, but these are  
17 primarily the grandfathered lines that operate  
18 above 72 percent. You need to consider that  
19 as well. Of course, going into that, I know a  
20 lot of those were tested, rigorously tested;  
21 but none the less need to consider the  
22 operating history, how it was tested, and

1 whether or not it would be a good candidate  
2 for reversal.

3 Now I'm going to shift gears and  
4 go on to construction observations. Another  
5 aspect of this replumbing is building new  
6 pipelines. Certainly, we've seen a big influx  
7 of that; certainly our inspectors are quite  
8 busy in that area, as are our operators who  
9 are out there building these lines. We see a  
10 lot of pipelines that are sort of short haul  
11 pipelines, medium haul, not that long, maybe  
12 a couple hundred miles but pretty active  
13 nowadays. We did recently issue as far as  
14 that second bullet points out, we issued  
15 another advisory bulletin related to  
16 construction notifications.

17 Now, we don't regulate through  
18 advisory bulletins, but we did ask that, and  
19 remind operators that yes, there's a sixty day  
20 notice out there, but if you could, would you  
21 please notify us sooner? And this is really  
22 to help us be engaged in the project sooner;



1 because there are a lot of activities that go  
2 on, like weld procedure qualification,  
3 qualification of welders, just a variety of  
4 things that are relevant to the integrity of  
5 the line that we'd like to be involved in  
6 earlier. So that's why we put that out. And  
7 plus, a number of operators have really cut it  
8 close in notifying us, so it was really a  
9 reminder about that.

10 A lot of these issues that we're  
11 seeing, and I'll point some of them out,  
12 they're not really solvable through added  
13 regulation. It's really up to the operator to  
14 do the right thing and have the controls in  
15 place and expectations and oversight of the  
16 contractor to do it. Looking back to 2007 and  
17 since then we've had a workshop and a lot of  
18 discussion. I know There was a tendency to  
19 contract out a lot of construction including  
20 the inspection; and one of the items that was  
21 pointed out, or we saw, that was, there needed  
22 to be really good oversight of the contractor.

1 Since then, I know a lot of work has been done  
2 related to building best practices for how to  
3 improve construction quality and I'm going to  
4 go through a couple of those in a minute.

5 It's just a kind of a collage of  
6 different issues that are out there, but kind  
7 of the different areas that it covers, perhaps  
8 you've seen this before. It's really  
9 consistent with what we tend to always see out  
10 there, just something we need to focus on  
11 related to the life cycle. Because if you look  
12 at it, you think about it, the failures that  
13 we've seen over the last few years, especially  
14 like in 2010, there is an aspect of new  
15 construction that you can implicate in those  
16 failures. If you look at San Bruno, they have  
17 the issue with the pipe that is of  
18 questionable manufacture. In Marshall,  
19 Michigan, you had the tape coat, it had a  
20 coating, the selection of coating that was  
21 used, of course, when it was built, we didn't  
22 know. But these issues, these decisions did

1 impact the long term integrity and we're  
2 living with those, really decisions made early  
3 in the life cycle, today and having to deal  
4 with them. So it's important to get it right  
5 up front.

6 And then, of course that curve I  
7 showed you earlier, the so called bathtub  
8 curve shows that early in the life cycle of a  
9 pipe is when you do have failures. And then  
10 the older pipes as well. Issues like handling  
11 and storage of pipe. On the left there,  
12 that's probably stacked too high. In this  
13 case, we've got a good example. See, that  
14 regulator doesn't always show the bad  
15 examples. Here's a good example of storage  
16 and handling of pipe. Here's I guess, a not  
17 so good example. Another thing we've seen  
18 here, just looking at side booms and moving  
19 pipe and lowering in pipe, is and that's a  
20 side boom turned over, if you can't make it  
21 out. But you need to have enough side booms  
22 to handle the pipe, because that is a factor

1 in how much stress you put on that weld. A  
2 weld will undergo the most stress following  
3 its lifecycle when it's being lowered in the  
4 ditch.

5 And when the weld procedure is  
6 qualified, it does assume or it does figure in  
7 that it's going to have a certain stress  
8 level. And that stress level is determined by  
9 how much support it has when it's going in the  
10 ground. So that's an issue we've seen, that  
11 we've had to address. Pipe that's resting on  
12 rock is a common issue, and has been  
13 implicated in a number of failures involving  
14 general corrosion. That's probably one of the  
15 more prevalent issues that we see later in  
16 life and just different handling of the  
17 coating. Things like that that can long term  
18 impact the integrity of the pipe.

19 One thing I like to say is we  
20 don't have throw away regulations and usually  
21 I say that in response to somebody where you  
22 have a coating issue and there's an assumption

1 that, well, the cathodic protection will  
2 protect the pipe long term, so it doesn't  
3 matter. The CP that you add later will take  
4 care of that holiday that may be in there.  
5 But that doesn't mean we don't expect  
6 perfection up front. Certainly the CP system  
7 is there to provide that protection, but we do  
8 expect proper handling of the coating.

9 I know I'm preaching to the choir,  
10 especially with operators. But it's an issue  
11 that really warrants close focus on projects.  
12 Probably coating issues were the biggest one  
13 we see. I hear some others that I won't  
14 really get into it. Another one, a newly  
15 installed line with no markers. And then  
16 another issue that's popped up, I know we've  
17 talked about this a few years, is related to  
18 interference currents causing corrosion on  
19 pipelines. This is where you have pipelines  
20 that might be parallel and you have  
21 interference between CP systems.

22 In a lot of cases, we see it's

1 with parallel transmission power lines, so it  
2 can really cause extensive corrosion in a  
3 short period of time. So the moral of the  
4 story here is there is what I have up there is  
5 don't put off your AC surveys and then just  
6 material verification. It is one that we've  
7 been focusing on. Certainly, there are  
8 requirements in the code. I might add that in  
9 our rulemaking on gas, as we deal with some of  
10 the recommendations and mandates, we are  
11 dealing with record keeping issue there as  
12 well.

13 As far as looking forward, the  
14 first bullet up there; we've already done. We  
15 issued an advisory bulletin and that's  
16 probably the main extent of our policy work  
17 right now other than some items we have that  
18 are in pending rulemaking that we're  
19 considering. We are in the throes of integrity  
20 management 2.0 that, with our rulemaking  
21 that's in progress right now. We also  
22 considered the same one of those rules that

1 John talked about yesterday, operator  
2 qualification for construction. And QMS for  
3 construction, that was a topic that's been  
4 talked about. I know there's been a lot of  
5 good work in that area done. I know industry  
6 has a number of initiatives that has produced  
7 some good results in that area, as a way to  
8 manage quality and insuring that you have  
9 quality product in dealing with these issues  
10 that you've seen there. To insure quality in  
11 product. I know there's still a lot of work in  
12 progress and we're expecting to see some of  
13 that from industry; but then also we have an  
14 R&D project right now on quality management  
15 systems for construction.

16 And finally, that integrity  
17 verification process. Like I said, one of the  
18 rulemaking's deals with record keeping. That  
19 one specifically to gas, deals with that  
20 issue. And that's it. Just a quick update on  
21 where we stand, and be glad to answer any  
22 questions you might have.

1 CHAIR HONORABLE: Thank you, Alan.  
2 Are there any questions? Comments? All  
3 right. We'll move along to our next agenda  
4 item. Just a moment.

5 MR. WIESE: Are you really letting  
6 him off that easy? Come on. Chad, I was  
7 looking at you.

8 CHAIR HONORABLE: Chad?

9 MR. ZAMARIN: Chad Zamarin,  
10 Cheniere. Just a question, maybe; because I  
11 think as an industry, we've seen that the next  
12 three to five years, I think, I'm sure the  
13 FERC folks would tell us the same. It's really  
14 going to be a remarkable period of time in our  
15 industry from a construction perspective. A  
16 lot of the last few years has been a lot of  
17 upstream and midstream activity, but a lot of  
18 repiping the existing infrastructure and we've  
19 kind of run out of the ability to do that.  
20 And so we're going to be building a lot of  
21 greenfield pipe and it's going to be a very  
22 active time. Just put it out there, what are



1 your thoughts and what would PHMSA look to do  
2 differently? We're thinking about it as an  
3 industry. How do we manage this workload  
4 safely and effectively, but are you also  
5 seeing that same demand on your resources  
6 coming over the next three to five years?

7 MR. MAYBERRY: Good question.  
8 Yes. We expect to increase the focus on  
9 construction, so as projects increase, one  
10 thing we're finding is it has been difficult  
11 to catch the number that we want to inspect.  
12 We are looking at our resources and just even  
13 the skillset that we hire to, because we, at  
14 the same time, we're also looking, we are  
15 getting additional staffing that would come to  
16 bear on construction inspections in  
17 particular.

18 With that, we are looking at,  
19 because of the challenge in hiring that we  
20 have, we are looking at the skillset and  
21 people that may be more focused in the  
22 construction area versus integrity management.

1 So that's one area we're looking at. And  
2 Linda, I know this is kind of her bailiwick,  
3 so. That's dealing with staffing. And we're  
4 also looking at curriculum changes at our T&Q  
5 office to sort of change with the times as far  
6 as dealing with construction.

7 MR. WIESE: With the Chair's  
8 permission, I want to just take a small swing  
9 at that one, too. I appreciate the question.  
10 We have a fixed box like you, a fixed box of  
11 resources; we have to parse it out and some  
12 parts of our turf are growing. Others, not  
13 many of them are shrinking; they're generally  
14 growing. One of the things that we've adopted  
15 and I think you'll, it's obvious to everybody,  
16 but I'm just going to state it so we're on the  
17 record here. You know, we believe the  
18 operator is responsible. We believe it's a  
19 process that needs to be managed from the  
20 beginning to the end. There, it is part of  
21 why we're talking about things like QMS, you  
22 know, we should all be comfortable when we see

1 a monogram, for example, on a pipe, what  
2 you're getting and what we're getting. I have  
3 raised questions on that.

4 I think the industry is responding  
5 in terms of quality control at the mill. A  
6 lot of companies sending their own people  
7 there. So I would say that the industry can  
8 manage this process by stepping up its level  
9 of quality control from the beginning to the  
10 end. I would also say that its part of your  
11 SMS. QMS is nothing more than are you  
12 achieving quality underneath the management  
13 system you have put in place? The last thing  
14 I'll say to you is that we will probably never  
15 be resourced to cover what some people,  
16 including some people in the public want us to  
17 do and still cover our other bases.

18 So I think you'll see an  
19 increasing use of us asking for third party,  
20 independent third party verification out on  
21 the right of way. I don't know how else we do  
22 it, you know? I don't think we can cover all

1 the bases without that. I know operators  
2 aren't thrilled to hear that; but it's either  
3 that or we triple our staff. And I don't  
4 think you probably want that, either, though.

5 CHAIR HONORABLE: Jeff?

6 MR. WRIGHT: Going back to Chad's  
7 comment, just so everyone knows--

8 CHAIR HONORABLE: I'm sorry, will  
9 you introduce yourself?

10 MR. WRIGHT: Oh, I'm sorry; Jeff  
11 Wright, FERC. Just so everyone knows out  
12 there in the public, too; it's a tremendous  
13 load that's coming. It's like a tsunami of  
14 pipelines. I can say since 2000, we've  
15 approved over 16,000 miles of pipeline, most  
16 of which has been built. I'm looking on my  
17 plate right now, whether pre-filing or  
18 currently under application, we have several  
19 thousand miles more. And then the potential  
20 is slightly ridiculous, so. You still want to  
21 come over, Chairman Honorable?

22 That said, we do as agencies look

1 into novel ways of processing, at least from  
2 my perspective, processing, using contractors,  
3 delegating, that kind of thing. Same thing  
4 with PHMSA, it's going to be a constant battle  
5 to look for novel ways to meet the public's  
6 need for gas, at least in my perspective, and  
7 also being responsive to all of our  
8 stakeholders at the same time.

9 MR. WIESE: And with your  
10 permission, I'll just say we've had a good  
11 relationship with FERC. We've worked on the  
12 L&G, the same thing, right? We did the import  
13 wave and then it all died off; now we're on  
14 the export wave, you know, and eventually the  
15 market will be met there and that will sort of  
16 die off.

17 And pipelines, the same way, they  
18 come in waves in the construction cycle. So  
19 we'll continue to collaborate and to Jeff's  
20 point, he's talking about interstate gas  
21 alone. We're not even talking about oil,  
22 which is also huge; and all the intrastate

1 growth around some of these plays. So I think  
2 that as a country, I think your point is well  
3 taken and can be extrapolated wider. It's  
4 huge.

5 MR. WRIGHT: I was just going to  
6 add, and eventually they're going to make me  
7 die off with all this going on.

8 CHAIR HONORABLE: We sure hope  
9 not, Jeff. Well, thank you for that, and  
10 thank you for the questions and for the  
11 discussion. It really helped put this in  
12 context, both for where we are now and where  
13 we're headed. I think we're ready now for  
14 Agenda Item Number Six; which is a briefing on  
15 the Subcommittee Report on Midstream  
16 Regulatory Jurisdiction from Linda Daugherty  
17 and Chad Zamarin.

18 MS. DAUGHERTY: Thank you,  
19 Chairman Honorable. Well, with great  
20 pleasure, I'm going to introduce Chad to give  
21 an update from the Subcommittee group for  
22 Midstream Safety. Just to kick it off, as a

1 refresher.

2 A while back some operators  
3 approached us and said look, we have a  
4 dilemma. There are some facilities in which  
5 there appears to be dual oversight from OSHA  
6 and from PHMSA, and there's a lot of confusion  
7 about who regulates what, who regulates both,  
8 how to make a good decision going forward on  
9 how to regulate these, or how to prepare for  
10 inspection on these facilities. And so we  
11 established the group to look at basically,  
12 what is the best way to achieve a safety  
13 outcome without wasting resources from both  
14 OSHA and PHMSA, and to get to an outcome we  
15 can all agree to. Chad is going to give us an  
16 update on how we reach that point and where we  
17 are right now. So I'll turn it over to Chad.

18 MR. ZAMARIN: Thank you. Chad  
19 Zamarin, Cheniere Energy. And as Linda  
20 mentioned, I think this is a good example of  
21 how we as a group can work to solve real  
22 issues. We have put together a subcommittee

1 that's really operating on behalf of this  
2 group. Todd Denton is also a part of the  
3 group; he's not here today. Also in  
4 attendance, we've got a couple of our  
5 subcommittee members from industry as well as  
6 Linda and members of her team have also been  
7 involved. But if we've got any detailed  
8 questions, we've got Graham Bacon from  
9 Enterprise Products and Francis Foret from  
10 Targa Resources, who are on the subcommittee.  
11 But what I'll do is just briefly kind of go  
12 through what we were chartered to do, refresh  
13 the group's memory and then where we are today  
14 and where, I think we're heading and then if  
15 Linda wants to add or correct anything that I  
16 put out there, she'll do so.

17 We formed this, it's a  
18 collaborative group. We've got PHMSA, we've  
19 got OSHA, and we've got industry  
20 representatives working together to work this  
21 issue. And the initial scope I think, of our  
22 effort is summed up in terms of we need to



1 make sure that we have adequate regulatory  
2 coverage for the types of midstream assets  
3 that we're looking at. We need there to be  
4 clarity. There are assets in infrastructure  
5 in our industry that have historically been  
6 designed and operated under an OSHA set of  
7 standards; and obviously, we have a large set  
8 of infrastructure designed and operated under  
9 a PHMSA set of standards. And there have been  
10 areas of potential overlap or confusion as to  
11 which assets fall under which framework.

12 And so we've worked to try to  
13 delineate what fits where, make sure we've got  
14 the right regulatory framework for the right  
15 set of assets and provide some clarity. We've  
16 all come to the, I think, agreement that it  
17 makes sense for there to be no gap, but also  
18 no overlap. Let's make sure we've got a well-  
19 established regulatory structure that matches  
20 the infrastructure. And so the process that  
21 we've gone through is first we've worked to  
22 insure and convince ourselves that we've got

1 good solid regulatory processes and frameworks  
2 for each of the asset types; so that not one  
3 side or the other feels like we're not being  
4 adequately taken care of if one set of assets  
5 are being regulated under a PHMSA or an OSHA  
6 set of standards. We've also canvassed the  
7 industry and regulatory experts for common  
8 ground regarding what should fall under OSHA,  
9 what should fall under PHMSA. And we've  
10 looked at different design and operating  
11 scenarios. I'll show you in a little bit that  
12 there's some, these are complex facilities.  
13 So it can be difficult to come up with a very  
14 simple definition of what constitutes an OSHA  
15 PSM facility versus a facility that is just a  
16 PHMSA regulated asset.

17 And so we've worked to try to at  
18 least identify the boundaries. And then to  
19 propose a method for formal communication and  
20 clarification that the industry can understand  
21 and that also regulators can understand, and  
22 staff members when they come to a facility,

1 it's clear if they're visiting, that they  
2 understand where the assets that should be  
3 applied under a PHMSA regulation end and where  
4 an OSHA facility set of regulations begins.  
5 And oftentimes, that happens in the same  
6 footprint. So, we need clarity for our  
7 inspectors and for our folks to know where  
8 that occurs.

9           So far, our progress, we've had  
10 several meetings; have had a good cross  
11 section of PHMSA, OSHA and industry folks in  
12 those meetings. We've had several conference  
13 calls as well. And we've also done outreach  
14 to stakeholders outside of the subcommittee.  
15 I know that Linda has MC'ed meetings with her  
16 staff across the PHMSA regions and we've taken  
17 work that we're doing back to operators, to  
18 educate them, get input in, you know,  
19 hopefully create as much of a collaborative  
20 process as possible. I've kind of sat through  
21 this process and tried to identify some of the  
22 general areas of alignment, and it looks like

1 a relatively short list, but I think these are  
2 pretty significant. The first, that both are  
3 good strong regulatory frameworks, PHMSA, Part  
4 192, 195, 49 CFR, and the complementary OSHA  
5 PSM framework. And we spent quite a bit of  
6 time educating ourselves, because on both  
7 sides, there wasn't always a full appreciation  
8 of the differences or similarities between the  
9 two. Clear consensus that it makes sense not  
10 to have overlap and certainly to insure that  
11 there are no gaps.

12 We've also been working to  
13 navigate the statutory authority and the  
14 ability to kind of allow for or clarify where  
15 one regulatory framework would hand off or  
16 take over from the other, and so that's an  
17 issue we're still working to, to further  
18 clarify but I think what I would say is, from  
19 my perspective, there's general agreement I  
20 think technically, we still have to work  
21 through some of the process-related issues,  
22 some of the more legal issues about how we

1 memorialize that.

2           The last point is, there is a  
3 desire to memorialize an understanding of  
4 where a PHMSA-regulated facility ends, where  
5 an OSHA/PSM facility begins. But we've still  
6 got some work to do to figure out exactly the  
7 best means for that. I'll just do a quick OSHA  
8 PSM 101, since most of our time is spent  
9 looking at PHMSA-related regulations. But  
10 what you'll see here is not surprisingly, I  
11 think, consistent with a lot of what we've  
12 already been talking about. In particular,  
13 the PSM framework looks a lot like the API  
14 1173 work that's being done. It's a safety  
15 management system that consists of what you  
16 would expect, some very common core elements.  
17 I would say that it's got a very robust set of  
18 technical standards and procedures. It has a  
19 lot of process elements that are important to  
20 insure safe design and operations. And then it  
21 has those cultural, behavioral elements,  
22 employee engagement doing a job hazard

1 analysis. Doing the things that you would do  
2 from a behavioral perspective that drive good  
3 safe facilities.

4 In addition, and this is just an  
5 example of a few that I've put up here. But  
6 I'm, the safety management system is supported  
7 by a large library of technical standards and  
8 specifications that support the design and  
9 construction and operation of these  
10 facilities. You can see obviously, a lot of  
11 ASME boiler and pressure vessel code, ASME  
12 B31.3, process piping; and then a host of API  
13 and other consensus standards that are  
14 incorporated by reference into the PSM  
15 structure. But when the rubber hits the road,  
16 the challenge that we have is that these are  
17 very complex facilities that vary from one to  
18 the other. These pictures don't really do  
19 them justice. But the take away is that these  
20 are processing facilities primarily; these are  
21 not interstate transmission related  
22 facilities.

1                   Now there may be interstate and  
2 regulated facilities that run to and/or from  
3 these facilities and making sure we can  
4 delineate where one asset exists versus the  
5 other is the challenge. How does an inspector  
6 walk into one of these properties and know how  
7 to trace the regulated transmission line  
8 versus the infrastructure that's really there  
9 to support a PSM operating facility. That's  
10 the challenge. And when I look at it, the  
11 hardest deliverable of this group is to make  
12 sure that we don't get caught in the trap of  
13 trying to define every possible technical  
14 scenario. It's how do we have a definition or  
15 a standard that someone can interpret and  
16 accurately apply each and every time they walk  
17 into a facility of varying complexity and  
18 design.

19                   So that's really the core  
20 challenge that we have as a group, that we're  
21 still working through; but I think we will  
22 figure out. Just to give folks a quick idea

1 of what we're talking about; I know this is  
2 elementary to everyone here. But these are  
3 processing facilities primarily in the  
4 midstream space that we're focused on for this  
5 effort; so dehydration facilities, natural gas  
6 processing, NGL separation, cryo units,  
7 fractionation, petrochemical operations,  
8 storage associated with these facilities.  
9 There is a need, and we're working through  
10 defining those storage assets that are related  
11 to interstate commerce, because there is a  
12 vast network of storage facilities across the  
13 country that is intended to support interstate  
14 transmission and delivery of products. Those  
15 are clearly PHMSA facilities that are of  
16 interest.

17 There are also storage facilities  
18 that are primarily or solely intended to  
19 support processing and midstream operations.  
20 And making sure that it's clear what facility  
21 is which. Many of those facilities were built  
22 and operated under an OSHA PSM standard; and



1 so we need to be careful to properly define  
2 each of those different types of facilities.  
3 So, to achieve no gap, no overlap, we're  
4 working through criteria that we would need to  
5 delineate the transition from a 49 CFR-covered  
6 facility to an OSHA PSM facility; and some of  
7 the examples, some of the ideas that we're  
8 working to further define and clarify and just  
9 as a point of process, our goal is by the next  
10 advisory committee meeting to have this  
11 drafted for the group's final review. I  
12 certainly want to take any input at this  
13 meeting.

14 But the idea of is it a pressure  
15 control device that when you move into a  
16 facility, there is some piece of safety  
17 equipment that helps to identify where you've  
18 transitioned from your pipeline to a midstream  
19 facility. Is it an isolation valve? A meter  
20 skid? The pig trap that delivers into the  
21 facility? I think a combination and it may be  
22 different for different facilities, so again,

1 coming up with a clear criteria that could be  
2 used is what we're trying to accomplish. There  
3 are other devices that may be shown to  
4 transition that again, there's going to have  
5 to be a definition that allows for some  
6 interpretation; because it's going to be very  
7 different in different facilities, and so,  
8 there's always that last catchall that you may  
9 have to sit down and work through a process to  
10 understand whether you've now transitioned  
11 into a OSHA PSM facility.

12 I mentioned the storage issue. I  
13 think clearly facilities solely used to  
14 transport/storage in and out of, to transfer  
15 products in and out of storage for interstate  
16 commerce are clearly subject to 49 CFR. We  
17 need to make sure we're clear on those storage  
18 assets, that are OSHA PSM designed, built and  
19 regulated. And then clearly, a lot of  
20 infrastructure was built under an assumption  
21 of an OSHA PSM framework and we need to test  
22 whether any of those facilities need

1 reconsideration, but I think our general  
2 technical view has been that that has been an  
3 effective tool for building midstream  
4 infrastructures, so if we can get it right,  
5 then we think there's a good marrying of the  
6 PHMSA-regulated facilities and the OSHA-  
7 regulated facilities.

8           There's still a bit of work left  
9 to do. We're going through the process right  
10 now. Linda and the PHMSA team are working  
11 through their stakeholders; we're working  
12 through the industry stakeholders to craft a  
13 definition that again, I think will likely not  
14 define every possible scenario, but hopefully  
15 provides guidance that allows someone to walk  
16 into any given facility and clarify where the  
17 49 CFR framework ends, where the OSHA PSM  
18 framework begins. Kind of the next steps.

19           We obviously want to get any  
20 input, answer any questions from this group.  
21 Our view is we're working on behalf of this  
22 committee and we want to make sure we deliver

1 back a good result. We need to finalize the  
2 definition of the parameters that delineate  
3 the transition from an OSHA to a PHMSA  
4 facility. We need to figure out how we  
5 memorialize this group's output and whether we  
6 can do that through a letter agreement between  
7 PHMSA and OSHA, or a clarifying publication  
8 from PHMSA or some other means, will, I think,  
9 have better determined by the next meeting.  
10 And then we want to present that deliverable  
11 at the next joint advisory committee meeting,  
12 so our goal is that this is, hopefully a  
13 helpful update, and that by the next meeting,  
14 we will have kind of these remaining questions  
15 answered and the detail ready to present.  
16 Linda, anything I missed there?

17 MS. DAUGHERTY: Yes, I'd just add,  
18 first of all, thank you for that excellent  
19 recap. It's a lot of information. Sometimes  
20 when you're a regulator, you have to think  
21 back to the advice that says, sometimes you  
22 can do something, but you have to think about

1 whether you should do it. And in this case, we  
2 had some people approach with an issue. They  
3 said, hey let's work on a solution together.  
4 I want to call out some of the people, Graham  
5 Bacon, Francis Foret, Todd Dent and Chad.  
6 There's other members of the committee. Some  
7 of them may be here. But the point is, if  
8 they came to us with a challenge and they  
9 said, this is how we perceive the issue, let's  
10 work together on a solution. And so we're  
11 going to get to a good place.

12 What Chad tactfully didn't mention  
13 is that we've all agreed, I think pretty much,  
14 that we want to get there, the no gap/no  
15 overlap. We just have to navigate some of the  
16 legal challenges. We've had OSHA attorneys  
17 and PHMSA attorneys on a phone call, talking  
18 about how do we achieve where we want to go?  
19 And how do we make this work? And I think  
20 that's the best way to solve issues like this,  
21 where we believe there's a good safety  
22 standard in place, either through OSHA/PSM or

1 through Part 195 or 192; let's figure out how  
2 we can save resources and get to where we want  
3 to be. So, thank you.

4 CHAIR HONORABLE: Well said; I  
5 would defer now to Jeff in case he has any  
6 other comments.

7 MR. WIESE: Thank you, Colette. I  
8 just wanted to add my thanks to the group.  
9 And I know, by mentioning names, you always  
10 leave people out, so it's not my intent; but  
11 Jerry Barnhill was another person who was  
12 heavily involved, and I wanted to thank him as  
13 well. I would just say, I think it's smart  
14 government, we have a choice here. We can go  
15 fight, and go to our opposite corners and take  
16 off our gloves, right? And fight it one by  
17 one. Or we get smart and sit down in a room  
18 and haggle it out. I think as long as we agree  
19 to the primary principles, no gaps/no overlaps  
20 early on.

21 So I think it's a really good  
22 group; it's a good example of how we can

1 collaborate. Some people think that's a dirty  
2 word, I don't. We have our own set of ethics,  
3 trust me; I don't think anybody thinks we're  
4 shy. But OSHA, too. So we'll, it's a smart  
5 way of doing business, and I just wanted to  
6 add my thanks to everyone, Chad included, for  
7 their leadership in helping us do this in a  
8 smarter way.

9 CHAIR HONORABLE: Hear, hear. And  
10 thank you, Chad, for an excellent  
11 presentation. And also I'm just very pleased  
12 to see the progress from the time that this  
13 issue was first presented to the Joint  
14 Committees and it seemed like a tough nut to  
15 crack, but we have very capable people  
16 involved and I'm confident that we can arrive  
17 at no gap/no overlap. I learn a new slogan at  
18 each one of these. All right. Any questions  
19 for Chad or Linda? All right? Please  
20 proceed, Jeff.

21 MR. LESNIAK: Chuck Lesniak,  
22 liquids committee. Just a quick comment.

1 It's something that I didn't hear in the  
2 presentation. Did you all talk about the  
3 goals of the two sets of regulations? OSHA is  
4 primarily a worker safety, which you can  
5 translate to public safety; but I would  
6 suspect it's primarily focused on worker  
7 safety and the pipeline regulations, I think  
8 are broader. And have you all looked at the  
9 two sets of regulations in terms of goals of  
10 the regulation? And I agree with the concept  
11 of no gap/no overlap, but if there are areas  
12 where the goals are different, maybe there  
13 should be overlap. And did you all look at  
14 that?

15 MR. ZAMARIN: No, that's a good  
16 question. Chad Zamarin, Cheniere. We did.  
17 Even from, for my own sake, I think each of us  
18 took a fresh look at that; and the OSHA, I  
19 think the overarching OSHA framework, I agree  
20 is primarily focused on personal safety. But  
21 the PSM framework is very much a process  
22 petrochemical safety management system that is



1 very robust, has been in place for many  
2 decades. There are many clear PSM facilities  
3 across the United States that are built under  
4 the design and maintenance and operating  
5 standards that PSM has had in effect for a  
6 long time.

7           So I think the OSHA umbrella can  
8 sometimes lead us to think, to not realize  
9 that there is a very detailed set of  
10 specifications and standards, specifically  
11 designed for petrochemical and processing  
12 midstream facilities. So there are facilities  
13 that have been operated well away from, you  
14 know, PHMSA jurisdiction; because they don't  
15 even touch the interstate grid. They're down  
16 along the coast or they're solely focused on  
17 petrochemical operations. And that PSM  
18 framework has been the standard for designing,  
19 building and operating those facilities  
20 safely.

21           And so we took some time to  
22 convince ourselves that there were

1 complementary equivalent goals and adequate  
2 tools in place to achieve the same result. And  
3 I think we unanimously as a group came to that  
4 conclusion that we're not giving anything up  
5 by having one versus the other. And that was  
6 our first step. That's where we started as a  
7 team, because that would have been kind of  
8 hey, we weren't going to have, we would have  
9 considered that a gap. If there was a goal  
10 that wasn't being met by PSM handling a  
11 certain piece of infrastructure versus PHMSA  
12 then that would have been a gap that we would  
13 have, I think, as a team, concluded you know,  
14 we're still going to have to apply both or  
15 we're going to have to do something  
16 differently. So we did spend quite a bit of  
17 time looking at that.

18 MS. DAUGHERTY: I would also add,  
19 we took it a step further; because this is a  
20 very valid question. And, PHMSA has statutory  
21 responsibilities, OSHA has statutory  
22 responsibilities. So when the first few

1 meetings, I kept saying over and over, broken  
2 record, you know, we could not step back if  
3 OSHA didn't cover the statutory  
4 responsibilities. We just couldn't do it. I  
5 couldn't walk away knowing something was going  
6 to be left uncovered. So we actually went in  
7 a little bit farther and we looked at accident  
8 rates at facilities inspected by PHMSA and  
9 those by OSHA. And then we also looked at  
10 inspection rates. One of the first concerns  
11 I had is, OSHA is overwhelmed with a number of  
12 facilities they inspect. Will they get out  
13 there frequent enough? If you say OSHA can't  
14 get to all of its facilities but once every  
15 hundred years, that's not good enough. So we  
16 wanted to make sure that they had a reasonable  
17 inspection cycle for these facilities. And in  
18 fact, they are risk-based. They have a  
19 different system than we do. But they do get  
20 out on a fairly frequent basis. So, valid  
21 concern.

22 MR. WIESE: I just wanted to add

1 one comment, because it's actually, I think  
2 it's a good question. But I think about and  
3 I bet Ron would pick up on this; one of the  
4 things that we've noticed in our development  
5 of the safety management systems is that  
6 competition between process safety and worker  
7 safety. I think we agreed unanimously, there  
8 should be no competition. A properly executed  
9 safety management system ought to be covering  
10 all of these issues. PSM has a really good  
11 hazard identification section. But I would  
12 just say, we brought OSHA in, we did talk to  
13 them. We're mindful of where they're headed.  
14 They put a proposal out three or four months  
15 ago about the future direction of PSM, which  
16 we're interested in, but we're collaborating  
17 with them. I think the smart thing about  
18 talking with your partners is you end up  
19 heading in the same direction and not off like  
20 that. Fair question, though.

21 CHAIR HONORABLE: Don?

22 MR. STURSMAN: Now as I understand

1 it--

2 CHAIR HONORABLE: And you are?

3 MR. STURSMA: Don Stursma, gas  
4 committee. Excuse me. I should know better  
5 by now. As I understand it, OSHA cannot exert  
6 its jurisdiction if another agency has already  
7 exerted jurisdiction in a particular safety  
8 area. And a number of years ago, we had a  
9 conflict like that in the pipeline business  
10 over who had primary jurisdiction for sending  
11 a worker into a bell hole with gas blowing.  
12 Where OSHA had a whole different idea about  
13 how things ought to be done versus the way the  
14 industry actually did it. That was resolved  
15 with a rulemaking clearly putting it in  
16 PHMSA's, under PHMSA's jurisdiction. Is there  
17 anything like that going on right now where  
18 there's kind of a conflict over who has  
19 jurisdiction and maybe some regulatory action  
20 would be needed to address that?

21 MS. DAUGHERTY: Yes, there is.

22 Did I mention we have lawyers involved? So

1 what we came down to at the end, we figured  
2 out which way we wanted to go generally. And  
3 we convened with our lawyers and said, can we  
4 do this? And they came back and said no.  
5 What, the strict reading of the rule says that  
6 according to both the OSHA lawyers and the DOT  
7 lawyers, is that PHMSA has statutory authority  
8 and we inspect, and we have regulations, and  
9 we inspect. We have a history of inspecting.  
10 Therefore, the pre-emption clause that boots  
11 OSHA out of a facility applies. However, we  
12 knew that that may not be the best safety  
13 approach. So what we went to our lawyers and  
14 we said, okay, knowing all that is in play, is  
15 there a way for us to come to an agreement  
16 where OSHA would continue to inspect these  
17 facilities?

18 And we do have an approach. It  
19 beats the legal hurdles, so I'm told. We are  
20 looking at how we are defining certain  
21 facilities. In our regulations, we identify  
22 regulations applied to, I won't use the term,

1 because, but certain facilities. What we are  
2 doing right now is we are setting up a team  
3 within PHMSA that will later work with OSHA  
4 and industry that will perhaps redefine the  
5 boundaries of those facilities. So basically,  
6 PHMSA may be changing where we are going to  
7 exert our authority. That will allow OSHA to  
8 step into that area. So we are looking for a  
9 solution. It's not an easy solution, but we  
10 think we can get there.

11 CHAIR HONORABLE: Thank you, any  
12 other questions? Craig?

13 MR. PIERSON: Craig Pierson,  
14 liquids. Linda, in that regard, have you  
15 contemplated a similar exercise in refineries  
16 where we've got pipelines going into  
17 refineries?

18 MS. DAUGHERTY: You know, Craig,  
19 that issue really hasn't come up. We haven't  
20 had much discussion specifically about  
21 refineries. I would say in general that  
22 various regulatory agencies, BSEE and PHMSA

1 play very well together. You know, we have an  
2 old MOU where we defined where we stop and  
3 where they begin. We have a clear  
4 understanding. We are working with OSHA to  
5 try to figure out where we can have no gaps,  
6 no overlaps. As has been mentioned, there are  
7 places where different agencies will have  
8 different focus of the regulations and their  
9 safety oversight.

10 So for example, there may not be a  
11 good place for EPA in PHMSA, to define that;  
12 because we have slightly different objectives.  
13 But in those places where you have regulatory  
14 agencies that are looking at safety issues,  
15 there may be approaches. And we are reaching  
16 out to our other partners and trying to reach  
17 that. Refineries specifically has not come  
18 up.

19 MR. PIERSON: Where it occurs is  
20 where you've got typically where you've got a  
21 crude pipeline that delivers into the refinery  
22 and you've got a relief system. And all that



1 plumbing that reaches back the relief plumbing  
2 and the tank itself and there's a pretty good  
3 overlap there that we work through in a number  
4 of locations. Just something to consider.

5 MS. DAUGHERTY: Well, let's get  
6 this one figured out.

7 MR. PIERSON: Yes, I know.

8 MS. DAUGHERTY: And then let's  
9 talk.

10 MR. PIERSON: Yes, yep, thanks.

11 CHAIR HONORABLE: Thank you; any  
12 other questions? Well done, Chad and Linda.  
13 All right. We're ahead of schedule? I'm  
14 fearful to say out loud. It looks as though  
15 our last briefing today will be on Class  
16 Location Study, by Steven Nanney. Steve?

17 MR. NANNEY: Good afternoon. My  
18 name is Steve Nanney and I'm with PHMSA. And  
19 I'm going to give an update and it's not of a  
20 regulation; it's of a report on class  
21 locations and could we use integrity  
22 management principles for class locations on

1 gas transmission facilities.

2 First of all, we did this as a  
3 statutory mandate on class locations from the  
4 Pipeline Safety Act of 2011, Section 5(a),  
5 which asks us to evaluate and issue a report  
6 on whether integrity management requirements  
7 could be extended beyond HCA's and could we  
8 use that to mitigate class location  
9 requirements. Some of the milestones of this.  
10 As we started in August of 2011 with an  
11 Advanced Notice of Proposed Rulemaking, with  
12 some questions that we asked. Then we, in  
13 early 2012, we got the Pipeline Safety Act of  
14 2011; and then going on down through this,  
15 April 16th of this year, we had a class  
16 location workshop.

17 And I know several of you that I  
18 see in here today were at that workshop; and  
19 it was a lively experience, with a lot of  
20 comments and viewpoints. And they were all  
21 over the spectrum; it wasn't anything, there  
22 was a lot of pro's and con's for whatever

1 option you wanted to consider. And then from  
2 that, we completed a Congressional report in  
3 the summer; and that was routed to our  
4 Administrator and we have proceeded to route  
5 that to OST, OST and they are in the process  
6 of sending it to OMB. And by the way, we  
7 haven't had any comments to date, so I think  
8 that, so far, is good news. But I'm sure  
9 we'll get some feedback as we go through this  
10 process.

11           The report contents, just a quick  
12 overview of those. We have an executive  
13 summary in there, which I think John and  
14 Cheryl sent you a briefing paper that has some  
15 tidbits of that, three or four pages, to just  
16 give you an overview of what our thoughts  
17 were. An introduction, and expansion of IMP  
18 requirements beyond HCA's. Does the expansion  
19 of IMP requirements beyond HCA's? Does the  
20 expansion of IMP mitigate the need for class  
21 locations? And that's the key question. And  
22 then we looked at alternatives to class

1 locations. There were a number thrown out at  
2 our workshop. There were several that we were  
3 considering and you'll see as I go through  
4 this, what those are. Then a conclusion and  
5 possible future actions. Again, this is only  
6 a report; this is not a regulation that we're  
7 working on.

8           As far as integrity management,  
9 just a quick overview of that. Again, we were  
10 looking at HCA, a High Consequence Approach,  
11 in lieu of class locations. And to just give  
12 you an idea, to just see it in a slide, if you  
13 look at an HCA approach of the circles, the  
14 red circle you see there would be an HCA. An  
15 illustration. Where the small red line that  
16 you see behind the homes there, that would be  
17 a Class 2 location. So just to give you an  
18 idea in this particular example, if we used an  
19 HCA approach, the homes that would be  
20 protected would be the ones in the circle  
21 under integrity management. And then if we  
22 did come up with some type of approach using

1 integrity management, we would extend that  
2 circle some way. Now, we haven't come up with  
3 how we would do that, but that would be one of  
4 the type of approaches. Where today under the  
5 class location methodology, all of that area  
6 there with the red line would be a Class 2  
7 location.

8 Class locations, what are they?  
9 Class locations for gas pipelines are from 1  
10 to 4. The design factors are, if it's a Class  
11 1, it's 0.72, Class 2 it's 0.6, Class 3, 0.5,  
12 and Class 4 would be a 0.4. And that would be  
13 applied to whatever design pressure or  
14 pressure you come up with, it would derate  
15 that pressure for your maximum allowable  
16 operating pressure. It was derived in the  
17 1950's from B31.8 and when the code came into  
18 play in 1970, that was put into the code. As  
19 far as class locations for gas transmission  
20 pipelines, they impact 28 Code sections. So  
21 there's a lot of impact, not only for gas  
22 transmission but also for our distribution

1 partners, too.

2 From our class location workshop,  
3 just a quick overview. Our State partners,  
4 they preferred class locations. Some of the  
5 comments we got from AGA, APGA members and a  
6 majority of the transmission operators, were  
7 that they were comfortable with a class  
8 location system for existing pipelines, but  
9 wanted us to consider different approaches for  
10 new pipelines.

11 A quick overview of what a Class 1  
12 location is. A Class 2, 3 and 4. Just have  
13 some pictures up there with lines so you'll  
14 get an idea when we talk about the various  
15 class locations, what each of them look like.  
16 And by the way, the Class 3 up in the upper  
17 right hand corner, that would also be an HCA.  
18 And the Class 4 would also be an HCA. The  
19 Class 1 and 2, probably would not be HCA's.  
20 To just give you an idea.

21 Why are we having this discussion?  
22 Well, one reason is when the code was put into

1 place in 1970, probably most of the, and in  
2 the 1950's when B31.8 put the class location  
3 factors in, most pipelines were probably of  
4 the thirty inch diameter max variety and a  
5 thousand pound operating pressure. So the  
6 660, if you look at the line we've got there,  
7 most of the pipeline mileage would be below  
8 that line. It would fall in that category.  
9 Well today, we've had pipelines forty-two  
10 inch, thirty-six inch, that have operating  
11 pressures well above 1,000 pounds; 1,440,  
12 some 1,600, maybe up to 2,100 pounds. So your  
13 PRR's are now above that dark red line. So  
14 that's why we're having the consideration,  
15 should we be using a 660 for a class location  
16 for all the pipe sizes? Or should we be  
17 looking at a different methodology?

18 And then in the next few slides,  
19 I'll go through. Again, some of the comments  
20 that we got from the public, you can see:  
21 Revise IMP to include the entire Class 3 and  
22 4 locations and beyond. Expand class location

1 definitions to reflect high density areas.  
2 Some of the comments we got were that we  
3 needed a Class 5 and a Class 6 location; in  
4 other words, a 0.3 design factor and a 0.2,  
5 where you have a lot of high rise buildings  
6 and a lot of people in the area. But State  
7 partners said class locations are a much  
8 broader concept than just IMP. In other  
9 words, how does it affect distribution  
10 systems? How does it affect gathering? How  
11 does it affect gas transmission? That we  
12 needed to look at everyone that it affects.

13 The industry, mainly the  
14 transmission operators, they wanted to keep  
15 mostly keep the class locations intact for  
16 existing pipelines and to consider or allow a  
17 PIR approach to be used for new pipelines when  
18 the class locations change. And to use  
19 integrity management principles for these  
20 class changes and non-HCA areas. And then some  
21 of the conclusions that we got from our  
22 workshop and like I said, it was some lively



1 debate and lively presentations there. But  
2 there was a broad perspective from the  
3 industry and the public on expanding these  
4 integrity management regulations. There was  
5 little support for changing class locations  
6 for existing pipelines. I'm not saying that  
7 there weren't a few that wanted it changed,  
8 but the overall majority was no change for  
9 existing pipelines.

10           The third bullet was there was  
11 support for changing class locations and going  
12 to some form of a PIR approach, a Potential  
13 Impact Radius approach, HCA approach; however  
14 you want to term it. And some of those  
15 alternatives that we discussed and considered  
16 was; number one, we heard from some public  
17 interest groups that we needed to expand class  
18 locations, a Class 5 and 6. Some others we  
19 saw, we heard from, was modify the HCA  
20 definition; in other words, go to some type  
21 expanded HCA definition. Then we also had  
22 comments on the potential impact radius

1 sliding mile, is instead of using the sliding  
2 mile which is what the code is based upon now.  
3 In other words, you look for a class location,  
4 you look at a one mile and it slides down the  
5 pipeline. Instead of using that, should we go  
6 to a potential impact radius or impact circle  
7 that actually slides down the pipeline based  
8 upon the diameter and the pressure of the  
9 pipeline. In other words, if you had a forty-  
10 two inch, 2,000 pound pipeline, it may have a  
11 1,500 foot PIR; where if you had a twelve  
12 inch, 200 pound pipeline, it may only have a  
13 150 foot PIR. In other words, doing something  
14 based upon consequence based upon diameter and  
15 pressure.

16 Then we also heard comments on a  
17 single design factor. In other words, where  
18 we've got four design factors now, should we  
19 consider one design factor like on the  
20 hazardous liquid pipelines, the design factor  
21 is 0.72. Is what's used out on the pipeline.  
22 Where on the gas pipelines, there's the class

1 locations. Now we didn't discuss whether to  
2 use 0.72 or 0.6 or 0.5, but consider a single  
3 design factor. Then another approach that we  
4 looked at and considered and talked about, was  
5 the bifurcated approach that INGAA came to us  
6 on, and what that would be is on existing  
7 pipelines, you would leave it like it is  
8 today.

9           On new pipelines, you would look  
10 at a single design factor and then you would  
11 look at something maybe incorporating a PIR or  
12 sliding mile into it as far as using the  
13 integrity management principles. So it would  
14 be a combination of some of all of it. And  
15 looking at new pipelines in that regards  
16 leaving the existing pipelines alone. And then  
17 there's always no change. In other words,  
18 keep the regulation as it is. No reason to  
19 make a change. So that's the things that we  
20 looked at, what we came down to in the report,  
21 were the key alternatives to discuss and to  
22 consider.

1                   Now, possible future actions, and  
2                   again, PHMSA hasn't written a rule, we're not  
3                   in the rule writing business on this at this  
4                   point. We're in, in sending this report  
5                   through OST through OMB and to Congress, and  
6                   then getting feedback from it; and feedback  
7                   from this committee. But again, any future  
8                   actions on revising class locations that we  
9                   would do, of course we will consider all  
10                  safety concerns of all the affected  
11                  stakeholders. Whether the public, industry,  
12                  everybody involved. Some of the possible  
13                  future rulemaking considerations, and again,  
14                  we haven't done anything on this; but you  
15                  know, some of the things that we've heard is  
16                  you know, number one is, I think we heard loud  
17                  and clear to leave existing pipelines alone.

18                         We've also heard loud and clear  
19                         that we need to make sure that if we're doing  
20                         it for one segment of the gas code, is make  
21                         sure you realize that it affects more than  
22                         just one group. In other words, if we do

1 something on the transmission side, to make  
2 sure we understand what it does on the  
3 distribution side. So we hear that loud and  
4 clear. But one of the things that I know in  
5 going through and looking at it, is this last  
6 bullet. More efficient and practical class  
7 location approaches that improve safety and  
8 avoid minor pipe replacements where safety can  
9 be maintained with other robust measures, such  
10 as incorporating IMP principles.

11 And just to throw it out, it's  
12 like what Chad said earlier. Is PHMSA is,  
13 here's everybody as far as the blowdowns and  
14 taking pipelines out of service, where you  
15 don't need to. And one type approach that, we  
16 may want to consider going forward is where an  
17 operator's gone in and they've got an existing  
18 pipeline or a new pipeline and they've changed  
19 out the pipe and put new pipe in, but they  
20 have a few outliner homes to be built near  
21 that area, that when you look at the sliding  
22 mile, makes that change class locations to

1 where they have to change out pipe and  
2 increase it. There may be some things there  
3 that we look at, that here's from the public  
4 side of maintaining a high level of safety,  
5 but also looking at the environmental impacts  
6 and looking at what industry is telling us on  
7 cost. So you know, we're trying to hear all  
8 sides and trying to consider things that take  
9 that into place.

10 But again, this is just a bullet  
11 throwing out to hear comments. It's not  
12 something that we have discussed fully or even  
13 planned at this point to write a regulation  
14 on.

15 But anyway, this is a summary of  
16 the report. Again, we're finished with it; it  
17 has been routed. And again, any of you that  
18 attended our workshop in April and gave us  
19 comments in May, we appreciate it. And thank  
20 you. That should be it.

21 CHAIR HONORABLE: Thank you,  
22 Steve. Are there any questions regarding the

1 class location issue? Don?

2 MR. STURSMAN: Don Sturmsma, gas  
3 committee. I'd just like to point out that  
4 this is actually kind of one piece of a larger  
5 puzzle; and one of those pieces is perhaps,  
6 shouldn't some of the integrity management  
7 principles be extended to any pipeline in  
8 Class 3 or 4 area? Even if it's not an HCA?  
9 Which all of a sudden makes you want to make  
10 sure that the class location actually  
11 represents risk.

12 There are a lot of talks on the  
13 big lines, and they have a PAR in excess of  
14 660 feet. I've got a lot of 4, 6, 8 inch  
15 lines. Some of the smaller lower pressure  
16 ones, the PIR may not really get in outside  
17 the easement. So now you're, if you impose an  
18 expensive new regulations on lines in a Class  
19 3 or even a Class 2 area, but my PIR is 100  
20 feet and the nearest house is 300 feet away,  
21 you know, what purpose is served by spending  
22 additional regulations and the additional

1 finances of the company on that piece of pipe?  
2 So it's almost like maybe there should,  
3 something like was done with the integrity  
4 management rules where you can figure your  
5 HCA's either way, either in a class location  
6 basis or on a PIR basis.

7           Maybe some system could be devised  
8 where you can determine class location in the  
9 traditional way; or some PIR-based method that  
10 would do a better job of accounting what is  
11 actually at risk from this pipeline instead of  
12 just what's within a certain distance of it.  
13 So I think that is maybe something down the  
14 road that should be considered, especially if  
15 it ties into increased requirements for Class  
16 3, 4 or even 2 areas. Like one of the things  
17 that was thrown around for a Class 2 location  
18 would be a house. Or building within 660 feet  
19 of the pipeline, certain integrity management  
20 things would kick in. One house is 500 feet  
21 away from a 200 foot PIR, I'm sorry, that's  
22 not going to make any sense. Anyhow.



1       Something for future consideration.

2                   MR. WIESE: All right. Thanks,  
3 Don. And reminding everyone, if we actually  
4 go anywhere, if we ever get the report out,  
5 you know that we'll go through rulemaking so  
6 the committee will be fully engaged in that  
7 whole thing. But, and I'm taking over  
8 temporarily again. I'm doing my Al Haig. So  
9 with that, I'll recognize Chad Zamarin.

10                   MR. ZAMARIN: Thanks. Chad  
11 Zamarin, Cheniere. So just we end on an  
12 exciting note, I figured this is an area of  
13 passion. I think Don's point is an example of  
14 why I would beg that you do something with  
15 this; because to even continue talking about  
16 class locations, a concept that dates to the  
17 fifties, that does not as effectively as PIR  
18 analysis and other tools, quantify where we  
19 have added risk or potential impact; using it  
20 to make decisions around pipe replacement,  
21 around integrity assessments, around risk  
22 assessments, is just fundamentally flawed.

1 We've learned so much since the fifties. So  
2 at one company alone, we spent over three  
3 hundred million dollars in the last ten years  
4 replacing perfectly good pipe in areas that in  
5 many cases, would never have impacted a home  
6 in its radius. And that needs to be fixed.

7 So I would beg that we address  
8 this issue, not just publish a report.  
9 Because I think there is one area that we've  
10 demonstrated we've learned a lot. I think it  
11 was part of the original cost benefit analysis  
12 of the IM Rule and we can do way better than  
13 class location. I know it's complex, and it's  
14 all over the code, but it just drives me crazy  
15 when we talk about a Class 3 location as  
16 inherently being a risk to your area, when it  
17 could be a 6 inch pipeline with a, 50 pound  
18 PIR that would never touch a living home. So,  
19 thanks.

20 MR. WIESE: Now look what you did.  
21 You made him put his card back up.

22 MR. ZAMARIN: I told you I wanted

1 us to end on an exciting note.

2 MR. WIESE: And I'll just say,  
3 it's a good topic for the committee to talk  
4 about in the future because a lot of things  
5 come into play with you. And we have said  
6 publically by the way, that philosophically,  
7 we agree. Okay? The problem is, in a  
8 practical sense, some operators lack the  
9 information necessary and they don't apply the  
10 conservatism they need to in order for us all  
11 to feel comfortable if that house that's a  
12 hundred yards outside of the PIR is okay.

13 So I think it's really, so I just  
14 wanted to say, I agree with you  
15 philosophically and I think most of us do.  
16 With good sound information and conservative  
17 applications where your information is less  
18 certain, then I think it works, right? But  
19 it's, there's a lot in inertia on this for  
20 those who haven't been involved in class  
21 location discussions; largely because it has  
22 been around for so long, and so many parts of

1 the code are predicated on it. So the liquid  
2 guys are saying, thank God. But with that,  
3 I'll butt out of it, sorry.

4 CHAIR HONORABLE: Rick and then  
5 Don.

6 MR. KUPREWICZ: Just real quick.  
7 And I appreciate the assistance in getting the  
8 report out, get it all going here. But from  
9 a public perspective, one way to get something  
10 and having a productive discussion moving  
11 forward, is the public needs to see where  
12 we're at on IMP 2.0. If you don't have that  
13 out clearly or some semblance that there's an  
14 improvement in the integrity management  
15 rulemaking or integrity management process,  
16 the public's going to come at you in spades.  
17 They're going to have no confidence in the  
18 process and I think you have a very good  
19 discussion here. We don't want you to waste  
20 your money. We don't want ineffective,  
21 inefficient regulation. We want effective  
22 regulation that's productive. And right now,

1 we keep getting a lot of questions, I know  
2 myself, I won't speak for Carl, but along the  
3 lines of where in the heck?

4 We know 2.0 is needed. We don't  
5 quite understand where it's going to be  
6 finalized. And so that could be an obstacle  
7 to this discussion. Very good comments here.  
8 Support both sides of this. But until we have  
9 some other understanding of how effective the  
10 next step's going to be, there's a lot of  
11 people in this room, the companies, they did  
12 IMP 1.0 very effectively. But also, there are  
13 companies who did not do it very effectively  
14 and we've had some very expensive, serious  
15 tragedies in the last ten years. And I'll  
16 shut up. Thank you.

17 CHAIR HONORABLE: Don?

18 MR. STURSMAN: Don Stursma again.  
19 Real fast. One of the issues with the whole  
20 class location thing is the concept is so  
21 imbedded in Part 192, if you start mucking  
22 with the class location definition, you start

1     risking a total rewrite of Part 192 and I at  
2     least, don't want to go there. But I think if  
3     we look at different ways of defining class  
4     location along the lines of what I talked  
5     about earlier, I think we can come up with  
6     something that would leave the rest of the  
7     code intact and we wouldn't have that issue.  
8     At least that would certainly be the goal.

9                   CHAIR HONORABLE: Thank you. Don?  
10    Are you done? Okay. Anyone else? I just  
11    have to check with Don; you never know. He  
12    might want to say, and another thing. Anyone  
13    else? Now's your chance.

14                   Well, we've had a robust couple of  
15    days here at the Joint Committee; even though  
16    we haven't taken up a rulemaking, I've really  
17    been very glad to be here. I've learned a lot  
18    in the last couple of days, and also a lot of  
19    progress that we've observed as well on some  
20    ongoing issues. So thank you for your  
21    dedication and thank you for your service;  
22    because it's making the work that we do

1 collectively better. And I will yield to  
2 Jeff.

3 MR. WIESE: So, officially, I  
4 think the meeting is over. We can stop the  
5 transcript.

6 (Whereupon, the above-entitled  
7 matter went off the record at 2:57 p.m.)  
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C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Gas Pipeline Advisory Committee

Before: US DOT

Date: 10-22-2014

Place: Washington, D.C.

was duly recorded and accurately transcribed under  
my direction; further, that said transcript is a  
true and accurate record of the proceedings.



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Court Reporter

**NEAL R. GROSS**

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# Agenda

## JOINT MEETING

### Gas Pipeline Advisory Committee and Liquid Pipeline Advisory Committee

October 22, 2014  
(9:00 am – 5:00 pm)

- 9:00 am**      **Call to Order**      Jeff Wiese &  
Committee Chair
- 9:10**      **Agenda Item 1:**  
BRIEFING: Methane Emission Reduction      Dr. James White, U-CO  
Paula Gant, DOE  
Mark Brownstein, EDF
- Committee Discussion and Q&A:**      Committee Chair
- 10:45**      **Break**
- 11:00**      **Agenda Item 2:**  
BRIEFING: Performance Metrics      Alan Mayberry  
Linda Daugherty
- Committee Discussion and Q&A:**      Committee Chair
- 11:45**      **Agenda Item 3:**  
BRIEFING: Oil Spill Response Plans      David Lehman
- Committee Discussion and Q&A:**      Committee Chair
- 12:15**      **Lunch**

**1:30**      **Agenda Item 4:**  
BRIEFING: Construction Issues (Reversal  
and Conversion of Service)  
**Committee Discussion and Q&A:**      Alan Mayberry  
Committee Chair

**2:15**      **Agenda Item 5:**      **(Moved to the end of Tuesday's agenda)**  
BRIEFING: Liquefied Natural Gas      Alan Mayberry  
Ken Lee  
**Committee Discussion and Q&A:**      Committee Chair

**Break**

**3:00**      **Agenda Item 6:**  
BRIEFING: Sub-committee Report on  
Midstream Regulatory Jurisdiction      Linda Daugherty  
Todd Denton  
Chad Zamarin  
**Committee Discussion and Q&A:**      Committee Chair

**3:45**      **Agenda Item 7:**  
BRIEFING: Class Location Study      Steven Nanney  
**Committee Discussion and Q&A:**      Committee Chair

**OPEN DISCUSSION**      Committee Chair

**Wrap-up and Adjourn**      Jeff Wiese