

U.S. DEPARTMENT OF TRANSPORTATION
Pipeline and Hazardous Materials Safety Administration
Technical Pipeline Safety Standards Committee
Technical Hazardous Liquid Pipeline Safety Standards
Committee

JOINT COMMITTEE MEETING

The Westin Alexandria
400 Courthouse Square
Alexandria, Virginia

9:00 a.m.
Thursday, December 10, 2009

Technical Hazardous Liquid Pipeline Safety Standards
Committee

THE HONORABLE LULA M. FORD
Commissioner (Committee Chair)
Illinois Commerce Commissioner
527 East Capitol Avenue
Springfield, Illinois 62701

Massoud Tahamtani
Director, Division of Utility and Railroad Safety
Virginia State Corporation Commission
1300 East Main Street
Richmond, Virginia 23119

Larry J. Davied
Vice President, Technical Services
Magellan Midstream Partners, L.P.
One Williams Center
Tulsa, Oklahoma 74172

Denise M. Hamsher
Enbridge (USA) Pipeline
1409 Hammond Avenue
Superior, Wisconsin 54880

Craig O. Pierson
Vice President of Operations
Marathon Ashland Pipe Line, LLC
539 South Main Street
Findlay, Ohio 45840-3229

Technical Hazardous Liquid Pipeline Safety Standards
Committee

Larry M. Shelton
Manager, Asset Integrity
Sunoco Logistics
One Fluor Daniel Drive
Building A, Level 3
Sugar Land, Texas 77478-5095

Timothy P. Butters
Assistant Fire Chief
City of Fairfax, Virginia
4081 University Drive
Fairfax, Virginia 22030

Carl M. Weimer
Executive Director
Pipeline Safety Trust
1155 N. State Street, Suite 609
Bellingham, Washington 98225

Geraldine E. Edens, Esquire
McKenna, Long & Aldridge, LLP
1900 K Street, NW
Washington, D.C. 20006-1108

Richard B. Kuprewicz
President
Accufacts, Incorporated
4643 192nd Drive, NE
Redmond, Washington 98074

Lisa M. Parker
Consultant
Parker Horn Company
P.O. Box 1234
Soldotna, Alaska 99669-1234

Technical Pipeline Safety Standards Committee

Donald J. Stursma
Iowa Utilities Board
350 Maple Street
Des Moines, Iowa 50319-0069

Michael R. Comstock
Gas System Superintendent
City of Mesa, Arizona
640 N. Mesa Drive
Mesa, Arizona 85211-1466

J. Andrew Drake
Spectra Energy
Vice President of Engineering and Construction
5400 Westheimer Court
Houston, Texas 77056

Jeryl L. Mohn
Panhandle Energy
Senior Vice President, Operations and Engineering
5444 Westheimer Road
Houston, Texas 77056

James F. Wunderlin
Senior Vice President, Engineering & Business
Operations
Southwest Gas Corporation
5241 Spring Mountain Road
Las Vegas, Nevada 89105-0002

Dr. Richard E. Feigel
Vice President, Engineering
Hartford Steam Boiler
One State Street
Hartford, Connecticut 06102-5024

Theodore C. Lemoff
Senior Engineer
National Fire Protection Association
One Batterymarch Park
Quincy, Massachusetts 02269

Richard F. Pevarski
Chief Executive Officer
Virginia Utility Protection Services, LLC
1829 Blue Hills Circle, NE
Roanoke, Virginia 24212

Technical Pipeline Safety Standards Committee

Richard F. Pevarski
Chief Executive Officer
Virginia Utility Protection Services, LLC
1829 Blue Hills Circle, NE
Roanoke, Virginia 24212

Paul S. Rothman
The Port Authority of New York and New Jersey
Engineering/Architecture Design Division
2 Gateway Center, 16th Floor
Newark, New Jersey 07102

Drue Pearce
Alaska Natural Gas Transportation Projects
Federal Coordinator
1849 C Street, NW
Washington, D.C. 20240

Also Present

Jeff Wiese

Roger Little

Alan Mayberry

John Gale

Mike Israni

A G E N D A

<u>ITEM:</u>	<u>PAGE:</u>
Call to Order Lula Ford, Committee Chair	193
Agenda Item 1: Pipeline Safety Overview Jeff Wiese, Executive Director	193
Agenda Item 2: Committee Administrative Matters Jeff Wiese, Executive Director	211
Agenda Item 3: Energy Demands & Projections	222
Panel Members: Jeff Wiese, Executive Director Michael Schaal, Director Energy Information Administration Division Office of Integrated Analysis and Forecasting John Felmy Chief Economist American Petroleum Institute Geoffrey Brand Senior Project Manager ICF International	
Agenda Item 4: Alaska Pipeline Update Drue Pearce Alaska Natural Gas Transportation Project	270
<u>Afternoon Session</u>	
Agenda Item 5: New Construction	305
Panel Members: Alan Mayberry, PHMSA Massoud Tahamtani, Virginia State Corporation Commission Andy Drake, Spectra Energy Jeryl Mohn, Panhandle Energy Denise Hamsher, Enbridge Energy Company	

A G E N D A

<u>ITEM:</u>	<u>PAGE:</u>
Agenda Item 6: Integrity Concerns (Couplings, Casings, EFVs)	382
Panel Members: Alan Mayberry, PHMSA Mike Israni, PHMSA	
Agenda Item 7: Climate Change	404
Panel Members: Bob Smith, PHMSA Jerome Blackman, EPA	
Wrap-Up and Adjourn Jeff Wiese, Executive Director	429

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

2 9:05 a.m.

3 Call to Order

4 MS. FORD: Good morning. Hope that everyone
5 had a wonderful dinner and a good night's sleep. I
6 certainly didn't. Too much coffee.

7 Welcome to the second day of our combined
8 Joint Meeting of the Technical Pipeline Safety
9 Standards Committee and the Technical Hazardous Liquid
10 Pipeline Safety Committee.

11 First, I'd like to call this meeting to
12 order. Madam Secretary, we do have a quorum. Thank
13 you.

14 First on our agenda will be our Executive
15 Director Jeff Wiese. Jeff.

16 Agenda Item 1: Pipeline Safety Overview

17 MR. WIESE: Thank you, Madam Chairman, and
18 good morning, everyone.

19 Like our chairwoman, I, too, was drinking a
20 little too much coffee, so I was up at 4 a.m. this
21 morning. So we'll have to rein it back afternoon.
22 Don't allow me to have a cup of coffee if you see me.

23 Any rate, thanks again to all of you for
24 sticking around. Yesterday was heavy sledding. That
25 was kind of rough, you know, slogging through the

1 details, but I very much appreciate your efforts on
2 that and your interests and willingness to help us out
3 in advancing the Pipeline Safety Program.

4 Today, as I promised yesterday, I think will
5 be a lot more fun. So thank you for sticking around,
6 but I wanted to reiterate something I said yesterday
7 which was this is -- today is really more what the
8 committee had asked of us a couple of years ago. They
9 said, you know, we're tired of just voting. You know,
10 you only bring us together when you want to vote on
11 something.

12 Well, you know, that's part of the
13 responsibility of the committee, but we are also
14 interested in your advice and your counsel on a range
15 of things, including policy initiatives. Also feel
16 it's important to kind of, you know, bring you up to
17 speed on some things that are happening in the
18 background to help.

19 I know you all are busy people, you know, and
20 I know you've got full-time jobs and you're dedicating
21 your time to us. So hopefully today is really
22 background information.

23 The way we tried to set up today was really
24 to let you hear about some of the drivers and things
25 that are happening in our energy environment that we

1 think will shape the near-term future, if not the long-
2 term future for energy supply issues, first of all, and
3 then things associated with pipelines, secondly.

4 So we'll have a distinguished panel together
5 here very soon to talk about energy supply issues,
6 demands, and projections. We're going to use that as a
7 platform to hear from several other of our colleagues,
8 I'm pleased to say people who are on the committee and
9 been on the committee for quite some time, who are
10 intimately involved in our energy future.

11 We'll hear first from Drue Pearce, get an
12 Update on the Alaska Gas Pipeline, look forward to
13 that, and then I want to call to your attention, with
14 the help of several committee members and one of our
15 senior staff, some of the challenges of meeting some of
16 the shifting energy demand and profile in the country
17 and issues on new construction that have been
18 identified as well as a pretty robust effort at
19 addressing those issues. So I'll set that up a little
20 bit more when we get to there.

21 A couple of issues on integrity concerns that
22 have had a lot of visibility lately and then we'll
23 close out with what I hope will be an interesting
24 conversation with the EPA and one of our staff, senior
25 staff people about climate change issues which I hope

1 is clearly on the mind of a lot of people these days
2 and very topical at that.

3 So with that and no further ado, I wanted to
4 open this meeting with a couple of quick remarks. I
5 will certainly not use all the time allocated to me for
6 the Pipeline Safety Overview. I think many of you are
7 familiar with that.

8 I mostly want to say to you that next year
9 will be a fairly significant year for the program.
10 Every four years, the U.S. Congress takes a look at the
11 Pipeline Safety Program and tries to decide, you know,
12 how are things going, what more needs to be done, you
13 know, what needs to be adjusted, and I think you're all
14 significant players in that debate. So I am here to
15 basically report to you on our progress on that front.

16 With very few exceptions, and I'll highlight
17 those in a second, the punch line is I think we're
18 doing well as an agency with getting ahead of the
19 curve. By that I mean the Congress laid out a pretty
20 ambitious agenda. I think there were 25 mandates in
21 our last reauthorization. That consumes a lot of our
22 disposal time taking care of those mandates but those
23 reflect issues that the Congress identified in the last
24 round of reauthorization.

25 I just want to give you a commitment to say

1 the agency has been working hard to close those items.
2 There are really, with your help, we've closed,
3 including yesterday, even though that was tough
4 sledding, we'll be closing out a lot of the actions
5 that Congress gave us. Control Room and DIMP were huge
6 and that we all did together last year. We finally
7 published those, praise the Lord. So it might have
8 taken a year but we finally published those.

9 A couple of things that are before us, and,
10 you know, I'm happy to entertain any comments from the
11 committee on that. I mostly intended to just let you
12 know. A couple of things that are before us that are
13 not done. One of them is Low-Stress Phase II, the so-
14 called Low-Stress Phase II.

15 For those of you who have not been familiar
16 with that issue, some time ago we began a regulatory
17 initiative of our own to cover so-called low-stress
18 hazardous liquid pipelines. We actually had a proposed
19 rule on the street when our last reauthorization came
20 up, but coincidentally a very noticeable and
21 significant spill occurred in Alaska that got a lot of
22 attention from the Hill, a lot of attention. In fact,
23 people still ask about it.

24 So that really kind of shaped the future of
25 that whole exercise. I think we're en route to doing

1 what we would normally do which was covering areas that
2 we thought were of high risk to the public and I would
3 point out that we had covered, you know, low-stress
4 pipelines in populated areas for many years, but it
5 really wasn't in any environmentally-sensitive areas
6 and that was the tack we were taking.

7 The Congress asked us to expand that to cover
8 low-stress pipelines everywhere, regardless of risk,
9 and to apply the whole Code, which is a fairly
10 substantial body of regulation. We had been thinking
11 of the primary threats which were corrosion, excavation
12 damage.

13 So due to having been ahead of the curve on
14 low-stress, we thought it made sense to complete that
15 rulemaking action. We were nearly complete with it
16 when the Congress passed a reauthorization. We covered
17 the environmentally-sensitive areas and, as I said
18 before, we'd already covered the populated areas. We
19 finished that rulemaking.

20 What was left was everything else that was
21 not near people and that was not near environmentally-
22 sensitive areas. The challenge that poses for us, and
23 I certainly welcome any comments from the committee on
24 that one, is we also have cost-benefit requirements.

25 To apply the whole Code to those low-stress

1 pipelines outside with a fairly huge gap in information
2 on infrastructure and risk has proven to be quite a
3 challenge. We have -- I think we're on our third cost-
4 benefit analysis on that now.

5 We're in a position where we can advise the
6 Administration what we've found and really it's in
7 their hands on how they want to proceed with that. The
8 Hill has been asking about that rulemaking and that's
9 really about all I have to say with that one.

10 The other one that we haven't completed but
11 had started was one to adopt enforcement authority at a
12 federal level for excavation damage. Some of you are
13 familiar with that particular provision.

14 I won't -- we spent a lot of time on that in
15 our last meeting, but for those of you who missed it,
16 the nickel digest on that one is we're big fans of
17 enforcement on excavation damage, but our view
18 heretofore has been that that's a state matter. It
19 really is something the states should do.

20 I believe this authority was always put in
21 place as a stopgap for those states that wouldn't, you
22 know, or as an incentive to encourage the states to do
23 what they need to do. So I would say working with the
24 industry and with others, including One Call operators,
25 we've really, I think, in the past year moved the

1 excavation damage agenda ahead pretty rigorously, but
2 we have not established the procedures and a final
3 rulemaking on excavation damage enforcement at the
4 federal level. So I see those two as the two primary
5 areas where we're going to have potential discussion
6 with the Hill.

7 So, really, that's about what I wanted to say
8 on reauthorization. I think that different stakeholder
9 groups are going to have their own ideas about what
10 should happen. It's my guess that many of them, and I
11 think I speak for the states, as well, when I say no
12 one's looking for 25 more mandates, and the reason for
13 that is not that we were not interested in the
14 direction from the Hill. It's that we're still
15 digesting all of those other mandates.

16 Remember now, we've just published the rules
17 on DIMP and Control Room. We haven't implemented
18 those. The operators haven't implemented those. The
19 impacts of those rules haven't even begun to take
20 effect yet. So while we're through Phase I of the
21 rulemaking, you know, I often say since I'm an
22 implementer, you know, the real work is just starting
23 and that's going to take substantial time.

24 Distribution integrity is not a minor matter.
25 To do it right will take substantial effort on the part

1 of the states, ourselves and the distribution industry,
2 both the municipal operators as well as the LDCs.

3 So any rate, I basically say I think things
4 are working well. We've closed the vast majority or
5 are en route to closing the vast majority of items that
6 were open, recommendations from either the Inspector
7 General, in fact, I think we have none now, and the
8 Government Accountability Office, as soon as we close
9 these forms and the One Rule, we'll have taken care of
10 all of their issues and then, last but not least, the
11 NTSB.

12 There are a couple of minor matters and Mike
13 highlighted a few of those yesterday, like the larger
14 application EFVs that they still have an interest in,
15 but just wanted to mostly say on that front in terms of
16 oversight recommendations that we've tried to take
17 those very seriously and tried to be responsive to the
18 oversight agencies.

19 So any rate, with any luck at all, we'll walk
20 into reauthorization next year at a point where you,
21 the stakeholders, you know, have a voice in this. You
22 can talk to the Hill about what you want to do instead
23 of us all being in a reactive mode, you know.

24 So if there are things you want to do, now's
25 the time to be thinking about those and I encourage you

1 to talk to the Administration. We finally, you know,
2 have an Administrator and it's someone I think you can
3 talk to, so I want you to think seriously about any
4 issues you think need to be addressed in a statutory
5 way and then I would encourage you to please reach out
6 to the Administration.

7 I'm happy to facilitate it, but you don't
8 need me. I mean, you're the stakeholders. You have
9 portfolio already. So please feel free to take
10 advantage of that.

11 The other thing I would just say internally
12 for what it's worth to you, the past year we've spent
13 considerable time turning to shore up the internal
14 foundations of the agency and a lot of that's not
15 obvious to you all but for years, we have leaned on the
16 pipeline operators to build integrity management
17 programs, you know, understand their business, how to
18 manage their business, set up their policies and
19 procedures, and yet I think we were extremely deficient
20 in the same regard.

21 So for what it's worth to you, you know,
22 we're suffering a little bit of the pain you guys have
23 gone through earlier. We have been really spending a
24 lot of time putting together our policies, our
25 procedures. Our goal is to try to be more consistent.

1 You know, we seek to be more consistent as we talk with
2 different operators.

3 Our second goal would be to be far more
4 focused on performance and we have been really drawing
5 a bright line on that. I've invited several operators
6 to come see us, you know, when we thought we had
7 performance issues and to sit down and have a talk with
8 their executive about those things.

9 Really, I think that's -- to be honest with
10 you, you get a lot of motion, you know, in engaging the
11 executives in a company about performance issues, so
12 happy to say that.

13 And then lastly on the public agenda, I want
14 to say that we have been really building the IT
15 infrastructure behind being able to deliver some of
16 this information into a public arena.

17 We started out with enforcement. You know,
18 as you know now, most of you, any of the significant
19 enforcement that PHMSA takes you can find on our
20 website and we move it on there as fast as we can,
21 usually on a big case usually within days, but
22 certainly refreshing it every month.

23 We're also -- the states have worked with us
24 for us to put their performance metrics up on
25 enforcement on that page. That will be debuting soon.

1 The states are a critical part of the pipeline safety
2 equation, and I think it's hard to judge its
3 effectiveness without understanding what the states and
4 PHMSA are doing.

5 So, lastly, as I've told a few operators and
6 then I'll close out my opening remarks to you, I do
7 believe the public deserves a lot more information
8 about what's going on in their communities.

9 We are -- that's why we had that protracted
10 debate about infrastructure information yesterday. I
11 think that's important information not just for our
12 state partners but I think you'll find that the public
13 will appreciate seeing that information.

14 This IT platform that I mentioned to you, we
15 have provided access to our state partners now. I know
16 Don has seen it and I know Massoud has seen it. That
17 platform is easily adaptable, I think, to both an
18 operator view and on their information.

19 One thing I've started to say to the
20 operators is that our near-term goal is to provide that
21 to operators in a view-your-own-type setting. Anything
22 that we have that's not pre-decisional on an operator,
23 I think should be available to that operator readily,
24 and I think this platform will let them see that.

25 I do that largely because I believe that data

1 quality before we dump it into the public domain is
2 essential, and I think there's very few people more
3 highly motivated to ensure that the data is correct
4 than the operators.

5 So we'll soon be -- I think we'll be pilot
6 testing over the next six months this platform with a
7 few chosen operators to work out the kinks on it and
8 then we'll open it up to all operators again for six to
9 12 months and at that time, I'm hoping to release a
10 public platform. The public wants to come in. They
11 want to know who operates in their community. They can
12 do that now through the MPMS. It should be a simple
13 link over to other information about that operator.

14 So it's interesting. It's an aggressive
15 agenda. You know, the IT challenge, as I think some of
16 our friends were pointing out yesterday, are not
17 minimal. You know, the technology is just not as
18 readily adaptable as we would like and it takes a fair
19 amount of time and money to serve those platforms up,
20 but it's a long-term commitment.

21 So any rate, with that, that closes my
22 opening remarks. I have some administrative remarks
23 I'd like to make in a moment, but I'd like to pause for
24 a second with your indulgence and see if the committee
25 wants to discuss any of those points.

1 MS. FORD: Any questions for Jeff? Richard?

2 DR. FEIGEL: Jeff, this is probably more an
3 expression of frustration than hopes that anything's
4 going to improve.

5 But it strikes me very much, and this isn't,
6 you know, a unique thought, I'm sure, that it is nearly
7 pointless to impose upon a regulatory agency doing
8 cost-benefit analysis against a prescriptive statute
9 that the cost-benefit analysis is being done much too
10 far down the pipeline, frankly, and I'm not naïve about
11 what happens on the Hill, obviously.

12 But is there anything that could get this
13 conversation started or restarted that some kind of
14 more robust cost-benefit analysis could be interjected
15 into the statutory process, either -- again, I'm not
16 naïve, Jeff, but I -- it's a source of, I think,
17 frustration to all of us, frankly.

18 MR. WIESE: You know, my usual dodge on a
19 question like that, Gene, is to say that one may be
20 above my pay grade, you know.

21 You know, of course, I do believe in doing a
22 rigorous cost-benefit analysis if the data's available
23 to you. In a few cases, including the one I mentioned
24 a little while ago, we've had to dig very deep to find
25 data on this and it's not readily available, neither

1 the infrastructure nor the consequence information.

2 DR. FEIGEL: Well, of course, the thrust of
3 my point is the timing and the sequence here, not what
4 our hopes about how robust the cost-benefit analysis
5 can be at any point.

6 MR. WIESE: Right.

7 DR. FEIGEL: Of course, we've had some
8 conversations about lack of data and at least we all
9 understand that that's probably the norm, not the
10 exception, and certain ways that you can handle that
11 within a risk analysis context and it inevitably will
12 be imperfect but that's not my point.

13 MR. WIESE: Right. You mean in front of the
14 statute?

15 DR. FEIGEL: Yeah.

16 MR. WIESE: Yeah. That's above my pay grade,
17 Gene.

18 DR. FEIGEL: I preface this with saying it's
19 probably, you know, an expression of frustration more
20 than hopes that anything realistic will change.

21 MR. WIESE: It's one we might share.

22 MS. FORD: Any other comments? Yes, Donald?

23 MR. STURSMAN: As much as I'd like to launch
24 into an impassioned discussion of the enforcement
25 ANPRM, all I want to ask -- but I don't think it's

1 right for that discussion right now.

2 I'm just going to ask is that rulemaking that
3 will eventually come before this committee or because
4 it's of a non-technical nature, that it won't?

5 MR. WIESE: No. It will definitely come
6 before the committee. We talked to the committee last
7 year, as you'll recall, about this before we launched
8 and at that time -- sorry. Just jumping in. I'm not
9 really following protocol very well.

10 MS. FORD: You're fine.

11 MR. WIESE: We told you at that time why we
12 would use an ANPRM. You know, we could have written an
13 NPRM and dropped it on the street. We use an ANPRM
14 decidedly because it's a go-slow, gather more
15 information, give people time sort of approach.

16 MR. STURSMAN: I didn't know if we were just
17 keeping the committee informed of some -- of rulemaking
18 initiative you're having or if it was something that
19 would also come before the committee. That's where my
20 -- thanks for the clarification.

21 MR. WIESE: Well, the committee will
22 definitely vote on it, but we have to put the NPRM out
23 first.

24 MS. FORD: Yes?

25 MS. PEARCE: Thank you. Drue Pearce, Gas

1 Committee. Jeff, I know that your Administrator is
2 newly-confirmed.

3 Do you have any feel yet from either the
4 Secretary or the Administrator whether we should expect
5 any reorganization within the agency or do you think
6 things will stay settled?

7 MR. WIESE: Well, I've seen some signs. No
8 one's said anything to me that immediately affects the
9 Pipeline Program, but then again maybe I'll be the last
10 to know. We'll find out.

11 You know, I don't know how to say that, Drue,
12 short of my response, and I've talked to you a few
13 people, is the Hazmat Program, which is the other major
14 program in Pipeline, just is in the midst of their
15 reauthorization and reauthorization is a funny time.

16 For those of you who have been around through
17 a few of those things, you know we're being recorded.
18 So let's see. The way to answer that one is that funny
19 things happen during reauthorization and, you know,
20 there's a lot of posturing and there are two people at
21 the head of that program who have been removed and I
22 believe a combination of reasons for that and then
23 three of their senior managers have been taken out of
24 their positions and assigned to senior advisors.

25 So I think this Administration, to get on a

1 positive bent, is committed to safety, you know. When
2 we start talking to them about reliability, they're
3 less interested in talking to us, although we have
4 adopted that as an essential part of our mission. When
5 you achieve the safety goal, we achieve the reliability
6 goal, right?

7 So they want to talk about safety. They're
8 serious about it and they're serious to the extent that
9 they'll move people around if they don't think that
10 they're going to line up with the agenda.

11 They're also very serious about inspection
12 and enforcement, you know. I think there's no doubt
13 about that and you'd see press releases from us that
14 you wouldn't normally have seen in the past on
15 enforcement actions. It's not been a practice to issue
16 press releases on things like that, but the
17 Administration, I think, is signaling that they're very
18 serious about inspection and enforcement and safety.

19 But that's probably the best I would go into
20 --

21 MS. PEARCE: Thank you.

22 MR. WIESE: Thank you, Drue.

23 MS. FORD: Thank you. Any other comments?
24 Suggestions?

25 (No response.)

1 MS. FORD: All right. We're ready for our
2 panel.

3 Agenda Item 2: Committee Administrative Matters

4 MR. WIESE: Well, I'm sorry, I've got myself
5 on here twice.

6 MS. FORD: Twice.

7 MR. WIESE: It was my prerogative. I intend
8 to have a very short conversation on something and I
9 don't intend to resolve it now. If you'll allow me to
10 segue into this topic by saying I'm really serious
11 about this reauthorization discussion.

12 So the committee is about as informed, you
13 know, as any of the stakeholders. I welcome the
14 committee's -- whatever decision you want to take. I
15 mean, if you wanted to set up subcommittees to talk
16 about that or if you want to go off on your own in your
17 own groups and do it.

18 I think it's essential for your voice to be
19 heard and I would ask you to think about things that
20 you think need to be done and let us know and certainly
21 the Hill will be contacting your groups and some of you
22 will probably get drug in to testify. So I strongly
23 encourage you to think about that subject.

24 Okay. So, administratively, I have a couple
25 of things I wanted to talk about. I don't intend to --

1 I thought about giving you the Charter. The topics I
2 want to talk about are the Charter of the committees,
3 the format of our meetings, and then terms, term
4 limits.

5 So really quickly, I guess I would say the
6 Charters are in the book, correct? Yeah. I'm going to
7 abbreviate this conversation by saying that as the
8 Executive Director and I think also John and Cheryl are
9 interested in your thoughts about how to improve the
10 committee and the committee experience. What are we
11 doing well? What are we not doing well? How can we
12 make your meetings better and prepare you better for
13 meetings?

14 I had a discussion last night with several of
15 the members about how we present information to you
16 when it comes time to vote. You know, I think that's
17 essential for us to get that feedback from the
18 committee. We're not here to make you slog through
19 things like I sort of felt we were doing yesterday.
20 You know, I'm looking for ways to make that better for
21 you.

22 So I've got an active request to all the
23 members and that's really for all these topics, is that
24 I'm interested in your counsel on how to change these
25 things.

1 I would ask you to take a look at the
2 Charters, see if you think those are current. You
3 know, do we need to adjust that in some way?

4 The other thing was to give us some feedback
5 on how the committee meetings are going. What do you
6 like? What do you not like? You know, if we don't
7 know and we don't hear from you, I'll ask John and
8 Cheryl to reach out to you later, so, you know, you'll
9 have an e-mail contact asking for this information, but
10 how can we improve the committee operation? We take
11 seriously your advice. We want to use your time well,
12 help us with that.

13 Lastly, but something I walk into with a lot
14 of trepidation, is the discussion on term limits and I
15 really only intend to say that I see that as a double-
16 edged sword. I've known many of you for a decade and
17 during that whole decade, a number of you have been on
18 the advisory committee and I think we've benefited
19 immensely from your participation.

20 So I would stop and pause there. There is no
21 but, you know. It's really we've benefited immensely
22 from your participation, your counsel, your experience.

23 The only reason to even have this
24 conversation, and I've had it with some other people
25 and former members of the committee, actually, you

1 know, about at one point there were term limits and you
2 could, of course, be reappointed. I think we had an
3 out in there. I forget the actual language right now,
4 but at one point in time that was taken out and it was
5 basically you could be reappointed in perpetuity.

6 So like I said, it's a double-edged sword.
7 Some of you have so much experience that we can cut to
8 the chase pretty quickly when we get into a
9 conversation, not to mention you got into your
10 positions because you were so integrally involved in
11 either representing the public, representing the
12 industry, or representing government.

13 So I guess I would just really say I'm not
14 going to -- I'm open to discussing it now, but I don't
15 want to put people on the spot. I'd really -- we'll
16 send a follow-up e-mail to you to collect your input on
17 Charter, administrative process, how can we make it
18 better for you, including the voting, you know, and
19 then also your thoughts on term limits, but, you know,
20 that's really it in a nutshell.

21 I had thought about slogging through the
22 Charter but I don't think that's a productive use of
23 your time. I'd really rather just give you time to
24 reflect on those, but I'm open to any comments anyone
25 cares to offer on that.

1 Ted?

2 MS. FORD: Ted?

3 DR. LEMOFF: Ted Lemoff. Regarding term
4 limits, and I would comment I believe I'm the longest-
5 standing member of the Gas Committee, but during that
6 tenure and if term limits are to be, it is to be and
7 that's perfectly understood, I would observe that the
8 committees do seem to have a significant turnover and
9 so it's not like the 15 of us are the same 15 that were
10 there five or 10 years ago.

11 So I would observe that it really doesn't --
12 I don't think there's a problem per se, but if the
13 powers-that-be, the powers-that-be, but I think I don't
14 see a problem is what I'm saying.

15 MS. FORD: Thank you, Ted. Any other --
16 Denise?

17 MS. HAMSHER: So I'll go with Ted. Denise
18 Hamsher with Enbridge. I'm probably the longest-
19 serving member on the Liquid Committee.

20 So I think it's a perfectly valid issue to
21 raise. I just don't know that it needs to be a black
22 and white, you know, hard and fast line.

23 That said, I also think then it's important
24 for both representatives of the Public, the Government
25 and Industry to have a reasonable expectation for

1 replacement and nominations, and as you know, there's
2 been times where we've had vacancies and a near lack of
3 quorum sometimes, you know, because of that. So again,
4 that comes with the two-edged sword.

5 Part of that is, you know, the Public
6 representative's duty to kind of put forth some ideas
7 and names as well as the Industry, probably the
8 Government, you're on your own recruiting mission, but
9 I do think that's important, that as we do that at the
10 senior-most level, that a commitment to, you know,
11 prompt action on nominations is incumbent.

12 MS. FORD: Thank you. Any other concerns?

13 (No response.)

14 MS. FORD: Jeff?

15 MR. WIESE: I guess if you'll allow me one
16 observation, again, as I said, double-edged sword,
17 right?

18 I think the agency in the past decade I've
19 been here has changed considerably. We are not the
20 same agency we were 10 years ago. All of us, including
21 me, carry baggage with us over time. I think that's
22 one of the benefits of term limits, is that you bring
23 in people with fresh perspectives that are new.

24 Okay. Countervailing for us is, as you
25 probably noticed with some look around the room, we

1 have made a concerted effort to elevate the level of
2 the people participating on the advisory committee. I
3 did that on purpose, you know. I often feel the
4 quality of the advice from the senior-level people who
5 have a broader perspective on the issues, and I'm not
6 -- it's not -- I don't mean to be pejorative of others
7 on a detectible level, but if we engage with the
8 committee that's designed to give us advice with people
9 who want to argue over technical issues, I don't think
10 we really achieve the goals of directing the regulatory
11 programs.

12 So that's why we've made an effort to recruit
13 -- some people we had to bend their arms three or four
14 times, not that Jeryl's looking at me funny, but we've
15 benefited immensely from having him on and hopefully
16 they've enjoyed their tenure here, as well.

17 Government's another thing I guess I'd be
18 interested in. We have several vacancies and I'd be
19 remiss if I didn't, you know, say here formally my
20 thanks to the people who've left for one reason or
21 another, starting with the gentleman whose retirement
22 luncheon is today and I couldn't be there, although
23 I've worked with him for 25 years, Bud Danenberger.

24 Bud was on the committee, as you'll recall, a
25 long time ago. He went off and I cajoled him to get

1 back on the committee because I wanted to have that
2 relationship with him and Bud is an eminently
3 reasonable person. So today is his retirement
4 luncheon. He sends his best wishes, but he's going to
5 attend his luncheon after 35 years probably in his
6 case, and I've worked with him 25 years. He's got it
7 coming.

8 Other people. You know, I know we'll all
9 miss seeing Bob Keating and Jeff Hatch-Miller around
10 here, you know. It's just they're fixtures and, you
11 know, we still see them, fortunately. Some of us
12 continue to see them in Gas Committee meetings at
13 NARUC. So I'm thankful for that.

14 We also lost O.B. Harris, you know, and O.B.
15 was another one of the really longstanding members of
16 the committee and I know that I'm, probably because I
17 don't have the list sitting in front of me, forgetting
18 several other people. Bern Mosley, you know, from
19 FERC.

20 So I guess I'm interested in the agencies,
21 it's a great way to sort of set up. Very soon, we'll
22 also have some other people departing soon, people that
23 have been part of this committee for a long time.

24 In Drue's case, I really appreciate shadowing
25 that, if you hadn't heard. Drue was on the Liquid

1 Committee and then took the job as a federal
2 coordinator and came over to the Gas Committee, you
3 know, invaluable advice on both sides of that equation,
4 and as Drue exits the scene, you know, I've got to be
5 thinking about which agencies do we need to plug in.

6 So any rate, that's enough of the
7 administrative stuff. I just really wanted to open
8 that for debate and tell you that we will send a
9 message out to you. We'll be asking for your advice
10 and counsel. So if you can think on those things.

11 MS. FORD: Thank you.

12 MR. MOHN: Jeryl Mohn. First, to respond to
13 Jeff's comment about arm-twisting, I have been pleased
14 to be here.

15 The observation I'd make is in my tenure as
16 one of the newer members of the Gas Committee, all of
17 the committee meetings that I have attended, the live
18 meetings as opposed to the teleconferences, are joint
19 meetings, and I'm not sure if that's the norm or not.

20 I'd just offer the observation that as an
21 operator, it's a good perspective to get to hear the
22 business and the conduct, hear the business that's
23 conducted for the liquid side of the business as well
24 as gas.

25 So to the extent that you're wrestling with

1 whether or not you have joint meetings or you have
2 individual Liquid and Gas meetings, I would observe
3 that, even though I get to listen to some Liquid
4 business, it still is a pretty effective way to conduct
5 the business of both committees.

6 MS. FORD: Thank you. I concur. Andy?

7 MR. DRAKE: Andy Drake with Spectra Energy.
8 I'm going to throw something on the table here that may
9 pin your ears back a little bit, but you asked about
10 how we can improve the efficiency of this group and I'm
11 not a lawyer. I don't understand what happened
12 yesterday, but that was really a mess.

13 I mean, I'm sorry, but when we can't see what
14 you're proposing to do, we're shooting at a target we
15 cannot see and it just causes us to riffle back and
16 forth between ANPRMs and NPRMs and comments that have
17 been filed by the general public. It's not very
18 productive.

19 In the end, we're really trying to put into
20 place an effective regulation, sort of like hide the
21 potato, except we're trying to vote on the potato and
22 we can't see it, and so I'd just offer that for the
23 record for your use with your counsel, and I hope that
24 we can figure out ways to make that work, not reasons
25 why we have to make it stay that way because I think it

1 just makes us -- it just sort of is punitive to this
2 group and the conversations that we're trying to have.

3 MS. FORD: Jeff?

4 MR. WIESE: And I tried to, but let me one
5 more time apologize for that. I'll take the heat for
6 that.

7 You know, I really should be -- we should
8 have been better organized and had better information.
9 I understand the point you're making and I appreciate
10 it and share your view.

11 I mean, we can't ask you to vote, I'm
12 speaking personally now, I don't think I can ask you to
13 vote on something until you see it, you know. That
14 said, we can't -- as you know, you've all been around,
15 we can't make promises to you. We can tell you what
16 we're thinking and I think we need to do a better job
17 of telling you what we're thinking.

18 So I apologize for putting you through that
19 and I'll just say anecdotally that you remember last
20 year, of course, I only vaguely remember last year
21 because I was running a fever about that time, but I
22 felt like that was a really difficult and tough
23 meeting, but I can't tell you how many members came up
24 to me and told me that they thought that was one of the
25 better ones because they'd actually been able to roll

1 up their sleeves, understand better what we were doing,
2 and worked to try to get a consensus outcome.

3 So I am at least personally sympathetic to
4 your remarks and I thank you and apologize again for
5 the difficulty of yesterday.

6 MS. FORD: Any other comments?

7 (No response.)

8 MS. FORD: Thank you, Jeff.

9 Agenda Item 3: Energy Demands & Projections

10 MR. WIESE: So with that said, now I have to
11 turn around for a second and ask if Michael is here and
12 John and Geoffrey. You are? Okay.

13 We're going to ask -- we're going to put
14 together a panel presentation right now. I might move
15 this one over here, but we'll have you come up here
16 where the mikes are. I think, do we have all your
17 stuff loaded? Pardon?

18 The first reason, I'm setting it up this way
19 on purpose. There's going to be a broader discussion
20 about Energy Supply, Energy Demand, and then we're
21 going to get into some specific ramifications of that.

22 So I'm going to step back for a second.
23 We'll turn the mike over first to Michael Schaal from
24 Energy Information Administration within DOE who's
25 going to set this up, followed up by a conversation

1 from John Felmy and Geoffrey Brand on both Liquid and
2 Gas perspectives on that.

3 So I will step out of the way here and let
4 somebody have my mike. Take my coffee, though. You
5 can't have that.

6 (Pause.)

7 MR. WIESE: Jeff Wiese again. I apologize
8 for that. Michael apparently is not here, correct?
9 Okay. So we're going to go ahead anyway.

10 We've got presentations both on the Gas side.
11 Shall we start there?

12 MR. BRAND: We can start there.

13 MR. WIESE: Okay. And then we'll move on to
14 the Liquid side on Supply Issues and when Michael, if
15 and when Michael gets here, we will have Michael step
16 up at the end of that.

17 Thank you so much for adapting with us.

18 MR. BRAND: No problem. Am I going to get
19 the clicker? Thank you.

20 Good morning, everyone. My name is Geoffrey
21 Brand. I'm with ICF International. We're a consulting
22 firm just here out in Fairfax, Virginia.

23 Today, I'm just going to go over a couple of
24 studies we did for the INGAA Foundation, mainly talk
25 about natural gas and a little bit on CO2.

1 We have done three recent studies for INGAA.
2 One was on unconventional natural gas supplies, another
3 one was on projections of natural gas infrastructure
4 through 2030, and we also did a report on CO2, what
5 essentially pipeline would be necessary if we did have
6 a federal widespread CO2 carbon capture policy.

7 All of these reports are on the INGAA
8 website. Certainly, I only am supposed to have like 10
9 to 15 minutes. So I'm going to just go ahead and go
10 over the highlights, but you can all download these
11 reports if you have any more specific details you want
12 to look at.

13 Unconventional gas supplies. First of all,
14 I'll go over a definition. Some people don't even like
15 the name unconventional gas supplies because they are
16 becoming more common and actually in the future
17 unconventional gas supplies could exceed conventional
18 gas supplies, so that kind of questions why we're
19 calling it unconventional.

20 But, in essence, a definition of what an
21 unconventional gas supply is, it's just natural gas
22 from a formation which needs additional enhancements to
23 get it out of the ground. In other words, it would
24 need like well stimulation or well fracturing or if
25 you're in coal bed methane, you would need some

1 dewatering.

2 So, in essence, it makes it a little more
3 costly than conventional supplies and this is a growing
4 natural resource in both the U.S. and Canada. Typical
5 types of unconventional supplies would be your tight
6 sandstones, your shales are becoming very important
7 lately, and also your coal bed methane.

8 The reason why unconventional gas supplies
9 are so important is because they are the driver to
10 where we're going to need new natural gas
11 infrastructure in the future. It's the location of
12 these gas supplies and their growth which is driving
13 the need for infrastructure.

14 Certainly growth in consumption markets are
15 important but the main driver of where we're going to
16 need new infrastructure is the shifting of the supplies
17 to these new basins of where these supplies are
18 located.

19 This is a graph kind of showing recent
20 history. In the blue is our tight sandstones, the red
21 is the shale, and the yellow is the coal bed methane.

22 As you can see, starting around the early to
23 mid 1990s, we were getting roughly three tcf per year
24 out of these unconventional supplies, but since then
25 we've seen very rapid growth and now, this graph ends

1 in 2007, we're around nine tcfs. So we're over nine
2 tcf unconventional gas supplies, so we've seen strong
3 growth within the last 15 to 20 years, and again this
4 growth is projected to continue. So this is why this
5 is very important as to where our natural gas
6 infrastructure is going to be.

7 This is a little hard to read, I apologize,
8 but again if you've got your handout, you can read it.
9 The top table is showing our U.S. reserves per year
10 from 2000 to 2007. The second column is showing
11 production.

12 As you can kind of see, production has been
13 fairly stable and flat around 19 to 18 tcf in the U.S.
14 However, reserve additions have been much greater than
15 the actual production, therefore we're actually having
16 increasing reserves in the U.S. This is setting up for
17 what was a flat production per year with the increasing
18 reserves, we could have growing production in the
19 future, and the bottom table shows details where the
20 reserves are and how much they are.

21 The very first column is proven reserves and
22 that's about 260 -- this is a 2008 number. I don't
23 have that listed there. So we have about 10 years of
24 reserves versus our production, 26 being both U.S. and
25 Canada, and then the third column is reserves and

1 resource, resources being a potential of what we think
2 is out there to be discovered in the future, and that's
3 about 2000, 600 tcf you hear about. That's 100 years
4 of gas we have in North America. You've seen that
5 number kicked around. ICF kind of agrees with that
6 number. Of course, resource is kind of a hard thing to
7 get your handle on.

8 That number has been going up because people
9 have been re-evaluating the shale numbers and that
10 shale number has been going up in recent years. Right
11 now, that's about, for U.S. and Canada, 800 tcf of
12 estimated resource, given current technology. So even
13 as technology advances, that number may still go up.

14 This is a projection of production from --
15 this is actually from the unconventional report. So
16 this is a little bit dated. In essence, it shows a
17 turnaround in total gas production growing post-2007 to
18 2008. If this would be updated, it would be a slight
19 flattening out in the year 2009 with the economic
20 situation. We've actually had a slowdown, not
21 necessarily a decline in production, but a more
22 flattening out of production.

23 That said, the trend should still continue.
24 Of course, with the discovery of the additional
25 unconventional supplies, we now are capable of actually

1 increasing total production growth.

2 Even if we have a policy of -- again, the
3 natural gas market's heavily dependent on greenhouse
4 gas policy. If such things would have a more flat
5 market, you would still see a growing unconventional
6 piece of that pie. So, therefore, even in a flat
7 market or non-growing total consumption market, we will
8 still see growing unconventional supplies/declining
9 conventional supplies. Therefore, you would still need
10 natural gas infrastructure in those unconventional-
11 based scenarios, even in a non-growing market. That's
12 a very important point.

13 So this is just a map kind of showing where
14 the various unconventional plays are. The red is the
15 shale areas. I have circled some of the more important
16 ones. The big one started out was the Barnett
17 formation in Texas. Of course, we get Hainesville down
18 in Louisiana has been growing lately and, of course,
19 there's been a lot of talk about the Marcellus.
20 Marcellus is a shale basin in the West Virginia,
21 Pennsylvania, and New York area. These are all growing
22 basins, especially, which have good potential for the
23 future.

24 The tight sand area, the biggest growing area
25 is the Rocky Mountain area which is in Wyoming. Coal

1 bed methane, also another unconventional supply, we
2 don't see it as a major growth area but certainly that
3 could change in the future, but there's good areas, of
4 course, in New Mexico, that's the San Juan area, and
5 also in the Powder River Basin up in Wyoming.

6 This map is actually from the INGAA
7 Infrastructure Report. This is our Base Case Results
8 of Changes in Interregional Flow. Again, I want to
9 emphasize we do have other cases in the report which
10 either show higher or lower natural gas consumption,
11 mainly based on policies, but what this map shows is
12 changes in flow from 2008 to 2030. The thicker the
13 line, again these numbers are a little hard to read,
14 but just the thickness of the line is most important.
15 It kind of shows you where the new gas is going to
16 flow.

17 I guess when you have a growing basin, you
18 need additional pipeline infrastructure to move it from
19 those new basins to the market, and, of course, the big
20 plays are actually down in the Texas to Louisiana area.
21 You kind of see, I guess, where the Mid-continent
22 shales are. That's where the Hainesville and Barnett,
23 a lot of the extra pipe is needed to actually move that
24 into Louisiana to hit the existing pipelines there.
25 There's strong pipelines needed out of the Rockies.

1 This shows the big line going across the Rockies
2 Express.

3 You also need gas moving both east and west.
4 West would be Ruby. If there is an Alaska project, and
5 I believe you're talking about that later today, you
6 will need essentially new pipeline, of course, to get
7 it to Alberta which is, you know, the project itself,
8 plus maybe some additional pipeline to get it to the
9 Lower 48.

10 So it is these increases in flow that's going
11 to show where the interregional long-distance pipelines
12 are going to be needed and, of course, the gathering
13 lines and the other laterals needed within the basin
14 itself. So that's mainly where infrastructure should
15 be.

16 This is a graph that shows just the pipeline
17 miles in the INGAA Base Case. You're getting about
18 1,700 miles per year on average is broken out between
19 new areas, kind of expansion pipe would be kind of
20 looping, and then laterals.

21 AS you can kind of see, there's a strong
22 growth from roughly 2008 to about 2012. That's the big
23 push to actually enter the new basins when those basins
24 are just starting online. Once those basins are
25 established, you get more just laterals and get less of

1 a build-out in the later years.

2 If there is an Alaska project or a McKinsey
3 project, you know, those are usually -- you know,
4 Alaska is probably like 10 years out. Everybody always
5 says it's like 10 years out, but those will not only
6 need those pipelines itself but also need the
7 associated downstream pipelines.

8 This is the capital expenditures per year
9 and, of course, these are following the pipeline miles
10 added. Again, there's kind of a big expenditure in the
11 2008 to 2012 range. In total, into the future, out
12 from 2009 to 2030, you're looking at about \$6 million
13 per year on average.

14 The Arctic Projects, they're spread out over
15 more than one year in this particular graph. They
16 account for about 30 to 40 percent of future
17 expenditures.

18 This is just a summary of the INGAA Base Case
19 Infrastructure Results. The base case itself had a
20 growing U.S. and Canadian market of about 18 percent.
21 That's over 21 years. So that's a little less than one
22 percent per year.

23 Of course, we need additional transportation
24 capacity between regions of about 20 percent. We had
25 storage growing by 10 percent. Pipeline miles, as I

1 said before, was roughly 1,700 miles per year. 8.1
2 million horsepower of added compression and in total
3 capital expenditures of about 135 billion.

4 Other midstream assets, of course, will be
5 needed. Gathering lines, again mainly in those new
6 basins, but also gathering lines that are existing in
7 mature areas, gas processing capacity, again that's
8 mainly in the new unconventional areas.

9 LNG import capacity. We have -- most of the
10 terminals are built that we need. They're not being
11 highly utilized now, so we don't see a tremendous
12 amount of new terminals being added. However, there
13 might be some enhancements of existing terminals. I
14 think Elbow Island has a planned expansion some time in
15 the future.

16 In total, we get roughly a \$160 billion in
17 the 2009 to 2030 and as I said, this is just the base
18 base and there are other cases in the report which is a
19 little higher and a little lower.

20 I'll just go briefly over our CO2 Report.
21 Obviously, in order to do carbon capture, there are
22 several steps involved. We need to separate it from
23 the waste gas, compress it up, be able to enter a
24 pipeline, then pipeline it to an injection site and
25 inject it into an appropriate geologic formation.

1 There's been a fair amount of -- well, not a
2 fair amount but there's been more study on some of the
3 other steps than just the pipeline portion of it,
4 mainly being because those steps are there's
5 technological problems in the other steps that still
6 need to be taken care of.

7 The pipeline is a pretty mature process. We
8 know how to pipe CO2 already. There's already existing
9 pipelines. So there's less questions on the
10 technology. However, that said, there was not any
11 quantitative study of how much pipeline would we need.
12 So that's why, one of the main reasons why the INGAA
13 report was essentially done or commissioned.

14 This is a map showing a potential CO2
15 pipeline network from the report. The dark circles are
16 the coal plants. That's where our major source of CO2
17 emissions would be. Then the shaded areas are like oil
18 and gas fields and/or saline aquifers or the
19 appropriate geological formations which could be CO2,
20 it could be injected.

21 The dashed blue lines are actually the
22 existing CO2 pipelines that are actually out there.
23 They're pipeline essentially, people would know, going
24 to enhance oil recovery. So they already have CO2
25 pipelines fairly long distance from ones that are in

1 existence today.

2 The report actually had four different
3 scenarios. There was a high and low case for the
4 emission injections by 2030. The high case had a
5 thousand million tons and just to get that in
6 perspective, our current coal power plants emit 2,000
7 million tons of CO2 per year. So the high case
8 essentially had half of all the emissions from coal-
9 powered power plants being injected into the ground by
10 2030. The low case only had 15 percent. So those were
11 the two cases.

12 The other variable for the cases we had in
13 the report was essentially how much of that gas would
14 be used for enhanced oil recovery. You need more
15 pipelines if you use more of the CO2 for enhanced oil
16 recovery because you can't just inject it. You have to
17 actually move the gas farther away to a specific oil
18 field as opposed to just injecting it into the closest
19 available, you know, saline aquifer or whatever.

20 So that's why the high injection and the high
21 greater enhanced oil recovery case has the highest
22 pipeline mileage. One thing you can kind of see here
23 is most of the pipeline miles are added post-2020,
24 given the scenarios that we did for this report.

25 The costs range from 8.5 to 65 billion. So

1 it's a fairly high range, depending on what you assume
2 is how strong the policy is and how much injection in
3 millions of tons. That's the key driver, how much
4 things are going to cost. Again, most of the costs are
5 going to be in the post-2020 time frame.

6 A couple -- there are many issues to be
7 resolved. Of course, there's liability issues. If
8 there's leakage out of the reservoir, who would be
9 liable for it? Financing would be -- there's questions
10 about that, whether private financing would actually be
11 available, if there's economic incentive there, or
12 whether we'd need some public financing.

13 Who would regulate, whether it's federal or
14 state, is not defined right now, and that's another
15 point that will need to be addressed in order to get a
16 carbon capture policy of this size, and whether or not
17 eminent domain issues, also.

18 So in order to get something of this size, of
19 course, you'd probably need a national approach as
20 opposed to the state by state approach which we have
21 with the existing pipelines in limited scope. Of
22 course, then how the investments are going to be,
23 whether you need -- what are the allowances in the CO2?
24 Cap and trade would be enough to enhance private
25 investment, and, of course, as we get into the future

1 areas, more likely go into more heavily-populated areas
2 than we would in the initial program.

3 And that's all I have, given my limited time.

4 MS. FORD: Questions for Geoffrey?

5 MR. PIERSON: Craig Pierson, Liquids. I've
6 got a quick question on the assumptions made on gas to
7 liquids technology. It looks like it's probably status
8 quo, not an assumption that that technology's going to
9 be available. Was that looked at very hard?

10 MR. BRAND: In this particular study, that
11 was not an assumption that that would go -- that would
12 not influence the amount of production we have in the
13 future before 2030, but that's certainly a possibility.
14 Certainly if you have -- you know, if Shell Gas goes
15 very high, then we'd have -- they'd be a potential
16 source for liquids, actually, but that was not an
17 assumption made in this -- the cases that we ran.

18 MS. FORD: Any other questions? Oh, I'm
19 sorry. Ted?

20 DR. LEMOFF: Yes, Ted Lemoff. I've heard
21 some speculation regarding liquefied natural gas. I've
22 heard some speculation that the availability could lead
23 to a situation where we convert one more import
24 terminals to export terminals and your numbers don't
25 seem to indicate that, but could you address that

1 subject, please?

2 MR. BRAND: Certainly that is -- I think
3 Freeport down in Louisiana actually applied to actually
4 be able to export and the Canadians in the Kitimac
5 area, which is off of British Columbia, they're
6 thinking of also building an export terminal, mainly
7 because there is a British Columbia shale up there, and
8 it's remote from a lot of the North American markets,
9 so therefore there would be interest in that.

10 Certainly is a possibility. Right now,
11 shale, mainly shale place have to really take off for
12 that to happen and it's certainly a possibility. The
13 shale is happening so fast and so quickly. I mean like
14 two years ago, you know, one year ago, things were
15 different from one year ago. So it's hard to say how
16 fast will that develop.

17 That said, there might be a world glut in LNG
18 exports. So the market might -- it all depends on how
19 the world market might turn out, also, not just how
20 well the shale applies. There's many competing factors
21 on that topic.

22 MS. FORD: Thank you. Any other questions?
23 Donald?

24 MR. STURMSMA: Again, as Jeff says, this may
25 be above your pay grade, but a year and a half or so

1 ago, you know, crude oil was in trouble digits, gas was
2 four bucks a gallon, and there was an election coming
3 up, and there seemed to be general consensus among both
4 the public and legislators that we should take more
5 steps to increase American production of gas and oil.
6 I could run through the litany of reasons. You know
7 from jobs and security and all that stuff and even
8 outside of the price spike, there seemed to be a
9 generally favorable attitude toward that.

10 Well, it kind of seemed to have gone away.
11 In fact, I can't see that anything's happening to
12 encourage, maybe even the opposite, for more fossil
13 fuel production and I just wonder if you'd care to
14 comment on what's happening there.

15 MR. BRAND: You're right, it is above my pay
16 grade.

17 That said, certainly at ICF, we thought the
18 natural gas price was kind of being dragged up by oil
19 and wasn't really fundamentally driven. So that, we
20 thought the prices being traded were too high and it
21 was just more how -- whether we should still encourage
22 domestic oil and gas production, I would agree with
23 that and, yes, I would just agree with that. How's
24 that?

25 MR. STURSMAN: One more question, although if

1 there is promotion for oil and gas, I don't know if
2 you'd find some in Iowa.

3 The very last statement you made, that CO2
4 pipelines will be more in developed areas and there
5 will be all sorts of siting and the public issue
6 problems. I just wonder what the premise was for that
7 statement.

8 MR. BRAND: I meant as in the future. I
9 mean, when I say in the future, the initial pipelines
10 will probably be in undeveloped areas, but as you build
11 out in the future, they'll slowly go into more
12 populated areas.

13 Of course, if you want to just take CO2 out
14 of the air, you would take it where it's cheapest and
15 least expensive to do that, but once you've done that,
16 it'll slowly go into more populated areas. It's more
17 like once the program gets rolling. I should have
18 specified that a little better.

19 MS. FORD: Yes, Lisa?

20 MS. PARKER: Yes. Lisa Parker, Liquids
21 Committee. The numbers that you gave for the CO2, are
22 those dependent upon -- for 2020 and 2030 construction,
23 are those also dependent upon what happens with the
24 upcoming climate change legislation or is this
25 something that you see as not dependent upon what

1 happens?

2 MR. BRAND: It is totally dependent on what
3 happens on climate change policy, yes. Much has to do
4 with how the pipelines get financed and where, what are
5 the economic incentives to build it.

6 MS. FORD: Any other questions for Geoffrey?

7 (No response.)

8 MS. FORD: If not, we'll proceed with our
9 next panelist.

10 MR. WIESE: I think -- this is Jeff -- just
11 with your permission, we're going to go next to John
12 Felmy from API. I think John probably has some
13 perspective on some of the questions that have been
14 asked, too. So I think feel free to -- we'll pause
15 after each one of these presentations and before we go
16 on to Michael for another round of questions.

17 But John's Chief Economist at API. Welcome
18 him and thank you for your time, John.

19 MR. FELMY: Thanks very much for having me.
20 What I'd first like to do is answer from at least my
21 pay grade the question that was asked earlier about
22 more oil and gas, and I think the answer is clear to
23 anyone who looks at this carefully, is that
24 irrespective of a lot of things, we can produce a lot
25 more oil and gas. ICF has documented that in work

1 they've done for us and so on.

2 The fact of the matter is going forward,
3 we're going to need oil for the foreseeable future and
4 I say that because all too often here in Washington, we
5 have rhetoric that dominates reality. We hear constant
6 statements to the effect of all we need is renewables
7 and that solves our problem.

8 Well, the fact of the matter is most of the
9 renewables that people are talking about are
10 electricity. We have 250 million cars that don't plug
11 in and until they're fueled by some other fuel, whether
12 it be electricity and hopefully that'll come about in
13 the future with the Chevy Volt or the \$140,000 Tesla,
14 or natural gas, we're going to need a lot more oil.

15 Now API is not in the business of
16 forecasting, so I'll use a couple numbers from
17 Michael's agency. If you look at what their latest
18 Outlook has, and they're coming out with a new one on
19 Monday, you're going to see oil decline by roughly
20 about seven percent, just oil products, in the future,
21 and that's between 2007 and 2030, and so to keep those
22 products flowing to consumers, we're going to need
23 constant crude oil pipeline capacity and we're going to
24 need refined product capacities.

25 Clicker. Thanks. To the right. Let's see.

1 All right. These are the liquid pipelines that we have
2 right now and they're in place both in terms of crude
3 and products. They're networked together in terms of
4 production of crude coming from various sources going
5 to refining centers and then ultimately to consumers.

6 A big gap in terms, of course, of refined
7 products pipelines is New England where we don't have a
8 pipeline that runs from the main centers into New
9 England and so some day I'd love to see a pipeline, as
10 a former pipeliner myself, I'd love to see one built up
11 there.

12 But this map is going to continue to evolve.
13 It's going to be affected by changes in first crude
14 supply. The biggest, of course, being Canadian oil
15 sands. Some of the developments that are there could
16 be continued growth of both the pipelines that are
17 planned and under construction and then also new ones
18 going forward and then that has the potential
19 implication in terms of, well, once you get it to a
20 refinery, where does it go from there, what's the
21 product slate that you're going to be working with, and
22 so it's an incredibly complex challenge that we're
23 looking at going forward, and, of course, it's further
24 complicated by the types of products that you have.

25 You all are familiar with the batching that

1 pipelines go through and so on. This one's a little
2 dated but it had nice colors, so I used it, but it
3 changes because, of course, the product slate continues
4 to change. We have had, of course, recently the ultra-
5 low sulfur diesel fuel was the latest big introduction
6 and then off-road and so on.

7 Suffice to say it's not getting any less
8 complex and when you add other types of things in
9 there, you can see this incredibly complex operation
10 and so it is a daunting challenge for the industry.

11 It's further complicated by you have to get
12 the products to where they're going to be ultimately
13 shipped to the end use consumers and these are the
14 terminals that you have to deal with and it's quite an
15 effort to be able to map this out so you get the
16 product to there, get the product to the consumer, and
17 so on, and it's further complicated by, for example,
18 gasoline.

19 This is the latest gasoline map put together
20 by ExxonMobil that shows the 14 different types of
21 gasoline that we have.

22 Now each slate tends to change more. We've
23 got an introduction in the Northeast of ultra-low
24 sulfur heating oil which is something we're very
25 concerned about because of the potential supply

1 implications.

2 Right now, we're not sure who would produce
3 it. The refinery system is under great stress right
4 now. Margins are very low. We've seen a couple
5 refineries announce shutdowns. The situation is
6 sufficiently dire that for one quarter the capacity,
7 which is relatively small refiners, they're facing
8 intense financial pressure. So adding more product
9 formulations, adding more changes like that just simply
10 makes our life -- makes the life of the shipper a lot
11 more complicated.

12 To that, we can also add, of course,
13 legislation that's on the books. The first is the
14 requirement to put in 36 billion gallons of ethanol.
15 Now that will have an impact on what we ship, where we
16 ship, how you ship it, you know. Obviously right now,
17 you don't put ethanol in pipelines to any significant
18 degree and so you'll have an impact in terms of what is
19 the base oil that you're going to -- base gasoline that
20 you're going to use for which you then blend ethanol
21 in. That's further complicated by the fact that you
22 can't put that much ethanol right now in the fleet of
23 cars that are out there because of what they call the
24 blend wall.

25 You cannot put more than 10 percent in and we

1 use about a 137 billion gallons of gasoline right now.
2 So at 10 percent, that would be 13. So we have a real
3 tough road in terms of having that go forward.

4 We also have the questions about increased
5 CAFÉ standards. What will that actually do in terms of
6 fuel demands, where, because those types of
7 restrictions and so on could have differential effects
8 all around the country and so we're really, really
9 looking at this carefully in terms of both the capacity
10 and where and from, to and so on. It isn't getting any
11 more easier as time goes by.

12 I think clearly we're going to see the oil
13 sands come in. There is absolutely no reason they
14 don't. We hear arguments from folks who are opposed to
15 it, saying don't use this type of oil. Well, from
16 every person I've heard from Canada involved in the
17 effort has said that they're going to produce it in
18 Canada and if it doesn't come here, it'll go somewhere
19 else, and so from an emissions point of view, we should
20 use it here. It's lower-cost emissions. Wheels to
21 wheels, those emissions are not significantly
22 different. It's a source of secure energy for the
23 United States and there's absolutely no good reason.

24 So going forward, we'll expect that to be a
25 challenge in terms of capacity there.

1 We continue to have structures. For those of
2 you who don't know, this is just one of the added
3 complexities that we have. These are state regulations
4 on heating oil in terms of sulfur content and so on and
5 that just further complicates our ability to be able to
6 ship things forward. That's not going forward likely
7 to change much but nevertheless if it does, it further
8 complicates our situation.

9 This shows where you've got the major trunk
10 lines and as I mentioned earlier, you've got the ones
11 coming down from Canada. You've got potential
12 increases in the Gulf of Mexico, if we have more
13 activity there, and you can see that refining centers
14 that are here on this and so think about how all those
15 different lines and pipes and so on could have to move
16 at some point in terms of where they're going and how
17 much of a challenge it is.

18 This just shows, you know, the additional
19 changes that could go on and, you know, additional, you
20 know, where could you have some increases, where could
21 you have some decreases. This is from Cheryl Trench,
22 from her analysis and so on, and so I'm just putting it
23 up to show the major flows and what it could do.

24 This just shows that, you know, her
25 assessment of where you're going to have increases,

1 where you could have decreases, and that additionally
2 will be a challenge.

3 Skip over this one. These are the refined
4 product lines. If you have changes in the inflows, you
5 can have changes in these. As I said, I'd love to see
6 a refined product pipeline into New England, but either
7 that or build a refinery would be another solution that
8 I think would help our energy policy a lot.

9 Now let me just briefly finish with shale
10 gas. Geoffrey went through. As a native of
11 Pennsylvania, I am really excited about this. I'm from
12 an area that is -- I'm not sure if you can see that --
13 in North Central Pennsylvania, where I remember as a
14 kid in the '60s seismic trucks going up and down all
15 those highways and I always wondered what they found,
16 if anything.

17 Well, now we know, and, fortunately, it could
18 be a vast amount of gas which is desperately -- that
19 economic development is desperately needed for that
20 part of the world. That neck of the woods, as I would
21 say. I grew up in a town, population 50, square
22 density of population 1.9 per square mile. So that's
23 from behind the sticks, as my wife would say.

24 But what was interesting to me, I'll close
25 with this anecdote, I worked as a kid on a pipeline.

1 The original major pipeline in the United States, as
2 I'm sure you all know, was the Tidewater Oil Line. It
3 was laid from the Bradford Fields of Northern
4 Pennsylvania down through to Bayonne. It was a line
5 that was a six-inch cast iron line screwed together
6 with collars, dug by hand largely. It was put together
7 by the independents to break John D. Rockefeller's hold
8 on transportation, finished in 1879.

9 Now I didn't work on it then, of course, but
10 nevertheless that line, that right-of-way, is still
11 there and so at one point when I heard about the shale
12 gas, I thought, aha, I have my pet rock, you know, and
13 so I thought I'm probably one of the few people who
14 knows that right-of-way is there and, of course, are
15 you know right-of-ways are very valuable and I thought,
16 hmm, this could be a good opportunity.

17 Well, I asked around, found a forester who
18 knew something about it and, unfortunately, Verizon
19 beat me to it. So they own the line, but otherwise it
20 would be a great line because it runs right through the
21 shale down into the consumption centers and so on, but
22 I lost out on that. As usual, that's typical of my
23 life.

24 So let me close and say thanks very much for
25 the opportunity to be here. We are going to continue

1 to be around. We've got daunting challenges and we
2 really appreciate the support that you all provide to
3 the industry.

4 Thank you very much.

5 MS. FORD: Thank you, John. Are there any
6 questions for John? Comments? Denise?

7 MS. HAMSHER: Just an observation. Hi, John.
8 There was some comments made about the CO2 regulatory
9 regime and whether that regime, you know, should be
10 federalized, if we get into that, but as some of you
11 and John knows well on the liquid pipeline, it isn't a
12 federal regime either. There's still federal
13 permitting and environmental leads, but from a siting,
14 eminent domain, public need determination, and all
15 that, it is a state by state review.

16 So that said, what are your comments, either
17 one of you or all three, you know, about if you look at
18 this change of infrastructure that's being driven, what
19 are the implications, if any, to, you know, maybe raise
20 that issue of a federal process as we have more and
21 more challenges going through the kind of plethora?

22 MR. FELMY: Well, just a quick comment. I
23 mean any time you have all the different state
24 potential intervention and so on, the process just
25 simply slows down and I'm on record as supporting more

1 Canadian oil sands lines coming in. It's secure energy
2 supplies. It's redundant. It's robust. It's
3 reliable. It's what we need for energy and so anything
4 that moves us away from that, if it's 50 people needing
5 to make a decision versus one, that's an enormous
6 challenge and it simply complicates it far more and
7 with energy policy, we're already facing an enormous
8 challenge.

9 MR. BRAND: Certainly, if you have an
10 extensive large amount of CO2 injected, you'll be
11 crossing more state lines. So, therefore, I think the
12 Federal Government might just get involved because of
13 the need to cross state lines. But again that's a lot
14 of opinions on that one.

15 MS. FORD: Michael, did you have an opinion
16 on that question?

17 (No response.)

18 MS. FORD: Thank you. Any other
19 observations, suggestions?

20 (No response.)

21 MS. FORD: If not, Jeff?

22 MR. WIESE: Just wanted to make a quick
23 reminder if it didn't come up when I was out of the
24 room briefly. I would remind you that there is a
25 federal presence on CO2 pipelines and we also partner

1 with the states.

2 Once you get to the point of construction and
3 operation of that pipeline, you know, it is
4 jurisdictional to DOT and we exercise that pretty
5 regularly, and I'm actually proud to say with over
6 4,000 miles of CO2 pipelines that have been operating
7 for a long time, there's actually a very positive
8 safety record on CO2 pipelines. So just making that
9 point.

10 Also use that as a segue to introduce Michael
11 Schaal. I appreciate Michael coming over from DOE to
12 share. DOE does a lot of work on forecasting on energy
13 futures and I appreciate their taking time to share
14 that with the committee.

15 So thank you, Michael.

16 MR. SCHAAL: Thank you, Jeff. While we're
17 getting the presentation up, many of you are probably
18 well aware of the Energy Information Administration.

19 The EIA, for those who don't, the EIA is an
20 independent agency within the Department of Energy and
21 as such, anything I say here is not policy of the DOE
22 or the Administration. It's EIA's projections alone
23 and that's part of our providing unbiased statistics
24 and forecasts of the energy industry.

25 I'll be making a few comments about liquid

1 and gaseous fuels outlook. Before I get to some of the
2 details, one of the things I'd like to have everyone
3 recognize when we talk about the future in particular,
4 one of the things that we like to tell people is that,
5 while we have a reference case and, yes, indeed, we
6 will be putting out a new reference case for AEO-2010
7 this upcoming Monday, that's built around current laws
8 and regulations framework where it's expected that
9 current laws will remain as enacted and when many
10 people think about the past, let alone the future, one
11 of the things that we're quite aware of is that there's
12 quite a bit of change that has occurred and that is
13 anticipated to occur.

14 You know, I've shown up here on the screen
15 here any number of policy changes that are in the
16 works, including tax policy issues having to do with
17 oil and gas extraction, and certainly one of the
18 largest ones has to do with greenhouse gas legislation.

19 For that reason, when we publish the Annual
20 Energy Outlook each year, usually in the February-March
21 time frame, we include with that a large number of side
22 cases that look at alternative visions of the future
23 and that provides those who are working in the industry
24 and analyzing what's occurring how that reference case
25 might change in response to changes in the assumptions

1 behind the modeling or perhaps some changes having to
2 do with certain policies being in place.

3 Now most of the policy cases are included in
4 previous service reports and those are publicly
5 available on our website.

6 In addition, the numbers that I quote here,
7 detailed tables are available on EIA's website as well
8 as detailed tables on all these scenarios, should you
9 want to go to that level of detail.

10 I've highlighted here a few of the important
11 -- a few important side cases as they pertain to oil
12 and gas, including those involving economic growth, the
13 pace of technology in oil and gas extraction, extremely
14 important, the impact of LNG, different levels of LNG
15 imports. The impact of opening up ANWR is an issued
16 that many people are interested in.

17 In addition, we have, as part of current laws
18 and regulations, oil and gas production expected to
19 occur in the Outer Continental Shelf in those areas
20 that had previously been foreclosed upon or subject to
21 moratoria.

22 So one of our main cases involves world oil
23 prices. We recognize there's a world market for oil
24 and that there are under credible scenarios one could
25 come out with prices that would be supported in the

1 \$50-60 per barrel range or as high as approaching \$200
2 a barrel range. Many of these have to do with access
3 to oil, OPEC behavior, the growth of demand in emerging
4 economies.

5 Our reference case and most of the
6 projections that I will show in the later slides
7 involves the red line which is in our reference case,
8 oil prices recovering from their low levels and
9 approach \$130 per barrel on a real dollar basis by
10 2030.

11 Now we will look at how that plays into
12 overall energy consumption within the U.S. One of the
13 areas we look at is the combination of macro economic
14 growth, which we have an average of 2.4 percent per
15 year which includes recovery from the current
16 recession, and the cumulative effects of energy
17 efficiency trends within the U.S.

18 Now this chart shows on the blue line that's
19 trending downward energy efficiency denoted as energy
20 use per dollar of real GDP. In other words, our
21 economy requires less energy for each dollar GDP now as
22 it did in 1990 and actually that trend goes back to the
23 '70s and we expect that trend to continue through 2030.

24 However, on a per capita basis, per person
25 basis, the energy intensity has been fairly flat from

1 1990 to present and only with the imposition of CAFÉ
2 and additional end use efficiency standards do we
3 anticipate that the cumulative effects of these trends
4 would be to drop energy efficiency on a per person
5 basis, as well, through 2030.

6 The result is a fairly slow growth in energy
7 consumption overall. What I'm showing here is total
8 energy consumption, coal, gas, and liquid fuels, and of
9 the liquid fuels, we're actually expecting that on
10 liquid fuels, including liquid biofuels, will
11 essentially remain flat throughout the projection
12 period.

13 Now this does show that fossil fuels and
14 petroleum in particular remain a significant component
15 of our energy supply requirements and that liquid
16 fuels, even though growing at a fairly rapid rate, will
17 still remain a fairly small part of the overall
18 equation.

19 So now liquid fuels, this chart compares
20 consumption on the top and domestic supply on the
21 bottom and with the difference being net imports and a
22 couple of trends to look at here is that (1) the growth
23 in consumption that has occurred over the last couple
24 of decades has, in our view, peaked and started to drop
25 somewhat, at least remain stagnant, and (2) the

1 corresponding decrease in domestic supplies that has
2 occurred over time has started to become arrested to a
3 degree and in the future is expected to increase
4 slightly.

5 As a result, our net import dependency has
6 dropped from 60 percent in 2005-6 to we're expecting
7 about a 58 percent net import dependency and that to
8 drop to 40 percent in 2030.

9 Now, by fuel, we're expecting that overall
10 the advent of CAFÉ, for example, which is expected to
11 result in light-duty vehicle efficiency moving from 27
12 miles per gallon to 38 miles per gallon will actually
13 result in a decrease in motor gasoline consumption.

14 On the other hand, distillate consumption is
15 projected to increase and this will put some pressure
16 on refineries to adapt to this changing product demand
17 mix.

18 As you can see in the bottom here, E85 is
19 expected to become marketed in an increasing degree
20 after 2015 and this is a result of having to meet the
21 requirements of the renewable fuel standard.

22 That said, we're projecting that the
23 renewable fuel standard of 36 billion gallons in 2022
24 will not be met at that level and that instead there
25 will be waivers and adjustments to that mandate to

1 reflect the capabilities of the industry to produce
2 specifically the second generation biofuels, the
3 cellulosic biofuels.

4 As a result, we're expecting that by 2022,
5 there will be about 21 billion gallons and that's
6 gallons of ethanol that will be introduced into
7 commerce and that will increase to about 24 billion
8 gallons of ethanol by 2030.

9 What we are finding is that the remainder of
10 the renewable fuel standard could be met or can be met
11 by Fisher Tropes fuels or other biofuels that produce a
12 distillate fuel that can be used within the existing
13 transmission and distribution infrastructure for liquid
14 fuels.

15 This chart shows some of the incremental
16 changes in U.S. liquid fuels consumption which is a
17 regional display of the overall national trend and I'll
18 leave my slides in case anyone wants to refer to them
19 at a later time, but among the changes we're seeing is
20 that this large market in the West-South-Central is
21 expected to experience some declines as a result of a
22 combination of population shifts and increased fuel
23 efficiency, likewise the New England states.

24 On the other hand, we're expecting that
25 Western states will experience incremental increases in

1 consumption.

2 In terms of supply, what we're showing is
3 that the declining Lower 48 onshore production will
4 begin to level off and actually increase and I'll get
5 to that in a moment. In addition, we're expecting the
6 Lower 48 offshore will begin to ramp up production as
7 additional deep water discoveries are brought online
8 and some, not a whole lot but some production occurs in
9 the Pacific and the Atlantic.

10 Now breaking down the onshore crude oil
11 production just a bit, we're expecting that
12 conventional and other enhanced oil recovery techniques
13 will stem to a degree some of the decline in those
14 resources. However, what we're projecting is an
15 increase in CO2 EOR production in this projection.

16 In particular, one of the things I'd like to
17 point out is that the CO2 EOR is, by the end of the
18 projection, is less than 30 percent from natural
19 sources or about 30 percent from natural sources and 70
20 percent from industrial sources, including power
21 plants, hydrogen production facilities, ammonia
22 facilities, etcetera.

23 So we're anticipating that in the absence of
24 climate change legislation and increasing oil prices,
25 that it will be economic to produce CO2 EOR from carbon

1 capture and sequestration at those facilities.

2 This chart shows what the net effect is on
3 the incremental crude oil supply declining in net
4 imports, an increase in the offshore, largely in the
5 Gulf of Mexico, and then an increase in the Rocky
6 Mountain and the Southwest areas from these EOR
7 operations.

8 For natural gas, we're anticipating that
9 there will be a decrease in our need for pipeline
10 imports and LNG imports and this is largely due to two
11 factors. One is the ongoing decrease in industrial
12 consumption which then remains stagnant and also
13 electric generation, which had been increasing, is
14 actually decreasing in the first few years and this is
15 due to the result of a couple factors, one of which is
16 decreasing rate of electricity demand growth rates
17 brought about by increasing end use efficiency.

18 In addition, there are some coal-fired power
19 plants that are under construction that we included in
20 our projection and state-level renewable portfolio
21 standards are forcing in renewable power and the impact
22 is largely felt on natural gas and as a result, we see
23 this declining electric generation fuel use for natural
24 gas and then later on in the projection, as low growth
25 continues, natural gas gets a share of that increase in

1 demand.

2 This chart, like the other, shows the total
3 regional natural gas consumption and as you can see in
4 the 2007 to 2015 time frame, many areas are expected to
5 experience a slight decrease in consumption followed by
6 an increase in consumption.

7 Now in terms of production, we're expecting
8 that the onshore unconventional will continue to
9 increase but much of that increase in our projection is
10 muted by the demand for that fuel essentially as I
11 described earlier and that will more than overcome the
12 declines in the non-associated onshore conventional
13 production and other sources.

14 Now you had a discussion earlier, as I
15 understand, on the gas shale. So we've been modeling
16 gas shales to a degree since about certainly the early
17 2000-1999 time frame, as shown in the green bar, which
18 includes coal bed methane.

19 At that time, gas shales were considered
20 experimental but there was some production occurring.
21 So we included a certain amount of resources. As time
22 went by, the amount that was added was increased as a
23 result of changes in the technology.

24 Certainly within the last couple years,
25 there's been an explosion in the use of that technology

1 which has, as you can tell, not just helped keep our
2 technically recoverable resource base fairly constant
3 but actually grown it, even though we've been producing
4 from this resource base over time.

5 And this is a slide that's available on EIA's
6 website and we're updating it all the time because this
7 chart shows the plays and there's more gas shale --
8 there's more shales in the U.S. than is shown on this
9 chart and as firms go out and drill and find more gas
10 that can be produced from these shales, we would expect
11 this chart to actually expand.

12 So not only are we increasing the amount of
13 the resource that's available but we're also increasing
14 the number of plays and what's occurring in the
15 industry is that the best of these plays are being
16 tapped first and, in addition to the number of these
17 plays expanding, for example, we're -- there are gas
18 shales over here on the West Coast. There are gas
19 shales up in Canada which are expected to have -- could
20 be brought in or are expected to be brought online.

21 What this points out is not only are we
22 expanding the resource base but one of our primary
23 exports at this point is the technology itself of
24 production, not just to Canada but to also Europe, and
25 therefore the development of this technology is having

1 its impacts felt internationally.

2 Now in terms of incremental and natural gas
3 supply, we're showing that the Rocky Mountain and the
4 Southwest regions as well as the Northeast, as
5 expected, are increasing and we're expecting some
6 decrease in the Gulf Coast regions.

7 And I'm getting close to the end here, but
8 this chart shows the impacts on natural gas consumption
9 due to the Waxman-Markey legislation. This comes out
10 of our recent service report, and as you can see in
11 2010 through 2020 and even through 2030, even though we
12 run a number of cases with regards to what the future
13 might play out under a cap and trade-type program, the
14 impact on natural gas consumption actually falls within
15 a fairly narrow band with the highest being -- the
16 highest consumption level being where we do not allow a
17 lot of offsets to be brought in from overseas to meet
18 the greenhouse gas compliance levels.

19 In addition, that case assumes there's
20 limited application technology having to do with
21 availability of nuclear and the carbon capture
22 technology to allow sequestration options.

23 The increases in gas price that's brought
24 about by the increased cost of the programs decreases
25 total energy consumption and natural gas consumption in

1 industrial, commercial, and residential sectors which
2 offsets to a degree the increases that would occur due
3 to natural gas gaining an increased market share in
4 electric generation.

5 And this slide summarizes our overview of
6 those factors affecting natural gas and liquids.

7 Finally, as I mentioned earlier, our website,
8 we have a lot of information and including our Short-
9 Term Energy Outlook which is produced monthly, our
10 Annual Energy Outlook with the detailed tables, and
11 all our series of special analyses.

12 MS. FORD: Thank you, Michael. Are there any
13 questions for Michael or anybody else on the panel?
14 Yes, Gene?

15 DR. FEIGEL: Be curious about if you could
16 speak in general bout the assumptions you made in terms
17 of the consumption of supply projections. I mean in
18 the out years, you're assuming proportionally more
19 domestic production which is to the end user premised
20 on the position of refineries and pipelines and so on
21 and so forth. I'd be curious.

22 There seems to be a lot of optimism, frankly,
23 built into that.

24 MR. SCHAAL: Oh, optimism about how much
25 domestic supply would occur?

1 DR. FEIGEL: Well, not just supply but, I
2 mean, inevitably end use which is premised on having
3 refineries being positioned to be able to produce in
4 the right places and all that. I'm just curious in
5 general about what kind of assumptions are baked into
6 those projections.

7 MR. SCHAAL: I see John Felmy is shaking his
8 head and he agrees with that assessment, but perhaps he
9 has a few comments on the topic of refineries being in
10 position to be able to provide the supply necessary.

11 In our modeling, we look at refining as an
12 operation that converts crudes into finished products
13 and markets those products and that within our
14 framework with ULSD and other regulations that industry
15 will operate such to obtain the margins necessary to
16 have that production occur, have that activity occur in
17 the future.

18 There's not anything that we project that
19 would preclude refineries from continuing to operate or
20 in some cases expand in some areas as other parts of
21 that industry contract.

22 MR. FELMY: The only thing I would add is
23 that, of course, in past EIA forecasts, you've had
24 increased capacity growing to reflect that. The real
25 challenge, however, going forward is what happens with

1 carbon policy.

2 We commissioned a study that clearly showed
3 that if you have Waxman-Markey, you could see a loss of
4 throughput of refineries of 20 percent and so what
5 you're effectively doing is outsourcing your refinery
6 internationally. You may be using less crude coming in
7 but you'll be importing more products and so that's
8 hardly an improvement in energy security, but it also
9 has important implications in terms of the supply chain
10 on, you know, where the pipes need to move product.

11 If it's more imports, then, of course, that
12 means you're going to have to have something somewhere
13 else than you have right now.

14 MS. FORD: Any other questions for the panel?

15 (No response.)

16 MS. FORD: Jeff?

17 MR. WIESE: If I could make a couple of quick
18 remarks, first of all, to thank the panel. I
19 appreciate Geoff and John and Michael coming in and
20 particularly to INGAA and AEI and to DOE for taking
21 time out of their day to share the perspective of this.

22 We asked for this panel. I discussed it with
23 some of the folks on the committee and elsewhere. I
24 thought it would be useful backdrop for some of the
25 conversations we're going to have in a couple minutes

1 but it's also just food for thought for you in your
2 daily life and in making sure this information is
3 available to you.

4 I wanted to quickly say that due to the haste
5 in kind of bringing things together at the last minute,
6 you don't have all the slides but the presenters have
7 been kind enough to allow us to post it on the
8 committee website. So as part of our follow-up to the
9 committee, we'll send you a note. Remember I said I
10 was going to ask a few basic questions. We'll send you
11 a note and let you know that it's posted up there for
12 your information.

13 I think it's clear, at least, if I can make
14 an observation and I had seen some of this work before,
15 that there are implications for the infrastructure and
16 while, of course, we're interested in pipelines because
17 that's our business, we can see implications for other
18 kinds of infrastructure in there, as well.

19 You know, whether it's new oil and gas, CO2,
20 biofuels, LNG, whatnot, there are a lot of moving
21 parts, you know. There are a lot of assumptions that
22 go into this and the world is constantly changing, but
23 no matter what I see somewhere, there's a construction
24 challenge going on, you know, and it's got to happen.

25 You know, I would say, and strictly on the

1 personal now, not speaking professionally, you know,
2 I'm really excited to see all the domestic and North
3 American production. It's really -- energy security is
4 something we have to pay attention to in this country,
5 you know, and the idea of being able to keep some of
6 the funds in the country churning here is certainly a
7 positive thing, but, any rate, I think that however you
8 look at it and whatever assumptions, there's going to
9 be new infrastructure.

10 I think that brings some relevance back to
11 the work that you all do and helping us set forward an
12 agenda there and I would just close my comments and, in
13 addition to thanking the committee, to say that we've
14 talked amongst all of the stakeholder groups about some
15 of these challenges that are coming up. Some of them
16 are exciting, clearly, you know, and there's a lot of
17 work that needs to be done in that and to better engage
18 the public and, you know, make better decisions about
19 the locations of it.

20 There are challenges in construction. You're
21 going to hear a lot more about that. I think we've
22 made great progress in dealing with some of those, but
23 nonetheless, as we ramp up, there are always challenges
24 that have to be met and then I'll just say, and I think
25 I speak for the states on this one, as well, is that

1 there's challenge in oversight.

2 The public expects a certain amount of
3 oversight on these matters and yet the Congress has
4 stressed, you know, to provide the resources to the
5 states, you know, and even to the Federal Government to
6 provide that level of oversight. So these things all
7 sort of work together.

8 So, any rate, I thought what we would do with
9 the chair's indulgence is that we'd take time to thank
10 the committee really quickly and then we'll take a
11 break and I cajoled Drue into coming and speaking
12 before lunch. So we'll come back and hear from Drue
13 Pearce and then we'll take lunch.

14 So if you'll join me in thanking the
15 panelists, I'd appreciate it.

16 (Applause.)

17 MR. WIESE: Why don't we take about a 15-
18 minute break? All right. Thank you.

19 (Recess.)

20 MS. FORD: Can everyone take their seats,
21 please? Thank you.

22 We are ready for Agenda Item 4, but before we
23 go there, I'd like Jeff to introduce our panelist.

24 MR. WIESE: Thank you very much, Madam
25 Chairman.

1 I appreciate everybody's time and attention,
2 again appreciate getting the meeting back in gear. I
3 wanted to just -- I don't really have to do this
4 because I think you all know Drue by now, but I wanted
5 to take two seconds to say that I've asked Drue Pearce
6 to give us an update. I think it's a nice segue from
7 the last set of presentations.

8 We were talking about Energy Supply/Energy
9 Delivery and Infrastructure Challenges and certainly
10 Drue's faced those and done an admirable job on moving
11 the Alaska Natural Gas Project forward. There's a lot
12 of momentum.

13 We've worked closely with them, but, more
14 importantly, I think Drue and her team have been able
15 to bring together a lot of the agencies, each of whom
16 have their own turf, I'm clearly aware of this, and
17 they have their own set of drivers, but has managed to
18 cajole them pretty successfully into working together.

19 So I consider that to be quite a feat, but I
20 wanted to both not only introduce Drue and I know most
21 of you know her by now, but I also wanted to take time
22 from the agency's perspective and speak officially to
23 express our gratitude to Drue.

24 Drue's been a member of the committee not
25 quite as long maybe as Ted but for quite awhile and

1 started when you were the Alaska Coordinator for the
2 Department of Interior. So Drue will be moving on to
3 new challenges next year and I know that not only will
4 we as an agency miss her partnership but I think the
5 committee will be the poorer for it.

6 So we'll be desperately seeking to try to
7 find a way to fill that void, but Drue, thank you so
8 much for coming in and speaking with us today, and
9 thank you again for all your help.

10 Agenda Item 4: Alaska Pipeline Update

11 MS. PEARCE: Thank you very much, Jeff. I
12 want to take this opportunity to thank PHMSA for the
13 honor and DOT, of course, for having had the honor to
14 serve on both committees.

15 Alaskans love to talk about Alaska. I could
16 talk the rest of the day, as Lisa will tell you. She
17 could chime in, but all of us are advocates and so we
18 very much enjoy talking about the projects as we try to
19 bring them forward.

20 We also wear lots of hats and, interestingly
21 enough, when Stacey Gerard found me over at DOI when
22 she was looking for someone to serve on the committee
23 who had some expertise in Alaska, particularly with
24 TAPS, we were moving into TAPS right-of-way renewable
25 at DOI and I was organizing and coordinating that

1 effort for the Secretary and eventually Stacey asked me
2 to come on the committee.

3 But going back even further than that, Tom
4 Barrett, Admiral Barrett, who is the deputy now in my
5 agency, and had, of course, a distinguished career here
6 as the first Administrator of PHMSA after the
7 reorganization, and then fleeted up to being the Deputy
8 Secretary, he was 17th District Coast Guard Commander
9 back in the late '80s and early '90s.

10 In Alaska, we have 33,000 miles of coastline.
11 So it's the largest Coast Guard base in the nation and
12 he and I from our different sides worked cooperatively
13 both rewriting the marine pilotage regulations as well
14 as doing some other marine safety work after the Exxon
15 Valdez.

16 So Tom and I have had a long history and it
17 was a lot of fun to get to work with him during his
18 time at PHMSA and I have been struck by the
19 professionalism and the great expertise that DOT has
20 brought to PHMSA over the years.

21 Jeff, the new Administrator is going to be
22 excellent, I believe, and it's a great organization to
23 work with, and I've certainly enjoyed my association
24 with you, Jeff, and hope to continue it in some new
25 form or fashion as we move forward.

1 I want to begin today by just saying that I
2 believe, and others do, thank goodness, that the
3 commercialization of Alaska's North Slope gas is
4 critical and that's critical not just for Alaska but
5 for the nation.

6 There's a gentleman named David Holt that I
7 heard at the Resource Development Council last month up
8 in Alaska. He is President of the Consumer Energy
9 Alliance. I'm sure many of you are aware of that
10 organization. His statement was that "all roads that
11 lead to energy security for America run through
12 Alaska," and I truly believe that that's the case, not
13 only because it's my mission to think that that's the
14 case and our mission as an agency is to advance the
15 nation's energy and economic security by expediting the
16 delivery of clean natural gas from the North Slope of
17 Alaska to North American markets, but also because
18 Congress and a succession of presidents have recognized
19 that same perspective of the importance of Alaska, both
20 to energy security, to domestic security, and to
21 economic security for the nation.

22 Along with that, Congress and a succession of
23 presidents, starting with President Carter, recognized
24 a very distinct need for an office to coordinate the
25 federal process for licensing, permitting and oversight

1 of the design and construction of Alaska Pipeline
2 Project.

3 This is not a new idea, as most of you know.
4 It's a 30+ year old idea. We've been close to moving
5 forward with it previously and this is the latest
6 iteration.

7 So the office was created in 2004 by Congress
8 and given the authorities of the Carter-Reagan era
9 federal inspector, I was sworn in 36 months ago next
10 week, three years ago next week, and in that time the
11 office has been dedicated to a single mission and that
12 is I spend my time and my staff all day every day
13 trying to get this pipeline built finally.

14 We coordinate and expedite the work of more
15 than 24 federal agencies. We do do a lot of cajoling.
16 They have roles in permitting, licensing and
17 certificating the natural gas pipeline. I think of our
18 office as being tasked with doing the job that combines
19 the talents of traffic cop, diplomat, sometimes
20 psychic, ombudsman, analyst, and engineer.

21 In addition to our U.S. federal coordination,
22 we work with the Canadian Government and the State of
23 Alaska and all the stakeholders from the Alaska Native
24 Tribes to the conservation community, both in Alaska
25 and in Canada and in the Lower 48 as well as the Unions

1 who we know will be providing the labor for this
2 project.

3 So for the purposes of the presentation
4 today, I'm going to touch on the most relevant of our
5 major efforts while catching you up-to-date on what's
6 happening with the pipeline.

7 I'll start with some general background and
8 information about both project applicants and the open
9 season process that will be commencing at the start of
10 the new year.

11 First, this pipeline would be nearly 2,000
12 miles long. It's obviously international. It would
13 bring gas from the North Slope of Alaska through Alaska
14 into Canada, through the Yukon Territory, through
15 Northeastern B.C. and into the Alberta Hub, 48-inch,
16 2,500 psi, X-80 steel at the very least, buried,
17 chilled pipeline, the largest project of its kind ever
18 undertaken anywhere in the world.

19 There are at present two applicants. Denali
20 is a consortium of British Petroleum and ConocoPhillips
21 and the Alaska Pipeline Project, known as the APP, is a
22 partnership between TransCanada and ExxonMobil. Both
23 companies have entered FERC's pre-filed process.
24 They're both working on their FERC open season
25 packages.

1 The Alaska Pipeline Project will submit its
2 open season package to FERC in January of 2010, as I
3 said. Denali anticipates submitting its plan to FERC
4 in the fourth quarter of next year.

5 In the enabling legislation, along with
6 setting up our office and doing a number of other
7 things, Congress instructed FERC to establish a natural
8 gas pipeline open season process that's specific to
9 this project, to the Alaska Pipeline.

10 It includes opportunities that were outlined
11 or dictated by Congress for public review and comment
12 during this open -- prior to the open season. The
13 legislation instructed FERC to issue regs that will
14 include procedures for the allocation of capacity,
15 criteria for and timing of an open season, promoting
16 competition in the exploration, development, and
17 production of Alaska's natural gas, and to provide for
18 an expansion of open seasons in the future which must
19 provide the opportunity for the transportation of gas
20 from other than Prudhoe Bay and Point Thompson fields.

21 FERC issued their final rule with a revision
22 in June 2005 and established the following open season
23 package process and as I say, this is unique to FERC.
24 It is unique to this project.

25 The applicants will file an open season

1 package with FERC for review and approval. The filing
2 will immediately be published for a 30-day third party
3 review which will allow for public comment. So that
4 package will go up on FERC's e-library very quickly
5 after they receive it.

6 After the 30-day public comment period, the
7 applicant will have 15 days to respond to those third
8 party comments and then that will be followed by a 15-
9 day FERC review. An actual affirmative action by the
10 Commission will be necessary before the applicant can
11 finalize their open season plan and then provide that
12 package to the public, and then the applicant will
13 actually commence the open season and that open season
14 has to last at least 90 days.

15 So having FERC involved in front of an open
16 season process is certainly new both to FERC, to the
17 general public because they're going to be asked for
18 comments as well, frankly, as to the companies.

19 I'll talk first about the APP only because
20 they're going to FERC with the open season package
21 first. They entered the pre-file process in May of
22 2009. They're holding discussions presently with
23 potential shippers in Alaska and Canada. Their routes
24 go from Alaska to the Alberta Hub. They also are
25 offering an LNG option to Valdez, Alaska, should any

1 shipper want to have that option, and their project
2 also includes a pipeline that will bring gas from the
3 Point Thompson fields over to Prudhoe Bay. Exxon is
4 the majority owner and expected operator of those Point
5 Thompson fields.

6 They are completing an in-state gas study
7 that's required by statute which will be filed as part
8 of the open season package and they are the State of
9 Alaska's licensee under the Alaska Gas Line Inducement
10 Act, also known as GLIA.

11 Denali entered the FERC pre-file process
12 actually earlier. They entered that in June 2008. In
13 May of 2009, FERC notified Denali that they had
14 selected the Argonne National Laboratory as the third
15 party contractor that would assist FERC staff in the
16 preparation of Denali's environmental impact statement.

17 They have indicated to FERC and to us that
18 they plan to begin their open season in late 2010 and
19 they have also already begun discussions with their
20 potential shippers.

21 Our Director of Permits, Scheduling, and
22 Compliance, who's here with me today, recently returned
23 from Ottawa. He was participating in the State
24 Department's Annual Energy Consultative Mechanism, ECM,
25 meetings which consists of a bilateral energy trade

1 delegation between Canada and the United States.

2 We at the OFC have participated at the
3 request of the State Department for the past three
4 years in this forum. It provides a format for energy
5 and trade experts from the two countries to explore the
6 mutual issues, including world energy prices and
7 regulatory permitting issues.

8 The two delegations discussed the progress
9 being made on development of the Alaska Gas Pipeline
10 Project and because it's an international project,
11 because licensing will have to happen on both sides of
12 the border, it's very important that we have this
13 mechanism for the bilateral discussions.

14 The APP's application renewal in Canada will
15 be processed by the Northern Pipeline Agency. It's a
16 legacy agency that was created with a proclamation of
17 the Northern Pipeline Act all the way back in April of
18 1978, at the same time that President Carter made the
19 decision to choose Northwest Pipeline as the entity
20 that would build the Alaska side of the project.

21 The Northern Pipeline Act oversees planning
22 and construction of the Canadian portion and there is
23 more miles in Canada than there are in the U.S. on this
24 project, just over a thousand miles in Canada, about
25 750 on our side, and the Northern Pipeline Act is

1 specific to Foothills which is the Foothills group of
2 companies that are now a subsidiary of TransCanada. So
3 the APP is the legacy now owner of the old Foothills
4 licenses in Canada.

5 That Northern Pipeline Act acts as a single
6 window between federal authorities and the Foothills
7 companies, also works with Provincial and Territorial
8 Governments and the Government of the United States.
9 In keeping with the Act, many of the regulatory powers
10 of other Canadian departments and agencies related to
11 the project were delegated to the NPA in the Act. The
12 National Energy Board also has a role in issuing notice
13 to proceed to construction.

14 Now, on the other hand, the Denali
15 application in Canada is being handled differently.
16 It's being coordinated by something called the Major
17 Projects Management Office or the MPMO. That's a new
18 entity that was established in 2007 by the Harper
19 Government to support the Government of Canada's new
20 approach in regulatory review of major resource
21 projects.

22 It is an approach that ensures a more
23 effective, accountable, transparent, and timely review
24 process that is coordinated. So the MPMO actually sets
25 up a project plan and signs with the other agencies an

1 MOU in which they define their roles and
2 responsibilities and that's to expedite.

3 As I say, they provide overarching project
4 coordination, management, and accountability for these
5 projects within the context of existing federal
6 regulatory processes. They also undertake research and
7 identify options to drive further performance
8 improvements.

9 Denali is required to submit to the MPMO a
10 project description and then the MPMO will coordinate a
11 project agreement between all the appropriate Canadian
12 agencies that have permitting and authorization
13 responsibilities, but they will be going through a
14 strictly-defined National Energy Board process or
15 process on their side of the border as opposed to the
16 Northern Pipeline Act process that Foothills is under.

17 So what have we been up to, other than
18 getting a logo, over the past three years? To set the
19 stage for the work ahead, I first had a gap analysis
20 prepared in 2007 that identified gaps and overlaps that
21 could jeopardize the efforts that we were mandated to
22 do to expedite construction of this project.

23 The gap analysis was commissioned to provide
24 unbiased studies and evaluations of environmental,
25 engineering, and regulatory issues.

1 I chose that methodology to identify gaps in
2 the process and then to draft an implementation plan
3 for each applicant. The plans will provide an agreed-
4 upon roadmap for each applicant to follow as they
5 progress to filing their FERC applications. These
6 plans will allow for early coordination and a project
7 management approach based on a common understanding and
8 commitment to the permitting process by all those
9 agencies.

10 Remember, I said there are more than 24
11 federal agencies involved somehow in permitting,
12 licensing, certificating this project, and we believe
13 that there are over 60,000 separate permits,
14 certificates, licenses, pieces of paper that have to
15 actually be manipulated to make this thing happen. So
16 that's a lot to coordinate.

17 The implementation plans will allow the OFC
18 to make sure that all the federal agencies are
19 compliant with the federal laws that govern this very
20 unique project.

21 We then began working on a permit matrix and
22 we're doing one for each applicant again and it's an
23 overall picture of that permitting process and how you
24 get to those 60,000 separate pieces of paper and that's
25 for each applicant, so that all the agencies, so that

1 both companies and, importantly, so that the public
2 actually has an organized and agreed-upon framework to
3 use as the agencies prepare, review, and actually issue
4 those 60,000 permits, licenses and certificates and
5 that, by the way, is not all in Alaska. That's across
6 the project internationally.

7 We have also established a technical review
8 team. It's chaired by us. It's comprised by
9 technicians, federal and state agency experts, and
10 Canadian experts, primarily from the National Energy
11 Board, who meet regularly to ensure that technical
12 issues don't delay the project.

13 The team is sharing engineering information
14 and expertise as they identify technical issues, such
15 as pipeline designs, security, leak prevention, best
16 available control technology, permafrost, seismic
17 standards, and emissions. They will also identify
18 issues that require early resolution and find solutions
19 before impacting the project timeline.

20 As you can guess, PHMSA is front and center
21 on that technical review team and, frankly, driving
22 many of those questions. We very much appreciate their
23 interest upfront. The team has begun meeting.

24 We've been talking in the committee meetings
25 over the past day about mapping and information for the

1 public about where are these lines, who owns them, who
2 operates them, what is in them. We're working on a
3 prototype geographic information system or GIS for the
4 pipeline coordination analysts in Alaska, just in
5 Alaska for the moment.

6 For years, we've been discussing the fact
7 that we need better mapping in Alaska. We have very
8 poor mapping. Many of our project agencies identified
9 a need for single reference system for data and
10 information collection. There is not and has never
11 been a consistent standard set of maps that detail the
12 pipeline route in Alaska.

13 Each state and federal agency has data
14 pertinent to their mission. However, sharing that data
15 and incorporating it into one authoritative base map is
16 instrumental if we're going to expedite this
17 permitting.

18 By the end of the year, we'll have
19 integrated information on a 20-mile stretch of the
20 route and that's the Atigun Pass stretch which is in
21 the northern section as you go from the Yukon River
22 Valley up and over the Brooks Range and down on to the
23 Coastal Plain out toward the Arctic Ocean. It's the
24 highest point of the pipeline.

25 Our goal as the OFC is to demonstrate that

1 the GIS prototype is an authoritative, consistent, and
2 integrated source of information that should be used by
3 all parties to permit, design, construct, operate and
4 then eventually maintain a gas pipeline.

5 Existing elevation data for the area in
6 Alaska is very coarse. You can see on the left-hand
7 side. On the right side you see new LIDAR data or
8 information gathered by LIDAR. It reveals the terrain,
9 as you can see, in far more detail and we are basing
10 our prototype using this incredibly-detailed LIDAR as
11 our base map.

12 Here's a detailed view of Atigun Pass looking
13 down. The LIDAR data that we collected thus far has
14 been analyzed in GIS to show slope and shown here is
15 the slope in degrees. The blue color is from zero to
16 seven degree, red is from seven to 90 degrees slope.
17 The intensity of the color which is rather difficult to
18 tell on this slide but it indicates the steepness.

19 Also shown in the green dots are original
20 Northwest Pipeline Company bore holes. There are more
21 than 1,000 bore holes that we digitalized just as part
22 of our prototype project which is only 20 miles long.
23 There are over 10,000 bore holes that have been done
24 along the route of the pipeline but they have never
25 been integrated into a database in one place with the

1 information being utilized effectively by everyone.

2 We hope to have web access to this data so
3 that it will be transparent to the public. Data can be
4 selected to be displayed depending upon levels of
5 confidentiality. In this case, you're looking at an
6 overview of the Atigun Pass prototype area. On top of
7 the regional elevation base, it's overlaid with
8 satellite imagery.

9 The Table of Content frames on the left show
10 Atigun Pass prototype layers. These are by default
11 turned off at the beginning and then you can turn them
12 on one by one and add layers. Each layer will have its
13 own security confidentiality level but it's our plan to
14 make as much information available to the public as
15 possible and to certainly make all this information
16 available to all of the agencies so they're using a
17 consistent database.

18 The Northwest Bore Hole Logs shown on the
19 left have now been geo-referenced. That had never
20 happened before and we are geo-referencing those into
21 the prototype. It provides a stratification of soil
22 types and permafrost data and I'll show you in a minute
23 where that's so important.

24 As I said, there are more than 10,000 bore
25 holes in Alaska alone but that data has never been

1 integrated.

2 With GIS, you can click on any point along
3 that stretch of the pipeline to extract and review the
4 relevant mapping. The power GIS is providing a
5 platform for showing many types of information but also
6 showing a platform that you can depend on that you know
7 is actually correct.

8 In this case, we're clicking on a stream
9 crossing point. Those are those green squares. You
10 can actually pull up a photo of that stream crossing.
11 You can then click on the stream to get information
12 about the stream, its name, and whether or not it's an
13 essential fish habitat and if it is for what. The
14 pipeline here is shown in red.

15 The proposed gas line mileposts are shown in
16 yellow and I can tell you that just in this 20-mile
17 stretch, we found that the old data used by the State
18 of Alaska and their Highways Department showing where
19 the haul road or the Dalton Highway, which is the only
20 road access to the North Slope, some of that data was
21 actually in correct and the road has been mapped
22 incorrectly and some of the mileposts have been
23 incorrect. So we know we have got poor mapping
24 information in Alaska.

25 So to summarize very quickly, the GIS

1 prototype will provide an authoritative base map. It
2 will allow the data to be integrated for multiple
3 agencies, for the public, and for stakeholders. The
4 web interface will provide that transparency for data
5 at different levels, and LIDAR new technology coupled
6 with good imagery provides a value-added database.

7 I want to talk a little bit about some of the
8 technical issues that we face to build this pipeline.
9 That's what permafrost can look like. Imagine trying
10 to do a chilled buried pipeline in ground and then
11 suddenly you have a permafrost up thrust like that at
12 2,500 psi, by the way.

13 Much of the land along the pipeline route in
14 Alaska contains permafrost. That's true in Canada,
15 too. Permafrost is defined, for those of you who
16 aren't Arctic students like we Alaskans, is defined as
17 ground that does not thaw for two or more years and can
18 reach thickness of more than a thousand feet. So you
19 can have ice going down more than a thousand feet.

20 It extends through as much as 50 percent of
21 Canada and 80 percent of Alaska. It's expected to be
22 continuous the further north you go and discontinuous
23 in the middle sections of Alaska and that leads to
24 areas near the 60th parallel that are subjected to only
25 seasonal freezing but even that seasonal freezing and

1 thawing can cause the land to shift dramatically
2 placing major stresses on a buried and chilled
3 pipeline.

4 Permafrost trends need to be incorporated
5 into the design by project engineers because this
6 pipeline is going to have a 30+ year lifetime.

7 The University of Alaska, the State of
8 Alaska, Department of Geologic and Geophysical Surveys,
9 and the U.S. Geological Survey have been working
10 together to map and understand the change that's
11 occurring in Alaska and we are going to be hearing more
12 about climate change this afternoon, but I want to show
13 you the trends in Alaska. They're startling.

14 What I'm showing you on this screen is a
15 model and it demonstrates the range of permafrost in
16 Alaska from 1950 to today and how it's forecast to
17 shift by 2100. The areas in red are permafrost-free.
18 As you look further north, you see those colors
19 shifting to light blue and then dark blue. The darker
20 the blue, the colder the ground temperature.

21 Watch closely what happens as we move from
22 1950 through 2100. It is startling and remember this
23 is information that we have through 2005 and then the
24 trend analysis going through 2100.

25 Isn't that amazing? Absolutely amazing. But

1 just shows what sort of technical challenges PHMSA's
2 going to have figuring out what design standards need
3 to be used while you try to put a pipeline, a chilled
4 buried pipeline in the ground that's going to be able
5 to withstand the thrusts, heaves of this sort of
6 change.

7 So frost heave and buckling of pipelines are
8 known major causes of natural gas pipeline failures in
9 the Arctic throughout the world. There aren't that
10 many natural gas pipelines, but we've seen some
11 failures.

12 The geologic instability of routes through
13 permafrost put challenging demands on those who design
14 and construct these pipelines. Arctic construction and
15 engineering is a significant challenge in and of itself
16 without worrying about the permafrost. Construction
17 will take place primarily in winter seasons on the
18 Alaska portion of the pipeline. Temperatures can reach
19 60 degrees below zero ambient. The lack of sun, i.e.,
20 darkness, increase the potential for accidents, for
21 unsafe conditions, and worker fatigue.

22 Machinery tends not to function well in the
23 same capacity in extreme wind and cold. This is going
24 to be the largest high-pressure gas pipeline ever built
25 in the Arctic. PHMSA and the Canadian National Energy

1 Board are working to harmonize their requirements on
2 both sides of the border to withstand these extreme
3 Arctic conditions. They have already begun the work
4 and I hope at some time in the future you have an
5 opportunity to hear from PHMSA as they move through
6 this process and talk about what they've decided that
7 the design standards should be and invite me back, I'd
8 like to hear.

9 Then there's the challenge of seismic
10 activity, if it wasn't enough that you've got all this
11 permafrost heaving here and there. On average, Alaska
12 records 50 to 100 earthquakes per day, one magnitude
13 seven event every year, and a magnitude eight or larger
14 event every 13 years. As a result of this, regions of
15 Alaska do in fact pose significant challenges to the
16 construction of a natural gas pipeline.

17 Most Alaskans, myself included, felt the
18 Denali fault line magnitude 7.9 earthquake that
19 occurred on November 3rd, 2002. You can see both of
20 these pictures were taken in the aftermath of that
21 quake. You see what happened to the Tok Cutoff Highway
22 that's very near the area that the pipeline is expected
23 to come down the Alaska Highway to get to the border
24 and cross. You can see what happened to the road and
25 then you can see on the right-hand side as one of the

1 rather brave USGS employees went out to measure the
2 offset in crevices in one of the glaciers.

3 The fault slipped 18 feet laterally and more
4 than three feet vertically beneath the TransAlaska
5 Pipeline but not one drop of oil was spilled because
6 USGS had looked at the seismic standards that needed to
7 be set for building the TransAlaska Pipeline and when
8 they set those standards, it was required that Alyeska
9 build to those standards and indeed the pipeline failed
10 safe and we need to make sure that we have those same
11 sort of standards that are built into this process,
12 design process so that this pipeline, too, would fail
13 safe because we know we'll have seismic activity.

14 The seismic activity in South Central Alaska
15 has been understood by engineers and geologists who, as
16 I said, played a role in the design, placement, and
17 location of the TAPS system 30 years ago. But
18 innovative geological and geophysical engineering will
19 be needed because the gas pipeline actually crosses
20 some active faults, including a new fault that's been
21 discovered underneath the Yukon River, that, frankly,
22 wasn't known even when TAPS are built that's very near
23 the bridge that crosses the river and carries the TAPS
24 line. So that design is going to have to be fail safe,
25 as I said.

1 Where the gas line follows the Alaska Highway
2 from Delta into Canada, it actually crosses some
3 northeast-facing faults and if I can find my little red
4 line, okay, here comes the highway from Delta down
5 toward the border. There are, as a result of work
6 that's been done in the past three years, the state DGS
7 has discovered some north-south-facing fault lines that
8 are newly-discovered. They've obviously been there for
9 tens of thousands of years but they're newly-discovered
10 by us.

11 So there are some new design considerations
12 that are going to have to be taken into account as this
13 pipeline diverts from TAPS and comes down toward the
14 border.

15 The Canadians are looking at the same sort of
16 information and are also discovering some new seismic
17 areas that weren't previously known.

18 In Alaska, the pipeline will traverse 750
19 miles along a mix of federal, state, private and Native
20 allotment lands, requiring rights-of-way, of course,
21 for the entire route. On the Canadian side, nearly a
22 thousand miles long, but there's much more Crown land
23 on the Canadian side. Both companies are progressing
24 with their Canadian permit processing and as I told
25 you, they have different organizations that they're

1 working with, but they're also both working on the
2 Canadian side at present.

3 Major economic issues for the project:
4 financing for the largest and most innovative natural
5 gas system ever constructed. The private sector will
6 finance this project. Congress authorized a loan
7 guarantee of up to \$18 billion in 2004 dollars that
8 will be adjusted for inflation.

9 In addition, they are now considering
10 actually increasing that loan guarantee to \$30 billion.
11 The last true estimate we had for the pipeline was 26
12 billion. We will get a new estimate of pipeline costs
13 obviously when the APP files their open season package
14 at FERC in January. I expect that number to bounce to
15 well over 30 billion. Lately, I've heard the companies
16 talking about a \$35-40 billion project and that is
17 going to have to be financed by the private financing
18 and private sector financing and the companies have
19 already begun working on those packages.

20 There's also, of course, unconventional
21 natural gas, namely shale, which has come into the
22 markets and brings new variables to the equation, but
23 all the companies that are involved in the two
24 applicants are very bullish on there being in the 2018
25 and beyond range actual room in the market,

1 particularly in the pipelines coming out of the Alberta
2 Hub to the Lower 48 for the Alaska gas.

3 It's imperative that we have the
4 infrastructure in place to stage all the manpower and
5 materials for construction. Both the U.S. and the
6 Canadian sides' companies are talking about what new
7 bridges, highways, airports, material sites and
8 maintenance camps will be needed so that the tens of
9 thousands of workers, the heavy equipment, and the two
10 and a half million tons of steel that this project will
11 take can be moved, staged for the actual construction.

12 The companies will be responsible in many
13 ways for these infrastructure needs, but also the State
14 of Alaska and the Yukon Government are expected to --
15 or the Canadian Government are expected to be
16 responsible for some.

17 The project calls for massive amounts of
18 steel. Congress has expressed its preference that such
19 steel should come from North America. North American
20 steel producers and plants would need to be prepared to
21 deliver two and a half million tons of high-strength
22 steel for the entire project to be built with North
23 American steel and that would need to be able to begin
24 to be moved into place in 2015 to 2016. That's pretty
25 fast to ramp up for that amount of steel.

1 Last economic issue is finding, training, and
2 retaining the labor pool needed on both sides of the
3 border. Labor for construction of the TAPS peaked at
4 28,000 men and women working on that line in Alaska.
5 The gas pipeline will require tens of thousands of
6 skilled workers at the peak, as well, and that huge
7 skilled labor force will have to be trained, be ready
8 to be hired, and then retained through the entire pre-
9 construction and construction, and Canada's labor
10 challenges will complement ours, as I said, over a
11 thousand miles of construction on their side of the
12 border.

13 Talked a lot about Canada. I've worked
14 closely with our Canadian partners over the past three
15 years. It's obviously in our and America's best
16 interests to ensure the process moves expeditiously on
17 their side of the border.

18 At this point, everyone in Canada is engaged.
19 Minister Jim Prentice, who's presently Minister of the
20 Environment, has the Alaska Pipeline files on his desk.
21 He has carried them with him as he's moved from
22 ministry to ministry.

23 Natural Resources Minister Lisa Raitt, the
24 Deputy in our Canadian Ministry Cassie Doyle, the
25 National Energy Board, Northern Pipeline Office, the

1 MPMO, the Environmental Assessment Agency, the
2 Provincial Premiers, the Federal Senate, petrochemical
3 industry, organized labor, the First Nations,
4 everybody's engaged. They're all very enthusiastic
5 about the economic benefits that the pipeline will
6 bring to Canada.

7 We've invited Canadians to be part of our
8 Technical Review Team. They also work closely with us
9 on the coordination of the entire project.

10 All those senior officials that I mentioned,
11 Minister Prentice and others, have actually shaken my
12 hand and pledged to meet the U.S. schedule that was set
13 by Congress so that the Canadian licenses are in place
14 when FERC would issue the U.S. licenses and at the
15 moment on the timeline that the two applicants have,
16 that would be happening in the Fall of 2014, and so the
17 companies would go to their private financing and their
18 sanctioning over the Winter of 2014-2015.

19 Canada doesn't have a federal coordinator
20 position like mine but Ministers Prentice and Raitt
21 have beefed up the Major Projects Management Office to
22 be the project manager for Denali and they also have
23 repopulated the old Northern Pipeline Agency to oversee
24 the APP project.

25 As you can imagine, we're also close partners

1 with the State of Alaska. We're working on a draft
2 surveillance and monitoring agreement that's required
3 by our statute. It's going to lay out the process in
4 detail for working together through final design and
5 then inspection and oversight by the state and the
6 federal agencies and ourselves during the actual
7 staging and then through construction and then long-
8 term through the operation of the pipeline, but we work
9 closely with them, as well, on all the other aspects of
10 the pipeline.

11 So, as I said at the start, this project is
12 critical to North American energy security. There's an
13 abundance of natural gas in Alaska's North Slope, 35
14 tcf of known reserves and another 200 tcf of expected
15 available reserves by USGS estimates. There's national
16 support for the project at this time. There's an
17 endorsement from the National AFL-CIO because of those
18 tens of thousands of good-paying jobs it will create.
19 There's support from Congress and there's support from
20 the White House.

21 First gas is planned on both companies'
22 timelines for 2018. There won't be two pipelines
23 built, one or the other or a combination of the two.
24 We'll end up building the pipeline. But we are closer
25 than we've ever been and while 2014 for sanctioning and

1 2018 for first gas sounds like a long time away, it's
2 really just around the corner as we see these open
3 season packages coming to us in January.

4 Last but not least, it's been an honor to
5 stand up the OFC. Government start-ups aren't always
6 fun, but it's been a challenge that I've enjoyed
7 devoting every day to and I love Alaska. I love my
8 state and I love the country and I've loved having this
9 opportunity. It's just been wonderful.

10 I do want to take the opportunity to tell you
11 that I think I have one of the greatest staffs that's
12 ever been pulled together. Two of them who've worked
13 closely with PHMSA are here today and I want to
14 acknowledge them. I hope the other one's still here.
15 He is. He can't sit still.

16 Jim Thompson is my Director of Communications
17 and Intergovernmental Affairs and Bill Doyle is the
18 Director of Permitting and also of Compliance and
19 trying to make sure that everybody stays on this
20 timeline that I'm talking about so we can actually have
21 a FERC license in 2014 and move forward to the project.

22 But I just want to publicly thank my staff
23 for all the wonderful work that they've done and also
24 acknowledge that Admiral Barrett, after his
25 distinguished career with the Coast Guard, leaving as

1 the Deputy Commandant, and then coming to PHMSA as
2 Administrator and then being Deputy Secretary of
3 Department of Transportation, honored me by becoming my
4 deputy earlier this year and he will be the Acting
5 Federal Coordinator until the nominee is actually
6 confirmed and so we're leaving the agency in great
7 hands.

8 I want briefly to go back to that quote from
9 David Holt. "The road to energy security is through
10 Alaska." Using our mission, I just want to expand on
11 that thought a little bit. I honestly believe that the
12 road's not just energy security but economic security
13 and to domestic security for America all run through
14 Alaska.

15 I want to thank you for this time to have an
16 opportunity for updating you and thank you also for
17 having the opportunity to serve with you on the
18 committee and I get to know many of you. It's been my
19 pleasure and my honor.

20 Thank you.

21 (Applause.)

22 MS. FORD: Questions for Drue?

23 MS. PEARCE: I'd be happy to answer any
24 questions.

25 MS. FORD: Questions?

1 (No response.)

2 MS. PEARCE: Pardon me? I talk fast.

3 MS. FORD: Right, right. Very informative.

4 Well, Jeff.

5 MR. WIESE: Certainly you don't take away the
6 committee's prerogative to ask questions, but Drue is
7 still with us for the rest of the day. I wanted to
8 reiterate my thanks to Drue and to echo a few of her
9 comments about her staff.

10 I've had the opportunity and privilege (a) to
11 work for one of her staff. I still consider myself --
12 Jim and I are competing to see who's his biggest fan,
13 but we're glad that you've got someone like the
14 Admiral, you know, and if you're not going to be there,
15 I'm happy that the Admiral is going to be there. I
16 have the utmost respect for him, as well as for you.
17 So I look forward to that stability in that office.

18 I would also say that we ask Drue to come for
19 two reasons. One is that we think this is a critically
20 important project. We've been engaged to the extent
21 that we can, given all the challenges in the country,
22 and I think if you -- as you hear the presentations
23 this afternoon, you'll see the challenges that Drue was
24 talking about playing out elsewhere, too.

25 So you all have a vital role in the future of

1 pipeline safety in the country. I think the issues
2 that Drue and the challenges that she highlighted
3 you're going to hear a lot more about this afternoon.

4 So I invite you back for that, but also just
5 to close with our, once again, thanks to Drue for many
6 years of service to the agency and for great leadership
7 at the Federal Coordinator's Office.

8 MS. PEARCE: Thank you very much.

9 MR. WIESE: Okay. So lunch. With that,
10 should we break for one hour?

11 MS. FORD: Yes.

12 MR. WIESE: And we're back on track at 1
13 o'clock back here.

14 Thank you so much.

15 (Whereupon, at 12 o'clock p.m., the meeting
16 was recessed for lunch, to reconvene this same day at 1
17 o'clock p.m.)

18

19

20

21

22

23

24

25

1 A lot of infrastructure growth, good news/bad
2 news. At the same time we were also pursuing both
3 special permit authority for gas operators to operate
4 at higher stress levels and entering into the
5 rulemaking for that.

6 I raise that largely to say that special
7 permits, which previously were called waivers, I see as
8 anything but. Actually, in this particular case, the
9 special permits, and I think you'll see as we go
10 through here, gave us a look as a regulator and an
11 overseer, gave us a look into a side of the business
12 and some of the data that we hadn't seen before.

13 Simultaneously, as they do with every
14 project, our field was pretty heavily engaged and there
15 was a lot of activity in particular in our Central
16 Region. I don't think that Ivan Huntoun is here, but
17 Ivan's in the building, for those of you who operate,
18 Ivan's in the building, but not for long. I don't know
19 if the news is Ivan's announced he's going to retire.
20 He's a sweetheart of a guy. We love him. I know he's
21 well respected by the operators, as well.

22 So, any rate, the confluence of those events
23 and the insight that we got from the field as well as
24 from the special permits really led us to have a lot of
25 concern about what was going on in new construction.

1 We engaged the industry in some discussions
2 to better understand what was driving this and
3 announced to them, and I think Alan will cover these,
4 that we were going to do a workshop. We had been
5 talking with our state partners. They had a lot of
6 concerns. We had been talking with FERC. They had a
7 lot of concerns, and we've been talking with the
8 Canadian National Energy Board and they, too, had
9 concerns.

10 So we engaged in what I think has been an
11 extremely productive dialogue with the industry and I
12 think you'll see today the results of that dialogue. I
13 asked for a couple minutes upfront largely to say that
14 even internally people will say, well, why don't you
15 just enact a new regulation, and I would make the case
16 to you we didn't have time for that, you know. Things
17 were -- regulations will take two to three years to get
18 out.

19 I mean, you know better than anyone how long
20 it's going to take. The problem was immediate. It was
21 in our face and our state partners' face and the
22 industry's, too. Frankly, it's their money at risk
23 here.

24 So I think the dialogue has been very
25 productive. We hosted a meeting. The industry has

1 hosted several. They've come up with a joint action
2 plan and that's really what we're here today, is to
3 talk about.

4 Alan Mayberry, who's our Director of
5 Engineering and Emergency Support, he sort of gets it
6 on both ends of that, the thoughtful and then the
7 reactive end, will kind of lay out our perspective on
8 this, and then I'm pleased to say, really, and it's
9 been my pleasure to see members of the committee who
10 are so substantively engaged in these things able to
11 talk to everyone else.

12 We have several other distinguished members
13 of the committee, three, who are going to present kind
14 of the industry response to that. Massoud, one of our
15 key state partners, is going to be laying out the
16 state.

17 I think we'll be going from you to Massoud
18 and then go to the industry and listen to the industry
19 action plan.

20 So with that, I'll turn it over to Alan.

21 Agenda Item 5: New Construction

22 MR. MAYBERRY: Thanks, Jerry, and I think
23 this is my -- okay. Great.

24 I look forward to meeting many of you. I
25 don't believe I've met everyone on the boards, but, you

1 know, if I haven't met you, I'd encourage you, please,
2 I'll look you up or please come see me afterwards and
3 look forward to getting to know you.

4 What I wanted to have a conversation with you
5 about today -- and by the way, if those of you that
6 have seen this would indulge me, this is a presentation
7 largely that I gave a little over a month ago at an
8 INGAA workshop in Houston to talk about the
9 construction process and this should be on the material
10 issue, but it focused on actual construction quality in
11 the field.

12 So if you would bear with me, for those of
13 you who weren't there, this will be new to you and
14 you'll see what I've got which is essentially a
15 conversation on our observations on construction, our
16 being observations from the federal perspective.

17 We're glad to have Massoud here, as well, who
18 Massoud and I go way back some years on the
19 distribution side, and I know firsthand that he's also
20 out there in force looking at construction issues.

21 But anyway, here's what I plan to cover.
22 I'll go through quickly our expectations. I'll review
23 our actions to date, have some data on our review of a
24 number of projects that we inspected and looking
25 forward to challenges and then looking ahead.

1 First of all, expectations. Perhaps the
2 first three are obvious. You know, we view them as the
3 price of entry. Obviously, they're ideals that we all
4 share as far as holding safety paramount, protecting
5 the public and the environment, then following the
6 regulations.

7 The fourth one really, you know, as I think
8 you'll find in the data that we have and our
9 observations is an area that we see that needs focus
10 and is what you may call quality management systems.

11 I know the Canadians, we're familiar with
12 some of what they're doing and they participated in our
13 workshop in April, but they have this ANXA, the
14 Canadian standards, which gets into some of the
15 provisions of quality management systems, but, you
16 know, it seems like that is an area that really needs
17 focus which involves focusing on people and processes.

18 Obviously training comes into play but we're
19 seeing things occurring on processes that are pretty
20 highly controlled and so it's really not a matter of
21 training. Training's happened, but it's a matter of
22 getting people to do the right thing. Training
23 certainly comes into play, however.

24 Just in review of actions to date, we picked
25 up our inspection of projects heavily in the Summer of

1 2007. That's consistent with when a lot of the special
2 permit projects were going to construction, special
3 permit for MAOP, that is, allowing pipelines to operate
4 at up to 80 percent SMYS. So we're out there
5 inspecting those and fairly quickly made some initial
6 observations that were concerning.

7 In the Summer of '08, we observed some issues
8 with some low and variable yield strength pipe and
9 actually some failed hdyros and then some expansion
10 issues on pipe. Before this time, we were having some
11 conversations with industry, both the liquids and the
12 gas side, you know, expressing concerns and talking
13 about our observations and then we did ultimately plan
14 and have our construction workshop earlier this year in
15 April in Fort Worth. Many of you were there.

16 Shortly after that, we published our advisory
17 bulletin on low and variable yield strength pipe
18 because of issues we noted on at least two operators
19 involving low yield strength pipe and we still continue
20 to follow up today on those issues there.

21 June 5th, we had a letter that went out from
22 Jeff to the trade associations, you know, just to keep
23 the fire burning, keep the ball rolling. We expressed,
24 you know, the issues still needed to be focused and the
25 focus needed to be not just material issues which were

1 really front and center at that time because we had
2 just come out with our advisory bulletin, but also the
3 overall quality process in construction.

4 Then June 22nd, we made a presentation to an
5 API Standards Conference based on some observations and
6 thoughts we had related to the pipe strength issue and
7 perhaps some enhancements to the Reference Standard 5L
8 and in particular that could be made to improve pipe
9 quality.

10 Then in August of this year, we established
11 the construction website.

12 I could have interlaced here the actions that
13 industry has taken and we appreciate the actions and
14 they've taken and really leaned into the issues that
15 have come up, but I know Jeryl and Andy and Denise will
16 speak to that.

17 This is a Summary of Issues that we noted on
18 about a 135 projects. We presented this data in
19 Houston or in Fort Worth, excuse me, at our workshop.
20 Not surprisingly perhaps for some of you involved in
21 inspecting, coating was the issue that was most
22 prevalent, followed by welding.

23 Now if you look at -- and then you have the
24 rest of the list here, too. If you really combine
25 welding and non-destructive testing, you know, the

1 pipe-joining process, that, along with coating, are the
2 two really big ticket items.

3 I have a couple of examples to show you on
4 pipe manufacturing or the low and variable yield
5 strength issue. This is just a shot of some pipe that
6 had undergone a hydro. It's actually a hydrostatic
7 test on a section of pipe before the pullback on a
8 directional drill and it had failed because it was
9 supposed to be X70. It was something quite a bit lower
10 than that, and we had, notice, also, some coating
11 adhesion issues on this pipe here.

12 Next, I've got a number of -- we had numerous
13 issues with weld cracking and on this one, you know,
14 it's not just an issue of the pipe or the weld crack
15 but there are issues here with pipe specs and
16 misalignment created by the specs, repair weld issues
17 and the procedures used, and the communications between
18 the NDT crew and the repair crew and then the NDT
19 quality issues, too, were noticed.

20 Another weld issue just with in alignments
21 seems to be an issue, has been an issue with causing
22 problems in getting a good weld in the field,
23 especially when you're using automated welding where
24 the rejection rates were quite high, and if repairs
25 weren't made properly, it resulted in some cracking

1 issues, not to mention we had some hydrogen-induced
2 cracking issues, as well.

3 I've got another one here. This is another
4 -- sorry to kind of lean on welding here, but I think
5 the point here is this is a highly-controlled process
6 and we're seeing a lot of issues. You know, it tends
7 to involve high yield pipe. This is X70. It's
8 predominantly the issues have been with X70 and X80,
9 but here's an induction bend that has been sectioned
10 and there was a crack that occurred at the weld and
11 combined stress issues possibly going on here, as well.

12 Now moving on to our actions as far as our
13 inspection frequency, you can see, you know, 2006 and
14 before, our construction inspection was really minimal.
15 We picked it up greatly in 2007-2008. I'm not sure
16 really what's going on in 2009. I think that's a good
17 number, but I think part of the issue there is we spent
18 a lot of time working with operators that didn't get
19 accounted for as inspection time. We have spent a lot
20 of time with issues that operators have had and just
21 following up on those and it took us out of the field
22 and dropped that number down.

23 You know, looking at challenges, I started
24 out there at the introduction there about people and
25 processes, and it's really -- we feel that that's a

1 major focus that's needed, getting people to do it
2 consistently right. They know how to do it and in many
3 cases we just need to make sure that they're following
4 the procedures, finding and retaining appropriate skill
5 sets. Obviously there's a lot of turnover in industry
6 and it was stressed quite a bit with the amount of
7 construction going on, and then achieving sustained
8 improvements. That's kind of a wishful line there,
9 but, you know, there are issues we've talked about. We
10 need to really think about sustained improvements.

11 Processes, establishing proper procedures.
12 There have been well procedure issues as far as how
13 they were qualified, ensuring a seamless transition
14 between contractors and owners, and what I'm talking
15 about there is, you know, I've seen two ends of the
16 spectrum where, in one end of the spectrum, you have
17 the owner contracting out just about everything from
18 obviously the contracting of the construction, the
19 inspection, the NDT and then just, hey, hand me over
20 the keys when it's done, to more of an engaged operator
21 who checks methods, who checks quality control. So
22 we've seen both ends of the spectrum and we need to
23 make sure that the guys who are doing the former way
24 are really following the best practices.

25 And then contracting methods. We've seen

1 some issues just here recently with, say, sectioning of
2 induction bends. Is that a good practice or not? If
3 you do that, what are, you know, really the right ways
4 to do that?

5 Looking ahead, our focus on inspection will
6 continue. You know, the second bullet, we really don't
7 have to say. Everyone knows that, but we will look at
8 that as a tool. It's one of several tools we have.

9 Then exploring other options, more effective
10 regulations, operator qualification for construction.
11 I didn't put that up there to alarm you, but it's just
12 something that's always talked about. Like I said, I
13 think a lot of the issues that I've really pointed out
14 here, you know, they get somewhat into training, but a
15 big focus there is, you know, the quality control and
16 making sure people who know how to do their jobs are
17 doing their jobs and then another issue we have
18 internally is really we look at enforcement actions as
19 doing it in a timely manner.

20 So that's it, and I think next we'll turn it
21 over to Massoud with the Virginia Commission.

22 MS. FORD: Questions?

23 DR. FEIGEL: I have a comment. On your fifth
24 slide, the Summary of Construction Issues, you got a
25 frequency. That's a misuse of that term. That's a

1 number of incidents. That's not a frequency, yeah,
2 which his fine.

3 MR. MAYBERRY: Right. It's not a rate.
4 You're right. That's a good point. Appreciate that.

5 MS. FORD: Thank you. Lisa?

6 MS. PARKER: Thank you for the presentation,
7 sir. A question for you, and it's because I don't
8 know.

9 If I'm constructing a pipeline, does your
10 office come out on a regular basis to look at what
11 we're doing, so that you're monitoring the
12 construction, so you don't have to take enforcement
13 action?

14 MR. MAYBERRY: I think the record will show
15 that our enforcement actions have been really minimal
16 to date and, yes, we have a history of working with
17 operators to correct issues and obviously there are not
18 enough inspectors to look at every project, but we do,
19 in doing spot checks, can establish a trend when we see
20 the same issue going on.

21 If we see an issue, say with coating
22 application, and you bring it up to the chief
23 inspector's attention and then you go to another part
24 of the spread and you see the same issue happening with
25 coating and, you know, that's when we are concerned

1 that, well, maybe there's not really a system in place
2 to really take the observations that we've had and act
3 on them, and I think that comes into play whether or
4 not we use an enforcement tool.

5 That's not -- you know, I mention that. It's
6 not -- obviously, it's not our first tool that we use,
7 but it is a tool and it's --

8 MR. WIESE: I'd like to -- first of all,
9 Gene's right. I mean, clearly, this was a limited
10 subset of observations and actually it's a bit dated,
11 but it was meant just to really give you a sense of the
12 relative number of issues more than anything, but I
13 would be remiss if I didn't say that there are
14 different categories of pipeline construction.

15 Code pipe is constructed according to design
16 standards that have been worked out over many years and
17 we have been actively involved in all of the consensus
18 standards that set those designs that are incorporated
19 into our regulation. We do inspect those as a matter
20 of course.

21 One of the things we're trying to draw a line
22 under here was because of the special permit pipe, so-
23 called 80 percent special permit pipe, we had a
24 different window in which, frankly, I think was very
25 useful. We were heavily involved with operators on the

1 design of that pipeline, the materials, the testing of
2 it, you know, every phase of the construction of that.

3 So when we get into talking about numbers of
4 days, those are the only thing we really track are what
5 we call AFOs, away from office, days.

6 Alan's point was we spend a ton of time in
7 the engineering and in the office on this issue. To
8 the extent that, you know, I feel that it's warped our
9 oversight process, we've had to spend so much time on
10 new construction because we thought it was critical
11 that it's really warped our program in a way.

12 MS. PARKER: So I haven't heard if I'm
13 constructing a pipeline, is your office going to come
14 out every week to check to see how the construction's
15 coming along? Do you make, you know, quarterly visits?

16 MR. WIESE: It's not every week, but it would
17 certainly be -- it depends on the intensity and what's
18 going on, if it's a complex operation, but we're out
19 there. Our regional folks are out there certainly
20 monthly, every other week, you know, and our state
21 partners, you know, it's not all interstate. Some of
22 this is intrastate. Our state partners are out there
23 on all the intrastate stuff that's going on.

24 MS. HAMSHER: If I could just give a specific
25 answer to a specific project with specific number of

1 days to put some color on that is we began the
2 construction of the U.S. portion of a thousand-mile
3 project, so 326 miles. It also involves a portion of
4 it which is two pipelines in the ground, big project,
5 began it in August, and we have had about 60 inspection
6 days since then, a combination of PHMSA, Central
7 Region, maybe we made Ivan retire, and then the
8 Minnesota which is a state agent.

9 So that's 60 inspection days, plus or minus,
10 that's an estimate, since August.

11 MR. TAHAMTANI: Good afternoon. As you've
12 noted, the state partners are out there and do
13 inspection of construction and other things.

14 In the mid '90s, we noticed in Virginia that
15 there was a serious shift between operators doing the
16 construction work versus that being contracted out and
17 the more inspection we did, the more we found out
18 issues that have been summarized by Alan and you'll see
19 at the end of my presentation.

20 So at least in Virginia, we do our inspection
21 work based on risk and construction inspection always
22 comes to the top of our list for the year or the month
23 and going back to Lisa's question in terms of Virginia,
24 the way we handle how often we see construction for a
25 particular company or a particular project is all based

1 on risk.

2 If you go to a site and you see that they are
3 doing things right every day, you may not need to go
4 there simply because you don't see the issues that you
5 would see on another crew or other project, and it's
6 been noted that because of resources both on PHMSA and
7 the state level, we can't be everywhere looking at
8 every project every single day.

9 So based on that, let me share with you --
10 you've seen some pictures that are related to large
11 pipelines and large projects, but this stuff happens on
12 very small pipelines. So with that, let's look at some
13 distribution, but before that, in 2008 and this is
14 typical of every year that we do in Virginia, 333
15 natural gas construction inspections. These are man
16 days that I've had inspectors out on construction
17 inspection.

18 We've conducted some break-out time for
19 repair inspections and some 69 integrity management
20 direct assessment inspections. Some of the problems
21 that we continue to see in the field, here's a plastic
22 pipeline that is getting ready to go in the ground and
23 serve the public for years to come.

24 Obviously, everybody knows that you can't
25 damage these pipelines and then bury them, but you

1 continue to see that stuff in the field.

2 Here's a qualification situation where it's
3 expired and the individual is out there performing
4 joining without a valid card. Here's the result of
5 some of the construction issues that you see. These
6 are bad joints that have been made either due to lack
7 of training, lack of proper procedure, complacency,
8 shortcuts, you name it, it causes these kinds of
9 problems, and we've seen them in the field in terms of
10 gas leaks. Some are the same issues that you see on
11 plastic pipelines.

12 Here's another situation which clearly the
13 procedures indicated had to construct this piece of
14 pipeline but they did not put the rigid stiffener in it
15 and later on it leaked and caused a serious situation.

16 Squeeze-offs. We see this often where a
17 manufacturer's procedures are not followed. It clearly
18 talks about three pipe diameters or 12 inches from butt
19 fusions, sockets, saddle, mechanical fittings, and
20 again these are simple things that we all know how it
21 should be done, but the contractors simply do not
22 follow procedures.

23 Here's a situation where it was an excavation
24 damage but clearly after you go onsite, you see that
25 they just threw this pipe into the ground with all

1 sorts of rocks and other objects that can damage the
2 pipeline. So this is a backfill issue. Again, we have
3 procedures. We have training, but people, it appears
4 that they don't want to follow these good practices.

5 Here is more of a surveillance issue, not so
6 much a construction, but the operator knew about this
7 particular project and as you can see, a four-inch
8 pipeline is hanging out there tied to a tree for a
9 couple of weeks before we came across that.

10 We talk about damage prevention often here in
11 this committee. You know, we've got to construct these
12 pipelines to be able to locate them. This was a major
13 pipeline that was put in and the tracer wire to help
14 locate this thing was installed 31 inches horizontally
15 and some six feet vertically. I don't think anybody
16 can locate this pipeline accurately going forward.

17 So the construction is not just about
18 pipeline but also about, in the case of plastic, about
19 doing the right thing to make sure you can find it
20 later.

21 One of the other construction issues which
22 has been a focus of mine to try to resolve it is what's
23 called trenchless excavation and the cross-bore that
24 happens where gas lines are bored through on marks
25 through laterals.

1 Some people term this as the ticking bomb.
2 These are pictures that we have seen, some in Virginia,
3 where gas lines are bored through sewer lines that are
4 unmarked and as you can imagine, when that sewer line
5 backs up and the plumber decides to fix it, he's going
6 to have a very serious situation happening. We're
7 addressing that in Virginia.

8 So this is a construction issue where we're
9 emphasizing to contractors that if you are getting
10 ready to directionally bore in front of a bunch of
11 homes and you don't have the sewer laterals marked, you
12 just can't use that technology.

13 Now getting to some of the transmission
14 issues that we've seen, this was an integrity dig on a
15 pipeline whereas you can see the dent was caused by the
16 lack of padding at the bottom of the ditch. This was
17 lying on top of a rock and we all know that as part of
18 the integrity management, this stuff is now being seen
19 by the instruments and being dug up at significant cost
20 to repair. So if we construct them right and put them
21 in right, hopefully we don't have to go back and do
22 these kinds of repairs.

23 There is a nice coating but as we put the
24 pipe into the ditch, there was trash in the ditch that
25 caused the coating to be obviously damaged and create a

1 corrosion situation.

2 There is attempt at, you know, coating that
3 obviously they did not follow procedure. They didn't
4 prepare the surface properly and it was simply peeled
5 off.

6 Coating. This was a situation where this
7 pipe was being examined and the coating had to be
8 removed for the weld to be x-rayed. In recoating, of
9 course, they had some duct tapes on the remaining of
10 the coat, so sandblasting wouldn't damage the remaining
11 coating, but to recoat, we didn't bother to remove the
12 duct tape. It simply doesn't make any sense, and, by
13 the way, the company inspector who had gone around and
14 approved these coatings with his date and initial on
15 the coating.

16 There's the duct tape that we recovered as
17 part of the evidence for God knows what.

18 Jeeps. You know, we have different coating
19 thicknesses and often we find that they go through the
20 motion but they don't set the jeep properly for
21 different parts of the pipeline. Again, that is a
22 construction issue that we've seen in the field.

23 We coat the pipeline. We try to put them in
24 the right way so that we don't have these kinds of
25 issues. In other words, we don't want to go back and

1 be dealing with these types of problems in the future.

2 Now, this is what we call a floating pipeline
3 in Virginia. We have -- by design. No, not by design,
4 but this is a prime example of, I think, complacency
5 where we're building a pipeline of about 25 miles, four
6 miles of which is going through -- going under
7 Elizabeth River and James River and two contractors did
8 not coordinate. One dewatered the pipeline before the
9 concrete matting was put on this portion of the
10 pipeline. So a couple days later, when they are out
11 there looking, this pipeline is floating.

12 Then we had a hurricane that was supposed to
13 come through Virginia. So they pushed the pipeline
14 down. They bring it back up, examine it, it goes
15 through a number of tidal cycles, all types of
16 stresses. This has been going on for awhile and I want
17 to thank Jeff publicly for assisting us with some
18 technical advice on this.

19 At the end of the day, they could replace
20 this piece of pipe at a smaller cost than what they did
21 in terms of again putting it back down, bring it back
22 up, running all types of models to see that this
23 pipeline's fatigue life is only impacted by a very
24 small percentage.

25 Now, I can't talk about what we're going to

1 do with them and some of the remedies that we may bring
2 about as a result of these non-compliances, but it
3 really points out to the fact that you got procedures,
4 you've got to follow them. You can't shortcut the
5 procedure. It's very simple.

6 You know, a simple phone call from one sub to
7 the other. Have you put the mats down? Yes, I've got
8 them down. Then dewater. That didn't even happen.

9 Coating issues. As you can see, we've seen
10 it on this pipeline where they're not following the
11 procedures. Now this is -- right here, if I can show
12 you, these are barnacles on this pipeline while it was
13 sitting at the bottom, barnacles grew on this thing,
14 and they one day recoated it. They tried to recoat
15 over the barnacles. Again, very simple but almost
16 stupid mistakes, not always. There are stupid mistakes
17 to make when it comes to constructing pipelines.

18 And this is a picture that we often use to
19 talk to our operators that, you know, when you pay for
20 inspectors, they better do their job. You see the guy
21 who's sitting on his little machine under the umbrella.
22 He's the welding inspector. While he's enjoying the
23 shade, these other guys are getting ready to weld this
24 joint you see upfront.

25 So often when we talk about contracting

1 inspectors, we have to be very cautious that they may
2 not be doing their job, you know, looking at the other
3 contractors doing the work.

4 This is the same pipeline where, as it was
5 bored and brought out of the water, it got this major
6 damage underneath of it and we went through a bunch of
7 exercises with the operator to determine how to handle
8 this thing and again work could have been done to make
9 sure that these kinds of things are prevented.

10 As Alan noted, we believe these things are
11 called by either lack of or not following quality
12 assurance/quality control programs by the operators or
13 their inspectors. Often, we have seen there are no
14 inspectors and then we've seen there are inspectors but
15 either they don't know what's going on or they don't
16 care what's going on.

17 Complacency. Some very simple procedures are
18 not being followed. We don't understand. That can't
19 be training. And then training is an issue where, at
20 least in Virginia, as we find these things, we have
21 arranged meetings, day-long training between the staff
22 of the Commission, the operator and the contractors,
23 trying to partner and tell the contractors that are
24 doing the work that we are in this together and you
25 shouldn't be doing this job as quickly as possible,

1 collecting your funds and going to the next job. That
2 doesn't serve the public well.

3 Those are all about Virginia. I want to
4 share with you really quickly a couple of slides.
5 NAPSRS did a survey and found some common issues, if you
6 will. Improper coating and hollow detection, we've
7 talked about that, lack of plans, procedures, improper
8 bedding and backfill, lack of operator oversight, and,
9 of course, questions about qualification and training.
10 So this is pretty normal across all the states,
11 according to the NAPSRS survey.

12 And they suggested some code changes, OQ for
13 new construction, and you can read the rest of it, but
14 I can tell you that as we have shifted almost all
15 construction work to contractors, there is clearly
16 proper training is an issue, but someone from the
17 operator needs to be looking after these contractors to
18 make sure they're doing the job. We see this every
19 single day.

20 The majority of my inspections on a daily
21 basis are new construction, ranging from service lines
22 to major pipelines. There was some discussion
23 yesterday about how does PHMSA know what construction
24 is happening.

25 In Virginia, at least, we get what we call

1 daily construction sheets from each operator. We know
2 where they are on a daily basis and that's done
3 electronically and then, based on risk, we decide where
4 we need to go inspect, and I believe that concludes my
5 presentation.

6 MS. FORD: Thank you, Massoud. Are there any
7 questions, comments, suggestions?

8 (No response.)

9 MS. FORD: Okay. Jeryl? Jeff?

10 MR. WIESE: No, but maybe we can come back
11 later and talk about PHMSA having some of the
12 authorities that Massoud has at a state level. I've
13 always envied his position at a state level and to be
14 honest with you, but Massoud does a great job, but I
15 think Massoud's typical of our state partners.

16 I think it goes to Lisa's question, as well.
17 So recognize that PHMSA's not the only game in town
18 when it comes to oversight. The states oversee a huge
19 chunk of the national pipeline system and they're
20 critical players in that.

21 I guess I'd also be remiss if I didn't say
22 that while construction -- the focus of this
23 presentation largely is on transmission pipe. We do
24 plan to hold a workshop with our state partners on
25 distribution construction issues probably in the April

1 time frame.

2 I'm looking for Zach. He was here a minute
3 ago. There you are. April or May? April. Yeah. And
4 we'll keep people posted on that when -- okay. Great.

5 MR. COMSTOCK: Mike Comstock, City of Mesa.
6 Let me -- and I think it's fair to say, I think it's
7 fair to put the types of photographs that we saw today
8 up.

9 But I also think it's fair to say that there
10 are a lot of people in the industry that are doing a
11 lot of good work in terms of inspection at the state
12 level and at the city level or at the contractor level.

13 I just want to make sure that we're on the
14 record that there are a lot of companies out there
15 doing really good stuff and that it's fair to see these
16 pictures, no doubt about it, and they're good to talk
17 about and we can get lessons learned from them, but I
18 don't think the whole industry should be painted with a
19 broad brush that this is going on clear across the
20 country.

21 Thank you.

22 MS. FORD: Certainly, we won't generalize.
23 Thank you, Michael.

24 MR. TAHAMTANI: Madam Chairman, that was not
25 my goal. The idea was that a lot of good work is going

1 on, but just when you look the other way, maybe that
2 doesn't happen in Arizona, but just when you look at
3 the other way, someone is trying to take a shortcut and
4 these things are seen, at least I think in every state,
5 more than we need to see them.

6 MR. COMSTOCK: Madam Chair, I think it's fair
7 to say that diligence is important, no matter what you
8 do, and we've got to watch everything that we do out
9 there to make sure that the citizens of this country
10 are safe for the work that we put in, but I just want
11 to make sure we're on the record that there's good
12 stuff going on.

13 MS. FORD: So noted.

14 MR. COMSTOCK: Thanks.

15 MS. FORD: Thank you.

16 MR. WIESE: I'll fill some air time here.
17 We're going to switch laptops really quickly to get to
18 the other presentation, but I'd like to pick up on Mr.
19 Comstock's remark because I think we've echoed that
20 wherever we've been, including the workshops, and so I
21 apologize that we've begun to take that for granted.

22 We're not here to malign the industry. We
23 believe that a lot of the industry is doing the right
24 thing, but it doesn't mean that we and our state
25 partners aren't seeing a lot of problems that need

1 attention.

2 In fact, we've been very careful to say the
3 things that we've seen as a percentage of the overall
4 construction is probably pretty small, but they're
5 serious enough to have long-term implications.

6 You know, if this is not put in the ground
7 right the first time, we're going to have issues down
8 the road. I mean, it may not be today or tomorrow, but
9 a couple of years down the road, it's going to be an
10 issue and certainly with communities encroaching closer
11 on transmission and the distribution being in the heart
12 of our communities, it's something that merits our
13 attention and just clearly the whole issue about how to
14 manage contractors and the interrelationship between
15 quality management, I believe that's going to be talked
16 about a little bit more in our next presentations,
17 we've wrestled with some of the suggestions that NAPS
18 has offered ourselves.

19 I will just quickly say that we're really
20 looking, hoping to get a more holistic solution. It is
21 possible to fix things one at a time, but if we can
22 find a more comprehensive way of fixing these issues
23 and we believe many of them relate to quality control,
24 quality assurance issues, you know, Alan's welding
25 example is a perfect one -- have I stalled long enough?

1 Drue?

2 MS. PEARCE: While we're stalling, I have a
3 question. In terms of I understand that your direct
4 authority and hammer is over the operators and that's
5 as it should be, but if you see a trend or a disturbing
6 lack of quality control, for example, in the steel
7 manufacturing as an industry in the United States, and
8 you see some problems popping up that could become huge
9 problems, what sort of communication does PHMSA have
10 with the industry going beyond just the operators but
11 to the actual steelmakers?

12 MR. WIESE: Alan and I might both be able to
13 reply to that, but I'll tell you that, first of all, I
14 started, as I was mentioning to you, Drue, our
15 principle is the operators are responsible. I don't
16 care how they do their business, whether it's with
17 their own employees or their contractors, they're
18 responsible, and we never relieve them of that.

19 That said, I think we're interested in
20 getting messages to people. I was at INGAA Foundation
21 with Andy and Jeryl presenting to the pipe
22 manufacturers, the steel-rolling mills, you know, a lot
23 of their contractors, to basically sing together with
24 them that quality starts at the very beginning and
25 their quality control stage is everywhere.

1 I think you'll see in the presentation as we
2 get going that the -- I think it's fair to say that
3 most of the contractors by now have heard pretty loud
4 and clear, at least the major ones, and the smaller
5 ones I think in distribution will be hearing in April,
6 you know, that you get into quality management systems
7 and contractor management systems, which are not unique
8 to pipelines, they're in a lot of industrial
9 enterprises, the first step is qualifying your
10 contractor.

11 What's their performance history? You know,
12 what's their accountability? You know, what are the
13 terms of your contract with them? So a lot of lessons
14 learned in that one.

15 Did we find your presentation, Jeryl? Okay.
16 Very good.

17 MR. MOHN: I threw Cheryl a curve, sent her
18 two presentations with file names that were close to
19 each other.

20 I'm going to go ahead and get started while
21 we get this kicked up and what I'm going to talk about
22 is a broad industry response to the issues that Alan
23 has noted. Andy will drill down in significant detail
24 related to pipe quality and then Denise will wrap us up
25 with some specific discussion of quality management,

1 system implementation on Enbridge projects.

2 My presentation is going to also reference
3 some specific actions that INGAA Foundation has taken
4 and will continue to implement relative to pipe quality
5 as well as construction quality.

6 Just a very quick commercial about INGAA
7 Foundation. It is not the INGAA trade association but,
8 rather, a foundation with about a 130 members in it,
9 made up of all of the interstate pipeline operators, as
10 well as our construction partners, so all of our major
11 construction companies belong to the foundation,
12 inspection companies, equipment suppliers, pipe
13 suppliers, and so on. So it is a unique forum where we
14 can bring together those partners.

15 We wish, Massoud, that we had a steady array
16 of pipeline construction projects so that we could
17 employ our own people to do so, but the cyclic nature
18 of the business is such that we have to depend upon
19 those contractors.

20 I appreciate the comments about the need to
21 ensure that contractors work in a way that complies
22 with what's expected of them. We try to approach them
23 as partners and INGAA Foundation is one of the forums
24 that we use to do so.

25 The first thing I wanted to note, my first

1 slide that you can see very clearly up here notes that
2 up until 2007 in the gas transmission large diameter
3 pipeline business, we had been building about 1,500
4 miles a year. In 2008 and 2009, that number jumped up
5 to about 4,000 miles a year. On top of that is the
6 liquid construction that Denise is going to talk about.

7 So in expectation of that coming, operators
8 prepared for that, contractors prepared for that, and
9 it's not an excuse but it is at least an
10 acknowledgement that we had gone through a significant
11 increase in pipeline construction where these issues
12 really started to show up in 2008 and 2009 and there
13 you can see a graph accordingly.

14 In 2010, according to Gene's information from
15 the presentation -- I mean, excuse me, Geoff's
16 presentation earlier today, not this Jeff, but the
17 Geoff from ICF, he showed about 2,200 miles of gas
18 pipeline construction in 2010. So you see that we'll
19 return to a more normal level of pipeline construction
20 in the next couple years.

21 Want to do the next slide? The next couple
22 slides that I have are really a repeat of things that
23 Alan has talked about in terms of what went wrong. So
24 I won't go through that first major bullet, but it is
25 worth noting what went right.

1 About two years ago, there was a major
2 accident resulting in a fatality up in Wyoming where a
3 new pipeline was being constructed in parallel to an
4 existing line, two different companies. The operators
5 of both of those lines, as well as the industry,
6 responded through the establishment of some guidelines
7 for parallel construction.

8 Our company, as well as most other companies,
9 took those to heart and implemented those guidelines,
10 and I'm pleased to say that when you look at that
11 4,000+ miles that was built in 2008 and 2009, a
12 significant portion of that was parallel to existing
13 pipelines and we didn't have an incident.

14 Geoff's organization challenged the industry
15 not to wait for a standard or a regulation and I think
16 that's an example of the way we can respond when we get
17 focused in the area of parallel construction.

18 Andy will talk about the next one related to
19 low yield strength pipe. Suffice it to say the tools
20 that we've employed post construction have enabled us
21 as an industry to locate pipe that may not meet the
22 strength requirements that were intended when the pipe
23 was installed.

24 We also recognize that many of the welding
25 issues that manifested themselves in some of the photos

1 that Alan showed you are important and key and they are
2 fundamental to the effective construction of pipeline
3 and I think, as the industry looked back on those
4 welding issues, we've recognized what it takes to
5 mitigate those issues.

6 And then lastly, coating damage. Coating on
7 a pipeline is the key that enables the pipeline, as
8 Massoud said, to last indefinitely. Inadequate coating
9 is costly from a safety standpoint. It's also costly
10 from long-term maintenance of the pipeline.

11 We have as an industry started to employ much
12 more extensively a technique, an electrical survey,
13 used to be called Pearson Survey, now it's called DCVG
14 Survey, that enables a pinpoint identification of a
15 coating issue on a pipeline post construction, once the
16 pipe has been buried. So we've been effective in
17 finding those coating faults and trying to fix those
18 coating faults in a timely basis.

19 Our overall reaction to these issues has been
20 that where they have manifested themselves in a small
21 number of projects, they are very serious and need to
22 be dealt with.

23 Most importantly, with one exception, all of
24 these construction issues, to the extent they have been
25 identified, have been identified and remediated before

1 the line was put in service. There's been one recent
2 incident, that last photograph, I believe, that Alan
3 had of a pipeline where there was a fail near a weld on
4 a post in-service basis.

5 My next slide gives you a summary of the
6 various industry responses and you'll note going back
7 to early 2008 the INGAA Foundation sponsored a
8 workshop, in fact Rod Sealey, the region director from
9 Southwest Region, gave the kickoff presentation at that
10 workshop, designed to focus attention.

11 We followed that with a workshop in March of
12 this year. Alan mentioned the PHMSA workshop in Fort
13 Worth. Then the PHMSA Advisory Bulletin and as we were
14 coming into 2009, we recognized across the industry,
15 both liquid pipelines and gas pipelines, that the
16 quality of pipe was truly an issue to be dealt with
17 quickly.

18 So we sponsored an Energy Industry Pipe
19 Quality Summit in June. Andy will go through the
20 eight-point action plan that we developed as a
21 consequence of that, and then we also sponsored this
22 October workshop that Alan mentioned in an effort to
23 try to pinpoint some things that we as an industry
24 should address on a system-wide basis.

25 All of this activity, plus many other forums,

1 have significantly raised the awareness across the
2 industry. So just because you may not see an INGAA or
3 an API or an AOPL response to an overall issue, be
4 assured that all of us operators have a significantly
5 higher awareness of issues that manifested themselves
6 in 2008 and in 2009 with a commitment to do better.

7 The next slide is exactly the same slide that
8 Alan showed. Gene, you can see one more time, I used
9 his term "frequency" rather than numbers of
10 occurrences.

11 Go to the next slide. This is the
12 presentations at the Construction Workshop that we did.
13 I'm not going to go through all these. You noted
14 earlier that Alan presented there and a number of us
15 did.

16 Go to the next slide. What I want to show
17 you is that the INGAA Foundation is the place where we
18 bring contractors together, Shehan, Price, Gregory,
19 where we bring operators together, both liquid and gas
20 operators, like TransCanada, and where we also bring
21 our consultants and welding experts to the table. You
22 see the presentation there from Robin Gordon with
23 MicroAlign and Brian Laing with CRC Evans, and then we
24 let a -- we let. We had a topnotch corrosion coating
25 expert there, happens to work for my company, and then

1 we followed it with some additional issues related or
2 some additional presentations related to coating.

3 In that workshop, we concluded it with a
4 brainstorming exercise and a voting process to try to
5 identify key takeaways which is the next slide. My
6 last slide will talk here in a minute about some action
7 items.

8 This is the observation. Many companies are
9 implementing best practices and doing things right.
10 I'm sure that if Geoff or Alan or their staffs could,
11 they would talk to you about some companies that have
12 done it right and done it right not because the PHMSA
13 guys have ignored them but, rather, because they've
14 observed through construction inspections and post
15 construction inspections that they've done it right.

16 But, Jeff, that's not good enough because, as
17 an industry, we can't afford to have the kind of issues
18 that we've dealt with. So they need to be implemented
19 consistently where things have been done right.
20 Obviously, we need to focus on planning, early
21 detection. When Denise talks about QMS, you'll see on
22 a broad basis how a good QMS process is comprehensive
23 across the board.

24 Undoubtedly, resources have been strained,
25 but a couple things have happened going forward.

1 Number 1. The number of miles to be put in the ground
2 isn't going to be as great in the next few years as it
3 was in the last two, and contractors have hired and
4 expanded their workforces over the last two years, so
5 they're starting to -- they build experience and they
6 will be putting that experience out on the pipeline
7 going forward.

8 And then lastly is the point to address the
9 people and process piece of PHMSA's challenge to us.

10 We absolutely know that the primary cause of
11 those events that were described in Alan's e-mail, at
12 least 80v percent of them, are related to human action
13 or human behaviors, that they're driven by experience,
14 expectations, by standards. In many cases, they fail
15 as a consequence of communication or lack thereof, that
16 a good QMS process demands effective procedures and
17 specifications.

18 You'd just be amazed at the discussion around
19 field coating of a weld and the variety of different
20 practices you've seen employed to do so when there's
21 really only a very handful of right ways to field coat
22 a girth weld.

23 And then my last slide gives you a summary of
24 the focus areas that we have and I'd like to categorize
25 these in two different areas.

1 As an industry, as an INGAA Foundation
2 industry, as well as with my liquid friends, we can
3 impact the effectiveness of the industry in two ways.
4 We can raise awareness, as you've seen in the
5 discussion here previously, and we can take the various
6 industry standards, the consensus standards, most of
7 which are adopted as a part of the regulation, and we
8 can make sure those standards are workable, are
9 understandable, are effective, so that operators can
10 properly apply them.

11 The first and the second bullet up there deal
12 with exactly that approach and API 1104, which is the
13 welding standard, Appendix A, provides an alternative
14 method that an operator can use to inspect a weld. The
15 clear message coming out of our workshop is that there
16 needs to be some guidance so that there is a consistent
17 and effective implementation of Appendix A.

18 The third bullet about resolution of issues
19 between API 5L and 1104, 5L is the pipe standard and
20 1104 is the welding standard. There are some issues,
21 some conflicts, if you will, between those two
22 standards and, in fact, we had an industry group, along
23 with some of Geoff and Alan's folks, had a meeting in
24 Houston, I guess it was yesterday, to specifically
25 address that.

1 These other items up here fit more broadly in
2 the category of QMS. We have not as INGAA Foundation
3 locked in on exactly what approach our organization
4 should take. Again, I beg to wait for Denise's
5 presentation to see that overall QMS focus, but here's
6 what we know.

7 We have talked a lot internally, have talked
8 to Jeff and his team about OQ as a solution. What we
9 observed, though, is that welding is the most
10 standardized and inspected process that we have. In
11 welding, it starts with API 1104, then it starts with
12 approved welding procedures, then it followed with the
13 welder qualifying on the specific procedure that he is
14 using to join two pieces of pipe that are defined in
15 the procedure, then it's use of an additional procedure
16 should the conditions change, and the welder has to
17 undergo a destructive test of his welds to demonstrate
18 his capability.

19 In spite of welding being the most heavily-
20 regulated and inspected piece of our business, you see
21 welding ranking as the second-highest category of
22 incidents observed from PHMSA.

23 If we had just "OQ" for welding, we would
24 merely validate that all of those things I just
25 described are done right. There is a lot of other

1 aspects of welding to be addressed in complete and
2 total QMS and from my perspective, that's a better
3 approach than to just focus in on OQ.

4 We intend to put our heads together and
5 continue to push these issues so that where we either
6 need or have or can enhance standards related to an
7 overall quality management approach to construction,
8 we'll work to do so.

9 I think with that, I'll shift to Andy.

10 MR. DRAKE: Just real quickly, I want to do a
11 time check. I mean, we're 10 minutes past.

12 MR. WIESE: That's okay.

13 MR. DRAKE: I don't know --

14 MR. WIESE: It's an important topic.

15 MR. DRAKE: -- what you want to -- I'll try
16 to move along here pretty quickly. I have several
17 slides here. I brought them on purpose. I hope you
18 can find them. It's the other presentation.

19 But I brought these slides on purpose. I'm
20 not going to go through them in detail, but I really
21 wanted to give them to you because they go through the
22 action plan that we came up in great detail. What is
23 the action plan? Each of the items very specifically.
24 And then what is the status currently on each of those
25 items?

1 I don't intend to go through that at great
2 length, but I know that some people here particularly
3 wanted that detail and given our time constraints, I'll
4 just kind of fly at a high level, but you can go read
5 those and if you have any questions on the slides or
6 any questions about the status, don't hesitate to
7 holler at Jeryl or I after this or give us a call later
8 on. I don't have any problems with that, or certainly
9 Alan has been very involved in that, as well.

10 All right. Which one of these do you push?
11 I don't want to do anything to detonate the program
12 here. We're already struggling. I'm afraid to touch
13 anything else.

14 This is really the issues that we felt like
15 we wanted to deal with in the Pipe Summit which was an
16 industry meeting that included all of the stakeholders.
17 I don't know who brought that up earlier. It was quite
18 a good point. Actually, we had the manufacturers were
19 there. There's the participants that were at the
20 meeting. You have a 120 different people coming from
21 different aspects of the industry, construction
22 contractors, but, really, I think the industry in part
23 that's here, because this is about pipe strength, is
24 look at how many pipe and steel manufacturers are
25 there. That is a significant number in the host of the

1 industry, how many people make pipe in the world, and
2 that's a good thing.

3 So those people were there, a lot of
4 operators, both gas and liquids people were there,
5 technical consultants very heavily were there. We're
6 really trying to look through what happened and what
7 can we do about it.

8 I think the point that I would offer here is
9 that Jeryl's slide talks about this increase in
10 construction. I think that would be a bit of an under-
11 statement. It was actually the largest boom in
12 construction that we've seen in 40 years in our
13 industry.

14 Now what does that mean because that's really
15 important to how this game plays out. That means --
16 and I don't mean to dramaticize this, but every single
17 aspect of the industry was totally stressed out. That
18 is not a trivial event. What does that mean? Okay.
19 That means you have pipeline operators who have not
20 built anything of any significant volume now making
21 significant financial investments in physical, you
22 know, infrastructure.

23 Okay. Everybody here should be way up right
24 now. That means you've got construction contractors
25 who typically have two or three spreads that we would

1 call an AB or maybe even a C spread quality of
2 oversight now have five or six spreads. So now you got
3 a D, E, and F spread and I guarantee you do not want
4 the F spread. Okay? You got pipe manufacturers who
5 are now have made other kind of rolled tubulars are now
6 stretching themselves into this very friendly price-
7 efficient market of a highly-engineered high-strength
8 low-alloy steel. Okay? That's not a good thing, you
9 know.

10 You got inspection people that are not
11 familiar with this industry. We have a baseline of
12 inspection staff that's been trained to deal with that
13 volume. Now we got three times that volume. Okay.
14 Well, where did those people come from?

15 What you have is a huge ramp-up, not unlike
16 what might be experienced in Alaska. So this is good
17 data to learn from because you've got to get ahead of
18 that problem.

19 The problem is it takes awhile to train all
20 these people. It takes awhile to get all these
21 companies synchronized. It takes awhile for people to
22 build processes and procedures that have never had them
23 and that, as much as anything, is what you're seeing.

24 So you're looking at a very stressed-out
25 industry trying to deal with this ramp-up obligation

1 and this group came together to really try to figure
2 out what is the problem, brainstorm around what are the
3 drivers and opportunities to improve and develop an
4 action plan and make assignments very specific and
5 timelines.

6 So with that, I think the key messages that
7 we saw come out of the meeting was this is a very clear
8 opportunity to improve. We can't just write it off as
9 a boom and, oh, fine, it's now the boom's over, no big
10 deal, let's move back to business as usual. No. This
11 was truly an opportunity for us to learn and improve.

12 I think the good thing that we saw here is,
13 as has been pointed out by Mike and others, this was
14 not an industry-wide problem. There were operators
15 that actually executed through this boom very well.
16 They didn't have any problem with their steel. They
17 didn't have any problem with their hydro tests. They
18 didn't have any problem with prolific construction
19 problems. That's a good thing because even in the
20 hailstorm of this boom, somebody knew what to do.

21 The key is you got to figure out who were
22 those people and what the hell were they doing that
23 helped them avoid having this kind of performance drop
24 and then help communicate that to the industry in a
25 standard, a guideline, a practice, something that's

1 practicable, enforceable, and tangible.

2 So that was really the challenge of this
3 group. These are the action plans. I'm going to stay
4 on this slide for a minute and if anybody wants to take
5 notes, I'm going to kind of skip through this and then
6 that will pretty much short-circuit the next 30 slides.

7 So these are the action plan items that came
8 out of this summit meeting with this wide cross section
9 of the industry together. I think what it really shows
10 is you're really looking at a composite solution here,
11 a bandwidth that includes the evolution of standards,
12 directives, and agenda items for manufacturers, agenda
13 items and action items for operators and technical or
14 technology improvement target areas, all coming back
15 together to work in an integrated fashion to help us
16 solve this problem.

17 It wasn't let's go kick the crap out of the
18 steelmakers because they should know better or let's go
19 beat up API 5L because they're the standard that
20 governs pipe manufacturing and obviously they're not
21 doing it right because this should never happen to us.

22 That is a very naïve approach and certainly
23 not one that's sustainable. It takes that bandwidth
24 working together to effectuate this engineered product
25 into the ditch successfully, even when we're just

1 talking about the pipe itself, and we didn't want to
2 shirk that responsibility.

3 So as you read through these, you know, Item
4 1, I really think the issue there is about trying to
5 define a decision flow chart to clarify risk and the
6 corresponding appropriate response to pipe that you
7 have acquired. This basically defines what is the
8 right way to buy pipe and if you haven't done it this
9 way, what the hell do you do about that and that was a
10 flow chart that all operators are now accountable to
11 work through to delineate their action plan in the wake
12 of the fact that the pipe is sitting there.

13 Now if you turn that around backwards, it
14 also helps you before you buy the pipe know what you
15 should do to get through the flow chart quickly and
16 efficiently without having a lot of post purchase
17 anxieties.

18 This was a very critical document and it is
19 completed and it is available and the operators are
20 using that and it has been very helpful to the
21 operating community to help respond to PHMSA's advisory
22 notice and hopefully it's been helpful to you to help
23 hold us accountable to getting through that
24 consistently.

25 So I think the second item on there is line

1 pipe quality management. This was really intended to
2 ensure that steelmakers and steel processors and pipe
3 manufacturers use quality management systems
4 consistently as an industry. I think it really was to
5 help us try to focus on the use of API 5L, Appendix B,
6 incorporation, the related QMS systems that are
7 described and are prescribed in there, and help that be
8 incorporated and adopted by the manufacturing sector
9 consistently.

10 Like I said, you've got a lot of new players
11 in here. They're working on -- if they were making X52
12 pipe or caissons before which may be Grade B materials,
13 they're now making X70, X80 thousand pound yield
14 strength highly-engineered commodities where the margin
15 for error may be 10 times less than the margin of error
16 on the other product they were dealing with.

17 We've got to get those people up the curve.
18 The degree of tolerance for mistakes in their business
19 diminished by an order of magnitude and they need to be
20 sensitive to that and so they had that obligation. I
21 know that Peter Lidiak -- there he is -- is here.
22 Peter has been very instrumental in taking the lead on
23 that with API and I appreciate that and we've had good
24 reception with the manufacturers.

25 Certainly the manufacturers realize this is a

1 big problem for them. This is a huge credibility issue
2 for them and they have ponied up and I will give them
3 credit for that.

4 On Item 3, evaluation enhancements to 5L
5 itself, I think the key issue there was clarifying
6 testing and retesting protocols at the mill, how do
7 mills handle that, and how do we handle the inspection
8 and test plan requirements, including protocols for
9 non-conforming pipe and particularly traceability.

10 We try to do everything you can do to
11 mitigate having a problem beforehand. That's certainly
12 basic quality management, you know, design, but if you
13 have a problem, it's imperative that we have
14 traceability and that's so much of what became a big
15 issue here. People were having pipe problems, but they
16 couldn't figure out where they were coming from because
17 they had no traceability back in the manufacturing
18 system.

19 Well, that basically poisoned the well on the
20 whole lot of pipe because they couldn't differentiate
21 the manufacturing input to the defect output. So they
22 couldn't differentiate. So that's certainly a homework
23 assignment for them under Item 3.

24 Item 4. In evaluation of enhancements to
25 operator specifications and practices, this was -- I'm

1 going to say it. I think this was a huge eye-opening
2 for people. People thought that you could buy what I
3 would call off-the-rack 5L materials and it was
4 supposed to be just great and everything was fine and I
5 think the API 5L Monogram means a great deal, but you
6 have to do more than that and what was happening was we
7 were seeing that there was a very large inconsistency
8 in how operators were using inspection and test plans
9 and QMS systems and specifications, communications and
10 protocols to the manufacturers, that everything from
11 it's just 5L, that's what we wanted, to huge books
12 clarifying what people needed to be doing not just in
13 the pipe mill but, just as importantly, interrelating
14 the pipe mill that makes the pipe, you know, takes the
15 steel and makes it into a tubular but upstream of that,
16 who makes the plate, who makes the coil.

17 Well, if they make bad plate or coil, it
18 doesn't matter how good a tube this guy makes, it's
19 screwed up. You've got to get those two married
20 together very, very early and that was not clear to a
21 lot of people and so helping people to see that was a
22 big awakening, a big opportunity, but it is opportunity
23 to help dampen an area of very significant
24 inconsistency in the industry.

25 It helped clarify the best practices around

1 that and helped communicate how do you communicate the
2 engineering demands and appropriate response deal with
3 the complexity of this engineered commodity in advance,
4 way in advance, so that as they're ordering the raw
5 materials, literally, the steelmaker is tied to the end
6 product correctly and making plans accordingly to deal
7 with the outcome of the pipe mill, not just the steel
8 mill.

9 I'm appreciating that Steve Nenny is here
10 and he's tolerating the fact that I'm not diving into
11 the metallurgy of this because there's a reason why
12 that is much more complex. As the product is
13 manufactured, it changes just by the processing. So to
14 understand how the downstream processes affect the end
15 product strength is huge.

16 So basically you're trying to network them
17 together so they work as a system, not independent
18 fighting units.

19 Item Number -- let's see. That would be
20 Number 6. This is one that is personally interesting
21 to me. As you'll see, I'm the chairman of that one as
22 well as Number 5. They are very interesting to me
23 technically. I could talk about this ad nauseam. I
24 think this is a great deal of the crux of what do we do
25 here about understanding steel and stress/strain

1 behavior and pipe expansion.

2 What does that mean? When we find that the
3 pipe has expanded because of the hydrostatic test
4 pressure, what does that mean and when do we get
5 excited about that and how did it happen? Trying to
6 understand that started a conversation that was quite
7 turbulent and volatile for awhile until we figured out
8 we had some very fundamental nomenclature problems.
9 How we talk about hydrostatic testing needed to be
10 straightened up, first and foremost, and how we talk
11 about hydrostatic tests in the mill and what that means
12 from a material testing standpoint to the mill test --
13 I mean to comparing it to the hydrostatic test that is
14 done post construction in the field.

15 They're actually very different animals. How
16 they load the material mechanically is very different.
17 So talking about a number is almost -- is interesting
18 but not transportable until you start getting on the
19 same nomenclature and that helped us get to the place
20 where we now talk about combined stress which is an
21 important term that we won't dive into here but it has
22 helped straighten out a lot of things about what's
23 going on with the pipe and what is the value of the
24 mill test, and I do believe the mill test is very, very
25 important and high mill tests are very important, but a

1 high mill test above 95 percent combined stress will
2 not likely happen, period.

3 What will happen because of the way the pipe
4 is responding as it expands in the mill test is that
5 the mills won't certify that. What they'll do is
6 they'll just start adding wall thickness. So now we're
7 just kind of playing a game with the manufacturer. So
8 you're really not testing the material. You're really
9 just testing his ability to get through the hydro test
10 because he's just going to make it thicker because he
11 doesn't -- he needs to know with an extremely high
12 confidence that product is going to get through that
13 test.

14 So if we -- we all need to come to that kind
15 of agreement, but the point is what does that mean when
16 we get to the field? And I think the point is that we
17 need to look at this problem statistically. SMYS,
18 specified minimum yield strength, does not mean, and I
19 want to clarify this, I know Peter will shake his head
20 yes and I appreciate that, SMYS does not mean that
21 there is not any pipe that came out of that
22 manufacturer below that yield strength. It is a
23 manufacturing standards terminology and based on
24 testing frequency, it's very clear and this is not
25 arguable that there is a statistical distribution of

1 pipe around that that can come out because you're only
2 sampling the lot.

3 The unsampled part's going to have a natural
4 bell curve distribution, some of which may actually be
5 below that. The point is you can statistically pattern
6 that and it is a small percentage of the population
7 statistically that will be below that and it will only
8 deviate below that minimum by a set amount pretty much.
9 I mean statistically, you can play it out.

10 I'd say that you're going to see one or two
11 percentage of the population below SMYS and the most
12 you should be seeing it drop down based on a 99 percent
13 confidence interval should be 3 or 4,000 pounds. So I
14 just cut right through it there.

15 There is a statistical way to get to that,
16 but it helps us understand what is the target. The
17 target is not that nothing will be below that number.
18 The point is only a little bit should be below that
19 number and it should only be below it by a little bit
20 and what does that mean? So as you push that forward
21 when you hydrostatically test to a 100 percent? What
22 does that mean the pipe's response is in the ditch?

23 Those are the things that we've been
24 wrestling with so that we can put some boundaries
25 around this thing, some technical tangible, you know,

1 connectivity to what's happening in the field.

2 All that said, I really think that in the
3 end, you know, when you look at the load -- you know,
4 what could happen because of SMYS, you know, what is
5 that number, and what pipe can do in response to the
6 hydro test and then we look at the reality of in situ
7 stresses, not wild stresses, just reasonable stresses
8 on the pipe, we could be seeing pipe, some small
9 percentage of the population could expand one and a
10 half percent, very -- that's a reasonable expectation.

11 I think the key qualifiers on that are that
12 we shouldn't be seeing a lot of the pipe expanding in
13 that range and we shouldn't be seeing pipe expanding a
14 lot beyond that range. Any of those things start
15 happening and I think we need to stop, period, and we
16 can't dismiss it. We just need to initiate a technical
17 evaluation and see if there's a reason why that's
18 happening that is explainable technically.

19 But I think those things are kind of where
20 we're headed, and I think that we're certainly in the
21 midst of those conversations, how to plug that
22 technology into practice now.

23 Item Number 7. Understanding implications of
24 stress on threats. Now this is certainly where the
25 public, I would think, ears would go way up. All

1 right. What does all this really actually mean to like
2 how scary the pipe is to people? The thing I think we
3 need to close on that issue is if the pipe survives a
4 post construction hydrostatic test, that is really,
5 really valuable because what you're saying is we are
6 testing above the stress that it will see in operation
7 by a certain percentage.

8 That confidence interval is very significant
9 in certainty about its ability to operate in that
10 environment and sustain threats, you know, or growth of
11 defects without causing some sort of catastrophic
12 failure. That is a huge, huge deal and our forefathers
13 understood that for 50 years. I mean that was very
14 fundamental to the design of the ASME Codes that led to
15 the design of the federal regulations, frankly.

16 The point is that strain is a stable threat,
17 given that the pipe has survived the hydro test. We
18 should be concerned if we see inordinate strain and we
19 should be, you know, only really worried about dynamic
20 loads that are put on the pipe after the hydrostatic
21 test; that is, if the pipe moved around or was hit or
22 strained globally. That would be -- those would be the
23 kind of threats you would want to watch out for.

24 Finally, on Number 8, expansions on coatings,
25 we have found basically that the coating issue is not a

1 significant problem. As the pipe expands, it stretches
2 and grows. We're seeing that crazing, based on field
3 burst tests, that the coating crazes at about six
4 percent and that we get cracking anywhere from six to
5 10 percent of strain. Those are huge numbers.

6 We're not anywhere near that number. So
7 gross coating failures in the one and a half to two
8 percent range that we're kind of talking about being
9 acceptable are not going to create coating problems.

10 With that, I'm going to flip through a lot of
11 slides here. I promised that we would just jettison
12 this so you have it to refer to.

13 I really don't know that we need to make a
14 lot of points here. This is really a summary of what
15 we have said so far. Integrated approach is very
16 powerful. Using all of these working together will
17 help us to improve the confidence and the quality most
18 significantly. Focusing on any one and trying to make
19 it perfect is not one practically. You're going to get
20 to a point of diminishing returns and you're not going
21 to net out that big a delta in result in quality.

22 The conclusions. I think that the good point
23 here is that the rigor of some of these projects, the
24 .8 design factor projects requirements, as Jeff said,
25 have worked. They've identified these issues because

1 the testing is more rigorous. That's a good thing.
2 We're not just responding to single issues but trying
3 to develop the integrated approach and we're really
4 raising the bar here that can be applied not only to
5 the 80 percent projects but to the industry as a whole
6 and that's really where I am.

7 I appreciate the carpet bombing there, but I
8 tried to spare you the details of all the slides.

9 If you have any questions, don't hesitate to
10 let us know.

11 DR. FEIGEL: Two questions. Did I read you
12 right that there's a great deal of focus in the entire
13 supply chain management set of issues here, from the
14 slab manufacturer to the pipe manufacturer?

15 To repeat what you said, I mean, we all know
16 that the standards are there and how they're met and
17 integrated may be a whole different issue. So you guys
18 are tackling that in a more robust way than just going
19 back and tell people to read the specs and behave
20 themselves?

21 MR. DRAKE: Yeah. I mean just to cut to the
22 chase, I mean what I think happened, so I'm not short-
23 circuiting any super confidences here, is one situation
24 involved a plate mill that was making on two parallel
25 lines a 36 structural material, an X70 line pipe, and

1 they got the plates swapped, just lost track of them,
2 and they shipped them to the pipe mill mismarked.

3 Well, some tubular guy thinking he's dealing
4 with caissons got some awesome caisson material. Some
5 poor pipeline guy got some great caisson material
6 trying to make an X70 pipe out of it and it didn't do
7 well. That's one problem.

8 The other problem was I think that some of
9 the coil manufacturers and theoretically plate
10 manufacturers but more the coil manufacturers did not
11 understand the Bauschinger effect and the loss of
12 strength through the manufacturing and forming
13 processes. So they targeted their strength here,
14 needing to get here when they went through the process,
15 but they really needed to target here to get here.

16 So when they made it here, it came out here
17 on a big scale and now you got a lot of pipe that's
18 just not quite there and that's pretty apparent.
19 That's part of what happened.

20 DR. FEIGEL: That gets to my second question.
21 You know, the basic design codes are based on maximum
22 stress which doesn't address all these plastic issues
23 you guys are into. I'm assuming all the smart guys
24 like you and the consultants you're using are using
25 some kind of plastic regime approach to analyze the in

1 situ, the stuff you've actually got in hand.

2 MR. DRAKE: Yes.

3 DR. FEIGEL: Okay.

4 MS. FORD: Richard had his hand up.

5 MR. KUPREWICZ: I just got to ask as a
6 qualifier. Is the bulk of these projects that are
7 under construction that are showing up these issues
8 related to deformation, is this basically related to
9 projects that are asking for a .8 design factor? Is
10 that the lion's share of these, if not all of them?

11 MR. MAYBERRY: That's where the problem is
12 observed, but it's not limited. It's not -- you know,
13 the issue of low and variable yield strength pipe is
14 not a new issue. It's been documented in, say, a 1999
15 PRCI report that talked about it and it's mainly the
16 issue with the high yield strength pipes or steel that
17 -- it's more of an art because, as Sandy pointed out,
18 the thermo-mechanical nature of achieving yield, it's a
19 combination of the alloying of the steel and the
20 amounts of micro alloys but also the temperature
21 control has been an issue.

22 Incidentally, in our issuance of our advisory
23 bulletin, you would conspicuously note that we left out
24 names of rolling mills and steel mills and when I got a
25 lot of calls after that came out, you know, the first

1 question was, okay, who, you know, and where and we
2 really -- you know, it's a number of issues that Andy
3 has pointed out.

4 You know, the steel mill may not be producing
5 the right material to send to the rolling mill. The
6 rolling mill may not be doing an adequate job of
7 checking and may not know where to check when he's
8 doing his mechanical testing according to the 5L
9 requirements, may not know where to check to get the
10 optimal strengths. So he doesn't have to throw away a
11 whole heap of incoming coil, but also we're looking at,
12 you know, the possibility of the standard itself. Does
13 that need to be tightened up?

14 So there are a couple of areas that are --

15 MR. KUPREWICZ: I mean, it's no secret that,
16 you know, I've technically said I support the .8 design
17 factor. There's a long history for that, but the
18 assumption there was the pipe quality be of such, not
19 to paraphrase you, Andy, but you would not have yield
20 under a high stress hydro test and you can go well
21 beyond 100 percent SMYS for the vast majority of your
22 pipe and not see elongation.

23 So there is a problem. It's a credit to the
24 industry that the vast majority of the industry is way
25 ahead of this curve, but what we're hearing is you

1 found a problem in the field and you need to get back
2 and fix it up.

3 Now the question is going to be the pipe
4 steel that's now in the ground, is this a very minor
5 segment of this or is this something the public's going
6 to say this is going to come bite you later on and
7 maybe we'll hear a little later about this, but go
8 ahead.

9 MR. MAYBERRY: I think to point out, really
10 first of all, we found this through the special permit
11 process, I think because of our focus on the special
12 permits, the inspections, the higher hydros, the higher
13 material standards, I think, that allowed us to find
14 it.

15 The environment's there for this to be a
16 bigger issue. Thankfully, it seems to be isolated,
17 but, you know, because of the controls and the areas
18 that are potential issues, I think that's why we issued
19 the advisory bulletin. That's why we engaged industry
20 and why they've reacted the way they have and so.

21 MR. KUPREWICZ: And I'm not trying to be
22 critical because it's clear when it started out in the
23 initial process, the technical aspects were going to be
24 the requirements were going to exceed the current
25 regulations and it's good that you're, you know,

1 finding these things and it sounds like you're telling
2 me it's a fairly small minority. People are reacting
3 to this because the public will not react well if we
4 start seeing failures for reasons that we should have
5 screened out, you know.

6 .8, there's nothing wrong with the .8 design
7 factor if all the other technical aspects are bringing
8 in and lowering the risk factors which was the whole
9 premise you guys started off with the special permits.

10 So I want to support that process continuing,
11 but when I start hearing about quality control issues,
12 you know, the bottom line is the operator has the
13 ultimate responsibility, the pipeline operator has the
14 ultimate responsibility to be sure everybody up the
15 food chain is doing what they're supposed to. Is that
16 fair?

17 MR. DRAKE: I think to help shore up
18 confidence, based on your comment, (1) the hydrostatic
19 test pressure levels that the 80 percent projects had
20 to go to were significantly higher stress-wise than
21 previous. That's a good thing. It helped identify
22 this. It helped a large population of people test pipe
23 to places they'd never seen before and it helped
24 identify this issue.

25 Secondly, after the hydrostatic test, the

1 pipe pigged with a geo tool that looks for the shape of
2 the pipe and it helps identify places where the pipe
3 has stretched to above the 1.5 percent strain threshold
4 and then people are going out and digging them up and
5 then I've got the answer they're cutting them out.

6 So I think that should help afford the public
7 a great deal of confidence that nothing is getting left
8 behind or that a threat is being created because of the
9 strain.

10 MR. MAYBERRY: Yeah. But this didn't happen
11 because of .8 design factor. It was found because of
12 allowing the .8 design and that's good, you know,
13 globally for all projects.

14 MS. HAMSHER: I'm going to step back up about
15 a thousand miles and really just use Enbridge's recent
16 efforts to expand the energy infrastructure system to
17 really talk about our approach to managing the multi-
18 faceted challenges of big projects.

19 This picture is a live picture at a real pipe
20 yard and one of dozens that we have. So managing pipe
21 and constructability issues is no small feat.

22 I won't bore you with a lot of the specifics
23 and this is a little bit of a misnomer. There's a lot
24 of colored lines on here and when you receive this on
25 your website, you'll have it in hand.

1 But we've put a lot of pipe in since 2007 and
2 a lot of these projects we're putting two parallel
3 pipelines next to an existing system that had either
4 two, up to five, existing pipelines. This is a lot of
5 pipe in a very short period of time.

6 We've added about 400,000 barrels a day of
7 capacity in what we call our crude mainline system,
8 bringing Western Canadian crude production and Northern
9 Rockies/North Dakota crude to market and that's what we
10 call our mainline.

11 These are 36- and 42-inch large diameter
12 pipelines and then one pipeline, the parallel one that
13 made it two in the same right-of-way, is new pipeline
14 from Chicago all the way up to Northern Minnesota,
15 reversing an existing line. It will be a complete new
16 system that will deliver from Chicago up to Alberta and
17 it's the light hydrocarbons that will be used to help
18 thin the real viscous heavy crude oil and make oil
19 sands production, pipeline quality, go through the
20 system and then literally recycle through that refinery
21 hub, light hydrocarbons will travel up, very complex,
22 multi-faceted, and so while we've talked a lot about
23 pipe quality and weld quality, we had a management
24 problem.

25 How were we going to really put these

1 together in a way? We were seeing again about \$14
2 billion of projects. While it's gotten better, as some
3 of you may know, we had a lot of strain on the
4 industry. Construction costs, pipe costs, pump costs
5 were really going up. So we saw I think yesterday, was
6 it Jeff or who was talking about a million barrels a
7 mile. You know, these are large diameter. There's no
8 more million barrel a mile projects.

9 So we had to manage a lot of these and
10 Enbridge also, while we have \$14 billion now, we had
11 anticipated and this is tempered now in this economy,
12 but we had anticipated another \$14 to \$20 billion on
13 the back. So we had like a five-year peak within the
14 company where we were going to be seeing an
15 unprecedented amount of growth.

16 But I want to back up. So what we did, look
17 at the real simple org chart up at the top, that's our
18 basic business unit model org chart. Some of you are
19 familiar with our Liquids Pipeline Division, one of
20 which is called the Lakehead System, etcetera,
21 etcetera. The other one is our Gas Pipelines. Many of
22 you know us wearing our gas pipeline's hat.

23 This challenge prompted us to develop another
24 business unit within our company. It is now going to
25 be moved into more of a corporate services department

1 but we developed a business unit that's job was to go
2 and deliver major projects. We could no longer ask the
3 environmental manager to take on, in addition to his
4 day job, going and helping to permit a thousand-mile
5 pipeline. We had to duplicate and clone a lot of
6 expertise and do that.

7 So we developed a hybrid of a very project-
8 centric team where you have a particular project,
9 whether it's a liquid project or a wind farm because we
10 have a lot of big projects going on, and we had a
11 project team with a project director or vice president
12 who was a 100 percent devoted to that project and we
13 had Enbridge people, sometimes contractors but longer-
14 term contractors, so they are Enbridge, and do that.

15 But then we couldn't embed a lot of the
16 support, the technical expertise that I think Andy and
17 Jeryl talk about. You can't duplicate that in every
18 project team in the field. So we've got a lot of
19 support behind that which many of you would kind of
20 refer to as a corporate office, but it's a support to
21 them that we come up with construction management, how
22 to commission, the processes, the procedures, and that
23 type of thing.

24 One of the things that we also did, in
25 addition to structuring this way, is we took a look

1 down the pike, if you will, no pun intended, and
2 developed two -- I'll give you two examples. We
3 developed a strategic alliance with pipeline
4 contractors. We knew that we had too many spreads to
5 go out and bid competitively and then have to manage
6 all these different contractors and the training and
7 unloading.

8 So we had four of them, now three, that
9 formed an alliance and our contract is with that
10 partnership of contractors and they went from one
11 project to another to another. So all that kind of
12 front-end loading on expectations, accountabilities,
13 processes, we felt improved.

14 The other thing we did is did a strategic
15 alliance with a pipe manufacturer. This is a
16 competitive market. We did it so we could control the
17 risk of our cost as much as the total volume, but it
18 also allowed the obvious. I think as Andy talked,
19 having a strategic alliance with one mill and one
20 company really helps once you set up some of that
21 inspection and process, it helped improve that.

22 Some of our objectives. This is a lot of
23 northern winter construction, different size pipe.
24 We'd have -- you can see two pipelines are being put in
25 at the same time, a 20-inch and a 42-inch, almost back

1 to back. So having and managing welding crews on a 20-
2 inch versus their next-door neighbor crew that have the
3 36 were a challenge.

4 Multiple contractors, then the whole typical
5 array of the environmental and other types of
6 challenges that you have.

7 So one of the things that we did, I think
8 Jeryl kept saying it and you can call a lot of names,
9 but we came up with a quality management system, but
10 it's not just on pipe and material quality. I think
11 it's an overlaying quality management system that
12 starts out at the way we plan, design and goes all the
13 way through the full life cycle of a project and when
14 it says close-out, what we mean in project terms is
15 turning that over to the operational people. So we
16 have a very disciplined approach to commissioning and
17 sign-off before our operations people, which now we
18 view as our internal customer, will accept that
19 project.

20 So we needed to develop in a very short
21 period of time a pretty comprehensive process.
22 Obviously you can't read that, but it is a life -- what
23 we call a project life cycle gating process. It's not
24 real rocket science. I think anybody that's done any
25 major projects recognize, you know, international

1 project features of this. We customized that and have
2 -- that are specific for linear projects because a lot
3 of things that you see out in the international project
4 world are not necessarily linear-type projects and so
5 we've customized that and set up a very disciplined
6 requirements for each stage and executives have to sign
7 off before we get from one stage to another, funds are
8 released, and we're permitted to go.

9 Again, I don't expect you to read it. I want
10 to give a flavor of the type. One of the projects is
11 the U.S. portion of one of the projects that is under
12 construction as we speak, largely in Minnesota and the
13 very northern part of Wisconsin and North Dakota, but
14 most of it's in Minnesota, has six spreads working
15 simultaneously, started off with four spreads.

16 So one of the things you have to do is you
17 change manage. Because of the delay in permits, I
18 don't think many of the environmental agencies we had
19 to beg permits from are here and it wasn't the Illinois
20 Commerce Commission this time, because of the delay and
21 winter approaching and proactivity and all that, we had
22 about a month period to come up with a six spread
23 versus a four spread effort and we were able to
24 resource load and do that. That's an example of the
25 kinds of inspection staff.

1 So most of that is Enbridge or Enbridge hired
2 third party inspectors looking over the backs of those
3 field construction people. You don't have to read the
4 names. It's just to be representative of the resource
5 loading that you do.

6 The other thing I really want to make a point
7 of is we've spent a lot on the craft and trade
8 inspection, is the welding quality and all that, but we
9 expect a lot of our inspectors. We want people to go
10 home to their families safe. So as part of their role,
11 they also have a worker safety expectation.

12 We have in most of these projects thousands
13 of pages of environmental assessments and requirements
14 and all that. We expect not all of them have every
15 obligation but many of them have at least some
16 obligation to make sure that we also have compliance
17 with our permitting, environmental processes, as well.
18 So that it's not just the environmental department's
19 responsibility to assure compliance, it is the
20 contractor's and the inspector's, as well.

21 Just an example of the kinds of testing, non-
22 destructive testing that you do in the field and just
23 one example of some of the trade inspection that you
24 have out in the field.

25 I think one of the things that we imposed a

1 lot on is a level of accountability. We call it kind
2 of a triple bottom line. That term's used at a
3 corporate level, but we really look at this as it
4 really starts at the top and that's a two-way arrow.
5 There's double accountability going all the way down to
6 the individual and we built in incentives so the
7 actual, the contractors have incentives, so that they
8 lose those incentives not just because of cost issues
9 anymore. We built in their safety expectations,
10 compliance, productivity, and quality expectations into
11 that. So they're measured and we have a mutual
12 responsibility as owner company overseeing that and
13 with our contractors.

14 We don't, as I think was referred to, look at
15 this as a turnkey operation. We own it all the way
16 through the process.

17 I didn't know this was going to -- so I'm
18 just going to -- just some of our observations. You've
19 heard the word kind of "quality management systems."
20 This is really kind of a process. It gets at the
21 controls, your documentation procedures, your
22 procurement, your inspections, the measurements,
23 testing, validation, really think of it as a life cycle
24 of the process. It's not just limited to quality
25 control.

1 The other thing is, you know, I'm talking
2 about big projects. So you ask the question, well,
3 it's easy to kind of throw this kind of resources when
4 you're talking about a project that's a \$3 billion
5 project. It's a lot of overhead, but the quality
6 management systems, an approach has to be scalable.

7 So what we've learned is that we can apply
8 some of this and scale it, not eliminate it, when
9 projects are much, much smaller than a billion dollar
10 project.

11 Codes and standards, both the company-
12 specific, industry-specific and regulation, are there,
13 but they don't replace the kinds of expertise that I
14 think you kind of heard from Andy and Jeryl that have
15 to come to play when you kind of run into something
16 that really wasn't envisioned.

17 The constructability reviews in this process
18 has to start at the get-go. Remember that complicated
19 life cycle gating process. You know, it's two years
20 before we actually start putting shovels to ground.
21 During that two years of a major project like this, a
22 lot of those constructability codes, requirements, and
23 processes are developed, and I think, most of all, I
24 think the opportunity to share learnings within the
25 industry.

1 You know, we compete on a lot of things. We
2 compete against market share. We compete against best
3 practices and customers. We don't compete on achieving
4 a level of safety that I think is in all our best
5 interests.

6 That's it. Thanks.

7 MS. FORD: Thank you. And I must admit that
8 issues you had was basically eminent domain.

9 MS. HAMSHER: Yes, yes.

10 MS. FORD: I do want to say that this was
11 very informative for me because Enbridge has certainly
12 done work in Illinois and I am learning some things
13 that I did not have the opportunity to know about. So
14 I think this has been very informative, Jeff, and I do
15 appreciate this.

16 MS. HAMSHER: The good way to learn it.

17 MS. FORD: Right. Yes, and I do appreciate
18 your passion, Andy and Jeryl, all of you, for all that
19 you do, and this is a very difficult situation because
20 Enbridge did come to our Commission before they started
21 this project. It might have been three or four years
22 ago and when we said you've got to go do all of this
23 siting and all of the other kinds of issues, when will
24 you finish. So it is onerous burden and I do
25 appreciate the fact that you all do the job that you

1 do.

2 Any questions, Jeff?

3 MR. WIESE: I just have a couple of quick
4 observations, if you'll allow, and just some points for
5 the record.

6 One is I wanted to assure the committee, as
7 we said to you before, we're capturing all the
8 presentations. We will put them on our website. We
9 will -- Cheryl will be sending you a follow-up e-mail
10 that will have the link to where all the presentations
11 are.

12 I think you'll find it, and I know that we
13 had to, and Andy's in particular, I remember that, I've
14 seen it before and I would encourage you to go back and
15 look at the eight points and the details under them.
16 Andy covered a lot of that verbally, but it's really
17 good reference material.

18 I want to underscore the fact that it's
19 important for people to understand that in new
20 construction, there are no user fees assessed. All of
21 the oversight is done without compensation per se. We
22 can quibble about this, but user fees only apply once
23 product enters the line.

24 So as we talk about projects like Alaska that
25 will take four or five years, one of the things I think

1 you'll be hearing from the Administration in the
2 reauthorization is some sort of a reimbursable
3 authority. We're not looking for permanent funding.
4 We're looking just to surge with the operator when they
5 surge and then fall back when the projects are over.
6 So we're happy to take input on that.

7 I did want to say really quickly, and I think
8 it's obvious so, but I'm known for the obvious, we have
9 a lot of expertise on this committee. This committee
10 -- this panel presentation I think really highlights
11 that. We have some of the top people in the country on
12 the committee which I think really underscores the
13 value of the advice we get from people here and you get
14 to hear from them firsthand and you'll have plenty of
15 time to talk with these folks. You know, we get expert
16 counsel and I appreciate that.

17 I guess that in the feedback that we ask you
18 for in the e-mail from Cheryl, I'd like your feedback
19 on these kinds of sessions. Remember today was
20 strictly a policy day. No votes. You know, what do
21 you want to hear more about?

22 We brought this one to you because it's an
23 issue that's been, you know, a burr under our saddle
24 for awhile and we've been working it and we think you
25 deserve to know.

1 Last two things for me. I just really have
2 more of a question to Denise. As we've said to the
3 industry all along, we boil it down to pipeline,
4 process and people, you know, and we've heard a lot
5 about the pipeline, the materials issues. I think
6 those are really well in hand and they're working hard
7 on this issue. The standards associated with all that.

8 We hear about the ramp-up in the process.
9 It's the people that continue to cause some anxiety in
10 different quarters and we haven't gravitated around it.

11 I wonder if you wouldn't mind for a second in
12 the solutions that we're talking about now, the more
13 comprehensive solutions, talk to us a little bit about
14 how that will improve the caliber both of contractor
15 management, which are people, and inspector, you know,
16 your inspectors or other contract inspectors. So more
17 on the people side of it.

18 MS. HAMSHER: Kind of a big question. You
19 know, because we've had the ability to have such big
20 projects from 2007, 2008, 2009, 2010, we have been able
21 with the continuity of an alliance of contractors have
22 a level of continuity.

23 We've decided that that is a way to manage
24 the people. I will say that there were originally
25 four, you know, members of that contractor alliance.

1 There's three now. We don't hesitate if there's a
2 particular crew, you can -- one of the things that I
3 kind of went over real fast is the idea of controls.
4 Having -- we've really developed controls, so that
5 while you're looking at productivity, if productivity
6 is lagging because you're seeing a lot of weld cutouts
7 and we're using controls to start seeing that, we can
8 see that as an early indicator.

9 Is it an issue with pipe? Is it an issue
10 with training? Is it an issue with that so we can get
11 at that before it becomes a real problem, and I think
12 I've said this to you before, Jeff, and I think you
13 might have gleaned it from one of Andy's answers, but
14 all that means is that the process is working.

15 We have testing, inspection, and really very
16 many redundant levels. So you can't 100 percent
17 control people or their ability or whether they woke up
18 that day and they weren't fit for duty because they
19 didn't sleep that night, but what those redundant
20 testing and all that, I think combined, and that's the
21 system we're talking about, I think helps us achieve
22 it.

23 It doesn't mean we don't have problems with
24 some, our own or contractors. It means that the system
25 is in place to vet that out and self-correct.

1 MR. WIESE: I guess my only reply to you is I
2 would certainly encourage the industry to think more
3 about the issue of inspector standards and
4 qualifications. I would urge you to think about
5 contract management.

6 I know there are standards out there that are
7 very -- in any industry about how to manage your
8 contract workforce and qualifying them. As you're
9 saying, Denise, the performance measures and the
10 accountability. Strategic alliances is a great idea
11 because then they start sharing some of your
12 objectives, but not everybody can do that and we're
13 talking about what should fit all operators.

14 So I'll get off my soapbox, but it's the
15 people part. I think we have to keep thinking about
16 that one, too. So thank you.

17 MR. MAYBERRY: I meant to mention in my
18 presentation. I think I'm really the messenger for
19 PHMSA and behind me, I know some regional directors
20 have trickled down and, you know, they have supported
21 the efforts in construction inspection. So I respect
22 the input they provide as we carry the message forward
23 and also on my staff, Steve Nenny, which Andy pointed
24 out, Eagle-eye Andy behind me, who's front and center
25 on the issue of material and construction quality. So

1 his efforts and he has put a lot of focus and is very
2 passionate on this issue and I wanted to recognize
3 Steve of PHMSA staff here.

4 Thanks.

5 MS. FORD: I think this is a perfect time for
6 us to take a break. 15 minutes.

7 (Recess.)

8 MR. WIESE: Can we go ahead and take our
9 chairs and get rolling so we'll get you out of here by
10 hopefully 4:30? Thank you so much.

11 Madam Chairman, with your permission, we'll
12 start with Mike and then I'll go find our panelists.

13 MS. FORD: Good afternoon. We're about to
14 reconvene and we'll start with Mike on Integrity
15 Concerns, Couplings, Casings, and Excess Flow Valves.

16 Mike?

17 Agenda Item 6: Integrity Concerns (Couplings, Casings,
18 EFVs)

19 MR. ISRANI: Okay. Good afternoon. Since
20 we're running one hour behind time, I would like to
21 just use status on where we stand on this very
22 important issue of mechanical couplings.

23 As you all know, there are hundreds of
24 thousands of mechanical couplings installed in our
25 piping system and they have provided excellent service

1 over the decades.

2 They're performing well today, but recently
3 there have been some incidents. There have been some
4 failures on these couplings and I'm going to just
5 briefly tell you how we are addressing this issue.

6 You know, these couplings come in all kinds
7 of sizes and designs and we are going to look at all
8 types of couplings, their failure trends. In the past,
9 we focused only on two-inch diameter and the smaller
10 size diameter but now we're going to look at even
11 larger diameter, up to four inches, of these couplings,
12 both inline and risers.

13 What I'm saying is service line and the
14 risers where these couplings are. We're going to look
15 at both steel buried couplings as well as the other
16 type of couplings where there's a plastic pipe, steel
17 pipe, or combination, like, you know, you have steel on
18 one side and plastic on the other side, and we're also
19 going to focus on the compression couplings mechanism
20 that includes elastomers and range-tightening nuts.

21 This slide shows you what we are focusing on
22 here. This is a cutaway of a coupling there, plastic
23 pipe on one side. You can see a plastic pipe on one
24 side and steel pipe on the other side. The typical
25 failures have been these plastic pipe gives out and the

1 pipe comes out from here.

2 The locations are typically near the riser,
3 as you can see here shown in this diagram, and
4 sometimes these couplings can be anywhere in the
5 service line.

6 Now I'm going to skip this slide because this
7 pretty much tells you what I already mentioned, that
8 they have had good service over the years and there are
9 only four to eight percent of these incidents that we
10 have noticed that occur as we know of could be from
11 these couplings. It's a very small percentage of all
12 the distribution incidents.

13 What steps we have taken so far, PHMSA has
14 put the advisory bulletin in 1986 and again in 2008, we
15 issued another advisory bulletin on this advising
16 operators to be careful and to watch on these
17 couplings. We had mentioned what types of couplings
18 have failed, to focus on those areas.

19 States on their own also have conducted many
20 studies and some have issued these commission orders.
21 Texas rule, as you recall, changed the rule in their
22 state for replacing all certain kind of couplings.

23 So through the DIMP Rule, where we have put
24 the requirement for collection of information on these
25 couplings, we are not certain in the DIMP Rule what

1 causes the failure because we do not know at this stage
2 what causes the failure, but we are collecting
3 information so we can determine what are the causes for
4 failure and we are also discussing this through the
5 committees.

6 We have a PHMSA NAPRS Committee and we also
7 have participation with the PPDC, which is Plastic Pipe
8 Data Committee, where even NTSB is a member, NAPSRS and
9 industry, and they're also studying this.

10 PPDC traditionally have focused only on the
11 plastic-type piping and plastic couplings and they
12 looked at through wall failures, but we are -- after we
13 urged them, they are now considering expanding the
14 scope to include failures which involves metallic
15 appurtenances on the plastic pipeline and DIMP Rule, as
16 I mentioned, came out on December 4th, and the PHMSA's
17 DIMP Rule will give us data and after some time when we
18 have collected ample information, we can take specific
19 action.

20 That's all I have on these couplings and now
21 I'll pass on to Alan to talk about casings.

22 MS. FORD: Thank you.

23 MR. MAYBERRY: Okay. Thanks, Mike. What I'm
24 going to do is take about 22 slides and bullet down
25 into about four slides. For the record, we'll have the

1 full presentation, but I wanted to go over just the key
2 points here in the interest of time.

3 But, first of all, I wanted to mention that,
4 you know, this discussion is very timely in light of
5 the baseline assessment for gas pipeline completion
6 deadline of 2012.

7 The issue here that we're dealing with is
8 issuing guidance to industry or developing guidance.
9 It's still in draft form to assess casings, the
10 integrity of casings in HCAs. So we're dealing with
11 HCA integrity management here.

12 I might add, also, that we sent to industry
13 on -- well, earlier this week, actually over the
14 weekend, the draft guidance. So we anticipate some
15 comments as we go forward. It was a bit different,
16 quite a bit different, depending on who you talk with,
17 from what we had ended up with at our last meeting with
18 industry on it, but let's see.

19 The presentation's organized into key points
20 and let me just -- the key points overview which is the
21 history which gives you kind of the exchange of letters
22 between industry and PHMSA on the issue and then the
23 background that covers the basis for the guide material
24 and then, finally, the guidance highlights.

25 I might add, too, that we also sent FAQs for

1 the guidance.

2 Key points of the guidance. It provides a
3 method for operators to establish casing regions and we
4 feel that casing pipe conforming to the guidance will
5 likely lower the risk of those case crossings for
6 future assessments.

7 The goals are to ensure resources are used
8 where most effective. Go through some of the history
9 or background. You know, in using a collaborative
10 approach, we did form, in cooperation with AGA and
11 INGAA, we formed a committee, the acronym is up there,
12 you can figure out how you want to pronounce it, but
13 there are members from AGA, INGAA, service providers,
14 NAPSRS and PHMSA.

15 So it's a collaborative approach where we
16 were given input between the months of about January
17 through July on the guide material, what the guide
18 material would look like and then since July PHMSA's
19 had it for internal vetting and the document that we
20 sent earlier this week is kind of the result of that
21 internal vetting, also a review with our Legal group,
22 review with NAPSRS and incorporation of NAPSRS comments
23 and that's where we are today.

24 Let's see. I now wanted to get to -- okay.
25 Can you do speed reading? Okay. I just wanted to

1 mention that in Appendix C of the guidance there are
2 indirect inspection tools that are identified and
3 really the main thrust of the indirect inspection step
4 is to determine which case crossings should have the
5 highest priority for direct examination since metallic
6 shorts or electrolytic contacts are indications of
7 carrier pipe with a coating anomaly and these two
8 conditions become immediate in the schedule,
9 respectively, as far as the priority for action.

10 The indirect assessment tools are thus rated
11 in the guidance on how well they perform to determine
12 the metallic short or electrolytic contact conditions.

13 Also in the guide material, there's
14 considerable guidance on how to deal with or how to
15 fill casings and then how to deal with filled casings,
16 both filled and unfilled casings.

17 I might add, too, that this was an area of
18 internal angst, if you will, as far as there's quite a
19 bit of material in the guidance on how to properly fill
20 a casing and how to assess or monitor the fill after
21 it's taken place.

22 It was felt -- there was some feeling that
23 maybe we're promoting the filling of casing and I just
24 wanted to stress that, you know, we're not doing that
25 -- bless you -- and that you have to realize if you

1 fill a casing, it could affect, you know, future
2 assessments or your method that's chosen down the road,
3 definitely would impact if you wanted to say down the
4 road figure you might use guided wave. That likely
5 would not be the best method and also would potentially
6 preclude other methods that are developed in the future
7 for integrity assessment, other than, say, hydrostatic
8 testing or inline inspection.

9 And just in summary, let me just mention
10 three items that the guidance does not do and just
11 clarify it doesn't allow for skipping casing
12 assessments. It doesn't allow for filled or unfilling
13 casing to be prioritized as having no corrosion threat
14 and doesn't mandate the use of guided wave or any other
15 specific indirect inspection tool.

16 What it does provide is it gives guidance on
17 how to review through ECDA the integrity management
18 procedures for case pipelines. It does provide a
19 mechanism for grouping casings into regions and does
20 give guidance on how procedures should be set up to
21 effectively monitor both filled and unfilled casings.

22 And like I said at the beginning, it's one of
23 the key points. If the guidance is followed, the
24 casings that should drop in in risk ranking on future
25 reassessments.

1 And I guess, in summary, to finalize this,
2 we'd like to wrap up receiving comments and really wrap
3 this guidance up and just move on. We really need -- I
4 know we've had this -- we've had it long enough and I
5 know it's been an issue that's been bubbling up for
6 some time. 2012 is fast approaching.

7 We want to be able to issue this so everyone
8 can move on. So we'd like to wrap this up by around
9 mid January and then have a public meeting, perhaps at
10 the February time frame, the end of February time
11 frame, and I look forward to your comments.

12 All right. That's all I have. Abbreviated
13 presentation.

14 MS. FORD: Yes. Thank you, Alan. Any
15 questions for Alan or Mike? Yes?

16 DR. LEMOFF: Ted Lemoff. For Mike, on the
17 casings, I appreciate the briefing. I had asked for it
18 because I didn't know what you were talking about.

19 But do you have any -- okay. These same
20 risers and couplings are used after the meter, for
21 example, if there's an underground line from a house to
22 a garage, and NFPA writes the code, NFPA -- National
23 Fuel Gas Code covers that stuff.

24 Do you have any idea if these -- at the time
25 these were being installed for beyond the meter use and

1 if there's something that our committee should be
2 sensitive to?

3 MR. ISRANI: Unfortunately, our jurisdiction
4 stops at the meter. So beyond that, I'm not aware of
5 if there are any couplings.

6 Alan, do you know?

7 MR. MAYBERRY: Ted, I think it's safe to say
8 those were in widespread use, you know, especially for
9 steel-to-steel connections, during the '60s, before
10 classics really came into being.

11 I think it's safe to say you'd really see
12 them downstream of the meter, in say a master meter
13 area, perhaps a primary. So I would say it'd be --
14 it's an area of concern. It's really not just pipeline
15 that we regulate or through our state partners but
16 potentially others because I'm sure the coupling
17 salesmen hit them, too.

18 DR. LEMOFF: Thank you. I appreciate that,
19 and I'll be in contact with Mike to get some further
20 details.

21 MR. WUNDERLIN: Mike, if I may, Jim
22 Wunderlin, make a quick comment on couplings.

23 Downstream, of course, is inches of pressure
24 versus like 60 pounds which would be upstream. So the
25 risk is somewhat lower in the house.

1 MS. FORD: Thank you. Any other suggestions,
2 questions, concerns?

3 (No response.)

4 MS. FORD: If not, we will ask for our
5 Climate Change -- oh, I'm sorry.

6 MR. ISRANI: Excess Flow Valves.

7 MS. FORD: Oh, I forgot about that. Mike,
8 Excess Flow Valves. Mike.

9 MR. ISRANI: Okay. I'll be very brief on
10 this one, as well.

11 As you all have known, the excess flow valves
12 was picked up in the Distribution Integrity Management
13 Rule and there we referred only to the single family
14 residences. PIPES Act had required that, along with
15 the DIMP, to have excess flow valves in single family
16 residences and we included that in the rule, but NTSB's
17 recommendation, which came out in 2001, had a broader
18 scope and that recommendation asked us to look at not
19 only single family homes but all the multifamily
20 dwellings and apartments, residences, commercial
21 properties, and industrial use, almost all over, and
22 incidentally this thing I wanted to mention.

23 The NTSB sent a comment on the DIMP on
24 September 21st. They indicated that unless we address
25 the issue of excess flow valves on all these other

1 applications, they will have their recommendations for
2 the excess flow valves as unacceptable.

3 So we have been proactive in this area, even
4 though DIMP was being developed. We already had a
5 joint garment industry group as well as we had public
6 members on this group, all kind of stakeholders. We
7 have met twice and discussed all kind of technical
8 feasibility and other issues on excess flow valves, and
9 this slide I'm showing you because we wanted to figure
10 out what role excess flow valve plays in all our risk.

11 We know risk is likelihood in consequences,
12 likelihood part is already being well address by the
13 Public Awareness Program, Damage Prevention Program, in
14 our Distribution IMP, but the consequence part is the
15 part where EFVs can play some mitigative role because,
16 you know, once the valve shuts off supply, you can have
17 the less consequences. The faster the action, lower
18 consequences would be there.

19 So EFVs is not the only mitigative action.
20 You know, the actual valves which are on the lines,
21 they can be sheared off also, but how quickly they can
22 shear off, that's the question.

23 So we decided to kind of look at what types
24 of incidents that EFVs can play mitigative role on from
25 all the data that we have in our PHMSA databank. We

1 started looking at those. We noticed that nearly six
2 out of 10 distribution incidents have occurred close to
3 the meter, regulatory and service lines, and so, you
4 know, we further divided that pie chart into what
5 percentage of the incidents occurred on the service
6 line near the meter, regulatory assemblies.

7 Going further down in the bar chart, we were
8 trying to figure out how many incidents have occurred
9 in the commercial-industrial entities and, you know,
10 where the pressures are right because, you see, we went
11 through different filtering factors, line pressure,
12 greater than 10 psig, and leak causes due to excavation
13 damage, natural forces, and damage by the outside
14 forces, all these factors where an excess flow valve
15 can play some role, and we came up with this 72 number
16 as the number of incidents that have occurred in the
17 commercial and industrial arena. Most other incidents
18 have occurred in the residential, single resident
19 homes.

20 So with that input that we have, you know,
21 it's some place it gives us to start with. Now we know
22 that EFVs may not have prevented all of these
23 incidents, but something that gives us information on
24 what percentage of these incidents we're looking at.

25 This number 72 may seem small but if you

1 notice that 70 percent of the incidents occur near
2 single family residences and 30 percent have occurred
3 in the commercial-industrial area, but the rate of
4 incidents that occurred in the time frame of this 2004
5 to 2009, commercial incidents are almost seven times
6 faster than the single family homes. Just playing with
7 the math here, even the number is small, 72, but the
8 rate of incidents on commercial is more. That's more
9 because of the load variations and changes and other
10 things that may -- or could be some excavation and
11 other activities near the commercial areas, but this
12 was just an observation in our databank that we
13 collected.

14 And this slide shows that 30 percent of the
15 incidents, one-third of the incidents, caused by
16 excavation damage have occurred after the One Call
17 notification. So it's something to note, you know,
18 that we have to now focus also on mitigation, that, you
19 know, accidents, we cannot prevent totally, but we can
20 look at the mitigative actions and excess flow valves
21 is one of those.

22 This is a slide which tells you the meetings
23 that we have had with the stakeholders, what findings
24 we have had from that group. We have had only two
25 meetings and information that we have got from them

1 that they have provided.

2 We noticed that the emergency responders and
3 NTSB, of course, they would like PHMSA to go with the
4 excess flow valves. They want excess flow valves to be
5 installed in the commercial entities, if they are
6 technically feasible.

7 As I mentioned, our DIMP Rule and the damage
8 prevention requirements will reduce incidents and
9 lessen the need for EFVs and this was the opinion of
10 industry and some other folks who feel that, you know,
11 since the DIMP Rule was recently issued and the damage
12 prevention requirements also are being enhanced by the
13 states, we should wait for the results to see if excess
14 flow valves really brings any additional improvement
15 there.

16 Operators also said that there's not enough
17 time, enough data available currently on the commercial
18 EFVs for you guys to analyze and see if these excess
19 flow valves are successful there and the effectiveness.

20 Now, EFVs, what we also observed are
21 currently available after two-inch diameter and they
22 also can have capacity as high as 5,500 standard cubic
23 foot per hour. Typical home will have anywhere from
24 200 to 400 standard cubic foot per hour and valves are
25 available up to 5,500 standard cubic foot per hour.

1 But there are other technical issues that we
2 also had to consider. The customer load changes, for
3 example, with a shopping center. You may have some,
4 you know, Radio Shack and suddenly a Pizza Hut is
5 opening there and so your load changes quite large.
6 Your service line may not be able to handle excess flow
7 valves once you install the same line, there are a lot
8 of changes to the service line to incorporate, and then
9 there are, with the different load variations, there
10 are snap loads, you know.

11 Certainly you can have so many heaters come
12 into place. So it's different compared to single
13 family home excess flow valves. You also have to worry
14 about bigger industrial plants where they do not want
15 any interruption in the supply. So there's a liability
16 issue if the supply gets cut off because of the excess
17 flow valves inadvertently closing. So operators have
18 to consider that factor, also.

19 And there's obviously very complex service
20 configuration design because when there are too many
21 branches coming out from one line, how do you size the
22 loads? So design consideration, also other factors,
23 which was raised by the operators that we should
24 consider.

25 Our next step also is to do some cost-benefit

1 studies on the excess flow valves, just like we did on
2 single family homes, from the current data that we
3 have. So we are going to develop interim report. In
4 fact, in January, we're going to have an interim
5 report, draft report, where all the findings that we
6 have had from the stakeholders, what types of valves
7 are available, whether foreign or -- there are
8 standards in some foreign countries, like Germany and
9 France, have these valves on the commercial
10 application, but we don't have much data on how long
11 they use them or if they are successful.

12 So all of the information would be in the
13 report. The report would be available on the website
14 after we draft it and run through our Legal Department.

15 Path forward. We will finalize this report.
16 We'll perform cost-benefit study. We'll develop final
17 report to reflect cost-benefit analysis, also, and then
18 we'll respond to NTSB on their recommendation and then
19 we'll implement the recommendation based on what
20 conclusions we come up with.

21 So that's it on the Excess Flow Valve.

22 MS. FORD: Thank you. Any questions? Oh,
23 yes? Jim Wunderlin?

24 MR. WUNDERLIN: I'll just make a comment. I
25 would like to thank PHMSA for forming the stakeholder

1 group and working with the interested parties on this.
2 They completed the two workshops and I think it's
3 important to recognize that commercial, large
4 commercial and industrial use of EFVs will need special
5 consideration.

6 You think of having an excess flow valve to
7 this hotel and if that tripped, what the consequences
8 would be to the hot water, the restaurants, and
9 etcetera. There's certainly financial, besides the
10 safety, there's other considerations in sizing and
11 design that are certainly very important.

12 So I appreciate PHMSA sharing the findings,
13 the initial findings from the stakeholders group, too.
14 I think that's important. This is going to be back
15 before the committee in the future, I'm sure. So it's
16 something we have to pay attention to and make sure
17 it's done correctly.

18 MR. STURSMA: Could you back up two slides?
19 At the bottom of that slide, you say, "Cost-benefit
20 analysis should reflect benefits gained on single
21 family residences and account for" -- just that first
22 part there. I didn't catch exactly what that means
23 because I would -- I'm hoping that it means that excess
24 flow valves to other than single family residences
25 would have to stand on their own in a cost-benefit

1 ratio. It wouldn't try and roll in benefits from all
2 excess flow valves into one pot. Am I correct on that?

3 MR. ISRANI: Yeah. I mean to give us to see
4 after the single family homes whether all these valves
5 and we have done some preliminary cost-benefit study on
6 that before valves went into mandatory category. We'll
7 have some more information on these valves, whether it
8 was really benefit, cost beneficial. That's where
9 we're focusing on.

10 MR. STURSMA: Okay. So you're talking about
11 another cost-benefit study --

12 MR. ISRANI: Correct.

13 MR. STURSMA: -- on excess flow valves on
14 single family residences?

15 MR. ISRANI: No, no. We're only looking for
16 commercial and industrial use.

17 MR. STURSMA: Anything but single family
18 residences?

19 MR. ISRANI: Yeah. Correct.

20 MR. STURSMA: Okay. That's -- the way it was
21 worded, I wasn't quite sure what it was doing. I knew
22 what I hoped it meant, but I wasn't sure what it really
23 meant.

24 MS. FORD: Thank you. Ted?

25 DR. LEMOFF: Many of you remember that I have

1 been somewhat vocal on this issue and, however, they do
2 seem to work for the single family homes for a number
3 of solid technical reasons.

4 Jim Wunderlin made the point about this
5 hotel. Well, what about hospitals or nursing homes?
6 They're much more sensitive. What about a glass
7 manufacturing plant? You know, there are other
8 sensitive -- and it's just a whole different ballgame,
9 you know, where you have one pipe size the whole way.
10 You size it to the pipe flow, not what the customer is
11 using today, assuming -- because you want the pipe to
12 be limiting, not the excess flow, but I think there's
13 many more variables, and I'm sure that this will make
14 for a very complex study.

15 MS. FORD: Thank you, Ted. Yes, Jeff?

16 MR. WIESE: I wonder, if there are no other
17 questions from the committee and before we move on to
18 the Climate Change discussion, if we could give a brief
19 opportunity to the public. I know there are some
20 people who are interested in making a comment for the
21 record.

22 MS. FORD: Yes, the public. Thank you.

23 MS. SAMES: Christina Sames, American Gas
24 Association. Great job quickly going through those
25 three issues. I really thought it was going to take

1 longer.

2 On mechanical couplings, Mike, you may have
3 had it on the last slide. If not, for the benefit of
4 the committee, the American Gas Association's Plastic
5 Materials Committee is creating a mechanical coupling
6 catalog library of sorts of mechanical couplings that
7 we hope will benefit the states and the industry.

8 So stay tuned. Kate, when is that due to be
9 released? Okay. I'll just say stay tuned for a date
10 of release, but we have the Manufacturers of Plastic
11 Pipe Institute and, of course, a lot of the industry
12 working on that.

13 On the casings, just a few small points.
14 Unpiggable case pipe is extremely small section of the
15 infrastructure. I think it's far less than two
16 percent. The problem is we're spending a lot of
17 resources trying to assess those case pipe.

18 We're with you. We need guidance. I won't
19 go into my speech, though, I think I gave you earlier
20 on my annoyance at how long it took to get the revised
21 document. We will do our best to get you comments by
22 the middle of January and very much look forward to
23 participating in a workshop on that.

24 And then for excess flow valves, Ted, you
25 nailed it. I think when you get to single family

1 residences, the industry has recognized that they do
2 have benefits and we have been installing them prior to
3 DIMP coming out.

4 For commercial applications, there are a lot
5 of other factors and that shifting load in particular.
6 As Jim pointed out, this hotel, early morning when
7 people are going to take a shower, you have a dramatic
8 load shift. That's going to kick an excess flow valve
9 and what we don't want is to have to dig these things
10 up after they're installed.

11 So thank you for the time.

12 MS. FORD: Thank you. Are there any more
13 public comments?

14 (No response.)

15 MS. FORD: Thank you. Climate Change?

16 MR. WIESE: Madam Chairman, would you like me
17 to make a quick introduction?

18 MS. FORD: Would you, please, Jeff?

19 MR. WIESE: Sure. Okay. Thank you so much.
20 I appreciate the committee's indulgence. I know we're
21 getting late. We only have five minutes left for Bob
22 to cover his entire subject, but hopefully with your
23 indulgence we'll go a little bit long. I know some
24 people had planes to catch and we'll keep coming back
25 and talking about this issue as time goes on, but I

1 think it's a particularly opportune moment to talk
2 about climate change now.

3 By way of introductions, I will say that
4 Jerome and his associates at EPA reached out to us to
5 talk and we very much appreciated that. We've had a
6 good dialogue with EPA. I hope that through the
7 dialogue we've been able to inform EPA on some of the
8 things that we and the industry have been doing to keep
9 product in the pipe which is really -- ultimately, it
10 works for both of us, but we're really thankful that
11 Jerome was able to come out to Indianapolis, talk to
12 all of our state partners, as well, about the
13 initiatives of the EPA, and so with no further ado, and
14 I know I can't do justice to your presentation, I'll
15 turn it over to you gentlemen.

16 Agenda Item 7: Climate Change

17 MR. SMITH: Thank you, Jeff. Good afternoon,
18 ladies and gentlemen.

19 I'm Bob Smith with DOT, PHMSA. I think it's
20 important to note that today's panel really is not
21 going to cover all the intricate and complex issues
22 involved with climate change. We're mainly trying to
23 discuss, you know, how pipelines can be impacted by
24 some of the issues we've heard with climate change.

25 I'm joined here, as Jeff mentioned, with

1 Jerome Blackman from the EPA. You'll hear from him
2 shortly.

3 Like Jeff also mentioned, we believe having
4 this panel is very timely, given the recent climate
5 change bills on Capitol Hill, with the greenhouse gas
6 news this week from the EPA Administrator, and with the
7 President's participation this week in Copenhagen at
8 the Climate Change Conference.

9 So for this panel, we'd like to discuss how
10 could pipelines be impacted by climate change, who's
11 really driving the change in focus, how is PHMSA
12 addressing the issue, what can we do about protecting
13 pipelines.

14 Well, the debate is the planet is warming is
15 really the issue. The debate is heated and that's no
16 pun intended, and there's even a scandal with the
17 appearance of some scientists cooking the data, once
18 again no pun intended, but the U.S. scientists agree
19 and are still projecting a .4 to 1.4 degree Celsius
20 warming between now and 2050.

21 They only agree that it takes several decades
22 to trend the data taken from a global measurement.

23 CNN recently reported that the best science
24 says that by 2050, we can anticipate a .5, a half a
25 meter sea level rise. That really puts a lot of port

1 cities at risk. \$28 trillion worth of assets are at
2 risk worldwide.

3 So what about other infrastructure,
4 transportation infrastructure, such as pipelines? On
5 the right, we're participating in a Department of
6 Transportation study looking at the impacts to all of
7 our infrastructure, transportation infrastructure, and
8 with the projection noted from the CNN article and the
9 fact that the Gulf Region is sinking, for the area of
10 concern for the study, as you see in the white area
11 there, basically the Houston, Greater Houston area,
12 east to Mobile, that the areas in red could be under
13 water as much as four feet by 2050.

14 And, in addition to that idea, areas north of
15 those red areas are more susceptible now to storm
16 surge, like we saw in Katrina.

17 This past summer, the House and Senate both
18 passed climate change bills that are calling for big
19 changes in curbing methane emissions and capturing CO2.
20 This is going to mean a big impact for both
21 transmission and distribution operators as well as
22 liquid pipelines.

23 The EPA recently made a previous voluntary
24 program mandatory to report methane releases from
25 transmission pipeline facilities, such as compressor

1 stations, and just this week ruled that they intend to
2 use the Clean Air Act to regulate greenhouse gas
3 issues, such as CO2 and methane, after acting on a 2007
4 U.S. Supreme Court ruling stating that the Clean Air
5 Act can also be interpreted to include greenhouse gas
6 pollution.

7 We've invited Jerome Blackman, who's the
8 Program Manager of the Natural GasStar Program at EPA,
9 to kind of summarize some of the recent activities and
10 actions he's been taking to curb methane emissions from
11 oil and gas pipelines.

12 MR. BLACKMAN: Okay. Thanks, Bob, and once
13 again I want to say thank you to all of you for
14 allowing me to come here today and share some
15 information with you on what EPA has been doing with
16 the Natural GasStar Program which is a voluntary
17 program that's been working with the oil and natural
18 gas industry to reduce their emissions of methane from
19 their operations and so I'm going to go through these
20 slides and I'm going to maybe edit a few of them just
21 because of our time limitation.

22 There was some mention about the mandatory
23 reporting rule and I'll give you some information about
24 this, but what I'm going to do is actually direct you
25 to a website and a phone number and e-mail if you want

1 additional information.

2 But September 22nd, EPA came out with its
3 Mandatory Reporting Rule for Greenhouse Gases.
4 However, the Subpart W, which was the section which was
5 supposed to deal with specifically the oil and natural
6 gas system in the U.S., we got so many comments from
7 the proposed rule back in April, thousands and
8 thousands of comments, that my colleagues are back at
9 the office still going through the responses to those
10 comments. So the rule that came out in September did
11 not include oil and gas.

12 However, our intent is to at some point in
13 time get a rule out and basically oil and gas industry
14 gets a pass of an additional year. So hopefully we'll
15 get the rule out, get final comments back, and the goal
16 is to have oil and gas industry be in a position where
17 they can start collecting their data starting June 1st,
18 2011. So that's the skinny as far as reporting rule
19 for oil and gas industry regarding their methane
20 emissions.

21 Here's a website if you want additional
22 information about the mandatory reporting rule.
23 There's also a telephone number and an e-mail address
24 if you want to submit additional comments or questions.
25 Of course, this will be distributed and made available

1 with the other presentations, as well.

2 So I want to talk to you a little bit today
3 about methane emissions from the oil and gas industry
4 in the U.S. and I'm going to talk specifically about
5 emissions from transmission and distribution
6 operations. I'm going to talk about the technologies
7 and practices that are available that can help
8 companies reduce their emissions and then I'm going to
9 talk a little bit about the barriers that we've seen
10 and heard about from companies that we've worked with
11 in our voluntary program and basically hopefully give
12 you something to think about and consider as you're
13 working with these companies, as well.

14 This is a busy chart, but if you look at that
15 pie chart over here, this is from our Annual Inventory
16 of Greenhouse Gas Emissions for the U.S. This came out
17 in April of this year, and as you can see, after carbon
18 dioxide, which is the majority of our emissions, the
19 second most important gas is methane which represents
20 eight percent of our total greenhouse emissions.

21 If you take the methane emissions and break
22 them out, we know, we have a good estimate of where
23 those emissions are coming from and that green part of
24 the pie there are methane emissions from the oil and
25 gas systems. So out of all the methane emissions,

1 about 23 percent come from oil and gas operations.
2 It's the second largest source of methane emissions.

3 And when we're talking about oil and gas,
4 we're talking about associated gas from oil production
5 and then natural gas all along the value chain where
6 there's inadvertent losses and also process-related
7 losses from equipment.

8 Why do we care about methane? Well, the
9 EPA's concerned about methane because it's a very
10 potent greenhouse gas. Compared to CO₂, it's about 24-
11 25 times more effective as far as retaining heat,
12 trapping heat. So it's a very potent greenhouse gas,
13 and it's also a valuable resource.

14 Methane is the largest component of natural
15 gas and so when we're talking about methane losses,
16 we're actually talking about natural gas losses and
17 anything that we can do to reduce or recover that gas
18 is gas that can get to sales line and get to a
19 customer, get to a consumer. So that actually helps
20 our energy independence, as well.

21 And so that's why the EPA's involved with
22 this because it's an environmental benefit but also
23 there's a positive benefit to the economy we can
24 capture and use this gas which would otherwise be lost.

25 I want to just take a moment here to pause

1 and make sure that you understand we're talking about
2 what we call fugitive emissions which are accidental,
3 inadvertent emissions from loose pipes or connections
4 and then also process-related venting emissions and
5 that's, you know, certain pieces of equipment,
6 pneumatic devices that use the gas and release it as
7 part of their operations.

8 If we look at the transmission sector, once
9 again this is information from our inventory report, we
10 can break down where these emissions are happening and
11 you can see a large part of our emissions in the U.S.
12 are coming from compressors, both reciprocating and
13 centrifugal compressors, and other emissions, as well.
14 I mentioned mag devices and you can see the breakdown
15 here. So we have a pretty good idea of what's going on
16 here.

17 If we look at the distribution side of
18 things, once again we have a good idea of where these
19 emissions are happening. Once again, the majority of
20 it is underground leaking pipes and also emissions from
21 metering and regulating stations. So this is important
22 because, unless we know where it's happening, we're not
23 going to be able to address it.

24 This is just a sampling of the various
25 methane reduction opportunities that are happening all

1 along the value chain here. So if we look at just the
2 transmission and distribution, there are things that
3 can be done. As I mentioned earlier, there's
4 technologies out there. There's best practices out
5 there that can help reduce these emissions and keep the
6 product in the pipe.

7 So just as an example here, you can install
8 vapor recovery units on liquid condensate tanks.
9 There's other things you can do as far as looking at
10 your equipment, on the compressors. You can look at
11 replacing wet seals with dry seals. These are, you
12 know, practices and technologies that are available
13 that we didn't make up. Our companies that we've
14 worked with over the years have reported to us and we
15 actually have information on our website on these
16 various technologies.

17 I'm going to move on here. This is an
18 interesting pie chart here. We work with production
19 companies, transmission, distribution companies, and we
20 collect information from them. Our partners report to
21 us each year on what they've been able to do as far as
22 projects to reduce their emissions and one of the
23 things that we've noticed is that, you know, our
24 production companies do a good job.

25 This pie chart is kind of confusing here, but

1 the solid part of the pie shows the actual missions for
2 that particular sector and the checkered part shows the
3 reductions that have been reported to us for that
4 particular sector. So as you can see, the production
5 guys have been doing a pretty good job reducing their
6 gas loss.

7 But if you look at transmission, their pie is
8 not as great and if you look at distribution, the
9 amount of projects that they've been reporting to us as
10 far as reducing their gas loss is really minuscule in
11 comparison. So we think there's some issues here. We
12 don't think it's just, you know, lack of technology or
13 lack of willingness. We think there's some other
14 issues here that maybe they're facing that don't allow
15 them to do the amount of reductions that other sectors
16 have been able to do.

17 So we're trying to look into this and explore
18 this opportunity and so we at EPA have been talking to
19 the people at PHMSA and DOT and we're also trying to
20 talk to our counterparts at FERC but to see what we can
21 do to address these issues.

22 A couple things have come to light just from
23 talking to our partners. A lot of times the financing
24 of these reduction projects is challenging for
25 companies and just for an example, on the transmission

1 side, transmission company gas movement rates are based
2 on capacity of pipelines rather than on actual loads of
3 gas moved. So, therefore, there's no incentive to
4 reduce gas loss. So basically that's a fancy way of
5 saying that a lot of the pipeline companies don't own
6 the gas. They don't have the incentive to reduce any
7 leaks that are happening on their systems and that's
8 just one example there.

9 On the distribution side, there's also, you
10 know, local distribution companies are much more likely
11 to use capital to expand their base to try to get more
12 customers rather than do improvements to their existing
13 infrastructure.

14 These are things, once again, that we've
15 touched on but we want to explore more and talk to
16 others and see if there's anything that we can do to
17 reduce these barriers and perhaps get more of these
18 technologies and practices deployed in the transmission
19 and distribution sector.

20 So, in conclusion, once again methane is a
21 potent greenhouse gas. It's the largest component of
22 natural gas but methane losses are actually, you know,
23 energy, you know, a waste of energy and we need to do
24 what we can to recapture that energy and make sure it's
25 used properly.

1 There are proven technologies that are
2 available to companies that they can utilize and we
3 need to do what we can do to try to reduce barriers to
4 implementation of these technologies.

5 So that's my presentation. If you want to
6 follow up with me, here's my contact information, and
7 our website is listed here, as well, if you want more
8 information about the GasStar Program.

9 MS. FORD: Questions? Suggestions? Yes,
10 Donald?

11 MR. STURSMAN: In one slide, you had kind of a
12 diagram showing what percentage of methane emissions
13 came from various places in the gas distribution
14 system, like so much from cast iron main, so much from
15 meter sets. How is that data derived?

16 MR. BLACKMAN: That's basically information
17 that we get from various industrial activities and
18 emission factors for transmission and distribution
19 operations and that's information that's been developed
20 over the years.

21 The EPA, and I believe it was GRI, a number
22 of years ago did a study where they looked at different
23 activities and emissions associated with certain
24 activities and that's how we come up with those
25 estimates for emissions from those various activities.

1 MS. FORD: Jim?

2 MR. WUNDERLIN: You asked a question about
3 distribution companies having, you know, not
4 contributed to reducing methane as much as some of the
5 other sectors of the industry.

6 I would say, you know, looking at our
7 company, I don't believe we -- we're part of the Star
8 Program, the EnergyStar Program, and certainly you
9 follow best practices and submit data, etcetera, and
10 we're very conscious about trying to reduce methane
11 wherever we can, but I'm not sure that, at least for our
12 company, we have a lot of opportunity to, you know,
13 reduce future methane emissions because we don't really
14 -- we've got a very tight system. We've got a very new
15 system.

16 There's not much we can do in our loss on
17 account of for gas is very close to zero. So I think
18 the industry is moving in that direction and certainly
19 are aware of this, but I don't think we have an
20 opportunity to reduce that volume. Maybe some
21 companies do with older systems, but --

22 MR. BLACKMAN: And just by response, I know,
23 you know, companies are different. So your system
24 seems like it's pretty new and tight. I'm not sure
25 that's the case for all distribution companies. A lot

1 of them may have aging pipeline which they're having
2 problems to replace, but we just want to make sure that
3 if there are any policy or structural barriers for
4 companies to do these things, we need to do what we can
5 to reduce them and we're trying to learn more about the
6 lost and unaccounted for because I know how that's
7 accounted for.

8 We're not totally up to speed on how that's
9 handled. So I'm glad you mentioned that.

10 MS. FORD: Jeff?

11 MR. WIESE: I wonder if I could -- just to
12 maybe doubling up on Jerome's point. While we know
13 there's a normal distribution of operators out there,
14 we think, and I hope that you would agree, that the
15 distribution integrity management actually is going to
16 be a significant contributor to this issue.

17 It's providing yet another incentive to
18 operators, maybe some of whom don't have systems quite
19 as tight as Jim's, you know, where they can grade and
20 repair leaks in a normal way, but the other thing, I
21 just wanted for the benefit of the operators, we've had
22 a very robust discussion with Jerome and his colleagues
23 about impediments to operators doing things, like the
24 rate structure in this country, you know.

25 So with no disrespect to anyone, it's just

1 there's -- you know, at a state level and at a FERC
2 level, there are disincentives to allowing companies
3 the rate of recovery that they need in order to
4 undertake some of these significant projects. So I
5 just wanted to point out I think Jerome and his
6 colleagues are sensitive to that and they've continued
7 to, you know, kind of hit on that issue.

8 So it's something that we would be interested
9 in partnering with them more on, providing the right
10 incentive to companies to do the right thing.

11 MS. FORD: Any other questions?

12 (No response.)

13 MS. FORD: The public?

14 MR. SMITH: Five more minutes and then we can
15 conclude.

16 Before I continue, I think it's important to
17 mention PHMSA's current Strategic Plan, we don't really
18 have a clarity on our position for climate change.
19 Climate change has been mentioned a couple times in our
20 Strategic Plan, but in the next edition and with our
21 new Administrator Cynthia Quarterman, I'm sure there's
22 going to be a little bit more clarity on what role we
23 could play into addressing specific issues for climate
24 change.

25 The rest of these slides, I'm going to go

1 through and kind of talk about actions that follow our
2 jurisdictional mission but happen to be related to some
3 of the issues we just heard, talk a little bit about
4 biofuels, hydrogen pipelines, CO2 pipelines, and then
5 want to wrap up on protecting pipelines.

6 When it comes to curbing methane, we agree
7 that our whole regulatory program is about keeping the
8 product in the pipeline. In 2004, as you know,
9 transmission industry programs were further
10 strengthened with our rulemaking to look at finding and
11 fixing leaks.

12 You've heard many times that the DIMP Program
13 also has a program in it for distribution systems to
14 find and fix leaks. We've been trying to understand
15 our biggest problem. We started in 2004 from a dollar
16 amount-based reporting method. We just recently did
17 rulemaking to switch from a dollar amount to a
18 volumetric basis for methane releases, natural gas
19 incident reporting.

20 I know that the number you see up there is
21 not the final number but it was the number that went to
22 press. It would include both unintentional and
23 intentional releases of gas and we feel it would help
24 PHMSA and our partners improve the risk picture here.

25 Once again, R&D, Jerome didn't mention but

1 there were a couple commercialized technologies out of
2 the program of collaborative and co-funded research
3 with the industry that are potential solutions that
4 could be brought to bear to detect methane emissions
5 from your system. Excess flow valves, as you heard
6 before, these, once installed, will reduce the amount
7 of methane that's released in residential incidents.

8 We did rulemaking to increase pipeline
9 capacity on our cross-border pipelines, moving from 72
10 percent SMYS to 80 percent SMYS. Biofuel pipelines. I
11 think it's very important to say that pipelines are
12 very feasible transportation options for biofuels, such
13 as ethanol, biodiesel and biogas.

14 There's been a comprehensive program well
15 underway to remove the known regulatory and technical
16 challenges for ethanol specifically and we feel it's
17 bearing fruit with the idea that KinderMorgan has now
18 been transporting ethanol batched with gasoline in
19 Florida and biodiesel at the level of B2 in Orlando.
20 It says Washington in your handout but it's Oregon.
21 Sorry. I said Orlando.

22 Equistar and KinderMorgan are doing major
23 offloading operations in the Greater Houston Ship
24 Channel area and there's several other pipeline
25 operators conducting batch testing with ethanol and

1 biodiesel. We have a voluntary reporting on that.
2 We've only been able to capture about half a dozen
3 doing batch testing and also the ones that are
4 mentioned there for commercial operations.

5 This is a map of the current systems that we
6 have for biodiesel and ethanol. The ethanol line in
7 Florida that you see there, from Tampa to Orlando, in
8 the Greater Houston Ship Channel there blown up, and
9 the biodiesel line in Oregon.

10 The yellow and orange dots in the middle of
11 the country are the corn-based ethanol production right
12 now. The proposed Magellan Poet New Pipeline, the
13 dedicated line for fuel grade ethanol from the
14 producing part of our nation to the demand center on
15 the East Coast, and we'll populate that map more as it
16 hopefully brings more systems online.

17 Just really quickly on ethanol, we've been
18 doing enormous program with industry to test on why we
19 see a stress corrosion cracking phenomena in the
20 ethanol in this country and not in other countries,
21 such as Brazil who has been moving ethanol in their
22 system for 30 years.

23 We determined chloride and oxygen resolved in
24 the ethanol is the culprit. It initiates cracking and
25 expands current cracks. We've also determined that

1 when you dilute fuel grade ethanol, which is a high
2 concentration of ethanol, down to 10 percent, that we
3 do not see the stress corrosion cracking threat, and we
4 know that if we monitor for oxygen and chloride and
5 exposure times, there's programs that can address the
6 managing the integrity threat as well as replacing
7 items, such as elastomers and other non-metallics, that
8 will swell in the presence of ethanol and leach into
9 the product.

10 Biodiesel. We don't see the same threats
11 like SCC but there's the same quality assurance/quality
12 control issues in batching biodiesel. We're now
13 looking at research to address the performance of
14 corrosion inhibitors when in the presence of biodiesel.
15 We want to see if there's any impact on their
16 performance.

17 Moving on to biogas, this is production from
18 primarily landfill and dairy waste that's scrubbed and
19 turned into something called biomethane which is
20 pipeline quality. The House and Senate climate change
21 bills, as I mentioned before, are proposing mandatory
22 municipal production of landfill biogas. So if you
23 have a landfill in your town, county, state, they're
24 going to have to produce the methane versus allow it to
25 leak to the atmosphere, either burn it onsite, the co-

1 gen, into electricity on the grid or in some cases,
2 already seen in this country, distribute it to
3 residential areas.

4 So that raises some issues with trace
5 constituents inherent in this stuff as well as
6 interchangeability issues that we need some guidance
7 there. There's been a concern of odorant effectiveness
8 when you introduce this biomethane. So we're looking
9 at some work to address some guidance there.

10 Moving on to hydrogen, I'll just kind of talk
11 about hydrogen economy. If you can look at this map
12 for awhile, you kind of get the idea that we have a lot
13 of hydrogen systems in this country but we don't have
14 many miles of hydrogen pipelines and they're all very
15 short with the greatest concentration occurring there
16 in the Texas, Gulf Coast, and a little bit in
17 Louisiana.

18 So if we move to a hydrogen economy, we would
19 definitely need to have new systems brought online to
20 handle the amount of hydrogen since the idea that using
21 the existing infrastructure with seasonal loads and
22 demands may not be possible and integrity threats that
23 you see there are definitely issues, but it's been
24 jurisdictional with PHMSA for some time now in Part
25 192. We have about 22 operators and about 2,200 miles

1 moving hydrogen today.

2 Carbon dioxide pipelines. Once again, there
3 are a number of systems in the country. Many of them
4 are short distance. We have a few long-distance
5 pipelines shown there in the New Mexico-Texas area and
6 up in Wyoming. There's been a couple new systems
7 proposed to bring CO2 from, I think, the Illinois area
8 down into the Gulf, but when it comes to the issues at
9 hand, to get to a division of climate addressing CO2
10 capture and sequestration, you know, we need to
11 identify how this is going to be used and where it
12 needs to go and how we're going to be able to get it
13 there and that's clearly going to mean some new systems
14 since we're talking about a liquid transportation of
15 CO2 per our 195 regulations. 26 operators and 3,900
16 miles currently.

17 So to wrap up, we talked about protecting
18 pipelines back in the beginning. For the last five
19 years, the World Bank reports that less than 30 percent
20 of its financing for worldwide pipeline projects and
21 pipeline operators have comprehensive integrated
22 climate change consideration as part of their
23 underwriting.

24 So that tells me there's some interest out
25 there and that some pipeline operators are dealing with

1 the issue but what can we do to gain some more momentum
2 on protecting pipelines from climate change?

3 We talked a little bit before about sea level
4 rise. I think it's important to start to look at what
5 are the potential impacts to your systems. You know,
6 what are the areas of impact, ideas of above water now,
7 under water in the future, as well as the idea of
8 addressing storm surge that weren't areas of concern
9 before.

10 Corrosion growth rates. It's pretty
11 widespread data of where in this country over the next
12 30 years there's going to be more or less rain. We
13 don't know if that's going to come to fruition, but
14 that's the projection.

15 You know, how's this impact integrity
16 management programs over the next 20-30 years? And
17 once we kind of identify that first step there, we need
18 to understand how to come up with best practices to
19 adapt and mitigate the issues.

20 So ASME standards for new pipeline
21 construction. I'm going to meet with the ASME next
22 week and I'm going to raise this point, but I think we
23 need to begin to identify things that we can put into
24 design standards to mitigate the issues that we can
25 identify and on existing systems come up with

1 adaptation standards to take these systems to
2 protection them from the impacts that may be
3 identified.

4 And we know through the collaboration and
5 coordination and co-funding of all the actions that
6 we've been doing for all the number of subjects I
7 talked about today, we can definitely remove some of
8 these technical and regulatory barriers, bring
9 solutions to stakeholders and outreach them to the
10 right people.

11 And with that, we can take some further
12 questions on my slides or on Jerome's.

13 MS. FORD: Questions? I'm sorry. Donald?

14 MR. STURSMAN: Are you surprised?

15 MS. FORD: No.

16 MR. STURSMAN: First of all, on hydrogen
17 pipelines, I thought I'd mention one of my projects in
18 my younger days was to actually do a study on the use
19 of hydrogen pipelines and I found that hydrogen
20 pipelines in existence in the time, those that -- well,
21 they basically fell into two classes: those that had
22 all kinds of operational problems for various
23 metallurgical reasons and those that didn't. You also
24 found they fell into the exact same class whether they
25 were government-owned or privately-owned.

1 It turned out that the government designs
2 were designing them just like any other gas system and
3 pipe was operating at a fairly high stress level. The
4 privately-owned systems operated at very low stress
5 level and they didn't seem to have problems.

6 Whatever that's worth, I'll just throw that
7 out. Working for government myself, I always was kind
8 of embarrassed to read that.

9 Also on regarding landfill gas, I just
10 thought we'd have an experience in Iowa that's been
11 going on for years and we're having lots of fun. We've
12 got a landfill. It's in the middle of a town now.
13 It's got gas leaking into adjoining residential areas.

14 There's been two attempts now for industrial
15 use of that gas, both of which have failed due to all
16 kinds of I don't know what kind of stuff they're
17 sucking out of that landfill, but it's had a very bad
18 effect on the boilers and customers really don't want
19 it anymore.

20 So now they're faced with a situation where
21 the gas is beginning to accumulate. They want to flare
22 it, but the story is that EPA won't let them just
23 because of all the garbage, this other garbage that's
24 coming out, I guess no pun intended, all the other
25 stuff that's coming out with that gas that isn't

1 destroyed in the flaring process, so it's releasing
2 some sort of pollutants into the air if the gas is
3 released.

4 So production from landfill, a lot of people
5 seem to think you stick a pipe in the ground, you get
6 gas. There's a lot of issues with the use of landfill
7 gas.

8 MS. FORD: Thank you.

9 MR. SMITH: Just a quick response to that. I
10 think we totally agree. We're working closely with TTI
11 on a couple projects to look at these trace
12 constituents to understand the type of integrity impact
13 both on a metallic system and a non-metallic system as
14 well as some of the issues you're talking about there.

15 So this clearly is going to be a better
16 inventorying. There's an enormous sampling project
17 going on that we're co-sponsoring with the industry to
18 get this done and to look at samples from the variety
19 of landfill gas and dairy waste locations around the
20 country.

21 So I think in the short while, the states are
22 really asking for this information. It was definitely
23 noted at our last R&D Forum. We already had one
24 project underway but we're seeking one right now to
25 further up some of the issues that you talked about.

1 MR. STURSMAN: Because at least our experience
2 with both landfill gas and sewage plant gas, which has
3 been, you know, used for years to provide local power,
4 is that economically it certainly seems preferable to
5 use the -- to find a use for the gas locally. The
6 costs of cleaning it up and shipping it some place are
7 -- have always been prohibitive unless that's changed
8 since. Your best bet is probably to find a local or
9 adjacent use for this gas in its raw btu form.

10 MR. BLACKMAN: I just want to make one
11 comment. I don't know. You may be familiar, but EPA
12 also has a landfill program, the Elmont Program, which
13 deals with identifying landfills throughout the country
14 which might be good for projects for either use of the
15 gas. So if you're not familiar with it, you can look
16 at our website for the Elmont Program.

17 MR. STURSMAN: I can tell you one you can have
18 a lot of fun with.

19 MS. FORD: Any other concerns?

20 (No response.)

21 MS. FORD: Jeff, did you have some final
22 thoughts or are we finished?

23 Wrap-Up and Adjourn

24 MR. WIESE: I do, and I'll be mercifully
25 short. First of all, thank you, everyone, particularly

1 for your indulgence in a couple of long sessions, a
2 little longer than anticipated both times, but, you
3 know, a lot of good dialogue, a lot of good discussion.

4 I also wanted to thank you, Chairman Ford,
5 for helping us out here on five minutes' notice. We'll
6 try to do better in the future on that.

7 MS. FORD: Please do.

8 MR. WIESE: I'd like to thank the members. I
9 understand that everybody, a lot of people have to
10 catch flights.

11 MS. FORD: Yes.

12 MR. WIESE: So it gets hard on the second day
13 at the end, but thanks to all of you who stuck around,
14 in particular. Also thanks to the public. It's
15 waning, but the hardcore people are still here.

16 MS. FORD: Yes, indeed.

17 MR. WIESE: I just want to say a couple of
18 other thank yous. I'd really be remiss if I didn't
19 thank our staff.

20 MS. FORD: Yes.

21 MR. WIESE: In particular, Cheryl, thank you.
22 Cheryl is dedicated to supporting the committee and I
23 know that she puts you guys first. So any rate, our
24 thanks to Cheryl.

25 Also like to thank Cameron who's been sitting

1 over here very ably helping us juggle all these things
2 and John who manages the overall program. Kay
3 McGyver's not here today but she was here and I know
4 she's helped put this stuff together.

5 Of course, our senior staff, Alan Mayberry,
6 you know, Bob Smith, Mike Israni, and people who've
7 come through here, and I guess trying to read my own
8 writing here which is not always easy, I'll skip that
9 part.

10 I'd just close with saying a reminder that
11 we'll be sending a follow-up survey to all the members.
12 We'll be asking you for just a couple of things. Any
13 comments on the Charter. There's a copy in your books.
14 The question of term limits, I'd like your feedback,
15 candid feedback, not for attribution but just want to
16 get a sense of the committee on that one. Suggestions
17 on process improvements, how we can better hold these
18 meetings so they meet your needs as well as ours, and
19 your feedback on policy sessions.

20 I mean, how was today for you, first of all?
21 Is there any way we could do that better, and are there
22 any topics of particular interest you'd like? I know
23 Jim and I were talking about a few and I think we'll be
24 doing a lot more as we approach DIMP and Control Room
25 that will resonate to that and will get some of the

1 information out there.

2 And last but not least, I'd just like to wish
3 you all safe travels and thanks again for coming.

4 So that's it for me, Madam Chairman.

5 MS. FORD: Thank you, Jeff, and I'd like to
6 wish everybody Happy Holidays and it was very
7 informative for me because I got three presenters from
8 this group, Denise and Andy and Jeryl, are going to
9 come to the Illinois Commerce Commission and present
10 early on in the Spring, but this has been very great.

11 Thank you so much.

12 MS. HAMSHER: Jeff, I know that you're trying
13 to finish, but when you recognized Ivan Huntoun, he
14 wasn't in the room at the time he said his
15 announcement. So I thought since he is here and has
16 such a long service, it would be nice to do so.

17 MR. WIESE: Yes. Well, thank you so much for
18 the opportunity to embarrass Ivan publicly yet again.
19 That won't end for a little while because while Ivan
20 tried to announce his retirement, I've got his arm
21 behind his back asking him to stick around for a little
22 bit longer to help me recruit his replacement.

23 Ivan is a source of incredible knowledge
24 within our agency, not to mention honestly, since we're
25 going to embarrass him, he's pretty well loved by

1 everyone. So, you know, we're going to miss Ivan
2 deeply and as long as I can keep him, I'm going to keep
3 him here, but, you know, I know everybody's time comes
4 and Ivan is a gentleman, as always, and I thank him for
5 his service.

6 All right. Thank you, all.

7 (Applause.)

8 (Whereupon, the meeting was concluded.)

9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

