

U.S. DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY
ADMINISTRATION

+ + + + +

TECHNICAL PIPELINE
SAFETY STANDARDS COMMITTEE
(GAS POLICY ADVISORY COMMITTEE)

and

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

+ + + + +

JOINT MEETING

+ + + + +

WEDNESDAY

JULY 11, 2012

+ + + + +

The Committees met in Ballrooms
C-D, Marriott Metro Center, 775 12th Street,
NW., Washington, D.C., at 9:00 a.m., The
Honorable Lula M. Ford, Chair, presiding.

PRESENT:

THE HONORABLE LULA M. FORD, Chair, Illinois
Commerce Commission

TECHNICAL PIPELINE SAFETY STANDARDS

COMMITTEE MEMBERS PRESENT:

DENISE M. BEACH, National Fire Protection

MICHAEL BELLMAN, City of Richmond

J. ANDREW DRAKE, Spectra Energy

RICHARD E. FEIGEL, Hartford Steam Boiler

SUSAN L. FLECK, National Grid

THE HONORABLE WAYNE E. GARDNER, Pennsylvania

Public Utilities Commission

RICHARD F. PEVARSKI, Virginia Utility

Protection Services, LLC

DONALD J. STURSMA, Iowa Utilities Board

RICHARD H. WORSINGER, City of Rocky Mount

JEFF C. WRIGHT, Federal Energy Regulatory

Commission

TECHNICAL HAZARDOUS LIQUID PIPELINE SAFETY

STANDARDS COMMITTEE MEMBERS PRESENT:

LANNY W. ARMSTRONG, City of Pasadena

LARRY J. DAVIED, Magellan Midstream Partners

L.P.

DENISE M. HAMSHER, Enbridge (USA) Pipeline

RICHARD B. KUPREWICZ, Accufacts,

Incorporated

CRAIG O. PIERSON, Marathon Pipe Line LLC

LARRY M. SHELTON, Sunoco Logistics

MASSOUD TAHAMTANI, Virginia State

Corporation Commission

CARL M. WEIMER, Pipeline Safety Trust

ALSO PRESENT:

CYNTHIA QUARTERMAN, Administrator, Pipeline
and Hazardous Materials Safety
Administration

JEFFREY WIESE, Associate Administrator for
Pipeline Safety, Office of Pipeline
Safety

LINDA DAUGHERTY, Deputy Associate
Administrator for Policy and Programs,
Office of Pipeline Safety

ALAN MAYBERRY, Deputy Associate
Administrator for Field Operations,
Office of Pipeline Safety

JOHN A. GALE, Director, Standards and
Rulemaking, Office of Pipeline Safety

SAM HALL, Program Manager, Office of
Pipeline Safety

MIKE ISRANI, Senior Technical Advisor,
Office of Pipeline Safety

CHERYL WHETSEL, Technical Advisory Committee
Manager, Office of Pipeline Safety

KRISTIN BALDWIN, Staff Attorney, Office of
Chief Counsel

JEFFREY GILLIAM, Director, Engineering and
Research, Pipeline and Hazardous
Materials Administration

DANA REGISTER, Pipeline and Hazardous

Materials Safety Administration

CAMERON SATTERTHWAITTE, Pipeline and
Hazardous Materials Safety
Administration

BRUCE B. HENNING, ICF International

JONATHAN VANSCOYOC, Odor-Tech

PHIL BENNETT, American Gas Association

JOHN ERICKSON, American Public Gas
Association

PETER LIDIAC, American Petroleum Institute

C-O-N-T-E-N-T-S

Page

Call to Order 6

Briefing: PHMSA Administrator Cynthia
 Quarterman. 9

Committee Discussion and Q&A. 26

Committee and Staff Introductions 20

Briefing: State of the Pipeline Safety
 Program 26

Jeff Wiese

Committee Discussion and Q&A. 53

Briefing: Member Roundtable - Response to
 the Secretary's Call to Action. 56

Sue Fleck (gas distribution). 58

Craig Pierson (hazardous liquid). 65

Andy Drake (gas transmission) 74

Massoud Tahamtani (state) 90

Michael Bellman (Richmond). 100

Committee Discussion and Q&A. 104

Briefing: New Domestic Energy Reality. 106

Bruce Henning, ICF

Committee Discussion and Q&A. 132

Briefing: Emergency Response Outreach. 151

Sam Hall

Committee Discussion and Q&A. 166

Briefing: Pipeline Excavation Damage
 Prevention Rulemaking 181

Sam Hall

Committee Discussion and Q&A. 205

C-O-N-T-E-N-T-S

Page

Briefing: Regulatory Agenda.213

John Gale

Committee Discussion and Q&A.224

Briefing: NPRM - Miscellaneous Changes to
Pipeline Safety Regulations236

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

2 9:07 a.m.

3 MR. WIESE: Good morning,
4 everyone. Let's see. We're getting a little
5 bit of a late start but that should work out
6 fine. We've got a fairly fluid agenda today.

7 My name's Jeff Wiese. I'm with
8 PHMSA's Office of Pipeline Safety. I've just
9 a couple of quick remarks for you and I'll ask
10 Cheryl and John to remind me of things that
11 I've doubtless forgotten. And then we'll get
12 right into it and I'll turn to my cohort in
13 crime, Lula Ford, and ask her to officially
14 begin the meeting. So we haven't begun.

15 First of all, I wanted to welcome
16 you to D.C. and say that you're glad that you
17 weren't here last week. You know, although I
18 suspect many of you were in the same bit of
19 weather clamp that we were in. But I think we
20 had something like 11 days of 95-plus and
21 about 4 or 5 in a row over 100. And the
22 humidity is sweltering here. So it's been

1 fun. This is quite a break in temperature
2 although the activity level has been pretty
3 high, I will say that. So I want to thank you
4 for taking time out of your day and your work
5 and thank you again for donating your services
6 to the Agency.

7 Henceforth I will probably change
8 this slightly, this slide you see up here.
9 The Technical Pipeline Safety Standards
10 Committee is too much of a mouthful. I have
11 to look up in the air at the acronym to
12 remember what the heck it means. So
13 henceforth I'm going to be referring to these
14 as the Gas Pipeline Advisory Committee and the
15 Liquid Pipeline Advisory Committee.

16 We are forbidden by bureaucratic
17 code from changing the official title but
18 we'll be shifting over. I think it reflects
19 the nature of this committee and how it's
20 changed over the years. It's really become
21 more of a policy and advisory group and so I
22 think it will reflect that. And henceforth

1 we'll revise how we do these and speak about
2 Gas Pipeline Advisory Committee and Liquid
3 Pipeline Advisory Committee.

4 So with that welcome again and I
5 think we'll begin the day. So Lula.

6 CHAIR FORD: Thank you, Jeff.
7 This is a joint meeting of the Technical
8 Hazardous Liquid Pipeline Safety Standards
9 Committee and the Technical Pipeline Safety
10 Standards Committee. That is a mouthful, I'm
11 glad you're changing it. For the record a
12 quorum is present.

13 At this meeting we will be
14 considering the following Notice of Proposed
15 Rulemaking and conducting a vote. The title
16 of the rule is "Miscellaneous Changes to the
17 Pipeline Safety Regulations" published on
18 November 29th, 2012 in the Federal Register.
19 When the time comes to call a vote Cheryl will
20 go over the example and how to call a motion
21 and conduct a roll call. Each committee will
22 vote separately.

1 The meeting is officially called
2 to order. Before starting with the first
3 agenda item please turn off your cell phones.
4 If you wish to speak turn your tent card on
5 its side and state your name before you speak
6 on the record.

7 Certainly our first agenda item
8 will be our briefing from our PHMSA
9 Administrator Cynthia Quarterman.

10 MS. QUARTERMAN: Good morning,
11 everyone. Can you hear me? Good. You are
12 indeed lucky to be here this week and not last
13 week although the heat is always on for us in
14 Washington here as you will hear as I give you
15 an update on where we've been.

16 Before I do that let me first
17 begin by thanking each and every one of you
18 for coming out here today and tomorrow and
19 working with us on these important pipeline
20 safety issues. On behalf of both the
21 President and Secretary LaHood we really
22 appreciate the time and energy you put into

1 these issues. As you know they are extremely
2 important. And I recognize that you're coming
3 in from all over the country to do this. And
4 again, we appreciate your assistance.

5 I want to give a special thanks to
6 those members who were involved in working on
7 the report to America. Carl Weimer, Rick
8 Pevarski, Colette Honorable who's not here
9 today, Massoud Tahamtani, Craig Pierson and
10 Sue Fleck. We really appreciate your efforts
11 on that. It is still a work in progress. I
12 think of it as I go back to my engineering
13 days taking programming language. Fortran,
14 it's sort of in a do-loop going around and
15 around and around. But hopefully that will
16 get completely finished and you will see the
17 results of all your hard work.

18 Since we last met we have been
19 quite busy as you can imagine. At the end of
20 the year the Congress passed one of the few
21 bipartisan acts of this Congress which was the
22 Pipeline Safety Act, a reauthorization act and

1 the President signed it shortly after the
2 beginning of the year. We are very happy to
3 have that behind us and done. There are quite
4 a few good things in that. A lot of
5 compromises were made as well. And for our
6 purposes there are about 40 different mandates
7 that we have to adhere to as a result of that
8 act.

9 In addition to those 40 new
10 mandates we have just come off a series of
11 NTSB hearings where we received 13
12 recommendations related to the San Bruno
13 incident and another 10 recommendations just
14 yesterday related to the Marshall, Michigan
15 incident.

16 We were bragging 2 years ago about
17 how we had whittled down all of our NTSB
18 recommendations and only had six left on our
19 plate. That plate is back to being full again
20 and we are working towards getting those done
21 as well. We also had completely eliminated
22 all GAO recommendations. We now have two

1 since we last met as well as Inspector General
2 recommendations were gone. We now have nine
3 and the Inspector General is in the midst of
4 auditing at least one other program and has
5 another audit on its way. So we have a long
6 list of items to work on.

7 If you do what I did recently
8 which is just to go through the Pipeline
9 Safety website to see what we've been doing,
10 what are our accomplishments over the last
11 over the last 10 years or so. If you go
12 through the list of rules that have come out,
13 the list of advisory bulletins that have come
14 out, the numbers of workshops, the numbers of
15 everything that's gone on and you look from
16 2002 to 2012 you'll see the last 3 years is
17 more than the entire 7-year period before
18 that, probably more than double of that in
19 terms of NTSB recommendations have been
20 closed, IG, all those things. We have been
21 busy, busy folks here.

22 And I have to thank the staff of

1 the Pipeline Safety Program as well who have
2 been keeping up on that treadmill and to Jeff
3 and his team for working very hard on that
4 which means I know that you too have been
5 working hard as well.

6 In addition to responding to all
7 of those different recommendations and
8 suggestions and mandates that we have, we
9 already had an extremely full agenda as you
10 know. We had already put into play the
11 hazardous liquid rules doing a sort of soup to
12 nuts review of that. We had an ANPRM out on
13 the street. We have a Notice of Proposed
14 Rulemaking that we are in the midst of
15 finalizing right now.

16 We also put into play the gas
17 transmission rules and looked at them from
18 soup to nuts. And we are in the midst of
19 drafting a Notice of Proposed Rulemaking
20 associated with that as well.

21 In the meanwhile on the
22 distribution side we just put in place the

1 distribution integrity management program.

2 And many of the states are out and we have
3 been out assisting the states, beginning to
4 audit with respect to those new sets of rules.
5 We also expedited the implementation of the
6 control room management rulemaking and we have
7 been out auditing those for the first time as
8 well. And public awareness, we've been out,
9 our folks have been out doing public awareness
10 audits. So we have been running on full with
11 respect to regulatory initiatives.

12 And that's only what we've been
13 doing externally. Internally, we've been also
14 doing a lot. We -- shortly after the
15 Deepwater Horizon incident we put together an
16 internal team to look at our offshore regs and
17 determine whether we needed to make changes
18 there. So we had a whole offshore action
19 plan.

20 We have a state grant action plan
21 where we're trying to improve the state
22 programs. We have an oil spill response

1 action plan where we're trying to improve the
2 oil spill response program. We have a huge
3 data agenda. We're trying to improve not only
4 the National Pipeline Mapping System but all
5 the data that gets input into that. And to
6 improve our data analysis.

7 We haven't forgotten about public
8 outreach. We've done a lot on emergency
9 response, having an emergency responder forum
10 last December. We're doing a similar pilot
11 program in Georgia. We for the first time
12 issued -- put together a public service
13 announcement on 811. We've had a lot of focus
14 on trying to improve outreach on the "Call
15 Before You Dig" program.

16 And with all that the
17 reauthorization brought us no new money and
18 few new people. Those issues were not really
19 on the table. We didn't discuss them during
20 the course of reauthorization but nothing
21 changed in the act for that.

22 We did an internal analysis of our

1 needs and the President put forward a quite
2 large budget request for Fiscal 2013 that
3 would increase the Pipeline Safety Program
4 substantially, by \$67 million for what is now
5 around a \$100 million program. It would
6 include 150 new positions, almost doubling our
7 inspection staff and increasing our data staff
8 and other support staff.

9 We would have a fuller banquet of
10 things to go forward with our data analysis.
11 We would have more money for research. We
12 would have an investigations unit separate and
13 apart from our inspection unit. It would do
14 a lot of great things for the program.

15 It is sitting with Congress now.
16 We have our fingers crossed but I can tell you
17 that at least in one chamber of the House the
18 reaction was well, you know, nothing's going
19 to happen on this. So we are trying very hard
20 to get the resources that we believe we need
21 to make this program as strong as we would
22 like to see it.

1 You've probably noticed in the
2 press over the past several months there have
3 been an article here and there talking about
4 the fact that the program has always been
5 underfunded and undermanned. On the manning
6 front we are on that as well. We have of 484,
7 135 inspection and enforcement personnel. We
8 have I believe 127 onboard. We have nine
9 offers outstanding. So at some point this
10 month we hope to be at 136 although I will
11 hold my breath I'm sure that people will
12 retire within that span of time that we'll be
13 back below 135. But we are also trying to
14 fill all of our slots as well.

15 We haven't forgot about the
16 Secretary's call to action. If you remember
17 last April he issued a call to action to all
18 operators asking them to repair, rehabilitate
19 or replace the highest risk infrastructure.
20 We have been working hard on that. Later on
21 this week the Deputy Secretary and I are going
22 out to have an event with one operator who has

1 stepped up to the plate and is replacing a lot
2 of bare steel pipe.

3 We look forward to having other
4 operators come in and say they're doing the
5 same. We'll be happy to go out with you and
6 say we support that. Not only will we support
7 it, by saying we support it we will also put
8 our money where our mouth is so to speak in
9 that the President issued an executive order
10 asking all the agencies to work together to
11 try to expedite clearance of projects such as
12 these. And we will do that. We will make
13 sure that to the extent that we can with our
14 federal brethren as long as a project is safe
15 that it will move forward, especially if
16 you're replacing cast iron, bare steel and
17 other pipe that has issues.

18 We also have a number of workshops
19 that have passed and are coming up, and
20 studies on all sorts of things. I will leave
21 all that to Jeff to bring you up to speed on,
22 but just know that our list goes on and on.

1 And we really appreciate the support that
2 you've given us. I think the program, despite
3 the fact that we have had a very bad year from
4 July of 2010 to July of 2011 we have used that
5 as an opportunity to make great changes in
6 this program. Not to say that we are where we
7 need to be, but we are well on our way. And
8 you are a great part of that. I really
9 appreciate it.

10 It's been a pleasure to work with
11 you over the past several years and I look
12 forward to seeing you next time here as we
13 continue to move forward in improving the
14 Pipeline Safety Program. With that I'll turn
15 it back over to Commissioner Ford. Thank you
16 so much.

17 CHAIR FORD: Thank you. And I'd
18 like to publicly thank Mrs. Quarterman. She
19 did visit the Illinois Commerce Commission on
20 August 11th last year. So we were very
21 appreciative of that. Thank you.

22 Let us begin to introduce

1 ourselves. We jumped a little ahead of our
2 schedule. I didn't know what Mrs.
3 Quarterman's schedule was. So you want to
4 start down there with the introduction,
5 please?

6 MEMBER DAVIED: Yes, I'm Larry
7 Davied with the Liquid Committee representing
8 Magellan Midstream Partners.

9 MEMBER STURSMA: Don't Stursma,
10 Iowa Utilities Board, a state representative.

11 MEMBER GARDNER: Wayne Gardner,
12 Pennsylvania Public Utility Commission.

13 MEMBER DRAKE: Andy Drake with
14 Spectra Energy.

15 MEMBER SHELTON: Larry Shelton
16 with Sunoco Logistics representing the liquid
17 industry.

18 MEMBER BELLMAN: Mike Bellman with
19 the city of Richmond Department of Public
20 Utility's Gas Utility.

21 MEMBER ARMSTRONG: Lanny
22 Armstrong, fire chief of the city of Pasadena,

1 Texas.

2 MEMBER PIERSON: Craig Pierson on
3 Hazardous Liquids, Marathon Pipeline.

4 MEMBER FLECK: Sue Fleck. I'm
5 with National Grid and I'm on the Gas
6 Committee.

7 MEMBER TAHAMTANI: Massoud
8 Tahamtani, Virginia State Corporation
9 Commission on the Liquid representing the
10 states.

11 MR. WIESE: We'll come back and
12 have the staff introduce themselves, but maybe
13 we'll finish with the committees if you don't
14 mind.

15 MEMBER HAMSHER: Denise Hamsher
16 with Enbridge Energy Company, on the Liquid
17 Policy Advisory Committee.

18 MEMBER WORSINGER: Rich Worsinger,
19 Rocky Mountain Utilities, Rocky Mountain,
20 North Carolina with the Gas Committee.

21 MEMBER BEACH: Denise Beach,
22 National Fire Protection Association, also on

1 the Gas Committee.

2 MEMBER WEIMER: Carl Weimer of the
3 Pipeline Safety Trust on the Liquids
4 Committee.

5 MEMBER PEVARSKI: Rick Pevarski,
6 Virginia 811 on the Gas Policy Advisory
7 Committee.

8 MEMBER KUPREWICZ: Rick Kuprewicz
9 representing the public on the Liquids
10 Committee.

11 MEMBER WRIGHT: Jeff Wright,
12 Federal Energy Regulatory Commission on the
13 Gas Committee.

14 MEMBER FEIGEL: Gene Feigel,
15 Hartford Steam Board on the Gas Committee.

16 MR. WIESE: I wonder if we could
17 maybe also introduce the staff that you work
18 with so much starting with?

19 MS. WHETSEL: Cheryl Whetsel. I'm
20 the one who does all this pulling you
21 together.

22 MR. WIESE: Jeff Wiese, Associate

1 Administrator for Pipeline Safety.

2 MS. DAUGHERTY: Linda Daugherty
3 with PHMSA.

4 MS. REGISTER: Dana Register with
5 PHMSA.

6 MR. SATTERTHWAITE: Cameron
7 Satterthwaite, PHMSA.

8 MR. GALE: John Gale with PHMSA.

9 MS. BALDWIN: Kristin Baldwin,
10 Office of Chief Counsel, PHMSA.

11 CHAIR FORD: Thank you.

12 Administrator Quarterman wants to give out
13 some service certificates.

14 MS. QUARTERMAN: Yes. We have
15 some new members to the committee this year,
16 but we also have some that have served quite
17 awhile and quite well for us. One is Denise
18 Hamsher. Denise, thank you so much for your
19 service. We have something for you here.

20 I don't know if Paul Rothman is
21 here today. But we thank Geraldine Edens and
22 Dan Martin. None of the rest are here? But

1 thanks to all of them for their work with the
2 committee over the years.

3 MR. WIESE: If you allow me I'm
4 going to add that Denise has served for at
5 least 5 years now is it, Denise?

6 (Laughter)

7 MR. WIESE: Denise began her
8 service to us in 1995 and has been a steadfast
9 member of the committee during this entire
10 time. I'm personally very thankful for her
11 participation in this committee. She was torn
12 and actually thought for years as her work has
13 taken her off towards new projects about I
14 really need to move on, Jeff. I really need
15 to move on.

16 (Laughter)

17 MR. WIESE: And we've sort of held
18 onto her for years because she's been such a
19 strong member of the committee. So I wanted
20 to personally thank you as well for all those
21 many years of service. And you've seen the
22 changes and you've been part of them.

1 MEMBER HAMSHER: Sorry, Denise
2 Hamsher. The first meeting I was on we were
3 talking about operator certification which had
4 been voted by the committee to advise not
5 passing that rule. And I think it took about
6 4 years later before we started using the word
7 "operator qualification" and another 4 years
8 before there was rulemaking, so.

9 MR. WIESE: So I think that proves
10 nothing if not, one, that the committee's
11 voice is important. You know, I agree and
12 particularly speaking personally certification
13 was not the route to go, but it took -- and
14 the second point, change takes awhile. You
15 know, people think that these things will
16 happen overnight. They don't. But if you're
17 doing the right thing and you're headed in the
18 right direction and you make those changes the
19 program is stronger in the long haul.

20 So again, Denise, my personal
21 thanks. And I know I speak for everyone here
22 in thanking you for your service.

1 CHAIR FORD: Now we open for
2 discussion and questions and answers from our
3 first agenda item and that was our briefing.
4 Questions? All right. It looks like we're
5 ready for you, Jeff.

6 MR. WIESE: Okay. Cameron, if I
7 could ask you to switch. I was debating
8 whether to get up and walk around and use this
9 lavalier mike but I'll try it from here so I
10 don't drive you crazy walking around in the
11 middle up there. Okay, yes, you know, these
12 things never work for me because I always end
13 up pushing the wrong button. This one only
14 has four buttons so I'm pretty sure I can work
15 this one.

16 Forgive me a couple of you,
17 particularly my partners with the states
18 because they've seen some of this stuff before
19 and some of the folks with industry have. But
20 I'm cognizant whenever the committee gets
21 together that not all of us get to talk
22 together at the same time. So Carl Weimer is

1 going to give my presentation now at this
2 point.

3 (Laughter)

4 MR. WIESE: Carl and I have been
5 on the podium together so many times that we
6 actually, did we not, the last time we were
7 together said wouldn't it be fun if we just
8 switch, you know. You do mine and I'll do
9 your presentation because we've done it so
10 many times. So Carl, you can tune out for a
11 little while. You might even have heard my --
12 I'll get around to how I titled this Groundhog
13 Day.

14 But I think one of the first hints
15 is while Denise has served so long I really,
16 I've only been here what amounts to 13 and a
17 half going on 14 years, but it seems like a
18 long time. And it seems to me that I've seen
19 before what we're seeing now and that's really
20 kind of a little introductory there.

21 So I've got a couple of opening
22 comments. A little bit about past

1 performance. Forgive me, I do want to because
2 there are so many members of the committee who
3 don't live this day-in and day-out talk about
4 how we got to here and the fallout. A little
5 bit about our priorities and I'll close out
6 about advance and happy to take any questions.
7 I'll speed through this pretty good.

8 If you remember nothing else I
9 think this slide and my opening comments to
10 you, and I said earlier that I believe that
11 we, many of us have worked together the entire
12 time that I've been here. I think we have
13 made great progress, not just good but great
14 progress working together. So as I listen to
15 the commentary, whether it's from the media or
16 NTSB or anyone else they all have angles they
17 want to work, but I think this ship is solid
18 and I think we have a good platform to build
19 on.

20 It has been a tragic and tough
21 couple of years. I'll make some data-driven
22 comments to you in a minute that says I don't

1 think it's indicative of trends that are
2 either, you know, out of control or that
3 require major surgery. You know, we don't
4 need to conduct an autopsy but we do have work
5 to do.

6 Your advice and counsel I think is
7 probably more important than ever before. I
8 do think when I close -- actually I was
9 telling the Administrator after she was done
10 I was tired. You know, after I heard that
11 remark, the comments about all the internal
12 and external, and I'm reemphasizing that with
13 my own comments. There's a lot going on and
14 you comment and advise on almost all of it.

15 I do want to say to you that I
16 believe we can wrest control of our own future
17 but if we don't do that we cede it to others.
18 We cede it to the people who have a particular
19 view on what should be done. Legislation is
20 a perfect example of it.

21 And like Cynthia, I believed that,
22 I think it was in January of 2010 that we were

1 really well positioned to move into
2 reauthorization and come out pretty clean.
3 And the reason that was important is I think
4 that we do have some real interests, things we
5 really want to work on that we think can be
6 meaningful but we also cannot afford to
7 ignore, the Congress, the NTSB, the IG and
8 GAO.

9 I do believe that change is
10 necessary, change is coming, resistance is
11 futile. To stand up and argue about the need
12 to make some of these changes is really just
13 being myopic. You know, some of these things
14 are clear and we see them time and time again.
15 I think we were talking about that. With the
16 NTSB there was nothing particularly new that
17 they said yesterday but we have heard it
18 before, have we not? Whether it was gas or
19 liquid, so it applies to all of us and it
20 requires that we work.

21 I think these themes at least in
22 my own perception are fundamental. The

1 breakdown in risk assessment is, you know,
2 first and foremost in my mind. You know, the
3 simplistic risk assessments that we've seen.
4 Maybe it's natural in the evolution of this
5 whole process but they are overly simplistic.
6 The huge gaps in records that we have seen.
7 How can you do a reasonable risk assessment
8 without those records? I'm sorry, you know,
9 if you don't have them you're skating on thin
10 ice.

11 The inadequacy of the tools that
12 we're using to do assessments, those are
13 clear. Quality assurance and quality control,
14 one of my many priorities from the
15 Administrator but one that I readily grasp.
16 You know, whether it was in new construction
17 when we saw things happening there, whether it
18 were issues the NTSB was talking about with
19 contractors and vendors, the services they
20 provide on ILI, et cetera, a crucial issue.

21 First of all, I do want to thank
22 Lanny for joining the committee. I think

1 Lanny will bring a really seasoned and
2 experienced voice. Lanny, welcome you this
3 morning by saying did you the three ethanol
4 cars that overturned in Columbus where the
5 Administrator is going tomorrow that were on
6 fire? And an issue that we've been working on
7 with Tim Butters, our Deputy Administrator,
8 since before the time he was Deputy. So
9 preparing communities for these responses and
10 emergency -- protecting our emergency
11 responders through appropriate training,
12 crucial.

13 I think other things, our finish
14 work, but whether we talk about safety
15 management systems which clearly we will be.
16 API picked up a recommendation yesterday from
17 -- to be working on SMS. These components are
18 crucial. You know, the executives must be
19 engaged. They can't be distracted with some
20 of the other things, whether it's new work, et
21 cetera. We need to maintain our focus on
22 current work.

1 And one of the things that we
2 spoke with the board members at NTSB about a
3 couple of days ago, they keep asking about the
4 means for getting employee involvement in a
5 program. The means for employees on the front
6 line to communicate to the executives about
7 risk. I think those are crucial.

8 So I'll pick up the speed a little
9 bit. Why do I think that it's Groundhog Day?
10 Because the more things change the more they
11 stay the same. I do believe we have a solid
12 framework. I do believe in having flexible
13 performance-based requirements but if they're
14 not executed well and meaningfully by the
15 industry it is for naught. What we see is the
16 backlash that we see now that is a cry out for
17 prescription. You know, again, a little bit
18 of personal philosophy. I don't know that all
19 that prescription is helpful. It basically
20 warps a risk management scenario and an
21 allocation of a fixed box of resources by
22 saying you must spend them over here whether

1 it's a risk in your company or not. But it is
2 a natural backlash when we have performance-
3 based rules that fail.

4 I wanted to be clear and I talked
5 with some in the industry, 2012 ends the
6 baseline period for integrity management.
7 I've spoken with most of the folks in the
8 industry and Carl Weimer as well about the
9 fact that 2013 we really need to double down
10 on integrity management. Identify the gaps
11 and soft spots and get about fixing them. So
12 Linda Daugherty and I have cutely coined that
13 IMP 2.0. And you'll probably hear that phrase
14 but I think it's meaningful in that maybe we
15 had to get through 1.0 to clear out all the
16 low-hanging fruit. But it's time to step it
17 up a notch in 2.0. Next summer to fall we'll
18 be holding a host of workshops on that topic.

19 So this will be quick, but I do
20 think and I always shout out to Marty
21 Matheson. Some of us remember Marty. She
22 used to beat me every time we'd get in a room

1 about not using data more. So really quickly
2 I want to say this slide which I use
3 frequently and it's public, the bottom trend,
4 it shows about incidents with death and injury
5 long-term progress. You know, I think there
6 are signs for concern but long-term progress.
7 But the risk has been growing at the same
8 time. More throughput, energy consumption's
9 going up, pipeline milage is going up,
10 population is encroaching on these pipelines.
11 So I think it's something we should at least
12 recognize that there has been good long-term
13 performance.

14 Incidents involving death or
15 injury also -- I don't mean to mitigate the
16 tragic nature of recent events by bringing
17 this up, but I do think that as a policy group
18 we need to think about longer term. The
19 trends are positive. Again, there are things
20 we need to focus on in recent years.

21 Same is true for injuries. The
22 spike off the chart in 1994 I believe had a

1 lot to do with an accident down in Texas where
2 there were an incredible number of
3 hospitalizations but it was a different
4 definition. But take a look at the last
5 couple of years here as Carl always points out
6 to me.

7 Fatalities, same thing. Progress
8 being made slowly over the years but the last
9 couple of years, cause for concern. Same is
10 true for liquid pipeline spills.

11 I just really quickly point out
12 that we, as the Administrator pointed out of
13 course 2010 was a watershed year for us. You
14 know, a fairly significant number of
15 fatalities and injuries, 70 percent of which
16 impacted the public. Those are important
17 things to think about. I think our tools for
18 intervention whether it's a public or a
19 workplace issue are different. So knowing
20 who's being impacted and how. Other than
21 that, you know, the averages are staying
22 relatively consistent but 2010 was a

1 particularly bad year.

2 I think it's important for us to
3 focus as well on where are these consequences
4 occurring. Gas distribution for obvious and
5 logical reasons both in terms of milage and
6 proximity to people are where we see most of
7 the fatalities and injuries, somewhere long-
8 term over three-quarters.

9 I will say that we get much more
10 focus on the transmission side whether it's
11 the media or otherwise, the Congress on
12 transmission because of the sort of stellar
13 nature of the failures that occur there. But
14 again, just making sure we have the data in
15 front of us.

16 So quickly, how did we get to
17 here? It's my view that whenever
18 reauthorization comes afoot everybody starts
19 paying attention to pipeline issues for a
20 limited period of time. This reauthorization
21 was drawn out. It was supposed to have been
22 done a year before it was. In the interim we

1 end up with Deepwater Horizon. And I can tell
2 you from inside Government there was a lot of
3 naval-gazing going on after Deepwater Horizon.
4 We are the only entities really in DOT that
5 handle oil and so there was a fair amount.
6 The Administrator asked us to double down.
7 Some people in Congress asked her to double
8 down. And we spun up many of the things that
9 she spoke to you about, whether it's offshore
10 action plan, looking at our oil spill response
11 plan. But the environment was fairly
12 polarized as you can imagine with the tragedy
13 of the nature of Deepwater Horizon and the
14 media was feeding on it.

15 We then encounter a spate of very
16 high-consequence major events by any
17 definition, tragedies, in Marshall, Michigan,
18 San Bruno, Allentown, Philadelphia,
19 Yellowstone, excavation fatalities in Georgia,
20 Texas, North Dakota and more. You know, there
21 were still a lot of these. That was just
22 feeding this environment and I think it set us

1 up for this damage from what I would say weak
2 links and poor performers, you know, and
3 tragic outlier events, you know not
4 indicative.

5 Clearly I think it didn't take the
6 Secretary and the Administrator long to say
7 what's going on here. Secretary asked us the
8 Administrator and our Agency to kind of get
9 all parties on deck in his call to action.
10 We'll hear more about that in a minute.

11 There was a push for regulatory
12 framework fortification. And I think moves,
13 whether it's from NTSB or from inside or from
14 the advocacy community for more prescription.
15 Stronger oversight, although as the
16 Administrator has said without any offer of
17 additional resources, just be stronger, you
18 know. The case made for -- I think a really
19 strong case made for pipeline infrastructure
20 reinvestment.

21 We've partnered with our state
22 partners both at the NAPS level and the NARUC

1 level as well as our partners at FERC to try
2 to accelerate that by working both sides. And
3 that is I think an emergence of the economic
4 regulator's role in the overall safety
5 equation, I think it's one they recognize and
6 are embracing. So a lot of things happening
7 there.

8 NTSB delivered their findings on
9 San Bruno. Then the Congress finally
10 reauthorized us with a name none of us can
11 pronounce so we'll just say the Pipeline
12 Safety Act of 2012 although most of the work
13 was done in '11.

14 A ton of new mandates, no new
15 resources and in my view most of the rules
16 they called for were to be done within 2 years
17 including the studies. We're late before we
18 began.

19 So 4 more years. I won't dwell on
20 this. I think by now most of you know what
21 happened in reauthorization. I put it in here
22 for the few of you who really don't have to

1 pay attention to this on an ongoing basis but
2 it touches a lot of things that I've already
3 alluded to.

4 Whether it's stronger enforcement
5 --- thankfully they returned our oil spill
6 enforcement authority. We'll be hearing more
7 on that later. They helped us -- a lot of
8 these were part of the administration's bill
9 to begin with. All of the congressional bills
10 built on the administration's initiative and
11 we did want to put more focus on excavation
12 damage. So you'll hear more on that. I know
13 we have presentations on that later.

14 As we told the NTSB board the
15 other day we take seriously their
16 recommendations. We intend to address, try to
17 address all of them. The board has recognized
18 that a few of these are heavy lifts, heavy
19 lifts. We do have cost-benefit that we do
20 have, we have requirements in the
21 Administrative Procedures Act that we need to
22 comply with. So be that as it may we've begun

1 work on all of these things. We'll be getting
2 into a bit of this.

3 Cynthia talked about cast iron,
4 you know, bare steel, replacement of things.
5 There's again good progress being made here.
6 We intend to shine a little more transparency
7 on some of those issues and get the data out
8 publicly. Hopefully that will help.

9 Studies galore, you name it.
10 We've already begun the valve and leak
11 detection studies. We have commissioned a
12 study from the National Academy of Sciences on
13 the risks of dilbit transportation. And we
14 have been working on gathering line issues for
15 a long time. And I will tell you that is on
16 our priorities scheme but it is difficult
17 right now to find the oxygen in the room to
18 get movement on it because there's so much
19 else going on.

20 This Friday we'll have a public
21 meeting on something that came out of the act
22 about the limitations on the use of national

1 consensus standards. So if you're at all
2 interested in that issue you can either dial
3 in on a webcast remotely and that's on our
4 PHMSA website, you can get the information on
5 it, or you can attend. It will be at the DOT
6 building.

7 I just have to emphasize again,
8 you see all the expectations growing, things
9 that will be getting done. The resources are
10 not commensurate with that. I don't mind
11 being very public in saying that I don't
12 understand that equation. There's a lot of
13 work that people want done but they're
14 unprepared to fund any of it.

15 So be that as it may I wanted to
16 thank the administration, particularly the
17 Administrator because I see this stuff play
18 out internally. The Administrator is very
19 influential in getting this request to
20 Congress. It's the first time I've seen in my
21 career here where we actually had a request
22 that could have made a difference. I

1 understand people don't want to pay for that,
2 but the work needs to be done so my thanks to
3 Cynthia and the administration for at least
4 trying on that.

5 Fallout continues in `12. We
6 just, many of us listened through a morning-
7 long session with the NTSB yesterday
8 delivering their report on Marshall, Michigan.
9 Their report, the synopsis is out now on their
10 website so you can get to it with their
11 findings and their recommendations.

12 Overall again I don't know that
13 too much new in that but you know, there was
14 a little bit of hyperbole. You know, when you
15 call things weak and you don't take a look at
16 how the resources are spread I'm not sure I
17 understand that one myself, but it is what it
18 is.

19 They have two more things coming
20 forward on Romeoville, Illinois, and I forget,
21 is it Plant City? In Florida. So a couple
22 more reports. I don't know that those will

1 even be board meetings or they'll just be
2 presented somewhere else. They're not major.
3 So the good news on the NTSB front is I think
4 most of the waves have crashed on that and
5 we'll be doing cleanup for a bit.

6 The IG did weigh in recently on
7 their hazardous liquid pipeline, their view on
8 integrity management for liquids. Alan
9 Mayberry, my deputy for field office is here
10 and he'll be presenting on that in the liquid
11 committee. They're now actively auditing our
12 state program so it will be interesting to see
13 where they go with that.

14 Two thousand twelve and beyond,
15 I'll try to make this fast. Cleanup as I
16 mentioned, I still think it's fair to say that
17 we believe it's important to address all of
18 these mandates and recommendations. It is not
19 prudent to leave that stuff on the table 4
20 years from now when we walk into
21 reauthorization and have undone items. It
22 does constrain our ability to do other things

1 that we would like to do, but I think it's a
2 necessary evil. So we'll be dealing with a
3 lot of new audits, the IG and GAO.

4 And a point that shouldn't be lost
5 on anyone is that together, and I know you all
6 had a hand in this, we have enacted a series
7 of regulations over recent years that we are
8 just now operationalizing. You know, we have
9 gotten out -- we haven't finished control room
10 yet. Even the first round of control room, we
11 haven't finished distribution integrity
12 management, the first round. We haven't
13 finished public awareness, the first round of
14 oversight. Those are necessary elements in
15 making sure that we have strong programs.
16 Alan will talk a little bit.

17 We're moving to an integrated
18 inspection format. We've been focused on new
19 construction, risk assessments, records,
20 damage prevention, something we can't afford
21 to give up. Keep focusing on that. PIPA. I
22 know Carl and we share an interest in trying

1 to advocate for better land use planning our
2 pipelines.

3 And then lastly, follow-through on
4 quality management system issues and fitness
5 for service. As the Administrator mentioned,
6 one of our top priorities is laid out in the
7 first couple of pages here -- I'm sorry, first
8 couple of bullets. We're going to finish our
9 excavation damage NPRM. We're pushing that
10 hard. The liquid rule is moving. I'm hopeful
11 to see that in the not-too-distant future.

12 Our pipeline enforcement
13 rulemaking we hope to get through final phase,
14 hope to get through final phase this year.
15 But I know our staff is hard at work at it and
16 our counsel's office is hard at work, John's
17 folks. So that's moving. The gas rulemaking
18 as you mentioned.

19 We're picking up a lot of items
20 from the Congress and the NTSB in those. I
21 think it's probably important and fair to say
22 that we didn't wait for the NTSB or the

1 Congress. As these issues came forward we
2 moved on them before we had the bill or before
3 we had the NTSB findings. So a lot of things
4 that are coming up there that I guess I won't
5 dwell on for fear of taking too long on this.

6 When I say capacity permitting I
7 say these are important issues. They're
8 things we need to be working on but there are
9 only so many of us to go around. Whether it's
10 gathering lines which I know that I share that
11 with Cynthia, a commitment to moving forward
12 to regulate risky rural gas gathering in
13 particular. It needs to happen.

14 Larger application excess flow
15 valves. We're making good progress on that.
16 All these other issues, anything -- the
17 incorporation of consensus standards as I
18 mentioned, we'll be dealing with that a lot
19 more on Friday.

20 There are things that I'd love to
21 be getting to, risk management, class location
22 dilemma. You know, how do we deal with HCAs.

1 You know, what's the future of integrity
2 management. I think we will make good
3 progress on that but it may take a little bit
4 longer. Studies galore, as I mentioned.

5 I think I covered most of these.
6 We're doing a study right now on the depth of
7 cover over inland water crossings. Obvious
8 fallout from Yellowstone and the record
9 flooding that we had last year. Anything else
10 to call out there?

11 I think things that you'll be
12 interested in, in the excavation damage and
13 the role of exemptions, that's a hotly debated
14 little topic. You might think on the surface
15 that it's a minor issue, but as we talk with
16 our friends. You know, some of the states by
17 the way, a couple of them have it in their
18 state constitution. So, yes. It is not an
19 easy issue. It seems like it should be and I
20 think we're all proponents of preventing
21 damage to underground facilities. So it's a
22 question of how we get that done, how we

1 address the role of exemptions.

2 And you'll hear more of the -- is
3 it the 18th and 19th, Linda? Yes, sorry, the
4 R&D Forum, I keep forgetting. The 18th and
5 19th you'll be hearing a lot more of some of
6 these issues play out as we get into our
7 Research and Development Forum here in town.
8 Oh, there we go, July. I forgot to put the
9 date.

10 We'll be dealing with something
11 that a number of people in the room have been
12 working for awhile on and the NTSB as well.
13 The whole issue of data and metrics, you know,
14 getting those out there. Yes, sorry about
15 that. I grabbed an old slide this morning as
16 I was throwing these together. So the dates
17 again, Linda?

18 MS. DAUGHERTY: Tentatively we're
19 looking at October 29th and 30th, right before
20 Halloween.

21 MR. WIESE: Okay. So and the
22 National Academy of Sciences will be doing

1 some public meetings this summer. I believe
2 that July 23rd is the first one on the risk
3 associated with pipeline transportation of
4 dilbit.

5 So with that, that's sort of --
6 let me summarize and close by saying I hope
7 that between the Administrator's presentation
8 and mine, and things that you'll get the rest
9 of the time that we're together here, there's
10 a lot to do. There's a lot of work before us.
11 We're going to need your advice and thoughtful
12 advice going forward in order to achieve a lot
13 of this. So again I close by saying I thank
14 you for your service to date and I'll thank
15 you for your service going forward. And thank
16 you.

17 CHAIR FORD: Thank you. Wayne --
18 Commissioner Gardner?

19 MEMBER GARDNER: Thank you, Madam
20 Chair. Jeff, is your presentation going to be
21 made available?

22 MR. WIESE: It is. I'm sorry, we

1 should have stated that up front, Wayne. We
2 will put all the presentations on the docket,
3 we'll send them to all the members. I should
4 have finished it in advance but as you might
5 have saw I was working on it this morning, so.
6 All right.

7 MEMBER GARDNER: You have some
8 good information in there that I want to
9 borrow.

10 MR. WIESE: Very good.

11 (Laughter)

12 CHAIR FORD: Any other questions?

13 MEMBER KUPREWICZ: Rick Kuprewicz
14 representing the public. I guess I'd -- my 40
15 years of experience, one consistent factor
16 that I've seen, groups of very smart people
17 end up doing the most craziest, stupidest,
18 reckless things is you try to do too much with
19 too little. As a representative of the public
20 I cannot underscore our support for PHMSA not
21 to try to do everything. I know it's tough to
22 push back on some of that stuff.

1 I think one of the questions we'll
2 be asking is what are your priorities and are
3 they in synch with what we're observing. And
4 I'll give you a very clear example of how the
5 resources got so spread thin they got
6 distracted and that's in California. Clearly
7 that safety regulatory agency lost its way and
8 whose fault it was is someone else's
9 determination. But you know, that bill is at
10 least \$5 to \$10 billion and probably more and
11 the question is who's going to end up paying.

12 So as a representative of the
13 public I'm going to be asking throughout the
14 week in other discussions, and you don't have
15 to give me all the answers but I'd -- what are
16 your priorities and are they in synch.
17 Because you just can't do everything and
18 they're not giving you the support and the
19 resources. And that's the last place we'd
20 like to see your Agency be.

21 CHAIR FORD: Jeff, did you have a
22 response?

1 MR. WIESE: Well first of all, I
2 want to thank you for that comment. The
3 challenge for us, Rick, and I think you know
4 this is there is no shared set of priorities.
5 It's our job to determine those. But I will
6 be honest with you and say that legislation is
7 made up of a lot of different people's
8 priorities. So to them the issues they put
9 forward in legislation for example are really
10 important. They want to see that done.

11 The oversight that's sure to
12 follow, you know, in the congressional
13 hearings, really what you have is members
14 going after the issue they put into a bill.
15 So I think, you know, the Administrator has
16 been very clear about that issue and I think
17 she's prioritized our work in terms of the
18 regulatory initiatives we have underway.
19 They're pretty far-reaching, you know, a lot
20 of these regulatory initiatives. These aren't
21 light lifts and we'll have some pretty heavy
22 discussions as we get into some of these.

1 But I wanted to thank you for the
2 comment because I do, like you I'd like to
3 stay alive and I think that if we try to do it
4 all at once it's not possible.

5 CHAIR FORD: Any questions?
6 Comments? Moving to agenda item 3. Jeff will
7 facilitate this.

8 MR. WIESE: You know, I asked and
9 several groups have taken actions in response
10 to the Secretary's call to action. This
11 morning you've been hearing about a lot of
12 people's reaction, their points of view, what
13 needs to be done. You've heard me, you know,
14 as the Administrator might tell me complain
15 about the workload that's yet to be done. But
16 it's not just on PHMSA, it's on a lot of
17 people. And I think that a lot of groups have
18 been reacting to the Secretary's call. So I
19 thought it would be useful for this morning.

20 I'm aware of three groups taking
21 official actions so I've asked them to comment
22 but at the same time to allow others to speak,

1 you know, as you will, as Lula said by putting
2 your tend card up. So this morning I've asked
3 maybe just in this order we've got Sue there
4 and then Craig and then Andy to speak. And
5 then Massoud is going to follow that.

6 So we have Sue representing really
7 the gas distribution side, Craig - the
8 hazardous liquid side, Andy - gas transmission
9 and Massoud, our state partner. So with no
10 further ado just turn it over to you, Sue.

11 MEMBER FLECK: Sue Fleck. Thank
12 you, Jeff. And I'll just wait for the
13 presentation to get up. And I do need the
14 clicker. Thank you. It's the one -- thank
15 you.

16 So to put in perspective the
17 distribution companies I'll just give you a
18 little bit of background. American Gas
19 Association was founded in 1918 and it
20 represents local natural gas distribution
21 companies that cleanly fuel the way of life of
22 177 million American households nationwide.

1 Member companies that are a part
2 of the American Gas Association deliver about
3 92 percent of the natural gas in the United
4 States so when you look at the commitment
5 coming from the AGA member companies it really
6 does cover most of the natural gas
7 distribution business.

8 Today natural gas meets almost
9 one-fourth of the United States' energy needs,
10 another little piece of information. So the
11 goal of the natural gas utility business is
12 safe, reliable delivery of natural gas to
13 homes and businesses at affordable and stable
14 prices.

15 So, AGA has a variety of
16 initiatives underway to improve safety and one
17 of these initiatives is AGA's commitment to
18 enhancing safety. We do have a handout that
19 will be passed around. I've made copies.
20 Hopefully there's enough for everybody. It's
21 got a little more detail than I'm going to
22 cover in this presentation but I am going to

1 hit the highlights here for you right now.

2 AGA's board adopted this voluntary
3 plan to enhance safety beyond legislative and
4 regulatory requirements. It highlights AGA
5 and the member companies' commitment to
6 enhancing pipeline safety. Commitments
7 include proactive collaborations to improve
8 safety, supporting reasonable regulations,
9 specific actions to help ensure the safe and
10 reliable operation of the nation's almost 2
11 and a half million miles of natural gas
12 pipelines. And we recognize the significant
13 role that the state regulators play in
14 supporting and funding these actions and
15 additional actions we'll be taking over time.

16 So I've picked out a couple of
17 sections to kind of highlight. The first one
18 is building it safely. And around
19 construction we've committed to expanding OQ
20 requirements to new construction activities,
21 reviewing oversight procedures and confirming
22 operator practices and procedures are being

1 followed appropriately. On emergency shutoff
2 valves we're expanding the use of EFVs to
3 branch services, small multifamilies and small
4 commercials. This is beyond where we were
5 before which was just the single family homes.

6 We support risk-based installation
7 of remote control valves and automatic shutoff
8 valves, sectionalizing block valves for new
9 construction and we are in the process of
10 developing guidelines for considerations of
11 these remote control and automatic shutoff
12 valves on the transmission lines that are
13 already in service.

14 Around operating safely on the
15 integrity management front we are advancing
16 integrity management programs and principles.
17 This is a constantly evolving process and will
18 continue to grow over time. We're
19 collaborating with a multiple number of
20 stakeholders to develop and promote effective
21 cost recovery mechanisms across all the
22 states.

1 We're developing guidelines for
2 better data management, lots of room for
3 improvement in that area, supporting processes
4 and guidelines that will enable tracking and
5 traceability of the components that make up
6 these distribution systems. On the damage
7 prevention side we are in support of strong
8 damage prevention laws and improving operator
9 and excavator engagement.

10 On maintaining safety, a lot going
11 on in this area mostly around sharing
12 knowledge between the companies, engaging
13 stakeholders, and when we engage our
14 stakeholders we try to find ways to
15 communicate more effectively with fire
16 departments, police departments,
17 municipalities, you know, the list is endless.
18 Partnering with emergency responders to
19 improve coordination. More drills, more
20 activities, more face to face meetings.
21 Increasing awareness of PIPA and risk-based
22 land use options, been going on for quite some

1 time.

2 And always looking at advancing
3 new technologies, increasing investment in
4 support of pipeline safety R&D. Plenty of new
5 efforts around this area and hopefully some of
6 these new products will come to the
7 marketplace soon.

8 Other AGA actions taken to raise
9 the bar on safety is in addition to this
10 commitment the AGA board of directors early
11 last year adopted a safety culture statement
12 that lays out the expectations that all AGA
13 members as well as contractors and suppliers
14 are expected to place the highest priority on
15 safety. You can find the safety culture
16 statement on the AGA website if you're
17 interested in seeing it. I don't have a copy
18 of that here with me today.

19 We're also actively engaged with
20 other stakeholders in an effort to improve on
21 information-sharing, including best practice
22 programs that allow companies to benchmark

1 themselves against each other's and identify
2 better, more effective ways of addressing
3 specific issues and performing work in the
4 field.

5 There's an executive leadership
6 safety summit held by the AGA board of
7 directors safety committee discussing lessons
8 learned from incidents across the country and
9 innovative initiatives to improve on safety.

10 There are a number of publications
11 including annual employee and vehicular safety
12 data that are widely read and a number of
13 companies use that data to figure out who the
14 best companies are and how they can learn from
15 them.

16 And an SOS program where a company
17 can seek an answer to a specific issue from
18 all the other member companies in a quick way.
19 So, that's been very, very helpful. And this
20 is not an all-inclusive list, this is just to
21 give you some ideas of the things that we're
22 doing to improve on information-sharing.

1 And with that, I tried to be
2 brief. There is plenty of more detail in the
3 paperwork that I passed around but I will
4 entertain any questions if you have any.

5 CHAIR FORD: Any questions for
6 Sue? If not, Craig.

7 MEMBER PIERSON: Thank you. If
8 you would, you've got a handout in front of
9 you, it looks like this. And I apologize,
10 some in the audience -- it's been passed out.
11 But if you can follow along with these
12 handouts. We don't have the visual
13 presentation.

14 I'm going to begin with a
15 discussion about data. If you turn to the
16 first slide you see at the upper left it's
17 number of incidents per 1,000 miles. This is
18 information based on the Pipeline Performance
19 Tracking System. This is data that the
20 liquids industry began gathering in 1999 and
21 it encompasses 137,000 miles of pipe compared
22 to the 177,000 miles of regulated pipe. This

1 is voluntary reporting of spills greater than
2 5 gallons.

3 And in this particular graph this
4 normalizes over 1,000 miles of pipe on onshore
5 right of way. We look at pipe beyond onshore
6 right of way but for the purposes of this
7 committee's discussion we think this is the
8 most important information to be looking at.

9 You can see a significant decline
10 dating back to when we started collecting data
11 and we started implementing integrity
12 management, significant decline. But if you
13 start looking at this is 3-year rolling
14 average data so it makes a nice smooth curve.
15 If you start looking at `05, `06 and `07 you
16 start seeing a leveling off. And we were
17 seeing the same thing. This is our voluntary
18 data. We were seeing the same thing in `07,
19 `08 and we began -- what is going on here.

20 One of the conclusions we drew is
21 that we would not have achieved this steep
22 decline had we not applied integrity

1 management beyond HCAs. We got rapid
2 improvement because we were looking at all of
3 our systems, and it drove that. And clearly
4 we've got a decline. If you slide to the
5 other, you go upward and it's a matter of
6 changing the scale, clearly in '05, '06, '07,
7 '08, '09 there has been some improvement but
8 no doubt it has leveled off.

9 If you flip the slide to -- go to
10 the next one in the upper lefthand corner it's
11 numbers of incidents. Now, this is not
12 normalized. Raw numbers of incidents. And
13 what you see is the red line is not -- it's
14 not average, it's the incidents per year. The
15 dashed line is a 3-year rolling average that
16 smooths it out. You still, you see the same
17 decline but you also see some variation and
18 you see that we have leveled off at about 100
19 5-gallon spills or more per year on these
20 137,000 miles pipe.

21 Moving to the right, now we're
22 talking volume. And what you see is an uptick

1 on volume in the most recent years. So
2 incidence has leveled off at around 100 per
3 year and what you do is you become very
4 exposed to large spills become more dominant
5 and that's what you see in the sawtooth in
6 '07, '09, '10. You see the effect of large
7 spills and you'll see that '11 is back down.
8 So uptick on volume relatively leveling off
9 decline on number of incidents. And what's
10 this point to? It points to we need to do
11 more.

12 So, what's more? If you flip the
13 slide to -- you see some cause information.
14 And you see these are numbers of incidents and
15 you see in every category of cause there's
16 been decline, some significant decline with
17 the exception of the far right as natural
18 forces and a very small number of incidents
19 there. But the point with this slide is if
20 you're going to try to improve that leveling
21 off you have to look at a broad array of
22 causal problems, everything from damage

1 prevention to operations to integrity
2 management.

3 So, flipping the slide. When we
4 had the problems in 2010 leadership had been
5 seeing this leveling off and it wasn't
6 difficult to respond to a call to action
7 because we'd been thinking about seeing what
8 more do we need to be doing.

9 We recently issued our safety
10 principles. It's available on the AOPL
11 website and API website. It begins with zero
12 incidents, that's our goal. I think to put
13 that in perspective if you chase perfection
14 you'll catch excellence. And that's the idea
15 behind stating that it's a zero goal.

16 We know that it takes an
17 organization-wide commitment from executive
18 level down to the folks who are doing the
19 work. They need to understand that and they
20 need to understand that we're not just looking
21 out for our employee and contractor safety,
22 but we're guardians of public safety as well.

1 To achieve that you have to have a
2 culture of safety. And it begins with having
3 vision and commitment and the systems
4 necessary that safety is always in the
5 forefront. You've got to learn from
6 experience. You've got to report and you've
7 got to analyze. You've got to trend.

8 Ultimately you have to take that
9 trending and turn it into action. That's done
10 through having systems, management systems
11 built on a plan-do-check-adjust cycle.

12 We know that we ultimately are not
13 going to put a dog leg in that curve unless we
14 use the latest technology. And we've realized
15 after examining ourselves we need to do a
16 better job of communicating with our
17 stakeholders. This isn't just using our
18 mouth, it's using our ears. We need to listen
19 as well.

20 With those principles we've
21 adopted eight initiatives and I'll touch on
22 them briefly. Research and development is one

1 of those initiatives. And one of the things
2 that we've done under that is we've committed
3 to an increase in our R&D spending by a
4 million dollars across the industry. This is
5 an incremental increase, this isn't
6 reallocation of existing funds.

7 We know we need to do better with
8 leak detection. Working on first making sure
9 that all of us recognize rupture and respond
10 to rupture quickly, then moving into higher
11 levels of leak detection.

12 We realize we need to improve on
13 enhanced data integration. With all this, the
14 smart tool runs, we get an enormous amount of
15 information and trying to make sense of it and
16 do the best we can with it. We've got to
17 share, operators need to share how we're doing
18 that. And it's very challenging.

19 One of the things that we are
20 umbrella-ing with sharing practices and
21 lessons learned, we do this in committees. A
22 lot of us participate in a lot of technical

1 committees but we're trying -- we are getting
2 started with an operator-operator, trying to
3 do a home and away. Two operators getting
4 together and getting subject matter experts
5 together and talk about what they're doing.
6 We aren't going to put a dog leg in that curve
7 without improving damage prevention.

8 External communications, speaking
9 to -- we've got to get our message out, but
10 it's also listening carefully to our
11 stakeholders.

12 And one of my personal pets is
13 strategic planning. We need to be looking at
14 what the data says. We need to be planning
15 today what we need to do tomorrow. And what
16 you see here with these eight principles is an
17 effort of strategic planning, but it can't be
18 episodic. It needs to continue.

19 And lastly, emergency response.
20 Clearly there is a need to improve how we work
21 with all of the responders along our right of
22 way. Geography is our enemy. If we were all

1 in discrete facilities that's a much easier
2 problem, but trying to even find out who all
3 the emergency responders are is a task in
4 itself, much less communicating with them.

5 I'm going to flip the page.

6 Safety is a culture. I'm not going to go
7 through all this, but we recognize that beyond
8 regulation, beyond enforcement that we've got
9 to have the right safety culture not just in
10 the industry but within the individual
11 companies.

12 And touching on the last slide on
13 high-tech safety, our technology is continuing
14 to evolve. We need to continue to invest in
15 it. The smart pigs are getting smarter.
16 We've got to do the data analysis ever better.
17 It speaks to integrating the data ever better
18 and clearly we won't put a dent in that curve
19 unless we use technology. Thanks.

20 CHAIR FORD: Thank you, Craig.

21 Any questions for Craig? Seeing none, Andy?

22 Oh, I'm sorry. Commissioner Gardner?

1 MEMBER GARDNER: You'll probably
2 hear his quote on excellence many more times
3 in the future and I'll take credit for it.

4 CHAIR FORD: Andy?

5 MEMBER DRAKE: Thank you. I'd
6 like to just give a little bit of a background
7 on where the gas transmission group is.

8 You know, 10 years ago we sat
9 around this table and put together integrity
10 management 1.0 which I appreciate that the
11 thought is much deeper than the novelty of the
12 sound of that.

13 We all knew that that was a
14 starting point. We wrestled with what that
15 might look like in the absence of having much
16 of a precedence. We bit of an awful lot I
17 think. We made a lot of improvements. I
18 think the data shows that. But I think
19 regardless of what the data shows us over a
20 10-year period we see incidents like San Bruno
21 and we see incidents in places like Kalamazoo
22 River. And we can see we have a lot more to

1 do. And I think it's incumbent on us to step
2 into that space.

3 And I think, you know, those
4 issues garnered a lot of attention from a lot
5 of different stakeholders. It was very
6 polarizing with the media, with the public,
7 with the Congress, you know, with regulators.
8 It was even very polarizing within the
9 operating community.

10 I think when we sat down with the
11 executives within INGAA a year and a half ago
12 in the wake of the incident at San Bruno it
13 was apparent we needed to do something in the
14 absence of any regulation or any pressure from
15 NTSB or others.

16 So we sat down and tried to come
17 up with what are our goals. What are elements
18 that are key to our success? You know, do we
19 sit back and say well, we're good enough,
20 we've reached some asymptomatic level of
21 safety and there's a point of diminishing
22 returns. Or do we really look here at the

1 issues?

2 And I think that what we came down
3 to was, you know, we are -- we share with a
4 few other industries the unfortunate
5 fingerprint of low-frequency/highly
6 unacceptable consequence events. And even one
7 is not okay. And we need to own that very
8 fundamentally.

9 And so to get into that mindset we
10 started looking at other industries and what
11 do they do and what have others done to try to
12 move that needle in that fingerprint, knowing
13 that they're already performing very well.
14 Industry is like the nuclear industry.
15 Industry is like the medical industry.
16 Industry is like the airline industry and the
17 chemical industry.

18 And I think the one thing that we
19 really came back to is the issue of zero.
20 They all shared a goal of zero. And it sounds
21 very novel and we got into a lot of almost
22 kind of esoteric kind of conversations about

1 the reality of such a goal. But I think what
2 really came out of that was the need to drive
3 continuously to improve, that there cannot be
4 rationalization that you're there enough and
5 that that's okay or somehow acceptable because
6 it's not. And I think that was a significant
7 conversation and it really helped underpin
8 where we're -- how we're going from there.
9 You know, and how do you do that, sort of the
10 elements that we felt were key to supporting
11 that fell out of that same thought.

12 And one of them that I think was
13 quite fundamental and perhaps novel to
14 engineers but not unique to those that are not
15 so technically focused is we're great
16 technically but we're not the greatest
17 communicators, and we need to figure out how
18 to reach out to the stakeholders around us and
19 listen to them better and more actively, and
20 actually focus on listening first and talking
21 second.

22 And try to go out and listen to as

1 many of the stakeholders as we could about
2 what they saw and what they felt were
3 opportunities to improve and what was
4 frustrating to them in pipeline safety
5 performance. And that was really quite
6 fundamental in shaping our thinking around our
7 plan.

8 And to Rick's point I think it is
9 a lot about priorities. You can't be
10 everywhere all the time, or nothing's a
11 priority. You've watered down your resources
12 and you're nothing to everybody. And so what
13 is it? What is the right thing to start doing
14 that seems to make the most sense to people
15 and resonates with people? And that's really
16 what we were trying to get input on to help
17 shape that plan.

18 I think in the nine-step program
19 that we put together we tried to hit things
20 that we were hearing from other stakeholders.
21 I think risk management is the right approach,
22 it's the right baseline. I do like the 1.0

1 thought, the 2.0 thought. It's an iterative
2 learning.

3 To Rick's point we prioritize. We
4 started somewhere. We started in HCAs and we
5 started with the best we had. Now we've seen
6 some things that didn't work well. All right,
7 well we've got to not only improve what we're
8 doing on an integrity management, the
9 execution of integrity management, better
10 threat integration, better data, better tools,
11 more robust analysis, better coordination with
12 the public. We also need to be looking at
13 fitness for service of older pipes that had
14 different kind of qualifications and rules.
15 And then we need to -- how do we extend it
16 beyond HCAs? So all at the same time you're
17 looking at those kind of things.

18 And these literally walk down what
19 we felt were some keys to trying to start that
20 process. You know, applying risk management
21 beyond HCAs, raising the standards for
22 corrosion anomaly management work. How we

1 deal with corrosion outside HCAs is the same
2 as we handle it inside HCAs. You pig from
3 station to station. All those anomalies need
4 to be repaired on the same criteria, not just
5 the ones in HCAs. Demonstrating fitness for
6 service for pre-regulation pipe. Shortening
7 isolation response times to 1 hour in
8 populated areas. Getting some kind of
9 standard of performance on how you respond to
10 incidents. Improving integrity management
11 communications and data, implementing pipe,
12 evaluating, refining and improving threat
13 assessment and mitigation. How interactive
14 threats are identified, characterized and
15 managed. Implement risk management systems
16 across the INGAA member companies.

17 I think one of the biggest things
18 that we saw when we stepped out and looked at
19 other industries was a very common element to
20 their step change was safety management
21 systems. It was a culture of zero, a mindset
22 of zero and a supporting -- the supporting

1 elements and an engine around driving that.

2 I think, you know, quite frankly
3 the NTSB is very heavily familiar with the
4 aviation business. The aviation business
5 stepped into a safety management culture,
6 safety management systems, SMS approach about
7 15 years ago. And they -- despite the fact
8 that they were very, very safe they have seen
9 a huge improvement in safety over the last 15
10 years. And I think when we listen to them
11 over the many now meetings we've had with them
12 they point to that as the key to their
13 success. Everything else was a derivative
14 that came out of instituting management
15 systems culture.

16 And we've put a lot of energy into
17 trying to understand what is that. What are
18 the elements of that? And we've written
19 several white papers now documenting what
20 other industries use to get those safety
21 systems to work.

22 And I think the best synopsis of

1 what I see in that is how many of the
2 operating -- well, how many of the people
3 around this table have a safety culture
4 statement inside their companies or inside
5 their entities that's zero-based. Zero-based?

6 (Laughter)

7 MEMBER DRAKE: I'm surprised most
8 of the operators aren't raising their hand.
9 But most of the pipeline operators that I know
10 of, personnel safety has been an absolute for
11 20 years. It's zero. No one is expected to
12 go home in a lesser state than they showed up
13 in, injured, ill, or otherwise. And when we
14 look at what drives those programs you're
15 basically taking those elements out of your
16 personnel safety programs and instituting it
17 into an asset management program. That's
18 probably the cleanest, quickest way I can
19 summarize it.

20 How many people that have those
21 kind of programs do the CEOs see a report
22 weekly on how many people are slips, trips,

1 falls, injury stats? Every week we're
2 upstairs talking to him about slips, trips and
3 falls. Take that to the next step and apply
4 that to your assets where the CEO sees those
5 kind of metrics on that kind of frequency.
6 That's the sort of fundamental.

7 How many of those same companies
8 when you're in your safety programs have a
9 periodic review of performance, maybe weekly,
10 and lessons learned with immediate advisory
11 bulletins out on changes to behavior? Back to
12 Larry's point about, you know, plan-do-check-
13 act cycles. Same kind of application to
14 assets. And those lessons learned I think
15 have been very key for us and they're very
16 cultural, they're very fundamental, but I
17 think that's a different mindset, similar to
18 a different mindset we instituted 10 years
19 ago.

20 So I think it's a both/and
21 proposition that we're looking at here and
22 that is the advent of a more technical base,

1 you know, certainly doing better on fitness
2 for service, doing better on extending
3 integrity management, doing better on
4 integrated threats and better on tools, and
5 better on culture which drives the engine of
6 improvement. And I think those are the kind
7 of things that we're looking at right now.

8 I think these are some significant
9 physical commitments that we have made very
10 out loud prior to regulation, prior to the
11 NTSB hearings is how do we expand integrity
12 management. And what do we do about pre-
13 regulation pipes? And what are we going to do
14 about mitigating consequences and incidents?
15 How fast do we respond? How do you do that?

16 Trying to provide some criteria to
17 the operating group, providing a very clear
18 public commitment on physical activity that
19 will be done starting immediately with some
20 deadlines and to Rick's point I think some
21 prioritization. Start here. Do this first
22 and hit this milestone, then move to this and

1 hit this milestone. Then move to this and hit
2 this milestone. It helps people focus their
3 energies in the place where they provide the
4 biggest bang for their buck.

5 This has required a lot of work to
6 be done. It has required a lot of changes in
7 plans to be made and a lot of physical
8 commitment. I think you alluded to one of the
9 companies already that has made a significant
10 change in their protocols. And others are
11 doing the same thing. And I think that's a
12 very positive sign of action.

13 These are the teams that we have
14 instituted to help execute against that. It's
15 a lot of teams, it's a lot of people, it's a
16 lot of moving parts so to speak but they all
17 feed a common purpose here of trying to
18 advance pipeline safety.

19 I think these are some of the
20 products. You know, the Secretary asked us
21 very bluntly, I want to see actions, not just
22 words. What we have spent a lot of energy

1 trying to do is provide guidance to operators
2 so that we don't get a lot of reckless
3 behavior, inconsistent responses to things.

4 This is what fitness for service
5 means. This is how you evaluate your pipeline
6 against it and this is what you do with the
7 outcome of your analysis. It's not
8 discretionary. You must do certain things.

9 This is what a safety culture
10 looks like. This is how you institute it into
11 your system. This what data management looks
12 like. This is the kind of information we need
13 to drive these programs. These are all one-
14 page reports that we've put together for our
15 executives and for the public. They're
16 publicly available to you and to anybody for
17 that matter.

18 These are work products that we've
19 put into place, workshops and webinars to help
20 disseminate this information, to help try to
21 get some consistency and understanding of
22 these targets and these changes and how to

1 institute them among the operating community.

2 You'll see many of them are joint
3 with API and AGA. I think there's a lot of
4 consistency in our approach. I think you've
5 heard us talk about zero, you've heard us talk
6 about continuous improvement, you've heard us
7 talking about data. That's actually a very,
8 very positive thing. There's not a
9 disconnection in the operating community about
10 that direction. If there was I think that
11 would be a huge red flag.

12 I think you also see some things
13 up there about working with NAPSR and some of
14 the other stakeholders to try to institute
15 some of these things, try to get their
16 opinions about how to put them into play. And
17 these are some of the white papers and
18 technical memorandums that we've issued to
19 provide more detail on how to institute these
20 programs in these areas, to give guidelines
21 and guard rails to the operators about how to
22 plug this into action. You can read all

1 those.

2 Again, these are all available on
3 that website. And I would encourage you, I
4 don't want to carpet bomb you with more than
5 I've already carpet bombed you but there's a
6 lot of information out there. That is done at
7 the request of the Secretary to try to put a
8 solid foot forward, not just a bunch of words.
9 These are physical products to try to provide
10 operators tools on how to executive and
11 institute this.

12 It's going to take awhile I think,
13 Jeff, you're exactly right. It's going to
14 take awhile but we've got to start and we've
15 got to start right now. Thank you.

16 CHAIR FORD: Thank you, Andy. Are
17 there any questions for Andy? Craig, you had
18 your hand up. Oh I'm sorry, Sue?

19 MEMBER FLECK: I just wanted to
20 mention one other thing. A second handout was
21 passed out with my enhancement to safety from
22 AGA. And this is just talking a little bit

1 about the interaction that the various
2 industry organizations are also having to
3 share between ourselves so that we're not just
4 focused -- distribution isn't just looking at
5 distribution issues, but we're also learning
6 from the liquids and the pipelines and those
7 kind of things. So this is also an
8 interesting piece of information to consider.

9 And lastly, the AGA does not
10 represent all the gas that gets delivered to
11 individuals. APGA does as well. And I wanted
12 to say if Richard had anything to add to what
13 I had to say, you know, feel free. Or Mike.

14 MEMBER BELLMAN: Actually, once
15 Massoud's finished his I would like to add a
16 little bit for APGA.

17 CHAIR FORD: Thank you. We will
18 ask that all the presenters please give all
19 their presentations to Cheryl so that she can
20 put them on the web. Massoud?

21 MEMBER TAHAMTANI: Well, good
22 morning. I'm Massoud Tahamtani and I will

1 present to you a brief summary of what the
2 NAPSRS has done. And NAPSRS being association
3 of pipeline safety managers, directors,
4 inspectors and technical support people that
5 partner with PHMSA to encourage and enhance
6 pipeline safety across the nation.

7 Our oversight extends as you can
8 see 96 percent of the 192 jurisdictional
9 intrastate gas facilities, about 32 percent of
10 the 195 jurisdictional intrastate liquid
11 facilities. And then a number of the states
12 act as the agent for PHMSA, nine states for
13 gas and six states for liquid. And our state
14 inspectors comprise over 75 percent of the
15 federal/state pipeline safety workforce.

16 I want to make a comment about
17 what Jeff said. As you notice from his
18 presentation his agenda is overloaded but I'm
19 sure you recognize that anytime his agenda is
20 loaded it impacts every single state. We are
21 loaded.

22 I want to also comment on Rick's

1 comment in terms of priority. We are
2 struggling with setting our own priorities.
3 But as we all know here when industry loses
4 focus on their priority and they've done for
5 awhile. Otherwise we wouldn't be sitting here
6 talking about a safety culture. That should
7 have never gone away from the days when the
8 industry's culture was pay me a fair rate and
9 I will deliver you a safe product. That does
10 not exist today.

11 And I appreciate everyone that has
12 put up their -- I enjoyed your presentation.
13 The safety culture is at the top level with
14 the exception of a few companies we all know
15 about. There is still stuff about the San
16 Bruno in the paper every single day, about the
17 things that they discover.

18 The safety culture doesn't
19 permeate as it used to down to the employee
20 level. And again, I enjoyed the way you had
21 described the safety culture. I see that in
22 my state every single day. So I want you to

1 know that when Jeff is looking at all these
2 demands that's put on him by the government,
3 by Congress, it's not because he's asking for
4 it. It's because -- I don't think he's that
5 crazy. I've known him for a long time.

6 (Laughter)

7 MEMBER TAHAMTANI: It is because
8 the industry fails and the public demands an
9 answer from the government. The public -- I
10 have been in this business for 32 years. The
11 public doesn't want the government unless and
12 when they want the government. And I see that
13 every single day. Now, I invite Don Stursma
14 to comment after this, but Don, try to be
15 positive as the day is still young.

16 Now, having said that in terms of
17 the call to action obviously the states that
18 were involved in these major accidents,
19 they're engaged in investigating those
20 accidents and where appropriate they have
21 taken enforcement action or are in the process
22 of taking enforcement action, and requiring

1 remedial measures. We do investigate every
2 accident that's considered significant. I
3 want you all to know that.

4 But since the Secretary's call we
5 put together a document that is out there now
6 detailing over 1,200 specific actions that the
7 states have taken in terms of rules,
8 regulations, legislation in 22 separate
9 categories to help basically enhance pipeline
10 safety above 192 or 195 in their own states.
11 These actions are in addition to the federal
12 pipeline safety code which we all know is
13 minimum.

14 These actions were to address
15 specific pipeline safety issues, a lot of them
16 risk-based and are specific to those states.
17 And that is the right thing to do. States are
18 closer to the issues, they can work with the
19 operators and try to address those issues.

20 This particular document has been
21 sent to every pipeline safety manager and
22 state commission with the hope and

1 encouragement that they look at it. And if I
2 can learn something from Iowa -- I don't think
3 I will learn anything from Iowa, but if I can
4 I will attempt to.

5 (Laughter)

6 MEMBER TAHAMTANI: Sorry, Don.
7 You notice I only pick on my state partner and
8 no one else.

9 Here is a brief chart to show you
10 the particular -- you can't read it, but the
11 particular code sections where each state has
12 had additional requirements above 192. T the
13 blue bars are all 192, 195 falls on the right
14 side and 191, 190 falls on the left side.

15 Even though NARUC has been engaged
16 in the pipeline safety for years but it has
17 been at the pipeline safety subcommittee which
18 I served on and chaired for a number of years.
19 But now because of the recent issues NARUC has
20 become very committed. Pipeline safety is now
21 an agenda item on the NARUC's gas committee
22 which is made up of commissioners.

1 They have formed a task force that
2 has a NAPS member on it to deal with pipeline
3 safety and try to move the agendas and educate
4 commissioners on for example what needs to be
5 done to replace aging infrastructure. As a
6 matter of fact, for each new Commissioner
7 there is now pipeline safety on their training
8 agenda.

9 As far as damage prevention there
10 is no doubt that every state pipeline safety
11 manager and commission is very committed to,
12 as Jeff said, preventing excavation damage to
13 pipelines as still being the leading cause.
14 Since last April, so seven states have passed
15 enhanced laws. It should be noted that every
16 state has a damage prevention law, but seven
17 have moved to add good things to their laws,
18 and five are working to enhance their damage
19 prevention laws.

20 We are helping through grants that
21 PHMSA has provided to the states on a daily
22 basis to enhance outreach regarding 811 and

1 safe digging practice. It's a constant work
2 that we do. Our inspectors are in the field.
3 They see what is going on and at least from my
4 state my inspector cannot pass an area where
5 an excavator may be digging without marks on
6 the ground or practicing, or not practicing
7 safe digging practices.

8 And of course I serve on the CGA
9 board of directors. We have a number of NAPSR
10 members that serve on the CGA committees to
11 help that particular association do the good
12 work they're doing.

13 Jeff mentioned all the things that
14 we are now trying to do in addition to all the
15 things we were doing. And by the way, we're
16 facing the same resource issues that the
17 Administrator mentioned, more work and the
18 same amount of people to do it with.

19 We are, have begun to do DIMP
20 inspection, a very complicated process. As
21 Linda Daugherty said, any risk management
22 program inspection or the actual program if

1 you do it right, it's difficult. And
2 honestly, I've been involved with four of
3 those and it -- arduous, difficult if you're
4 going to do it right.

5 Public awareness, the same
6 situation. Control room. All of those are
7 new inspections that the states have to
8 conduct. And we are cosponsoring with PHMSA
9 and the industry workshops, meetings and we
10 are on more than 20 task groups. And again we
11 are not like the industry who's got a
12 department for every single thing so they can
13 send somebody to a different meeting every
14 time. We have the same four or five people
15 doing everything and still when the call comes
16 from Linda or Jeff or Zach -- these are all
17 PHMSA people -- hey, we need somebody else for
18 a task force. We've got to get on that
19 bandwagon and get on that task force.

20 We serve on advisory boards with
21 APGA and of course we serve on industry
22 standards such as GPTC. And it's all to stay

1 engaged, to understand the industry's issues
2 and to try to help, help pipeline safety. We
3 have no control about -- we want zero
4 incidents, but honestly zero incidents
5 completely depend on the industry.

6 We are working with our partner
7 PHMSA to determine the most effective
8 enforcement process to ensure compliance. I
9 can speak about Virginia. It has had a
10 rigorous enforcement program since the early
11 nineties. I can't say the same thing about
12 some of the other state partners. I know
13 that's a challenge for Jeff and those states
14 to come up with the most appropriate
15 enforcement process to ensure compliance with
16 the minimum regulations and the risk-based
17 programs.

18 Data quality, we've talked about
19 this. We face the same challenges you do. If
20 the data is not captured properly from the
21 field it is no good to you or us. Again, this
22 committee, the two committees have heard about

1 the challenge associated with that. And I'll
2 be happy to answer any questions.

3 CHAIR FORD: Thank you, Massoud.
4 Are there any questions? Oh, Michael, I think
5 you were going to make a statement.

6 MEMBER BELLMAN: This is Mike
7 Bellman, city of Richmond. I was going to add
8 some things about the American Public Gas
9 Association. So if there are questions for
10 Massoud.

11 MEMBER TAHAMTANI: Well, I think
12 Don wants to say something. Don? I'm not
13 running the meeting, but you know.

14 MEMBER STURSMA: Massoud did not
15 warn me that he was going to ask for my
16 comments and I don't know whether to call them
17 comments or rebuttal.

18 (Laughter)

19 MEMBER STURSMA: But --

20 MEMBER TAHAMTANI: You can't
21 rebuttal your friend.

22 MR. WIESE: Supporting statements.

1 MEMBER STURSMA: But I think he
2 did an excellent job of summarizing everything
3 that NAPSRS has done. You know, Jeff was
4 talking about all the new things that Congress
5 and Inspector General and so forth are asking
6 them to do. Industry is facing many new
7 regulations, new requirements coming down the
8 road.

9 And states are in the middle of
10 all this. We're in the thick of it. We're --
11 a lot of the activities that PHMSA will have
12 to do at the behest of Congress I'm sure that
13 they will want state support and assistance in
14 doing that which adds to our workload.

15 As a result of San Bruno and some
16 other things there is increased oversight of
17 state programs which means that more will be
18 expected of us. And I think it's all part of
19 the larger picture, the response to the
20 Secretary's call for action that just probably
21 like everybody else in this room sometimes it
22 can be a little overwhelming.

1 CHAIR FORD: Thank you, Donald.

2 MEMBER BELLMAN: Mike Bellman,
3 city of Richmond. We are a municipal gas
4 operator and I get to wear two hats kind of.
5 I'm a member of the American Gas Association
6 as an LDC and I'm also a member of the
7 American Public Gas Association as a municipal
8 gas operator. The APGA municipal gas
9 operators of course are much smaller so in AGA
10 I'm a small company and in APGA I'm one of the
11 big guys here. So, but there are a couple of
12 things that APGA would just like to pass on on
13 the commitment to enhanced safety.

14 First is that we do fully support
15 AGA's statements that Sue described and so
16 we're working on the same thing. And the
17 other thing is that we talked a little bit
18 about, I think Jeff mentioned the weak links.

19 And because there are so many of
20 the smaller operators, APGA has reached out
21 and developed the SHRIMP program, Simple,
22 Handy, Risk-based Integrity Management

1 Program. And it's a TurboTax-type system
2 that's available for those smaller operators
3 to do their risk management and their risk
4 integrity threat analysis. So you know, we're
5 active in reaching out to those smaller groups
6 and trying to assist them in whatever we can
7 do for that. And there's over 1,600 operators
8 that have used that program now.

9 And then I guess the other aspect
10 I'd point out. Of course we're, as a
11 municipal we are a part of the city and so our
12 employees, our managers and supervisors are
13 trained in the emergency preparedness right
14 side by side with the fire chiefs and the
15 police officers. We're trained in the NIMS,
16 National Incident Management System, the ICS,
17 Incident Command System. And so you know, we
18 see some of the challenges for the liquid and
19 the INGAA pipelines because you have so many
20 municipals to interface with. But you know,
21 we don't really see that as a big issue in our
22 part of the industry because we're already a

1 part of that. Thank you.

2 CHAIR FORD: Thank you. Are there
3 any other comments or remarks from this member
4 committee before we go to break? Hearing none
5 we'll go to break for 15 minutes. Thank you.

6 (Whereupon, the foregoing matter
7 went off the record at 10:45 a.m. and resumed
8 at 11:05 a.m.)

9 CHAIR FORD: Jeff will now
10 introduce our next speaker.

11 MR. WIESE: Great. Welcome back,
12 everyone. The next presentation is going to
13 be given by Bruce Henning who works for ICF.
14 I'll let Bruce talk a little bit about himself
15 and ICF.

16 I asked for Bruce to give this
17 presentation to really kind of broaden our
18 perspective for a moment. We've been kind of
19 homing in on pipeline safety issues and thanks
20 to everybody who keeps coming up to me today
21 with the articles. This one's the Wall Street
22 Journal, the Washington Post that talks about

1 the blame on the regulators. So thanks for
2 bringing those up, everyone. Like we're not
3 used to that by now. That being said, it's
4 time for -- maybe just to draw back a little
5 bit and think a little more globally about
6 what's going on in this country.

7 I've been impressed and I know
8 most of you have as well with the sea state
9 change that we've had in this country
10 regarding domestic energy. I've worked nearly
11 30 years whether it was offshore or onshore in
12 energy and this has, it kind of blows your
13 mind. I remember the days not along ago when
14 we were worried that we were importing 60
15 percent of the oil that we were consuming and
16 where was it going next, you know. And what
17 does that mean from a geopolitical standpoint.
18 But there have been a sea state change in the
19 country.

20 So just to draw back for a moment
21 before we wade back into the pipeline safety
22 issues I've asked Bruce if he would give us

1 kind of a high-level review of that. So with
2 that I'll turn it over to you. Thank you,
3 Bruce.

4 MR. HENNING: Thank you, Jeff.
5 Appreciate the opportunity. Jeff asked me to
6 spend about 30 minutes to talk to you about
7 some of the nature of these changes.

8 As he indicated I work for ICF
9 International. I'm vice president of energy
10 market and regulatory analysis. And I've been
11 in this business for over 30 years as well and
12 most of my background has been with natural
13 gas. Fifteen years ago I was the chief
14 economist at the American Gas Association.
15 And as Jeff indicated at that point in time
16 the questions really were where's supply
17 coming from. What are we going to be able to
18 do? How are we going to meet those needs?

19 I also do work for the Propane
20 Education Research Council in looking at NGL
21 issues, supply issues, market issues there.
22 And I have colleagues at ICF that work in the

1 crude oil markets and the product markets.
2 And what I'm going to try to do today is talk
3 a little bit about some of the changes, just
4 to give an understanding of what's really
5 going on and then some of the implications it
6 has for natural gas and liquids, pipelines,
7 infrastructure and the kinds of challenges
8 that are likely to happen over the next 15-20
9 years or so.

10 Being a publicly traded company
11 and having forecasts here this is our
12 disclaimer. It says that everything that you
13 hear me say I did say but it may be wrong.
14 But that doesn't mean that it's not worthwhile
15 understanding the nature of how these
16 forecasts work.

17 Now, I'm an economist and
18 economists we all know are analysts good with
19 numbers that didn't have the personality to
20 become an accountant. But I'm also a student
21 of history in terms of how we look at markets
22 and where those were.

1 This is a plot that goes back to
2 2000 of natural gas prices at Henry Hub. As
3 you're all probably aware the Henry Hub is
4 sort of a reference price for the North
5 American gas market in terms of that location
6 down in Louisiana.

7 And during that period we had
8 three distinct periods of real price spikes,
9 and each one of those came about from a
10 different kind of cause. The first after the
11 California energy crisis and the drawdown of
12 storage in the west. The second big one here
13 was with Katrina and Rita and the supplies
14 that came out from there. And the third was
15 kind of an interesting one because that was
16 the global commodities markets and how all
17 commodities, cement, steel, oil, would --
18 everything else was going up as in the boom
19 era of commodities prices.

20 But as a student of history and
21 commodities what bothered me the most was this
22 trend in between the spikes where it was

1 continuing to go up. And the reason it
2 bothered me is for 30 years now I have been
3 challenging audiences to find me one mature
4 competitive commodity that comes from a
5 depletable resource that actually experiences
6 long-term price increases in real terms. And
7 I've been challenging people to do that for
8 that 30 years and offering to buy them dinner
9 if they can come up with it, and I haven't
10 bought dinner yet.

11 The reason is that when you think
12 about what goes on in those commodities
13 technology progress always outstrips resource
14 depletion in mature commodities. Now, as we
15 were going through the decade after 2000 I
16 didn't know what that technology was going to
17 be, I couldn't say what it was, but history
18 said that it would happen. And you know,
19 occasionally going to industry meetings, I go
20 out to Las Vegas and I for one never put a
21 coin down to bet on something that's never
22 happened before. So, I was looking for this

1 opportunity in terms of what that technology
2 is.

3 Now, sometimes the technologies
4 happen on the demand side where in fact you
5 get a replacement for what that commodity is.
6 Sometimes you get it with efficiencies. All
7 of those things are going on in terms of
8 energy. But often you get it on the supply
9 side.

10 To think about what had to happen
11 this is the same graphic representation of the
12 Henry Hub price, and the gray levels here are
13 the gas-directed drilling activity that was
14 going on in the United States. And each time
15 you had one of these price spikes with a
16 little lag for what happened after that you
17 got a big runup in terms of the drilling
18 activity, and then it dropped back down again,
19 and then it would run up again. And by the
20 time we were in about 2007-2008 in order to
21 kind of deal with this resource depletion you
22 were needing over 1,500 or approaching 1,500

1 rigs in North America, the United States and
2 Canada, looking for natural gas.

3 Then we had a recession and some
4 other activities there. But look what's
5 happened since then. And by the time we came
6 out of the recession and started getting what
7 is albeit anemic recovery, some recovery, the
8 levels of drilling there were in the 700 to
9 800 range. And what was going on at that
10 point in time was that the deliverability, the
11 capacity of the industry to produce natural
12 gas was still going up even though the
13 drilling levels had dropped by half.

14 Now, we come to where we are today
15 after the warmest winter on record, more than
16 two standard deviations from the norm, and
17 prices have dropped very low. And you can see
18 some of the implications there.

19 But what was going on? Well, the
20 opportunity and what was going on was
21 unconventional resources. We're talking about
22 shale gas. We're talking about shale oil and

1 the NGLs and other hydrocarbons that come from
2 production within it.

3 Now, what made this be able to
4 happen? Well, you've heard the term
5 "fracking," almost everybody has at this
6 point, but I want to describe how that, what
7 is really high-volume hydraulic fracturing
8 technologies used for completions matches up
9 with directional drilling, horizontal
10 drilling. Because this resource, we have
11 always known that it was there. It was an
12 awful lot of hydrocarbons, natural gas and
13 liquids, that was trapped in very tight
14 formations of the shales and they were
15 layered. And people would drill for that
16 back, I'll show you a chart in a moment in an
17 area that people drilled for this sort of
18 stuff, but it was very hard to get out because
19 once you drilled a vertical well through it
20 you really just weren't able to get much gas
21 from it.

22 The technology then developed to

1 be able to drill down and turn the drill bit
2 and line it up in the shale resource, in this
3 tight resource, and effectively run down the
4 layer now to the level of 5,000 feet through
5 the layer of the gas-bearing rock.

6 The second technology was this
7 high-volume hydraulic fracturing where you
8 could go down and crack the rock right in the
9 vicinity of where the well bore is and release
10 the gas from around it. And what that would
11 up doing was being able to collect the gas
12 from this very tight or nonporous rock
13 formation.

14 Well not only were they able to do
15 that, they're now able to do it so you can
16 have 12 or 15 different completion fractures
17 along this run.

18 Now, where is this? We're talking
19 about a well bore that goes down maybe 5,000
20 feet and then turns and runs another 5,000
21 feet below the surface, and you're collecting
22 the resource from that. And what that has put

1 together is a huge increase in the technically
2 available resource. We're talking about for
3 natural gas over 3,500 trillion cubic feet of
4 natural gas. And in the oil side at least 210
5 billion barrels. So we're talking about a
6 huge resource that's now been made available
7 in terms of the crudes and condensates and the
8 natural gas. And it's spread all over in
9 terms of where it is.

10 Now, this is the first thing I
11 want you to think about in terms of the
12 implication for the pipeline infrastructure,
13 what we're talking about. Because where these
14 resources are is not necessarily where the
15 traditional hydrocarbons came from, or at
16 least not recently. And when we talk about
17 that we certainly are talking about the
18 Marcellus and the Utica shales which are right
19 in the northeast of the United States. We're
20 going to come back to that in a minute.

21 But when we think about these
22 resource assessments here ICF has done its own

1 resource assessments and I'll tell you that we
2 on the natural gas side have identified over
3 1,500 trillion cubic feet with resource
4 development costs at today's technology levels
5 below \$5. So what we're really talking about
6 at that kind of level and with this kind of
7 resource is more than 150 years' worth of
8 natural gas in North America that -- at
9 today's consumption levels. And that's a real
10 game-changer in terms of the nature of it.

11 The other thing about this is all
12 of a sudden now that the technology has
13 developed it this way this tight resource is
14 not the marginal production. The marginal
15 production is continuing to drill like you
16 used to in conventional resources going after
17 smaller and smaller pools of the hydrocarbons
18 and doing it in the same old way. But in fact
19 what you find is that in terms of where that
20 resource supply curve is the shale and tight
21 resources is underneath that and it's pushing
22 it out.

1 So what you got was with the low
2 prices that we've had over the last winter the
3 drilling activity has shifted away from the
4 conventional gas drilling and then went first
5 to the areas that had not only the natural gas
6 but also the liquids associated with it, and
7 the drilling activity focused on that.

8 We're now to a point where the
9 drilling activity and the prices are so low
10 that it's kind of dropped back down again and
11 that's why ICF believes we will have some
12 firming in both natural gas prices as a result
13 of that balance. But for the longer term
14 there's an awful lot of this that's available.

15 Now, this is not a Rorschach test
16 but it does tell you a little bit about how
17 this really changed it over time. This is
18 production in one area, a very prolific area
19 called the Hanesville shale for natural gas.
20 And each one of these dots is a well
21 completion, a well that was drilled. And the
22 estimate of -- the estimated ultimate recovery

1 per well. So what that is is that's the total
2 amount of natural gas that would be estimated
3 to be produced over that well over its entire
4 lifetime. And once you started doing these
5 completion techniques you see that you are
6 getting around 4 or 5 billion cubic feet per
7 well.

8 Now, I said before there's been
9 drilling in these kinds of areas before. If
10 you get a conventional well and dropped it
11 down through that formation and tried to
12 collect it the estimated recovery per well if
13 you placed it exactly right would probably be
14 about 250 million cubic feet. So this is an
15 order of magnitude change in terms of what's
16 going on per well.

17 Now, these wells are a little more
18 expensive to drill than the conventional
19 wells, a little more meaning maybe 2, 3, 4
20 times more expensive, but the amount of gas
21 that you're getting for each of these is much
22 larger. You're talking about by the time you

1 -- they got better at it you were starting to
2 get in some of these wells with more than 10
3 billion cubic feet or 40 times the amount of
4 gas out of each individual well. That's why
5 you see that decline we saw earlier in terms
6 of the drilling activity and you're still
7 increasing the amounts of hydrocarbons going
8 forward.

9 Now, there's been debates and what
10 can happen in the future but the thing you
11 can't debate about is what has happened. And
12 just looking at the rapid growth in production
13 from the shale resources in the U.S. and
14 Canada and how spread out those are all over
15 North America.

16 If we do look forward, the ICF's
17 view of the market is that the primary driver
18 for natural gas consumption is going to be
19 electric generation and we're going to need
20 more of this natural gas. And we start
21 looking at where all of this demand is
22 occurring and it happens to be where the

1 people live and where the electricity
2 consumption is being driven. You are serving
3 more natural gas customers in the residential
4 and commercial sector by doing it more
5 efficiently. You're adding about 2 percent or
6 so customers per year for natural gas
7 residential and commercial growth, but the
8 continued improvement and efficiency in the
9 use of natural gas means that that aggregate
10 volume of gas that goes into that sector stays
11 pretty flat and it's the power generation
12 that's the big driver going forward.

13 And when you look at the supplies
14 though the way we're going to do that is with
15 these unconventional and shale resources
16 because you're getting at the continued
17 decline in the traditional resource where it's
18 coming from. And the unconventional being the
19 sum of the shale, the tight gas and the
20 coalbed methane.

21 Now as I said before, one of the
22 things that happens though is that this

1 resource isn't where traditionally natural gas
2 has been developed, or at least not in the
3 recent future. I mean, there was natural gas
4 and oil that was developed in Pennsylvania 100
5 years ago but now you're getting the rapid
6 growth in the Marcellus and that's changing
7 the flow patterns.

8 What this is trying to show and
9 it's a little bit hard to understand but it's
10 worth thinking about just a bit. This is the
11 North American flow designations in terms of
12 natural gas, where it comes from, but it's not
13 just the flow in any one year. This is
14 looking at the change in flow that ICF is
15 projecting from 2010 to 2035. So literally
16 what each of these lines represents is the
17 movement of gas in 2035 minus the movement
18 that occurred in 2010.

19 So what you see is that from the
20 shale resources down in here you get large
21 volumes of the shales that are moving up into
22 the mid-Atlantic. They're going out into the

1 growth in Florida where the growth in the
2 power generation requirements. You're seeing
3 unconventional resources from the Rockies
4 moving both west on the Ruby pipeline as well
5 as moving in the East in order to satisfy
6 demand for power generation in the Midwest.
7 Some of the power generation there as you're
8 probably aware coming from the retirements of
9 coal-fired facilities in those markets.

10 You also though see red lines.
11 You see these red lines coming into here.
12 Really, that's not saying that gas demand is
13 going down there. What it's saying is that
14 the gas demand is being met with supplies that
15 are very local, from the Marcellus shales and
16 from the Utica shales there. And so you get
17 a shift in these patterns.

18 You see the Western Canadian
19 Sedimentary Basin which by the way, from 1990
20 till about 2007 all of the demand growth in
21 North America in the United States was met
22 with increased imports in Canadian gas. And

1 the Western Canadian Sedimentary Basin volumes
2 are going to be declining there and more of
3 it's going to be staying in Alberta for the
4 development of their resources as well as for
5 their power generation needs. So you get a
6 different shift in terms of the overall
7 movement.

8 Now, a lot of pipe has to be built
9 for this. The vast majority of it frankly is
10 not in the long-line, mainline gas
11 transmission. It's not another REX Pipeline
12 that goes from the Rockies all the way into
13 the -- towards the Midwest markets and towards
14 the east coast. It's rather all of the kinds
15 of facilities that are going to have to be
16 tied into the existing infrastructure to
17 access those supplies as well as facilities
18 that are going to take some pipe segments that
19 may have been flowing from south to north and
20 reversing them and flowing them from north to
21 south with new supplies coming in in the
22 markets. So the pipeline system itself is

1 going to have to meet challenges in terms of
2 how it moves it and that's going to have
3 certain infrastructure requirements.

4 We went through a study for the
5 INGAA Foundation last year that looked in
6 terms of where the regions were and there are
7 some detailed slides. And I'm not going to go
8 really go over that here, but just to note
9 that really what we're talking about is maybe
10 35,000 miles of transmission lines, gathering
11 lines and so forth in terms of the totals too.

12 Now, let's shift over for a second
13 from natural gas. Why did I focus on natural
14 gas? Well, that's what I work in a lot which
15 makes it easier for me to talk about, but it's
16 also because the trend that you had going on
17 in natural gas which really accelerated
18 starting in 2006 and 2007 is going on now with
19 a lot of speed having started a little later
20 for the liquids sides.

21 Some of the liquids were produced
22 with the natural gas. When you talk about

1 shale gas there are dryer shale gases and
2 there are some that may have as much as 13 or
3 14 percent ethane in the gas stream that comes
4 out of the well.

5 Well, there's some flexibility in
6 terms of gas quality that you can deal with
7 but for safety reasons gas quality and the
8 distribution systems has to be managed very
9 tightly. So what you've got to figure out is
10 what are you going to do with that ethane.

11 Well, there are a lot of things
12 you can do with ethane. You can make it into
13 ethylene, you can transport it. Conceivably
14 you can burn it as a fuel as well. And that
15 ethane has a price that's a little bit higher
16 than the natural gas, the methane prices.

17 You also then have pentanes,
18 propanes, butanes and others that come out
19 from that and we'll talk about the NGL
20 infrastructure there too. But a lot of what's
21 happened in terms of the development of that
22 is figuring out what is going to be the

1 optimal way to deal with that portion of the
2 resource.

3 It also though is come forward and
4 is looking at crude oil as well. And you're
5 starting to see the same kind of shapes in
6 terms of the dramatic growth in terms of crude
7 oil production that you saw in natural gas
8 just a few years earlier. So we're getting
9 those kind of fundamental changes going on
10 there as well.

11 And when we make our projections
12 in terms of the -- and this was done a year
13 and a half ago, or a year ago, and our newest
14 projections are even for greater than were put
15 into this -- you start to get people talking
16 about, as the Department of Energy has,
17 fundamental shifts in terms of what the North
18 American balance for imported oil is going to
19 be by 2020 or by 2025.

20 Now there are a lot of
21 uncertainties about it, what's going to happen
22 to the demand levels and so forth. I'm not

1 going to say that I'm certain that we're going
2 to have an energy independence by 2035 but
3 with this kind of resource available we are
4 certainly looking at reducing our dependence
5 on foreign oil. And when you add in oils from
6 Canada it fundamentally changes that
7 prediction as well.

8 The Stillwater Associates put
9 together this particular graphic that looks in
10 terms of the crude oil pipelines. And you can
11 see the number of different pipelines. The
12 biggest one that everyone has focused on is
13 the Keystone XL Pipeline. Obviously there are
14 a lot of things about that and whether it'll
15 be built or when it'll be built or how it'll
16 be built.

17 But one of the things that you do
18 know is that the parts that are looking at the
19 de-bottlenecking around from Cushing down to
20 the refineries in the gulf coast, those are
21 moving forward. There are going to be other
22 infrastructure requirements to deal with the

1 locations of those crude oil resources.

2 And this is another Rorschach
3 test, I guess we specialize in those at ICF,
4 that just looks at the interregional flows of
5 crude and condensate, and how that's likely to
6 change over the next 25 years. That's going
7 to be in your handout there and if we want to
8 go over that in a little bit more detail we
9 can.

10 But effectively what we're looking
11 at here is we've talked about crude, we've
12 talked about natural gas. This is our
13 projections it of the NGL productions. We're
14 getting to a point where the United States at
15 least seasonally is a net exporter of propane
16 and other NGLs. The picture is changing in
17 terms of how that market winds up working.
18 When you put these all together what you find
19 is that there's a large amount of
20 infrastructure that's going to be required in
21 order to deal with that both in terms of the
22 oil pipeline infrastructure and the sum of

1 that with the NGL infrastructure. So we're
2 looking at cost of those transmission lines is
3 maybe an incremental \$45 billion in
4 investments by 2035.

5 How that's broken out in terms of
6 the regions and you can see that there's a
7 significant amount of investment, a lot of it
8 in Canada, but spread out through the rest of
9 North America as well. And this is the same
10 thing for the NGL lines.

11 When you look at the total
12 additional cost associated with the
13 infrastructure in the gas transmission lines
14 you can see that we're talking about maybe
15 \$250 million in terms of the transmission with
16 a lot of the cost and a lot of the mileage
17 associated with the laterals.

18 So when you put all this together
19 we now have a resource that can fundamentally
20 change the nature of reliance on foreign
21 sources of energy and hydrocarbon energy. And
22 the ability to try to figure out how we're

1 going to apply that resource. And that's
2 going to require infrastructure as you all
3 know more than an economist. We always assume
4 that it just shows up. But you know that it
5 actually has to be built, and it has to be
6 maintained, and it has to be operated in a
7 safe manner.

8 When we look at these total
9 requirements we're talking about large, over
10 \$250 billion in expenditures that's going to
11 have to happen in order to be able to access
12 all of that infrastructure.

13 The bottom line is that as Jeff
14 indicated we have experienced a fundamental
15 sea change that like most in energy has been
16 driven by a technological change. The
17 utilization of horizontal drilling with high-
18 volume fracturing, the best way to think about
19 it is it's an industrial process. It has to
20 be managed in an environmentally sensitive
21 manner as an industrial process. But it can
22 be done in that way and the implications of it

1 are to fundamentally reduce our dependence on
2 foreign hydrocarbons.

3 And you're likely to see studies
4 coming along in the near future that are
5 looking at what these changes have meant in
6 terms of job creation, in terms of economic
7 activity. All of a sudden we've taken away
8 some of the specter of \$8, \$9, \$10 natural gas
9 prices and are looking at long-term prices at
10 a much lower level, that \$5-\$6 range. And
11 that allows economic resources to be utilized
12 otherwise.

13 So it's an exciting time for me.
14 I can finally now say I know what that
15 technology is that's going to make it so that
16 natural gas is not going to be the first
17 depletable competitive resource that
18 experiences long-term price increases and is
19 driven out of the market that way. We now
20 know that it's available, it's just our job to
21 get down to it and figure out how to utilize
22 it safely. And with that I'd be happy to take

1 a few questions.

2 CHAIR FORD: Thank you. I think
3 Jeff has one to start.

4 MR. WIESE: First of all, Bruce,
5 thank you very much. I appreciate that. I
6 think obviously most of the people in this
7 room sort of get the implications for the
8 debates we're going to be having going
9 forward.

10 One of the things that I've been
11 interested in myself as I've looked at this is
12 I look at the financial and cost models. We
13 talk with different people and I hear a lot
14 about the cost of the new projects. And I
15 wonder from your perspective do you see a
16 competition for money, limited money, that's
17 being used both for maintenance and
18 replacement. I mean what are the implications
19 of competition of all this new infrastructure
20 with the existing infrastructure?

21 MR. HENNING: That's a wonderful
22 question and quite complex. But you are right

1 to have some concerns in terms of how that
2 competition occurs.

3 You start getting into the areas
4 as to how infrastructure is contracted for and
5 how infrastructure is financed in terms of the
6 projects. And I spend a fair amount of time
7 at the Federal Energy Regulatory Commission in
8 rate case proceedings, and that's a lot of the
9 things that are discussed quite regularly,
10 right Jeff? So I don't have a simple answer
11 for how that works.

12 But recognizing that that
13 competition exists and recognizing that both
14 for the pipelines as well as the non-economic
15 regulated entities of either FERC or the local
16 distribution companies regulated by the
17 states, there's going to be this need to make
18 sure and consider how the global regulation
19 allows for both the recovery of costs
20 associated with safety both testing as well as
21 replacement of equipment and -- if it's found
22 to be needed, as well as the expansions. And

1 it's big, big dollars.

2 The other thing I'll say though is
3 that there may be some instances where the
4 opportunity to redesign or rebuild certain
5 facilities in order to tack onto some of where
6 these resources are may create some
7 synergisms. Now how big that is I don't know
8 and how many of them, but when you read
9 descriptions of individual projects you can
10 see that there may be some possibilities
11 there.

12 MEMBER HAMSHER: A couple of
13 comments. And I don't want to oversimplify it
14 but I think you almost have to to make the
15 point.

16 It's not like a family checkbook
17 where X amount of money comes in and is split
18 between the need to buy a new car, or buy
19 food, or add a family room. It doesn't work
20 that way. A project, and an expansion project
21 whether it be a new pipeline, a repurposed
22 pipeline, an acquisition of one to reverse it

1 has to stand on its own legs. It has to earn
2 its own money. Otherwise you're investing in
3 something that will ultimately if it's robbing
4 Peter to pay Paul the company's not viable in
5 the long run, again oversimplifying.

6 But a capital investment in a new
7 facility has to live on top of the added
8 volumes, more money per every barrel you do
9 makes you more money, or a surcharge, or a
10 negotiated rate. Some mechanism in order to
11 earn and have a payback on that huge capital
12 investment. So I wouldn't want a perception
13 being made that in our case you have some
14 numbers up there. Enbridge alone has \$14
15 billion of planned and proposed projects.
16 That doesn't detract from maintenance dollars.
17 It's different buckets of money.

18 Going to your point on
19 repurposing, exactly what we should do. We
20 have a fundamental re-piping of America and
21 it's in our economic interest to take an
22 underutilized asset, whether we own it or can

1 get it from somebody else at a good price and
2 repurpose it safely. You've seen recent
3 examples using Illinois as the hub where
4 pipelines that used to come up to Chicago from
5 the south were bought, reversed and now
6 they're flowing down to Oklahoma. And
7 starting last month or 2 months ago as far as
8 the gulf. So this repurposing and re-piping
9 of America is I think alive and well.

10 CHAIR FORD: Thank you. Jeff and
11 then Craig. Jeff was first, I'm sorry. And
12 then you, Craig.

13 MEMBER WRIGHT: Bruce, you talked
14 earlier about gas price levels being down and
15 being depressed. And from my perspective
16 there's been a bit of a lull in actual gas
17 infrastructure in the last year or two. I
18 mean things are going apace but not like they
19 were, say, in '08 through '10. Do you see
20 those gas levels, price levels having -- you
21 said firming up. Firming up at a higher level
22 before we see the gas people jump in again

1 with a lot more infrastructure?

2 MR. HENNING: Well, I think -- I
3 guess the way we would see it, and frankly you
4 have to put it into the context. We, ICF
5 produces a baseline projection or a base case
6 in terms of what we see natural gas prices
7 doing.

8 And we were kind of a lone voice
9 in the wilderness back last January and
10 February when we were starting to say you
11 know, by the time you get -- if you get normal
12 winter weather and you get a reasonably hot
13 summer you could be seeing Henry Hub gas
14 prices above \$4 by January of next year. Now
15 that's not the \$8 or \$12 that you had before.

16 If we're right -- and that's a
17 projection and other forecasts may look
18 totally different -- then what we will start
19 seeing first is the firming of that
20 deliverability drilling activities and the
21 gathering infrastructure and the gas
22 processing infrastructure that's necessary in

1 order to bring that back online.

2 The other part is a little more
3 complicated because in fact there are a lot of
4 issues that are out there in terms of lateral
5 deliveries to power plants and the
6 infrastructure into given regions. The timing
7 of that is a little harder to say and figure
8 it out, but we are going to start -- we
9 believe that we are going to start seeing a
10 number of other projects coming back and being
11 proposed. Maybe not at the same rate that
12 they were in 2007-2008 but we do think that --
13 I mean you have to understand just how unusual
14 this last winter's weather was. If we had
15 simply had normal weather in North America the
16 space heating load for residential, commercial
17 and industrial customers would have been a
18 trillion cubic feet higher than it was.

19 So the nature of that disruption
20 just caused by the weather in terms of the
21 investment patterns, is that going to make
22 some people more cautious? I think maybe so,

1 and it may take awhile for it to get back.

2 But I think that when we start seeing those,
3 first starting with the drilling activity and
4 then what's necessary in order to bring that
5 supply online we'll start seeing it then.

6 MEMBER PIERSON: I echo what
7 Denise's description. These projects stand on
8 their own. They aren't competing with
9 maintenance capital. What is out there is a
10 lot of competition for resources to do the
11 work. And so that we've got to manage.

12 There's one other complexity with
13 the liquids. It's pretty interesting. The
14 crude oil that's coming out of these shales
15 tended to be a higher gravity, lighter crude.
16 And the refining industry historically has
17 been shifting to being able to process heavier
18 and heavier crudes.

19 So the pipeline, the pipeline
20 projects are competing with refining projects
21 to see where does this light crude find its
22 way to market. And refiners can make

1 modifications to accept the light crude that
2 might be closer to the source and therefore
3 the crude doesn't have to get transported
4 further. So there's a complexity in the
5 liquid side of it that's pretty interesting to
6 watch play out.

7 And one last point is this isn't
8 2020-ish, this is 2012-ish stuff that's going
9 on. It's quite fascinating.

10 MEMBER WEIMER: Carl Weimer.
11 Great presentation, really appreciate it. One
12 of the arguments that seems to be making its
13 way into the media all of a sudden, and I was
14 wondering if you could comment on it, is you
15 know, we were worried about our energy
16 independence and where was the next source
17 coming, and now we've got more than we know
18 what to do with for 150 years so we're
19 starting to export it. Have you looked at how
20 export could affect this sea change?

21 MR. HENNING: Yes. I mean, let me
22 try to give a little high-level because it's

1 a rather complicated subject and unfortunately
2 it's another 45-minute talk that I give
3 periodically.

4 Obviously when we're talking about
5 exports the debate comes in a couple of
6 different ways. One is what does it do to
7 jobs and the economy. And being a trained
8 economist most economists look at a whole
9 series of different aspects of free trade and
10 conclude that while -- Alan Blinder probably
11 said it best, that when you start looking at
12 protectionist tariff issues you can obviously
13 identify certain industries that may be
14 assisted or harmed by a tariff, but what's
15 much harder to do is to look throughout the
16 entire economy in terms of what it is. And so
17 most of the forecasts and so forth look at
18 free trade as ultimately being a good thing as
19 long as it's being done in an open manner.

20 There's been a lot of debate about
21 the L&G export issues and the Department of
22 Energy has had some studies associated with

1 it. The one little tidbit that I'll add from
2 ICF's perspective is that we shouldn't be
3 looking at this in the vacuum of the United
4 States because at the same time when we're
5 developing these resources, resource projects
6 to compete for that L&G export are going
7 forward in Australia.

8 Gas projects, trying to explore
9 their shale and unconventional resources in
10 China with -- they may have more resource than
11 we do. And so the dynamics of what's being
12 unleashed here in the U.S., we're ahead of the
13 game compared to the rest of the world but all
14 of those same dynamics of that technologies
15 going out in the rest of the world will wind
16 up affecting it too. So we look at the
17 opportunities for the L&G exports at being
18 really, your economics better work between now
19 and say 2022 because you may face a different
20 competition more than 10 or 12 years down the
21 road there.

22 And so when we look at all of

1 these things together there's a lot of public
2 debate and there should be, but those are just
3 a few of the things that we think about when
4 we look at that issue.

5 MR. WIESE: I think we have Gene
6 and Rick -- you didn't have your tent up,
7 Rick. You're not going to play that game?
8 Okay. Well, we'll play nice. Who had their -
9 - Gene? Then we'll come back to you, Rick.

10 MEMBER FEIGEL: How do the
11 political uncertainties surrounding renewables
12 color your probably midterm views of what's
13 going to happen in particularly the gas
14 industry?

15 MR. HENNING: Well, first, I guess
16 I need to give you a little bit of a context
17 for what ICF puts into its base case. We do
18 have built into our base case an assumption,
19 I don't know if it's going to happen, but an
20 assumption that we will be dealing with some
21 kind of carbon control regulation in the
22 United States post 2020. We implemented in

1 the case around 2022.

2 We look at the -- all of the
3 renewable portfolio standards of the
4 individual states as well as the regional
5 RPSs. And we build into our base case the
6 assumption that those are completed in that
7 way, they're met. As a result most of the
8 growth of the renewables that's likely to
9 happen between now and 2020 or 2022 is being
10 driven by those RPSs. And in fact we have in
11 that case the renewables as the fastest
12 growing sources of energy. That said, they're
13 starting from a much smaller base and in terms
14 of what you can wind up doing there.

15 We also try to build in some
16 certain assumptions regarding smart grid and
17 all the other -- demand-side management and
18 all the other things like that which is why
19 our computer printouts for these things stand
20 about this tall by the time we run the model.
21 Once you start getting into the questions of
22 how the integration of that renewables and

1 what it requires for the other infrastructure
2 it's a very complicated subject and I won't go
3 into it now, but I'll just say that our view
4 is that that's not going to be a major source
5 of increased load volumetrically for natural
6 gas, but that it will require infrastructure
7 that is capable of dealing with the
8 variability requirements of the output.

9 So I mean, I guess without going
10 into all of those details, yes, renewables are
11 going to be quite important. They're going to
12 grow very quickly. We think that the drivers
13 of it are the renewable portfolio standards
14 principally, at least for the near term in
15 terms of where we are, and that in order to
16 change something that would jump it well
17 beyond that would require some kind of other
18 legislative or funding activity.

19 MR. WIESE: Rick?

20 MEMBER KUPREWICZ: Yes. Sorry,
21 Jeff. My maverick side kind of rises every so
22 often. That can be a double-edged sword.

1 I guess from a public perspective
2 one issue that's going to come up later on
3 that's related to that is for the gas guys
4 that means you can only put in so much new
5 infrastructure, but the existing
6 infrastructure which is the predominant
7 infrastructure in the gas system.

8 I read this as gas pressures are
9 going up. That's the best way to get capacity
10 and efficiency in a gas system, especially
11 transmission. It's no secret. I don't have
12 a problem with 0.8 design factor on
13 transmission systems if the operator knows
14 what they're doing, and that's a big if.

15 And so that's kind of, you know,
16 is that something that you've looked at?
17 Because surely MAOP pressures, there's going
18 to be some discussion about this later this
19 week probably, but as you raise those
20 pressures all kinds of things change regarding
21 your TAMP approach and the relationship
22 between an anomaly that's existing that's

1 stable versus unstable. We've already had an
2 example here in San Bruno how an anomaly went
3 unstable and went to rupture for lots of
4 reasons.

5 And so I think what I'm saying
6 here is that just means if the public is
7 losing confidence in the TIMP program from a
8 priority aspect that's something that's
9 probably high on the agenda of PHMSA and if it
10 isn't it's sure going to get -- just for all
11 these. I mean these are billions of dollars
12 at risk here. So cost-benefit is going to say
13 hey, you know, if you can raise the pressures
14 and you've got integrity, high-confidence
15 integrity that's the way to go.

16 MR. WIESE: Well, certainly the
17 burden of proof on proving the integrity that
18 you have is a little higher now than it used
19 to be and it's probably going to get higher.

20 MR. HENNING: I was just going to
21 make a couple of quick comments. One, you're
22 absolutely right in terms of the kinds of

1 expenditures. We suspect that the
2 expenditures in terms of the testing as well
3 as dealing with any replacement issues and so
4 forth are going to add certain cost components
5 to transmission line rates, to distribution
6 systems as they're going through to that.
7 Exactly how much, you'd have to know exactly
8 what the regulations are going to look like.

9 Does that mean that the prices may
10 go up compared to where they are today? Well,
11 I think first of all if we're right prices are
12 going to firm in terms of the commodity as
13 well, but even before you get to the
14 transmission and distribution. The question
15 is how does that then change in terms of the
16 competition and the other alternatives. And
17 what are the other things there. And that's
18 a much more complicated analysis, and it
19 really is very scenario-specific.

20 We do work in that area but in
21 terms of trying to look and say how does that
22 affect competition. But your points are well

1 taken in terms of the cost components and how
2 they might change.

3 MR. WIESE: Okay. Thank you,
4 Bruce. I very much appreciate your coming in
5 and making the presentation to the committee.
6 Hopefully we'll have a little discussion later
7 about the kinds of things that you want to be
8 seeing going forward, but I hope you'll -- I
9 think everybody sees the connection to Bruce's
10 message here and the implications for us in
11 infrastructure. So thank you again for coming
12 in and sharing that with us.

13 I would ask is your presentation,
14 is that okay for us to post it? Okay, very
15 good. Thank you so much.

16 With that I would invite Sam Hall
17 up. And I'm going to invite your indulgence.
18 We'll probably run till like 12:15. I've
19 asked Sam to try to accelerate. Thank you.

20 While Sam is coming up I'm going
21 to close our last topic by saying, you know,
22 maybe we need to have more conversations on

1 this topic because there's more to it than
2 just capital. There's human capital. And I
3 personally have seen human capital flow from
4 operations and maintenance into new projects.
5 A lot of brain power, and there's a limited
6 pool of people to be drawing into the
7 business.

8 The Senate's taken an interest in
9 this whole issue. A couple of senators have
10 been talking with us and some of the agencies
11 about demographic shifts in the workforce.
12 What are the implications for safety, both
13 worker safety but as pipeline safety as well.
14 So I think those are topics we can explore
15 going forward.

16 But with that let me turn it over
17 to Sam. Sam, thanks for taking time and
18 coming up from Richmond, Virginia to come see
19 us along with Mike and Massoud.

20 MR. HALL: Thanks. My name's Sam
21 Hall. I've worked with PHMSA since '98. I
22 did take a brief break to go work for Virginia

1 state government in a completely unrelated
2 field, and came back to PHMSA in 2008. When
3 I moved out of PHMSA in '05 I believe it was
4 I moved down to the Richmond, Virginia area
5 and that's where I currently live. So Jeff's
6 comment about coming up from Richmond is
7 because I live down in the Richmond area.

8 I'm going to run through very
9 quickly a briefing on what we've been doing to
10 reach out to emergency responders. I've
11 probably got 30 minutes of material here and
12 I'm going to try to condense it into about 15
13 minutes if I can.

14 Just to give you a sense of what's
15 going on in PHMSA with regard to emergency
16 response initiatives, one of our strategic
17 goals is preparedness and response. And
18 specifically it says reduce the consequences,
19 that's harm to people, environment and the
20 economy after a pipeline or hazardous material
21 failure has occurred.

22 We do have regulations that

1 address that strategic goal. Most notably our
2 public awareness regulations, RP 1162. We're
3 doing a lot to understand how the
4 implementation of those regulations is
5 working, what lessons we're learning from that
6 regulation.

7 And recent incidents as we've been
8 discussing all morning have placed
9 considerable focus on this strategic goal.
10 You know, what do we do about emergency
11 response? I don't think I need to tell you
12 here in the room. You're probably all very
13 familiar with that.

14 Right now we're undertaking a few
15 efforts to augment the existing regulations
16 that we have and programs that we have through
17 a variety of activities, including
18 communications and outreach, developing
19 strategies for improving our reach with
20 emergency responders and building
21 partnerships.

22 The overarching problem is really

1 that many emergency responders in communities
2 that are traversed by pipelines are not
3 adequately prepared to safely and effectively
4 respond to pipeline emergencies. That is not
5 true in every community by a long shot.

6 We're joined by Chief Lanny
7 Armstrong from Pasadena, Texas. Chief
8 Armstrong has talked again and again about how
9 his jurisdiction is very prepared to deal with
10 pipeline emergencies and that's because
11 pipelines are standard in Texas and Pasadena.
12 They're a part of everyday life. In other
13 parts of the country that is not true.

14 Part of this problem, you know, I
15 did mention that our regulations require
16 pipeline operators to reach out to emergency
17 responders in the communities traversed by
18 their pipelines. Sometimes that's not -- the
19 techniques that have been used to conduct that
20 outreach have not been effective in every
21 case. And so there are a variety of reasons
22 for this overarching problem, but it's a

1 problem that we're looking to solve. And
2 we're really just getting started. So what
3 I'm presenting here is just a sense of sort of
4 where we've -- where we've begun, the starting
5 line.

6 Our fundamental goal is to
7 institutionalize pipeline safety in the
8 emergency response community. That is we want
9 to make pipeline safety a matter of course in
10 the emergency response community. Fire
11 fighters, other emergency responders who may
12 have to deal with the pipeline emergencies
13 know what pipelines are. They know where they
14 are, they know what to do when an emergency
15 occurs. And they get this information through
16 existing resources, through existing channels.

17 And those channels do exist.
18 There are training materials that are
19 available, there are communication pathways
20 that exist now that can be leveraged to
21 accomplish this goal.

22 I want to step back and just

1 mention that we have been in the last year or
2 so working hard to reach out to the emergency
3 response community. And our goal in doing
4 that is really to educate ourselves as much as
5 it is to educate other stakeholders on
6 pipeline emergency preparedness and response
7 issues.

8 We started really with a forum on
9 December 9th of 2011. It was an emergency
10 responder forum. Many of you I believe were
11 there. We learned a lot from that forum. I
12 won't go into it in the interest of time but
13 there were some great lessons learned from
14 that forum and it was really the foundation
15 for moving forward for PHMSA.

16 The industry also hosted a
17 fantastic forum in Houston, Texas in September
18 that really also shined a light on a lot of
19 the issues that we're facing. And the
20 industry has been extremely active in this
21 area.

22 We've also made multiple

1 presentations and hosted booths at a lot of
2 conferences. The HOTZONE Conference in Texas,
3 down in Houston. The International
4 Association of Fire Chiefs Conference in
5 Baltimore. Fire Department Instructors
6 Conference in Indianapolis, that's the largest
7 fire fighter conference or emergency response
8 conference in the country. Continuing
9 Challenge in Sacramento, California and the
10 Midwest Hazmat Conference out in Chicago.
11 We've been out there, we're trying to make
12 contact with emergency responders and make
13 presentations and pass out information as much
14 as we can.

15 On that note I do have some
16 brochures that I'd like to pass around.
17 Unfortunately I don't have enough for the
18 entire audience, but at least the folks at the
19 table should be able to get a copy. This is
20 a brochure that we've developed that just
21 highlights some of the resources that are
22 available from PHMSA now and it's a brochure

1 that we've been passing out at the conferences
2 that I just mentioned.

3 We've also published at least one
4 article in a fire service publication, that
5 was FireRescue. That went out in January and
6 I think that was very well received. And I
7 believe we're getting ready to publish a
8 second article in Fire Chief magazine if I'm
9 not mistaken. I believe it's Fire Chief.

10 Developing strategies and building
11 partnerships. This is essential to our
12 success. One thing we've been working on is
13 a partnership with an organization called
14 TRANSCAER. That's Transportation Community
15 Awareness and Emergency Response. That's a
16 voluntary national outreach effort that
17 focuses on helping communities prepare for
18 hazmat incidents, hazmat transportation
19 incidents. And in the past they have not
20 focused on pipelines. They are prepared to do
21 that now and they're ready and willing to work
22 with us and the pipeline industry to get that

1 done. And shortly the industry will see a
2 call from us to become state and local
3 coordinators in the TRANSCAER organization on
4 a voluntary basis certainly.

5 We've also had a very successful
6 cooperative agreement with the National
7 Association of State Fire Marshals. Jerry
8 Rosendahl who is the fire marshal from
9 Minnesota could not be here today but he is
10 the current chair of NASFM. And through that
11 cooperative agreement we've produced a
12 training curriculum called Pipeline
13 Emergencies. It's a very comprehensive
14 overview of pipeline operations and how to
15 respond to pipeline emergencies.

16 We've gotten tremendous support in
17 the recent past from the U.S. Fire
18 Administration. They are under the Department
19 of Homeland Security and work closely with
20 FEMA. They also run the National Fire Academy
21 out of Emmitsburg, Maryland and they've been
22 tremendous supporters and have really guided

1 us in our efforts.

2 And these last two bullets on this
3 slide I'm going to go into in a bit more
4 detail. The first is the Pipeline Emergency
5 Response Working Group which is an
6 organization that we've recently stood up, and
7 also a pilot project that we have going on in
8 Georgia.

9 First the Pipeline Emergency
10 Response Working Group. This is a national
11 effort. We held a kickoff meeting in June,
12 I'm sorry, June 29th. So two Fridays ago I
13 believe. And at that meeting we discussed
14 what our path forward should be and what our
15 goals should really be. And it's very fluid
16 right now. We just had our kickoff meeting so
17 we're learning a lot and we're really
18 formulating our path forward.

19 But some of the big topics of
20 discussion there were the first thing we
21 really need to do is define success. And what
22 do we call -- how do we know we're done? How

1 do we know we've achieved our goals and how do
2 we measure that performance?

3 One thing that really needs to be
4 done and that could help there is to inventory
5 existing resources that are out there that
6 could be used to help institutionalize
7 pipelines in the emergency response community.
8 I mentioned some of those, training,
9 communication channels. We need to have a
10 systematic way of knowing what's out there,
11 what's available and how do we leverage those
12 existing resources to get the message out.

13 I've listed here the members of
14 the working group. Lanny Armstrong, Chief
15 Armstrong from Pasadena, Texas who's at the
16 table with us is on the group as is Jerry
17 Rosendahl who I just mentioned, the Minnesota
18 fire marshal. We also have great
19 representation from the NFPA 472 committee,
20 Greg Noll. National Fire Academy is there.
21 Mike Hildebrand and Greg Noll both authored
22 the pipeline emergencies training curriculum

1 that we funded through the National
2 Association of State Fire Marshals. So they
3 are very familiar with these issues.

4 And then we've got great talent
5 from the pipeline industry, Susan Waller,
6 Larry Hjalmarson, Gwynette Broussard and
7 others. And we are very thankful for all of
8 your participation.

9 The second thing I want to talk
10 about is the pilot project that's going on
11 down in Georgia, and this is being led by our
12 Southern Region Office. And like our national
13 working group this is a working group of
14 pipeline regulators, emergency responders and
15 regulators. And their goals are more specific
16 and they're focused more in Georgia.

17 They are looking to establish and
18 sustain effective communication between
19 emergency responders and pipeline operators.
20 They want to develop a comprehensive training
21 program for emergency responders in Georgia
22 and they want to develop a model that's

1 transferrable to other states.

2 One of the challenges in this is
3 that every state is different. The standards
4 for training in every state are different.
5 And so if you create a model in one state
6 you're going to have to modify that model for
7 other states.

8 I understand this is going very
9 well, this Georgia pilot. The group met in
10 May of 2012 and they're meeting periodically
11 to keep moving forward.

12 I should also mention this second
13 bullet -- or excuse me, the first bullet,
14 establish and sustain effective communication.
15 We are also funding through our Hazardous
16 Materials Cooperative Research Program which
17 is a grant program the development of a guide
18 that will help emergency responders and
19 pipeline operators communicate. That guide is
20 going to be produced I think -- it's about,
21 oh, I think 12 or 14 months from now.

22 The guide will have input from

1 emergency responders, pipeline operators and
2 other stakeholders around the country. It
3 will be vetted in a large meeting that will
4 take place out in the bay area in California
5 with I think over 125 stakeholders. The guide
6 will hopefully be a resource for emergency
7 responders and pipeline operators to help
8 facilitate better communication and
9 appropriate communication.

10 Other resources that are
11 available. You have the brochure in your
12 hands now. Any extras are -- you can pass out
13 to the audience. The National Pipeline
14 Mapping System is certainly a primary resource
15 for emergency responders. We know fire
16 fighters don't look at that en masse and we
17 are trying to advertise the National Pipeline
18 Mapping System and we're looking at ways to
19 improve it for use in the emergency response
20 world. I mentioned the pipeline emergencies
21 training curriculum.

22 The Emergency Response Guidebook

1 was just published last month -- excuse me,
2 May. And it's got some updated and expanded
3 pipeline pages that were developed in
4 conjunction with the pipeline industry. And
5 I think that's been very well received.

6 PIPA we've been mentioning
7 throughout the day. And one aspect of PIPA
8 and the implementation of PIPA is a pilot
9 project in Virginia to work with hazard
10 mitigation planners there to infuse pipelines
11 into hazard mitigation plans which then may
12 help drive changes in land use planning.

13 "Call Before You Dig," 811.

14 Obviously the best way to respond to an
15 incident is to not have it in the first place.
16 And excavation damage is a leading cause of
17 incidents that result in injury, fatality and
18 property damage.

19 The Technical Assistance Grants
20 Program managed by the Office of Pipeline
21 Safety can be used by communities to improve
22 emergency response capabilities. Of course

1 our community assistance and technical
2 services folks are always at your disposal and
3 at the disposal of the public, regulators and
4 other stakeholders. And then our website is
5 always available for gathering more
6 information. That was a quick whirlwind.

7 MR. WIESE: Sam's pretty good.
8 When you tell him to condense it, cut it in
9 half, Sam. I appreciate your coming in to do
10 that. Happy to entertain. I thought we would
11 have maybe about 9 minutes. I'm scheduling us
12 to adjourn no later than 12:15. So according
13 to my Blackberry which I'm not sure we can
14 trust RIM anymore we have about 9 minutes.

15 So I know there's a few people. I
16 don't want to undercut this because I think
17 this is a critical issue. It's something we
18 have been working on a lot. I appreciate
19 adding Lanny and Jerry to the committee I
20 think was a really important step. I don't
21 think there's anybody in this room who would
22 doubt the need for us to do more and work

1 closer with the people who are protecting our
2 communities.

3 We've begun Pipeline Emergencies,
4 how many years ago? Eight, nine years ago,
5 you know, to protect the fire fighters who are
6 protecting our communities. And I think we've
7 made great progress with that, but we need to
8 take it to the next level. And I know with
9 your help, Lanny, and with Jerry's we'll get
10 that done.

11 So with that said -- and I'm
12 sitting in as chair temporarily. Lula had a
13 call she had to take. So with that I'll turn
14 to Larry.

15 MEMBER DAVIED: Thank you. Larry
16 Davied. Sam, I very much appreciate the
17 presentation. I think it is absolutely right
18 on. And I suspect for all stakeholders here,
19 particularly for the liquid very much aligned
20 with the approach of a united versus
21 historical it's been kind of a singular burden
22 on each stakeholder to kind of get with other

1 singular stakeholders in sharing it. So
2 absolutely aligned.

3 I think the pilot programs are
4 going to -- very hopeful, optimistic. They're
5 going to reveal how critical it is and have
6 that message united. You know, fundamental
7 dissemination of information, where the
8 utilities are, what the commodities they
9 contain and how to properly respond. That's
10 a united emphasis of all stakeholders, the
11 goal being to eliminate forever. Never have
12 another case of "I didn't know it was there,
13 I didn't know what to do."

14 But very much applaud the liquid
15 industry. I suspect all stakeholders doing it
16 in a united fashion versus singular is a
17 marked difference. It certainly for the
18 liquid industry is one of our top eight
19 leadership priorities. Everybody as we know
20 works hard on never having the incident, but
21 being prepared in the event that one does is
22 paramount to us being successful.

1 MR. WIESE: Thanks, Larry. Carl?

2 MEMBER WEIMER: Yes. I know this
3 has been an issue because the industry is
4 required to talk at emergency responders but
5 emergency responders aren't required to listen
6 which seems to be part of the problem with
7 this.

8 And I was really surprised sitting
9 through the NTSB hearing or meeting yesterday
10 how at one point they said, someone asked the
11 question have you found a model that has
12 worked for communicating to emergency
13 responders where they, you know, on a
14 different issue that the emergency responders
15 really adopted and then listened. And NTSB
16 said no, we haven't found a model. So I was
17 wondering with this work group have you looked
18 at other models around the country where some
19 other type of hazardous material or some other
20 issue altogether really has been adopted by
21 emergency responders?

22 MR. HALL: Yes, we have. There's

1 been a great deal of success with other modes
2 of transportation besides pipelines and
3 communicating with emergency responders.
4 TRANSCAER is a good example. I know I breezed
5 through it but that is a voluntary outreach
6 effort that is focused on rail and tanker
7 truck transportation of hazardous materials.

8 The chemical industry also has an
9 excellent model. Granted a lot of the
10 materials there are in fixed facilities. And
11 I think there was a comment from this side of
12 the table earlier this morning that if we were
13 focused on fixed facilities we'd have a very
14 different burden. But because the
15 infrastructure is so dispersed it is a bigger
16 challenge.

17 But there are -- to answer your
18 question, I think there are some models out
19 there that do make good sense. I'd invite
20 Lanny if that's appropriate to comment on any
21 models that you're aware of.

22 MEMBER ARMSTRONG: One of the key

1 issues that we've been talking about in this
2 working group is expanding some of the
3 consensus standards from NFPA. And the NFPA
4 as well as the -- 472 is really kind of our
5 guiding document for hazardous materials
6 response. And I think the approach that the
7 emergency response community is starting to
8 develop is pipelines are another mode of
9 transportation for hazardous materials, albeit
10 it's probably the safest transportation mode.

11 The difference is, as has been
12 mentioned many, many times, that it's low-
13 frequency high-consequence. When things get
14 out of that pipeline they tend to react a lot
15 quicker than they do when they get out of a
16 tank truck or a rail car. However, the impact
17 is the same. I mean, you're shutting down
18 transportation routes, you're evacuating the
19 public.

20 One of the things -- I mean
21 there's kind of a glaring 800-pound gorilla in
22 the room and it's the fact that about 70

1 percent of the emergency responders that
2 you're dealing with in the United States are
3 volunteer. And that's a huge issue. Every
4 volunteer fire department has unique budgetary
5 restraints as well as retention and staffing,
6 and it's a huge, huge issue. I mean, they
7 face their own set of problems.

8 The difficulty in engaging
9 emergency responders is, like you said
10 earlier. I mean, you may engage them. They
11 may not be listening. And I think the route
12 that we're taking with the expansion of 472
13 and the sustainability of what's already in
14 place with OSHA 1910.120 which is the HAZWOPER
15 standard and all of the levels of training
16 that are defined in that standard can be
17 expanded to include pipelines.

18 And I think you'll find that
19 that's much better received in that route than
20 it is if you have a, like in our area. I
21 mentioned this in the response forum in
22 December. We typically have a third party

1 service that comes in and provides a pipeline
2 training program. And they feed them a steak
3 or a barbecue dinner and they have booths and
4 everybody gets a little bag of trinkets.

5 And everything's hunky-dory and
6 they go through this training program while
7 everybody's eating. And then when they finish
8 and my guys come back I go what did you get
9 out of that? A steak dinner and a bag full of
10 trinkets. Did you learn anything? Well no,
11 I was eating. So those are kind of not real
12 effective.

13 And I'm not real sure what the
14 solution to that is other than if you take it
15 through the consensus standard route and the
16 sustainable training that's been done with the
17 chemical industry for many, many, many years
18 I think you're going to go down the right
19 path. And you'll get some engagement from
20 them.

21 As well as the incident management
22 system. And I'm not even really sure what the

1 requirements are for the operators as far as
2 NIMS and all those things are. I don't think
3 there are any.

4 MR. WIESE: There's liaison
5 requirements but not in the incident
6 management structure or NIMS to my knowledge.
7 I mean, I know that many of the operators are
8 fully versed but it's not a requirement per
9 se.

10 MEMBER ARMSTRONG: And that's
11 another aspect. I mean, they need to be
12 engaged in the management side of it so that
13 when we respond to these incidents with the
14 operators they fit right into that management
15 system and we unify command. Because
16 obviously the operators are the ones who are
17 going to be dealing with this problem.

18 And I know in our area it's
19 pipeline central, but my fire fighters, we
20 don't touch valves. We don't -- we're not
21 going to mitigate your problem. We're going
22 to stabilize it, we're going to evacuate the

1 public and we're going to wait for you to get
2 there and tell us what you need. And that's
3 how we're going to respond. So I mean, I
4 think if you take that approach you're going
5 to be way ahead of the game.

6 MEMBER TAHAMTANI: The issue of
7 liaising with the public officials and
8 emergency responders has been obviously part
9 of the code for a long time. But the point
10 that was made that operators are required to
11 reach out but the responders are not required
12 to listen while they're eating their steak.
13 In Virginia we don't give them steaks.

14 (Laughter)

15 MEMBER TAHAMTANI: It's a hot dog.
16 Even then we couldn't get their attention.
17 So, what we did, Chief, was we got together
18 with our operators and one operator agreed to
19 create a web-based training where they would
20 get actually a credit toward their continuing
21 education. That started about 6 months ago.
22 It's been very successful. And pretty soon

1 Mike will make it available to all operators
2 including the city of Richmond.

3 The question here, you said it
4 exactly. Seventy percent of the fire fighters
5 are volunteers. You have to make it very easy
6 for them so that when they are sitting in the
7 firehouse with nothing to do they put the
8 cards away and say let me do this. And as I
9 said, it's only 6 months old but the results
10 have been pretty impressive.

11 MR. WIESE: Okay, with the chair's
12 indulgence I'm going to try to wrap it up and
13 say first of all I think this topic alone we
14 could probably and will keep coming back to
15 and expand on. So as we find models I think,
16 Massoud, we're familiar with that one too. We
17 need to get a little more exposure to these.
18 There's probably no one answer, right? There
19 are a lot of answers.

20 And one of the things I think we
21 learned a long time ago is it wasn't nearly as
22 effective coming from us or from the operator

1 as it was coming from the emergency responders
2 to the emergency responders. That's why we
3 brought in Hildebrand and Noll, you know, who
4 are widely known for their work, the quality
5 of what they do. And they know. And it's why
6 we're -- Sam is striking these partnerships.
7 You might note that our Deputy Administrator
8 is an emergency responder. So I think we
9 believe passionately in the work that we need
10 to do in this area and there's a lot more to
11 do. So, we'll keep the focus on it.

12 Just with that I think -- I'll
13 just give some guidance and turn to the chair
14 to close. We're going to go for an hour. I
15 apologize for the fact that I don't have a
16 list of all the places but there are lots of
17 places within a one-block radius. There's a
18 restaurant here. Let's do the one hour and be
19 back at 1:15 if we can.

20 CHAIR FORD: I simply wanted to
21 say that we just had a MARC Conference in Des
22 Moines, Iowa. I think, Donald, you will agree

1 that Phil Bennett and Tim Butters and a
2 gentleman from the National Transportation
3 Safety Board gave us an excellent and very
4 divergent views on some of our issues with
5 pipeline safety. So I'd like to thank Tim in
6 his absence and Phil Bennett for a fine job
7 that they did.

8 Donald, did you want to close by
9 saying anything?

10 MEMBER STURSMAN: No, you've summed
11 it up very well. And we're grateful that you
12 appreciate the work we did on that conference
13 because that was a major undertaking. And
14 it's always glad to know that it turned out
15 well.

16 MR. WIESE: We will adjourn.

17 (Whereupon, the foregoing matter
18 went off the record at 12:18 p.m. and resumed
19 at 1:21 p.m.)

20 MR. WIESE: Good afternoon,
21 everyone. Given the fact that we barely have
22 a quorum here right now we're going to do a

1 little bit of rearranging. It's essential to
2 have a quorum here when we do the vote. It's
3 not essential to have them here to do a
4 presentation.

5 And since Sam is usually good on
6 his feet we've just sort of told him that
7 we're going to move him up in the agenda.
8 Really not the emergency response one though,
9 but the excavation damage one. Talking about
10 something we've talked to many of you about
11 before and that's our rulemaking on excavation
12 damage.

13 I should have said earlier, by the
14 way, I shouldn't let an opportunity go to take
15 a shot at Sam. You know, we fired Sam once
16 before and somehow or another he managed to
17 sneak his way back into the organization.

18 (Laughter)

19 MR. WIESE: I think it actually
20 was that Sam realized, wise man that he is,
21 that it's hard to maintain a quality of life
22 in Washington, D.C. and he did honestly and I

1 give him credit for that move to Richmond.
2 Took a job somewhere else. We decided that we
3 liked Sam too much so we said it's okay, you
4 can work for us from Richmond. So pleased to
5 have Sam back and appreciate your flexibility
6 in covering that topic for us.

7 MR. HALL: Thank you, Jeff. I'm
8 going to talk -- the agenda item I believe is
9 the damage prevention rulemaking or the Notice
10 of Proposed Rulemaking. And I'm going to talk
11 about that NPRM in the context of our overall
12 damage prevention program.

13 So I'm going to lead up with some
14 general information about our damage
15 prevention program and specifically our 811
16 campaign. It's a relatively new campaign to
17 promote the "Call Before You Dig" number 811.

18 I'll also talk about some efforts
19 to document what's going on at the state
20 level. As you all are probably aware states
21 all have damage prevention laws as Mr. Stursma
22 said this morning, but no two laws are the

1 same. We've done a lot to try to document
2 what those laws say across the country.

3 I'll talk briefly about our state
4 damage prevention grants. Then I'll get into
5 the enforcement rule and that's really the
6 bulk of the presentation. And I'll wrap up
7 with some other miscellaneous damage
8 prevention efforts and some things that are on
9 the horizon.

10 So, some background on the 811
11 campaign. As I'm sure you're aware DOT was
12 instrumental in working with the FCC and
13 designating 811 as the 3-digit "Call Before
14 You Dig" national number. You dial 811,
15 you're automatically routed to your One Call.
16 And of course that's the foundation of
17 effective damage prevention.

18 We've also over the years I
19 believe since 2000 been funding the Common
20 Ground Alliance to help them promote 811.
21 They have really been the keeper of the 811
22 campaign since that time. And from 2010

1 through the present we've done quite a few
2 things to try to advance 811 including letters
3 to each state Governor every year in promotion
4 of Safe Digging Month and 811 Day or 8-1-1
5 Day, I should say. That's August 11th.

6 We've written letters to state
7 agency chiefs, pipeline safety program
8 managers. We've worked with the national
9 trade associations and put out web messages,
10 blogs, congressional -- worked to get state
11 congressional resolutions and gubernatorial
12 decrees, those kinds of things, about 811 Day
13 and National Safe Digging Month.

14 We've also done a lot of
15 presenting all over the country at lots of
16 different conferences and we really try to say
17 yes whenever we're invited to speak at a
18 conference because certainly that's a real
19 opportunity to get to the folks who are doing
20 damage prevention every day.

21 Recently Secretary LaHood made a
22 commitment to do a better job of promoting the

1 811 message. And certainly his reasoning and
2 ours as well is that PHMSA is a safety
3 organization and 811 is a critical safety
4 message.

5 The CGA, the 2010 awareness
6 survey, CGA conducts a survey every 2 years to
7 evaluate the awareness of the 811 number. And
8 the results from the 2010 survey really did
9 show that there's room for growth in the 811
10 campaign and that there's room for DOT in
11 particular to contribute.

12 New resources in the form of
13 funding were dedicated to PHMSA from the
14 Secretary's office to help us ramp up the
15 support of 811. And the approach that we've
16 taken is that the campaign must incorporate a
17 strong safety message, be considered a DOT
18 campaign (read: pipeline-centric) but also
19 complement the Common Ground Alliance campaign
20 and use appropriate CGA materials. They've
21 done a lot of work in this and we do not need
22 to reinvent the wheel, but this campaign is

1 really intended to be a more DOT-centric
2 campaign.

3 What we've done so far is produce
4 a public service announcement. It's in the
5 form of a video. It's called "Avoid a "Grimm"
6 Situation: Call Before You Dig." It's a bit
7 of a pun. The theme is a fairy tale, it's
8 Snow White and the seven dwarves. The seven
9 dwarves are doing some digging work. Avoid a
10 Grimm situation, call before you dig. You can
11 view the PSA at that web address. That's one
12 of the shortened web addresses from YouTube
13 that they now produce, TinyURL type of thing.

14 We've also -- to announce the
15 public service announcement we hosted a media
16 event and did some other work to promote the
17 public service announcement like a social
18 media campaign. We posted the video to
19 YouTube.

20 Internally we've been working with
21 our own employees as I know many pipeline
22 companies have and certainly state-level

1 agencies have to commit to safe digging. The
2 811 Promise is a Common Ground Alliance
3 campaign. We got quite a few people within
4 PHMSA to commit to calling 811 formally
5 through this 811 Promise campaign.

6 We've also posted monthly messages
7 on our websites. We've had posters all over
8 the DOT building. There are lots of people
9 who work at DOT. We've had the Secretary post
10 some blogs on his blog The FastLane.

11 And finally, we're looking into
12 partnering with some non-conventional
13 organizations to help promote the 811 message.
14 Emergency responders certainly all resonate
15 very well with the 811 message because it's a
16 prevention. You know, the best way to avoid
17 having to respond is to avoid the incident
18 altogether.

19 We've also looked at partnering
20 with the Future Farmers of America. They're
21 diggers, they're excavators and it's a great
22 way to get messages to young people.

1 I'm going to skip now away from
2 the 811 campaign and into our efforts to look
3 at state laws and regulations. The first
4 effort we've taken, it's not an effort to look
5 at state laws and regulations. It's an effort
6 to look at state laws and regulations. It's
7 an effort to look at how states have
8 implemented the nine elements of effective
9 damage prevention programs.

10 And if you're not familiar with
11 those nine elements, I'm sure that you all
12 are, they were written into the -- they came
13 out of the DIMP study and they were written
14 into the PIPES Act of 2006. They address
15 things like employee training, partnership and
16 public education using data, using technology,
17 those types of things.

18 And what we've done is used sort
19 of a forum to go out and assess how well the
20 states are implementing those nine elements.
21 It's a very -- it's a relatively subjective
22 evaluation and it relies heavily on input from

1 state officials, both within the One Call and
2 in the pipeline safety regulatory agency.
3 We've also tried to take a look at all the
4 state laws. And we've tried to develop a one-
5 stop shop for information about state damage
6 prevention laws.

7 Quickly, here's some -- just a
8 taste of the results from the characterization
9 tool. We produced this information as maps so
10 that you can see geographically these results
11 as opposed to just this sort of dot idea. But
12 as you can see the results are very Consumer
13 Reports-like. The green dot means the program
14 element is implemented. So element one for
15 Alabama is implemented. A yellow dot means
16 the element is partially implemented,
17 marginally effective. So you can see that for
18 Alabama element four is partially implemented.
19 If it's red it's not implemented and a circle
20 with a cross means that no information was
21 available. The P's mean it's pending and
22 we're looking for more information. I wish

1 that didn't look like a crosshair. It would
2 be better if it was an X.

3 (Laughter)

4 MR. HALL: I just realized that.
5 We'll take care of that.

6 The other thing that we've done
7 that I mentioned is trying to take a look at
8 all of the state damage prevention laws and
9 summarize them in sort of a one-stop shop.
10 This is a mapping tool or a mapping website
11 that we developed. It's very simple to use.
12 And I presented this I think about a year ago
13 to this group.

14 On the left you have provisions of
15 the state laws. I know it's very difficult to
16 read but for example the top one says
17 "Excavator notice to the One Call is required,
18 yes or no?" "White lining is required, yes or
19 no?" As you click through each of these
20 provisions, assuming it's a yes-or-no question
21 the map changes. So as you can see the blue
22 states here are yeses, the more gray states

1 are no. And I've clicked here on white lining
2 required so Arkansas requires white lining,
3 Illinois, Minnesota. Other states do not.

4 On the right side you can click
5 through each of the state damage prevention
6 laws. And we've tried to parse out those laws
7 in some digestible format.

8 We keep this up to date. We
9 update it probably once every 6 weeks or so
10 and certainly periodically as we get notice
11 from our state stakeholders and others that
12 changes are being made. We update the law
13 even if the law is implemented. You know, in
14 Washington for example they just recently
15 passed a law and we had the changes updated
16 before I think the law went into effect.

17 However, that being said there's
18 no substitute for understanding the law in
19 each state and this really isn't meant to be
20 a substitute for going to that state's law and
21 understanding how that state functions. It's
22 really just meant to be a one-stop shop to

1 help people understand that there is quite a
2 diverse landscape when it comes to damage
3 prevention laws and regulations.

4 Okay, next topic. I'm jumping
5 around. The next topic is state damage
6 prevention grants. I just have one slide on
7 this.

8 Since 2008 we've awarded over \$6
9 million to 30 states under the state damage
10 prevention grant program. And the grants are
11 available to state authorities that are
12 designated by the Governor as eligible
13 recipients. That almost always means that
14 it's awarded to the pipeline safety regulatory
15 agency or to the One Call.

16 The intent of the grants is to
17 help states align with the nine elements of
18 effective damage prevention programs which I
19 just mentioned. So some of the results that
20 you saw from that characterization tool have
21 been influenced by the money that states have
22 used to improve their implementation of those

1 nine elements.

2 They are competitive grants. We
3 only have \$1.5 million annually to award and
4 the maximum award is \$100,000. So if you do
5 the math you've got 15 awards if every state
6 gets \$100,000. So states do compete for this
7 money.

8 And the 2012 awards are pending.
9 We should have those announced shortly.

10 Okay, so I've kind of just touched
11 on some of the things that we are doing, some
12 of the new fresher things to come out of the
13 damage prevention world from PHMSA. Now I'm
14 going to jump into the Notice of Proposed
15 Rulemaking that was listed as the subject on
16 the agenda today.

17 The title of the Notice of
18 Proposed Rulemaking is "Pipeline Damage
19 Prevention Program." The docket number is
20 listed here, PHMSA-2009-0192. You plug that
21 into regulations.gov and you can actually read
22 the entire proposal.

1 We've also developed a video. I
2 made a presentation on a video, it was
3 recorded and we posted that video online.
4 It's about 20 minutes and it provides an
5 overview of the regulation or the proposed
6 regulation. And I'd encourage you to go check
7 that out. It'll give you a much more thorough
8 review if you haven't already read the NPRM.

9 The comment period on the NPRM
10 just closed Monday. So we -- I've read I
11 think two or three of the submitted comments.
12 They were relatively extensive and there seems
13 to be a lot of good feedback on the proposal.
14 We'll be digesting all of that over the next
15 several weeks, months, and developing a final
16 rule. We hope the final rule will be
17 available at the end of 2013 but that's got to
18 be a question mark at this point. You know,
19 it's -- we're not entirely in control of the
20 time line there.

21 A little background on the
22 proposal. The Pipeline Inspection Protection

1 Enforcement and Safety Act, PIPES Act of 2006
2 really focused a lot on damage prevention and
3 it gave PHMSA new authority to enforce against
4 excavators who damage pipelines in states with
5 inadequate damage prevention enforcement
6 programs.

7 The enforcement authority is
8 limited. We've always had authority over
9 pipeline operators obviously. This is a new
10 authority over excavators but it only applies
11 to excavators who damage pipelines, not other
12 infrastructure, and it only applies in states
13 that we've deemed to have inadequate
14 enforcement programs.

15 The law said that in order for us
16 to actually implement this and to use our
17 limited enforcement authority we had to go
18 through a rulemaking process to determine how
19 we were going to evaluate states' enforcement
20 programs, the process we would use to make
21 those evaluations, the adjudication process we
22 would use for violators, for excavators who

1 violate the regulation, and then of course
2 what it is that we are going to enforce at the
3 federal level.

4 We published an Advanced Notice of
5 Proposed Rulemaking in October and it's the
6 same docket ID on regulations.gov. You can
7 read it there, October 2009. So we had quite
8 awhile to -- we got lots and lots of comments
9 on that and we went through all those and
10 developed a fairly I think comprehensive
11 response to a lot of those comments.

12 The intent of the NPRM is really
13 that every state -- we're trying to set the
14 bar essentially. Every state has its own
15 excavation damage prevention law but no two
16 are identical. Some states don't adequately
17 enforce their damage prevention laws and we do
18 know that effective enforcement does reduce
19 excavation damage rates. And of course
20 excavation damage is a leading cause of
21 pipeline incidents that hurt people, kill
22 people and damage property.

1 So the proposed rule is really
2 intended to reduce excavation damage to
3 pipelines, encourage states to adopt
4 effective, balanced damage prevention law
5 enforcement programs and if they don't,
6 provide backstop federal enforcement authority
7 in states that lack adequate enforcement.

8 And specifically, I just mention
9 these. We need to establish the criteria and
10 procedures for determining the adequacy of
11 state enforcement programs. Of course we have
12 to do this before we can use our new
13 authority.

14 We have to establish the
15 administrative process for making adequately
16 determinations. How are we going to go out
17 and do this? Will we do site visits, those
18 kinds of things?

19 We have to establish the federal
20 requirements that PHMSA will enforce in states
21 with inadequate programs. We don't enforce
22 state law. What will we in fact then enforce

1 if a state does have an inadequate enforcement
2 program? And then finally, once an excavator
3 is cited what does the due process look like?

4 I've got some truncated criteria
5 here for what we've used, the criteria that we
6 propose to use to assess a state's enforcement
7 program. This is not the exact language from
8 the NPRM, it just gives you a taste of what's
9 in there.

10 The first is does the state have
11 enforcement authority with civil penalties.
12 Do you have authority to enforce? And the
13 second is do you have a designated agency or
14 other body as the responsible enforcement
15 authority. Do you have the authority and are
16 you -- do you have somebody that can use it?
17 The third is is the state using its
18 enforcement authority and making that
19 enforcement information available to the
20 public.

21 The fourth is does the state have
22 a reliable mechanism for learning about

1 excavation damage. If you're enforcing, how
2 do you know what to enforce? Is there a
3 reporting mechanism? Is there a complaint-
4 based -- complaint-driven reporting mechanism?
5 What is it?

6 Does the state -- the fifth is
7 does the state use damage investigation
8 practices that are adequate to determine the
9 at-fault party. In other words, is the
10 enforcement fair and balanced? Are you
11 assessing penalties against the right -- the
12 actual at-fault party or are you targeting a
13 particular stakeholder group like excavators?

14 The sixth is does the state's
15 damage prevention law require, then there are
16 three parts to this. This is pulled right out
17 of the PIPES Act. Excavators have to call the
18 One Call before they dig. They may not
19 excavate in disregard of the marked locations
20 of pipelines. And an excavator who causes
21 damage to a pipeline must report the damage to
22 the owner or operator of the pipeline and must

1 call 911 or another emergency telephone number
2 if there's a release of a product from the
3 pipeline.

4 And then finally the seventh one
5 is does the state limit exemptions for
6 excavators from its excavation damage
7 prevention law. As it's proposed we do not
8 intend to declare a state inadequate if it
9 does have exemptions in its law. We want to
10 see written justifications for the exemption,
11 and in many cases states have data that can
12 substantiate the exemption and show that that
13 exemption is not problematic in a state.

14 The colors on this slide don't
15 look great, but this is a quick map that shows
16 who the enforcement agency is in each state in
17 the U.S. And I know that the legend is
18 difficult to read. What I want to draw your
19 attention to is that there are nine states in
20 red that do not have enforcement authority at
21 all on the books.

22 Another thing that we've proposed,

1 and of course I'm just highlighting some of
2 the things that are proposed in this rule. We
3 also propose the process that we'll use to
4 evaluate state programs. I won't cover this
5 here but I did mention that we had to define
6 the federal requirements for excavators.

7 Again, we don't enforce state laws so what is
8 it that we will require of excavators or what
9 is it that we will expect of excavators in
10 states that we've deemed to have inadequate
11 enforcement programs?

12 Again, this is pulled directly
13 from the PIPES Act. Before starting a dig
14 excavators have to call the One Call. If the
15 pipelines exist in the area they've got to
16 wait for the operators to come and mark.
17 They've got to excavate with proper regard for
18 the marked location of the pipelines and dig
19 with care essentially. And they've got to
20 make additional use of the One Call as
21 necessary if marks are obliterated. If for
22 some other reason they want to move outside of

1 the original excavation zone they need to call
2 811 again to make sure that facilities are
3 marked properly.

4 If a pipeline is damaged in any
5 way by excavation activity excavators have to
6 report the damage to the pipeline operator
7 whether or not a leak occurs. So if there's
8 a scratch to the coating, if there's a dent,
9 any kind of damage at all to a pipeline that
10 should be reported. And if the damage causes
11 a release from the pipeline call 911.

12 There is an exemption in the
13 proposal and that is for homeowners who are
14 using hand tools on their own property. And
15 I understand from some of the comments that
16 that's very contentious and that's
17 understandable.

18 I also want to mention before I
19 move onto the last slide, we recognize that --
20 this authority is over excavators. But we do
21 recognize that there are other parties to
22 preventing excavation damage. It's a

1 responsibility of the pipeline operator, it's
2 a responsibility of the One Call system. It's
3 a shared responsibility.

4 Our current regulations do allow
5 us to pursue or enforce against pipeline
6 operators who violate our damage prevention
7 regulations. We've done that in the past and
8 we encourage states to also, to enforce
9 against the appropriate party if -- the at-
10 fault party in an excavation damage. This
11 regulation as it's proposed and the authority
12 that was provided to us by Congress is focused
13 on excavators. That covers the excavation
14 damage proposal.

15 Some other damage prevention
16 efforts. We are mining and trying to use our
17 existing incident leak and damage data as best
18 we can. There are some creative ways that
19 we've thought up that we might be able to look
20 at data trends although it's imperfect data.
21 And if you're familiar with damage prevention
22 data in general you know that there is no

1 perfect set of data. There are lots of
2 sources of data. None are perfect.

3 We're working to reach out to
4 emergency responders to help promote the 811
5 message. Again I think that's an easy win and
6 it's something that's in both of our best
7 interests as emergency responders and as a
8 safety agency.

9 We've conducted over the past
10 several years some meetings with all of the
11 trade associations, pipeline trades,
12 excavation trades, the locator trades to stay
13 coordinated, to talk about what's going on, to
14 understand where we can best apply our
15 resources and promote change and change in
16 behavior.

17 We've made lots of presentations
18 at events. We've participated in stakeholder
19 meetings as best we can. I said earlier we
20 write letters. And we hope that we serve as
21 a resource to the states.

22 The last few bullets here deal

1 with the most recent reauthorization bill.
2 And in particular the bill calls for an
3 exemption study, a study of how exemptions
4 affect damage prevention. We are noodling the
5 -- how to approach that study and it is --
6 it's daunting. It's going to be a real
7 challenge I think to produce a study,
8 especially in such a short period of time that
9 utilizes the best available data and produces
10 results that are dependable and reliable.

11 The reauthorization bill also
12 eliminates grant funding, specific grant
13 funding, not all grant funding. But I think
14 it's state damage prevention grant funding and
15 One Call grant funding for states that have
16 exemptions for state and local government
17 agencies. This is I think going to be a real
18 challenge for many states but it's been
19 certainly a priority of Congress to eliminate
20 state and local government exemptions from
21 damage prevention laws.

22 That concludes my presentation.

1 CHAIR FORD: Thank you, Sam.
2 Before we go to questions Jeff wanted to make
3 a statement.

4 MR. WIESE: First of all, I
5 appreciate your flexibility here. I asked Sam
6 to go ahead because we needed to get a quorum
7 in here to have the vote on the miscellaneous
8 rule. But I also asked Sam to come back and
9 talk to you about this subject because of
10 uncertainty in the regulatory process.

11 Between now honestly and next year
12 what we can get done is unclear. There are a
13 lot of things going into the regulatory
14 pipeline so to speak, you know, and the speed
15 at which they move is unpredictable. Some
16 things we can move and some you can't. So I
17 can't predict it.

18 I know that you guys have heard
19 this before, much of it before. Sam's done
20 great work on this. Sam and the whole group
21 over in program development there, and I
22 appreciate their leadership on this issue.

1 This is one if we could pop it out
2 and depending on how you view it, if we need
3 to we might be able to go to a phone vote just
4 to get it done, you know. I think this is
5 crucial work that addresses one of the higher
6 risks in pipeline safety and the ability to
7 time everything is just loose.

8 So we won't push it. If you feel
9 like you really need to come to the table to
10 talk about it we'll do in person. You know,
11 I try to do in-person meetings when we have
12 votes and can't always do that. But this is
13 really important I think to all of us who want
14 to move it. To the extent that there's, you
15 know, not a lot of controversy at the table we
16 might be able off a phone vote and accelerate
17 it. So just a little background info for you.
18 Thank you.

19 CHAIR FORD: Thank you, Jeff. We
20 will move now back to agenda item 6. Oh, I'm
21 sorry. Don, I'm sorry. Don?

22 MEMBER STURSMA: Don Stursma. And

1 you really didn't think I was going to let
2 this one go past without commenting, did you?

3 (Laughter)

4 MEMBER STURSMA: I know it's new
5 and both Iowa and NAPSRS have filed some pretty
6 extensive comments in this docket, but I do
7 want to make just a few points.

8 Number one is I do think that the
9 proposed rulemaking goes far beyond what was
10 mandated by Congress, getting into areas that
11 have nothing to do with enforcement and
12 therefore I don't believe have any part of
13 this rulemaking, or at least not a rulemaking
14 that's justified by what was contained in the
15 federal law.

16 It's already been mentioned the
17 exemption for property owners directly
18 conflicts with major state and national
19 efforts because we do want those people to
20 call. If PHMSA has made some sort of decision
21 that it's not going to bring the full weight
22 of the federal government to prosecute a

1 homeowner if they dig that's fine, but you
2 know, we shouldn't have a rule that's saying
3 no matter what your state law is all of a
4 sudden they're exempt.

5 Similarly there's no exemption --
6 if we're going to list exemptions we need to
7 talk about farming. I think every state that
8 has a damage prevention law has either an
9 explicit or implicit exemption or at least
10 limitation on when normal farming operations
11 have to call. And if anybody in this room
12 relishes the thought of having to go out and
13 mark all the pipelines in the country every
14 spring when the farmers hit the field then
15 maybe you'll support that rule, I don't know.

16 Of course the part about the
17 rather extremely onerous proposed penalty
18 against state grants for states that don't
19 have what's considered an adequate enforcement
20 process. Again, that is not covered by the
21 mandate, plus it is absolutely excessive. A
22 state can do just about anything else wrong

1 and not be penalized anywhere near that level.

2 If PHMSA wants to pursue that
3 route I know the rulemaking says that there's
4 no public meeting or anything proposed on this
5 rule. I think that item alone if it stands
6 the way it is would warrant a public meeting
7 to look at the potential impact of that.

8 And of course when I saw a draft
9 cost-benefit ratio of 19 to 1 of course that's
10 like waving a flag in front of me. So I waded
11 into the benefit-cost analysis and found all
12 kinds of things to comment on which are in the
13 state comments. I don't know if I managed to
14 -- I didn't try and recalculate the cost-
15 benefit ratio and I'm not sure if I took it to
16 or below zero, but I'm quite -- I think it's
17 quite clear that the one that's in there is
18 horribly inflated.

19 But I guess to cap off is that
20 this rulemaking is strictly for whether a
21 state is enforcing its damage prevention law.
22 I really don't want federal criteria out there

1 on when you have to call One Call, how you
2 have to dig that conflict with the state laws
3 already on the books. I just don't see how
4 that's going to work if state law says one
5 thing and then PHMSA come along and says no,
6 you need to do something else.

7 The proposed rules say that you're
8 supposed to -- excuse me, the law says you're
9 supposed to -- excavators are supposed to use
10 the state system. I submit that when it says
11 "system" it means more than the facilities for
12 answering pre-excavation calls. It
13 incorporates the broader scope of this is how
14 a state handles it.

15 And I think you start adopting
16 something totally new and different from the
17 established state process, I think it's going
18 to cause a lot of practical problems in the
19 field with personnel not being able to -- or
20 not knowing that there's two sets of criteria
21 out there, which one do they follow.

22 And that's probably enough. I've

1 probably made my feelings known.

2 CHAIR FORD: Jeff, do you?

3 MR. WIESE: Just out of curiosity
4 though, Don, and I appreciate that. Don's
5 been involved in this for a long time. We've
6 talked about many of these issues. And not
7 saying we necessarily always disagree on some
8 of these things, but I would ask you are the
9 comments that you're relaying now, are those
10 like Iowa and yours, or are they NAPS
11 comments?

12 MEMBER STURSMA: They are
13 primarily my comments, but some of those same
14 remarks are reflected in the NAPS comments.

15 CHAIR FORD: Rick?

16 MEMBER KUPREWICZ: I just wanted
17 to make a comment on Sam's discussion about
18 the different laws in the different states.
19 CGA has created a new committee called the
20 Advisory Committee to work in conjunction with
21 PHMSA to identify some of the CGA best
22 practices that could -- as new states are

1 coming in and revising their damage prevention
2 laws, that this group would be there as a
3 resource to help identify what are the key
4 best practices that have already been voted on
5 by consensus of multiple stakeholders and to
6 initiate those within their own state laws.

7 MR. GALE: Thank you, Ms. Ford.

8 Just to add just a quick comment to what Jeff
9 said regarding the rulemaking process.

10 To give you an example on this
11 rule, we submitted that rule, because it was
12 a significant action it had to go to Office of
13 Management and Budget which then means it has
14 to go to the Office of the Secretary. It
15 probably took us almost 9 months to get
16 through those two steps to get that rule out.

17 So though we could possibly, you
18 know, do a phone vote on this or some kind of
19 committee meeting late fall, early winter on
20 this, it would still -- after we finish the
21 final rule it still will take several months
22 to get that rule through the process and

1 actually get it out. So that's why when you
2 saw Sam's comment up there about it being
3 published late in 2013 that's where some of
4 those time frames are coming from.

5 I'd also like to take a quick
6 second to thank Ms. Cheryl Whetsel for putting
7 this -- helping us put this committee
8 together, or this meeting together. Ms.
9 Whetsel takes a lot of pride in putting these
10 meetings together and I think it shows. I'd
11 also like to take a second and thank a lot of
12 the other members of my staff who try to help
13 Ms. Whetsel to pull this meeting off while
14 still doing all their other tasks that they
15 have to do on a regular basis. So thank you,
16 Cheryl.

17 I'd also like to thank Rick
18 Kuprewicz for mentioning the issue of
19 priorities because a lot of the additional
20 rulemaking actions that are --

21 MR. WIESE: Strike that comment.

22 (Laughter)

1 MR. GALE: -- you know, are
2 falling directly into our office. Not only
3 are we responsible for managing rulemakings
4 but we also have to manage this advisory
5 committee. We get involved in special
6 permits, written interpretations, et cetera.
7 So priorities is definitely something we have
8 to consider on a regular basis, especially
9 with all these new NTSB recommendations and
10 all the new congressional mandates that are on
11 our plate.

12 When I gave this presentation last
13 time to you guys we were probably talking
14 about five to six rules. We are now managing
15 close to 20 different rulemakings at this
16 time, especially with the new recommendations
17 we just got the other day. So we haven't
18 gotten any new resources but we're going to do
19 our best, I can guarantee you that. Our
20 priorities are definitely paramount in our
21 organization.

22 The first rule to mention is one

1 of the priorities of not only our office but
2 of Ms. Quarterman herself, and that is our
3 rulemaking, taking a look at the hazardous
4 liquid pipelines. The ANPRM, just the kind of
5 nuts and bolts on this rule, was published
6 back in October. Comment period closed a few
7 months later in January and we're in the
8 process of drafting that rule as Ms.
9 Quarterman mentioned.

10 The ANPRM dealt with a wide
11 variety of items. This is a very significant
12 rulemaking action for our office and we've
13 dedicated a lot of resources to it because of
14 the breadth of the different issues that are
15 involved.

16 We're looking at the scope of the
17 regulations, specifically some of the
18 exceptions that are in there such as gravity
19 lines and the like. The criteria for
20 designating a high-consequence area and should
21 we expand it. Should we change it. Should we
22 revise it.

1 Looking at leak detection and
2 EFRDs and adding those. Obviously those are
3 part of the recent workshops, they're part of
4 the recent congressional -- the Pipeline
5 Safety Act of 2012 as Jeff mentioned. And the
6 same is with valve spacing. We're trying to
7 juggle, you know, those two different mandates
8 at this time and the studies that we have to
9 do as well as continue to move the rule.

10 We're looking at developing repair
11 criteria in non-HCA areas as well as stress
12 corrosion cracking. As Ms. Quarterman said we
13 are currently drafting that rule and we're
14 moving forward on that rule. And very likely
15 you could see a proposal hit the street by the
16 end of this year related to these issues.

17 The other big significant --
18 "significant" doesn't do it justice for these
19 two rules, rulemaking that we're dealing with
20 is the -- kind of the sister rule to the
21 liquid rule which is the gas transmission
22 rulemaking. Again, throwing on the table lots

1 of different aspects of the regulations
2 related to gas transmission regulations.

3 The nuts and bolts on it again is
4 the ANPRM was published back in August. The
5 comment period just recently closed. And
6 we've been meeting on it on a regular basis
7 now to try to identify what different topics
8 should we propose. Because not only do we
9 want to, you know, address these important
10 topics, we need to be able to get it done.
11 Right now the rulemaking is very broad, it
12 covers lots of different topics. A lot of
13 unassociated topics for example. We also have
14 some new mandates that we have to also
15 address.

16 We've also related to the MAOP
17 verification requirement and the recent AB
18 we've published some revisions to the gas
19 transmission rule where we're going to collect
20 data related to the grandfather exception and
21 some other of the proposals that we've
22 mentioned in that ANPRM. So it's possible

1 that we could split this rule up into
2 different segments and address some of these
3 things in a future rulemaking action. But as
4 you can see here it's major topics, definition
5 of an HCA, developing repair criteria in non-
6 HCA areas. Assessment methods, corrosion
7 control. The issue of the grandfather
8 exception. Gas gathering lines and valves.
9 Again, juggling all the different
10 congressional mandates and restrictions we
11 have on our plate in addition to the different
12 studies that we have to complete in order to
13 get some of these rulemakings out.

14 So right now I think we received
15 roughly 100 comments on the rule and we're in
16 the middle of trying to identify what we're
17 going to propose. I don't think we're close
18 to even guesstimating when a notice could hit
19 the street on this rule but it's definitely
20 one of the top priorities in our office right
21 now.

22 Excavation damage rule as Sam just

1 covered. The only thing I would mention, I
2 guess in a way Jeff did cover, you know, when
3 could we possibly have a TAC vote. It could
4 be either phone vote as Jeff mentioned or
5 another get-together. It most likely would be
6 in the next 4 to 5 months.

7 For us to pull off one of these
8 meetings we're usually planning if it's an in-
9 person meeting at least 4 months out in order
10 to get the space and to coordinate everything.
11 So one of the restrictions we could have in
12 the need to do the phone vote in order to move
13 the rule quicker is the time associated with
14 pulling one of these meetings off.

15 So I'm just going to kind of skip
16 these since Sam stole my thunder here.
17 Actually, real quick Sam, you've got to tell
18 me how you got down to Richmond one day and be
19 able to report to these.

20 With the miscellaneous rule which
21 is the rule we're going to cover. We're not
22 going to get into the details of this rule,

1 but basically this is the rule we're going to
2 hopefully have a vote on in the next 30
3 minutes or so.

4 EFVs is another rule that is a
5 priority of our office. We published an ANPRM
6 which is looking at expanding EFVs beyond the
7 single-family residences. We're looking at
8 the multifamily dwellings, the commercial
9 buildings, public buildings, industrial
10 facilities.

11 And in addition in order to move
12 this rule forward and cost-benefit we're
13 developing a survey to gather additional data
14 to help us to make a -- to help us drive our
15 decision-making as to the cost-benefits of
16 some of these issues.

17 I think we're also doing a pilot
18 of the survey. We understand some of the
19 pilot -- we're having some issues with it, but
20 that's the purpose of a pilot is to kind of
21 correct some of those deficiencies and to
22 improve our survey so we can get the data we

1 need and also make sure that the operators
2 themselves can actually fill out and give us
3 the information we're requesting.

4 Tomorrow though this will be
5 further discussed. Mike Israni will be giving
6 a presentation in the GPAC meeting, or the Gas
7 Pipeline Advisory Committee meeting and get
8 into further detail as to the proposal and to
9 the census itself.

10 Another rule we've been working on
11 is a standards update rule. This is a fairly
12 -- a rulemaking that we do on a regular basis
13 looking to incorporate the more recent
14 versions of the standards that we've
15 incorporated into our regulations.

16 We're looking at about 30
17 different standards to update, but we have a
18 little bit of a problem right now. And that
19 is called Section 24 of the new Pipeline
20 Safety Act which mandates that any standard
21 that we adopt be publicly available for free
22 of charge on the internet. There is a public

1 meeting to discuss this topic on Friday and
2 it's going to severely hamper our ability to
3 adopt such rules. This rulemaking was
4 something we would do, you know, pretty
5 standard pro forma process and now it's going
6 to be a significant rulemaking action at OMB
7 in addition to trying to address the issue of
8 how are we going to make these standards
9 available, how are we going to address the
10 issue of the cost and the like.

11 Some of the standards are already
12 available. Many of the NFPA standards are
13 available. The API standards are available.
14 But if this requirement stays in place it's
15 going to make it very difficult for us to
16 update to the newer standards.

17 Another rulemaking we're doing is
18 related to what's called Part 190 or our
19 enforcement procedures. We're doing a lot of
20 editorial changes, a lot of amendments to it
21 just to make it current with some of the
22 requirements in the new Pipeline Safety Act

1 related to civil penalties and enforcement and
2 just administrative process. Kind of a
3 cleanup of Part 190. We don't have a time
4 frame of when we think we'll get a final rule
5 out, but we're hoping to get a notice out, you
6 know, in relatively short order.

7 We've recently gotten a
8 designation from OMB that this is a non-
9 significant action so that can hopefully speed
10 up our process for getting it out. But it's
11 definitely a rulemaking that -- it's something
12 we're trying to complete or at least get the
13 notice out this year. Sir?

14 MR. WIESE: I think it's important
15 to make a note on that last one just for the
16 committee's benefit if you're not familiar
17 with this fact. We had -- we never really had
18 enforcement for oil spill planned in our OPA
19 authority. It resided within the Coast Guard.
20 And theoretically that was okay when the Coast
21 Guard was within DOT but as a practical matter
22 we couldn't get them, you know, it was small

1 change for them so we could never get them to
2 pursue it. When they left DOT we lost
3 altogether the ability to enforce.

4 At our request the Congress gave
5 us back that enforcement authority so this
6 rulemaking amongst other things will return
7 authority to us and let us exercise that. The
8 rest of it is fundamentally fairly
9 administrative.

10 MR. GALE: Another rule we're just
11 right now temporarily calling Miscellaneous
12 II, this is kind of a way for us to kind of
13 just keep track of a lot of the different
14 mandates that came from the recent Pipeline
15 Safety Act. And they may or may not end up
16 being in this rule, but this is a way of just
17 informing you guys of what are some of the
18 actions we have to consider.

19 There is a change or requirement
20 in reauthorization related to incident
21 reporting and I will quickly -- incident
22 reports have to be submitted which is now, I

1 think it's within one hour of the incident.
2 Through the congressional mandate. An issue
3 on cost recovery, on design reviews. The
4 issue of exceeding of MAOP, of adding biofuels
5 to the definition of hazardous liquid, of
6 regulating certain types of carbon dioxides.

7 We're looking at also developing a
8 renewal process for our special permits. In
9 the last few years we've been adding
10 expiration dates to our special permits. And
11 right now if we don't develop a renewal
12 process those special permits that terminate,
13 they'll have to reapply and just like a brand
14 new special permit. And we think it would be
15 best to at least come up with some type of
16 renewal process that can expedite currently
17 authorized special permit applications --
18 authorizations.

19 We're also looking at our mapping
20 requirements. As you all are aware, currently
21 the mapping requirements are mandated in our
22 law but are not currently in the regulations.

1 So one of the things the miscellaneous rule is
2 going to do is actually bring in concurrently
3 with what's required today the mapping
4 requirements into the pipeline safety regs.

5 We are also now looking at making
6 changes to those requirements in this separate
7 regulatory action. We're looking at improving
8 the data accuracy which is currently at 500
9 feet. Then we're also looking at improving
10 the different attributes that we collect
11 today. We're looking at adding different
12 attributes related to diameter, pump and
13 compressor station locations, the MAOP or MOP
14 of the line, the pipe grade, operating SMYS,
15 piggability, et cetera. So hopefully this is,
16 again, this is one of the rules for our office
17 which is definitely a priority. This is a
18 rule that has tie-ins to many different parts
19 of our program so it's important that we get
20 this through. But it's just one of many
21 different priorities that we have currently.

22 MR. GALE: Another rule that came

1 about --

2 MEMBER GARDNER: Can I jump in?

3 MR. GALE: Yes, sir.

4 MEMBER GARDNER: Wayne Gardner
5 from Pennsylvania. On your pump compressor
6 locations matter, are you aware that FERC has
7 initiated a gas and electricity harmonization
8 looking at that matter as well? Because for
9 one thing it's a critical infrastructure and
10 in the event of electric outage they didn't
11 want to have compressors being shut off as
12 well further complicating the matter.

13 MR. GALE: What I'll do is I'll
14 take that information back to our mapping
15 folks and make sure they're aware of that as
16 they progress forward with that rulemaking.

17 MEMBER GARDNER: Good.

18 MR. GALE: Thank you, sir. Yes,
19 Jeff.

20 MEMBER WRIGHT: We're in the very
21 early stages. There's no rulemakings at FERC.
22 There's no even advanced rulemakings. We just

1 announced that we're going to have conferences
2 around the country starting in August. So
3 it's at a very, very early stage.

4 MR. GALE: Thank you. Another
5 rule we're looking at is the issue of NFPA 58
6 and 59. As you all recall in a prior vote or
7 rulemaking we were looking at the issue of the
8 primacy between NFPA 58 and Part 192 where
9 currently NFPA 58 has primacy over Part 192.
10 And we proposed to eliminate that primacy
11 issue and revert back to 192.

12 The committee recommended that we
13 not adopt that proposal and we did not. And
14 what we've been doing over the last couple of
15 years thanks in most part to Mr. Israni here
16 is comparing the different requirements of
17 Part 192 and NFPA 58 and 59 and looking at
18 those differences so that we can come up with
19 a rulemaking to clearly identify for operators
20 those requirements of Part 192 they have to
21 meet that are not in -- directly related to or
22 mentioned in NFPA 58.

1 So we're hoping to move forward
2 with that rule pretty quickly. We're looking
3 at different ways of getting that rule out.
4 But not necessarily a priority of our office
5 but it's something that's very important to
6 us.

7 We're also looking on issues of
8 plastic pipe. We have a variety of issues
9 related to plastic pipe that we're looking at.
10 We're looking at composite pipe. We have
11 several petitions on plastic pipe issues. One
12 is on composite pipe. We also have a petition
13 on the issue of PA12, the authorized PA12. We
14 have an AGA petition to raise the design
15 factor from 0.32 to 0.4. We're also looking
16 at issues relating to tracking and
17 traceability of plastic pipe.

18 But this rule also has some issues
19 related to IBR material and getting back to
20 Section 24. A lot of our rules end up dealing
21 with IBR material. And so -- and the effect
22 of that implementation of Section 24 on these

1 rules is going to be significant. But -- and
2 this rule we're basically just looking right
3 now at doing an ANPRM. But for sure this is
4 a rule that's maybe moving down the priority
5 list with the other mandates that we have
6 currently.

7 We're also looking at a rule
8 relating to assessment standards. This rule
9 would incorporate some consensus standards
10 governing the conduct of assessments of the
11 physical conditions of these pipelines. The
12 different types of assessments would be inline
13 inspection, internal corrosion direct
14 assessment and stress corrosion cracking
15 direct assessment. To give some requirements
16 on how you perform these assessments and the
17 training associated with the performance of
18 those assessments.

19 This is also related -- it was a
20 petition from NACE, is that correct, Michael?

21 Okay.

22 We also are tracking some

1 different mandates that are associated with
2 some studies that we're doing currently. We
3 obviously as has been mentioned we have done
4 a leak detection workshop and we've done a
5 valve workshop. But after the completion of
6 these workshops we're going to have to move
7 forward with rulemaking actions on these
8 different items.

9 There's also -- with the MAOP
10 verification issue. One of the things we're
11 going to have to do is then look at what are
12 going to be the requirements on operators that
13 can't verify their MAOP and the standards that
14 we have to adopt. So our rulemaking list or
15 the different rules that we have to manage
16 currently has grown exponentially.

17 And we have lots of different
18 mandates and lots of different requirements.
19 I haven't even been able to digest the
20 different NTSB recommendations that came in
21 the last couple of days and how that's going
22 to now impact our office. But we definitely

1 have a very, very, very full plate ahead of
2 us.

3 That's the end of that
4 presentation. Any more questions on the
5 rulemaking agenda? Please don't add anymore
6 rules though, please.

7 CHAIR FORD: There seem to be none
8 but it is -- agenda item 7 seem to be -- going
9 to be a lot of questions so if you want to
10 take a break you can choose to. It's your
11 pleasure.

12 MR. WIESE: I wonder if we might
13 ask, John, how long do you think -- we really
14 have two parts to these as always, the members
15 know. There's a presentation part. Then
16 there's the Q&A part and the vote. How long
17 is the presentation part?

18 MR. GALE: Forty-five minutes to
19 an hour I'm guessing.

20 MR. WIESE: Forty-five.

21 MR. GALE: That's adding in the
22 votes. We're looking at multiple votes here

1 to make it easier on the members. In total
2 deference to you guys we've come up with some
3 ideas on how to move forward with the vote on
4 this rule. Because it's dealing with multiple
5 topics it's -- there's technically 17
6 different proposals here.

7 And so we've come up with some
8 ideas on how to move forward in a more
9 positive way on the vote. So we were thinking
10 of having a vote on some of the less
11 controversial items and then a more thorough
12 discussion on the items, let's just call them
13 more controversial. We went out to the
14 members to ask them to identify what those
15 controversial items are. We have a list of
16 about five that we want to get into really
17 thorough detail of the proposals. We give you
18 a presentation on the rest of the rule as well
19 but I think that vote can move pretty quickly
20 and then we can get into the more
21 controversial issues. That's purely at the
22 deference to the committee.

1 MR. WIESE: So the non-
2 controversial part, how long do you think that
3 will take?

4 MR. GALE: That could probably
5 take about a half hour.

6 MR. WIESE: Half hour. So want to
7 run through that first and then?

8 CHAIR FORD: Massoud?

9 MEMBER TAHAMTANI: So you're
10 trying to get us really tired with the easy
11 stuff and then --

12 MR. GALE: Yes. We thought we'd
13 take the vote around 8 o'clock tonight.

14 MEMBER TAHAMTANI: 8 o'clock
15 tonight.

16 MR. GALE: Yes.

17 CHAIR FORD: All right. Let's
18 proceed.

19 MR. GALE: Before we proceed with
20 the rule what we'd like to do is do a quick
21 presentation by Cheryl who's going to just go
22 over the process for voting. So just to

1 refresh all the members and for the newer
2 members the procedures we have for voting. If
3 that's okay with Ms. Ford I'd like to turn it
4 over to Ms. Whetsel.

5 CHAIR FORD: Fine.

6 MS. WHETSEL: Okay. I'll make it
7 quick, I know you guys already know this. So,
8 the statute says that each committee consider
9 each proposed natural gas or hazardous liquid
10 pipeline safety standard published in the
11 Federal Register. And you're supposed to
12 evaluate it for its technical feasibility,
13 responsiveness, cost-effectiveness, and
14 practicability.

15 And we are going to take a vote on
16 each -- from each committee separately. And
17 there will be several separate votes in this
18 case. When the chairman hears somebody make
19 a recommendation there would need to be a
20 second. We've already determined that there
21 is a quorum in the room.

22 When we get to the more

1 controversial issues if you think you might
2 have something that you want to actually throw
3 into the motion you all might want to
4 volunteer somebody to prepare some of your
5 little written comments or whatever.

6 Then the proposed language --
7 thanks Cameron. There's three different ways
8 that you can visit the proposed language and
9 the first one is the proposed rule as
10 published in the Federal Register is
11 technically feasible, reasonable, cost-
12 effective and practical. The second is that
13 you all can propose it and then fill in the
14 blank if there is something that you want to
15 change in the particular rule. And then the
16 third is if you don't feel it's technically
17 feasible, reasonable, cost-effective, or
18 practical you can let us know that as well.
19 So that's the real quick rundown.

20 And then the verbatim transcript
21 is our record. So does anybody have any
22 questions? The prior slide? Okay. Is not or

1 cannot be made. Does that make sense?

2 MR. GALE: Don, you could be a
3 little bit more positive, you know.

4 MS. WHETSEL: Hey Don, thank you.
5 Okay, any other questions? Okay, I just want
6 to clarify. Are we not taking a break then?
7 We're going to go through yours? Okay. All
8 right.

9 MR. WIESE: Cheryl, just because
10 the votes have been confusing sometimes, is
11 that language in here by chance?

12 MR. GALE: We're going to bring up
13 a slide later that's --

14 MR. WIESE: Well, but it's in the
15 miscellaneous changes back towards the back.
16 Sample language. Just trying to make sure the
17 members know if you want to make a motion it
18 is in there.

19 MR. GALE: And also we'll bring
20 this slide back up. When it's time for a vote
21 we'll have the slide up so everyone can see it
22 to help facilitate the discussion.

1 As Cameron starts to bring this
2 presentation up this rulemaking again deals
3 with a wide variety of topics. I am not nor
4 would I ever try to claim to be an engineer
5 and some of these issues are very engineer-
6 specific. So I brought some support with me
7 with Mr. Mike Israni and Jeff Gilliam and also
8 DeWitt Burdeaux is around here somewhere in
9 case there's any technical questions that need
10 to be addressed so that your questions are
11 more than adequately answered. So in some
12 cases I'm going to defer to those individuals
13 to respond to your questions.

14 So the nuts and bolts of the
15 miscellaneous rule real quick. The rulemaking
16 was published back on November 29th, 2011. It
17 proposed 17 separate miscellaneous amendments
18 to the regulations. When I first came onboard
19 I noticed the need to try to do a rule such as
20 this. We had lots of different older
21 petitions or recommendations from NAPS, GPTC,
22 even some industry, other industry types of

1 recommendations, even internal
2 recommendations. And we needed a vehicle or
3 method to address these smaller changes in an
4 efficient fashion. So we came up with this
5 idea to try to clear the decks a little bit of
6 some of these older recommendations and also
7 in some cases for the sake of some of our
8 inspectors to show that their initiatives are
9 taken seriously and we have actions and
10 vehicles that we can address their different
11 recommendations to change the regulations.

12 But a lot of these didn't deserve
13 their own rule. You know, we're not going to
14 do a rule just on some editorial changes, or
15 we're not going to do rules that have very
16 minor impacts just on mapping to bring it into
17 the regulations. So this is a way of kind of
18 combining these things into one rule and in a
19 more efficient fashion get them into the
20 regulations.

21 One of the things that was the key
22 to this rule, one of the keys was that they

1 were proposals that would tend to correct
2 errors, address inconsistencies or impose very
3 minimal burden or are so minor not to merit a
4 separate rule. So that was one of the
5 premises. We probably reviewed over 30
6 different items in the regulations or
7 different proposals to adopt.

8 And I think on the whole we did a
9 good job. On a couple of cases maybe not so
10 much, but -- and I'm sure they'll be discussed
11 later, but in general I thought we did a good
12 job. In actuality in some of the petitions we
13 got we ended up going back and giving denial
14 letters to the petitioner to their recommended
15 changes to the regulations.

16 So this is a laundry list of the
17 different proposals that are in this rule.
18 I've highlighted several of these for a reason
19 and I'll get to those in a second. And the
20 different topics are responsibilities to
21 conduct construction inspections, leak surveys
22 for Type B gas gathering lines, qualifying

1 plastic pipe joiners, the mill hydrostatic
2 test for pipes to operate at an alternate
3 MAOP, ethanol, indirect cost for state grants,
4 transportation of pipe, threading copper pipe,
5 offshore pipeline condition reports and their
6 elimination, the pressure reductions for
7 hazardous liquid integrity anomalies, testing
8 low-stress components, alternate MAOP
9 notifications, the NPMS system and adding it
10 to the regulations, some changes to the
11 regulations regarding welders and welder
12 operators to make them consistent, components
13 fabricated by welding, odorization of gas and
14 some additional editorial amendments.

15 We received about 43 comments to
16 the rule. Most by far dealt with three
17 topics: construction inspection, odorization
18 and qualifying plastic pipe joiners. It
19 seemed like if anybody had a comment they'd
20 comment on construction inspection. It was by
21 far the number one topic that was discussed.

22 What I'd like to do is have a

1 quick brief on the rules or the items that I'm
2 going to deem as less controversial. We will
3 do a brief on those items, give members an
4 opportunity to comment after each of those
5 topics if they so desire. The public will be
6 given an opportunity to comment after the
7 completion of the brief, and then the
8 different committees, the LPAC and the GPAC
9 will then vote separately on these non-
10 controversial items.

11 I'm going to just jump real quick
12 through this. These are the issues that have
13 been recommended by different members as the
14 issues they would like specific votes on:
15 construction inspection, odorization,
16 qualifying plastic pipe joiners, limitations
17 of indirect costs to states and pressure
18 reductions for hazardous liquid anomalies.

19 Now why I highlighted in the
20 earlier slide the different topics in this
21 list is use the numbers potentially in your
22 voting language further up. Because

1 effectively what we're going to do is have a
2 vote first on everything that's not
3 highlighted, right? And then we're going to
4 vote on the highlighted items individually.
5 You can follow it, Rick. Yes, Gene.

6 MEMBER FEIGEL: John, if you're
7 going to do that and I'm not opposed to it.

8 MR. GALE: Okay, thank you.

9 MEMBER FEIGEL: I would like to
10 move item 15 onto your discussion and separate
11 vote list.

12 MR. GALE: Okay. We can do that.
13 As a separate vote? Gene, you wanted a
14 separate --

15 MEMBER FEIGEL: I don't want to
16 vote against 13 because I would vote against
17 this one.

18 MR. GALE: Not a problem. I
19 understand. We can make that happen.

20 MEMBER FEIGEL: So I want some
21 discussion, separate discussion on that.

22 MR. GALE: Is there any other

1 items? Let me go back to the list of the
2 items that we have separate votes for.

3 MEMBER STURSMA: On the one on
4 indirect costs to states you have that listed
5 as a gas issue.

6 MR. GALE: That's actually --
7 you're right, Don, that's both.

8 MEMBER STURSMA: That would be
9 both committees, yes.

10 MR. GALE: That's both committees.
11 Thank you, Don. What I've tried to list there
12 is the different committees that would vote on
13 the different proposals.

14 MEMBER STURSMA: Well I think the
15 liquids committee would vote on that also
16 seeing how that states --

17 MR. GALE: Yes, that's correct.

18 MEMBER STURSMA: -- some states
19 are in the liquid program as well as the gas
20 program.

21 MR. GALE: Totally agree. Say
22 again? There's also about five or six

1 proposals -- there's also, and to get the
2 committee's recommendation here too, there's
3 also about -- and this would also eliminate
4 the possibility of leaving here at 8 o'clock
5 tonight. Is there's about six proposals that
6 in my opinion are purely editorial or they
7 were very minor and had very limited comments
8 or the comments were all supportive. And
9 these items were editorial changes, threaded
10 copper pipe, ethanol, the elimination of the
11 offshore condition report, testing components
12 in low-stress pipelines, and welding versus
13 welding operators. So right now there's
14 slides on these different topics and we can
15 present what was exactly proposed and what the
16 commenter said but they are really editorial
17 issues.

18 And you know, at the pure
19 deference of the committee my recommendation
20 would be for you guys is to just vote in total
21 without a specific presentation on these
22 topics. If there's any disagreement on that?

1 Right now we're fixing one of the slides.

2 MR. WIESE: I think the thing we
3 have to do procedurally -- just check. You
4 know, some of you people who have been here a
5 couple of years can check me on this. As long
6 as there's no objection to whatever list of
7 items we put up there, no one's raising an
8 objection I think we could probably vote en
9 masse. You know, if there's any objection we
10 either have to park that or separate into
11 committees for voting.

12 So I think that John's trying to
13 do a process of elimination here by saying if
14 we have low-hanging fruit we don't have any
15 objections to we could probably move to vote
16 on that en masse and then we'll just get more
17 progressively difficult after that. Is that
18 correct, John?

19 MR. GALE: Basically. I think we
20 can -- the six that I identified that were
21 fairly editorial or minor in nature I would
22 kind of group with the next batch and do one

1 vote on the combination of those 12 items.

2 MR. WIESE: Okay. So, when you're
3 ready to make the --

4 MR. GALE: Cameron's making the
5 change to that slide.

6 MR. WIESE: -- we're going to vote
7 on then we'll -- we'll try to suggest. If
8 anyone wants to, please. I mean, that's your
9 job. If you want to object to any of the
10 items that John lists let us know and then we
11 can take it off of the easy list. We're
12 narrow it down to an easy list and we'll try
13 to vote en masse on that and then work
14 forward. Thank you.

15 CHAIR FORD: Wayne and then Carl.

16 MEMBER GARDNER: My question,
17 John, is on the easy list are you planning to
18 at least show us what the question is? Or
19 you're just going to lump it all together and
20 say these were all easy, vote on them.

21 MR. GALE: The question? I'm
22 sorry. What we could do is -- we have the

1 slides right here. We have the slides for
2 each of these proposals in this presentation.
3 I think at this point it's probably best that
4 we just quickly go through each of the
5 proposals.

6 MEMBER GARDNER: I support that.

7 MR. GALE: All right.

8 CHAIR FORD: Carl?

9 MR. GALE: I was just trying to
10 make it a little more --

11 MEMBER WEIMER: Yes, and I don't
12 think I have an objection on the easy list but
13 I might have a question on one.

14 MR. GALE: Okay, sure.

15 MEMBER WEIMER: We're going to be
16 able to do that?

17 MR. GALE: Yes, we will. I think
18 what we'll do is we'll have the slides, we'll
19 get to the slide and if anybody has any
20 question we'll just go over it as quickly as
21 we can.

22 Okay, so the first topic that I'd

1 like to discuss real quick is the proposal
2 related to leak surveys for Type B gas
3 gathering lines. In the rulemaking we
4 proposed to require that the Type B gas
5 gathering lines be subject to the leak survey
6 requirements in 192.706.

7 Type B gas gathering lines are
8 metallic lines with an MAOP of less than 20
9 percent of SMYS or metallic lines with an MAOP
10 of 125 psig or less. They are subject to less
11 stringent requirements than Type A gas
12 gathering lines but are located in Class 2, 3
13 or 4 locations. They're not rural lines.
14 These are lines that could be potentially in
15 areas where there's lots of folks around.

16 This proposal was based in part on
17 a recommendation from NAPSRS who said gas links
18 are a primary hazard for low-stress lines.
19 And most importantly they pointed out that
20 operators had to perform leak surveys in non-
21 rural areas prior to the March 2006 rule.

22 Don, real quick, because this was

1 based on a NAPSR recommendation do you have
2 anything that you'd like to add on this
3 proposal?

4 MEMBER STURSMA: I don't really
5 have anything to add. I think at the time
6 what we were doing was it was what we thought
7 was a valuable requirement that these lines at
8 be leak surveyed that disappeared during a
9 rule change. I think it was actually an
10 inadvertent change that NAPSR proposed be
11 reinstated.

12 MR. GALE: Okay. Thank you, Don.
13 Now the comments, a lot of the comments were
14 negative on this proposal. One of the
15 comments and a common theme for several of
16 them was that we should delay moving on this
17 action because of a recent mandate in the
18 Pipeline Safety Act reauthorization to review
19 the sufficiency of all the regulations on
20 gathering lines, both gas and liquid.

21 Another comment was that this was
22 going to have a greater impact on operators

1 than PHMSA envisioned. Remember again this
2 rulemaking was, and we sold this rulemaking as
3 an initiative that had minimal impact on
4 operators. And therefore the operators were
5 pointing out to us that this was not a minimal
6 impact and would be a potentially significant
7 cost change or cost impact on these operators.

8 Another common theme, that there
9 was no supporting data for the proposed change
10 and the docket had no supporting evidence to
11 show the facts and was not -- just pure
12 speculation.

13 Some of the other comments were
14 that we should develop cost estimates of the
15 compliance for the affected operators. And if
16 we were to adopt that we should at least
17 provide adequate time or not necessarily
18 grandfather, but provide operators time to
19 purchase the equipment and to comply with this
20 new requirement.

21 Another comment was that we
22 shouldn't adopt the leak survey requirement

1 for transmission lines which is in 706 but to
2 adopt the leak survey requirements for
3 distribution lines which is a less stringent
4 requirement in 192.723 because of the
5 definition of distribution and transmission
6 lines.

7 That's basically the summary of
8 the comments related to Type B gas gathering
9 lines. Are there any comments from the
10 members on that?

11 CHAIR FORD: Donald?

12 MEMBER STURSMA: Don Stursma. I
13 was just going to say regarding the
14 allegations of lack of documentation. Iowa
15 does not have any gatherings and we don't have
16 any royalties either so it's a mixed blessing.
17 But at the time again my recollection was that
18 it was the experienced opinion of the states
19 that did have gathering that leaks on
20 gathering lines were of concern to them. I
21 don't have statistics but again it was based
22 on the experience of people who had gas

1 gathering lines in their states and experience
2 with the problems that you can have with these
3 gathering lines.

4 MR. GALE: Okay. Thank you, Don.
5 Another proposal we had was regarding the
6 definition of hazardous liquid and adding
7 ethanol to the definition. Back in 2007 we
8 had actually issued a policy paper in the
9 Federal Register stating that it was our
10 opinion, PHMSA's opinion that ethanol was a
11 hazardous liquid and therefore subject to the
12 Part 195 regulations.

13 All we are simply doing in this
14 rulemaking as consistent with that policy
15 statement is changing the definition of
16 hazardous liquid to add ethanol to the
17 definition. And most of the comments on this
18 item were supportive.

19 Carl?

20 MEMBER WEIMER: This is the one I
21 had a question on. And I don't have any
22 problem with including ethanol in the

1 definition. I was just wondering if there was
2 any analysis of whether the rest of the
3 regulations under liquids are adequate for
4 moving ethanol by pipeline. Ethanol I think
5 has been shown to be more corrosive so do the
6 corrosion regulations cover ethanol
7 specifically?

8 MR. WIESE: I don't believe so.
9 However, at the same time that that was going
10 on, Carl, we undertook a -- two things. One
11 was a series of pilot projects with individual
12 operators who were experimenting with moving
13 biofuels including ethanol-based fuels. And
14 a fairly aggressive R&D project with PRCI and
15 some of the other groups to look at the
16 influences of ethanol stress corrosion
17 cracking in particular and what could be done
18 to mitigate the impact of that. I think we
19 came out with a series of guidance for
20 operators about how to move it.

21 You know, in the end I would have
22 said most of these people have, you know,

1 multiple billions of dollars at stake. They
2 were actually gun-shy about moving ethanol as
3 you can imagine for the fear of damaging their
4 infrastructure. So, I don't think the rule
5 specifically calls it out which it's regulated
6 now. What this does is take it in its neat
7 form really which we don't think it will be
8 moved as.

9 I mean, frankly you're going to
10 get into dealing with the Bureau of Alcohol,
11 Tobacco and Firearms if you ever want to move
12 ethanol neat in a pipeline. I don't think
13 that's going to be happening anytime soon.

14 MR. GALE: Any more questions on
15 the proposal that's related to ethanol?

16 Another proposal we dealt with was
17 on the rail transportation of pipe. This is
18 related to an NTSB recommendation. Certain
19 pipe right now must be transported in
20 accordance with API 5L1 where there's an
21 exception that allows operators to use pipe
22 that was stockpiled prior to November of 1970

1 and not have to comply with that standard.
2 But based on an investigation by NTSB of an
3 incident back in July of 2002 they recommended
4 that we remove that exception and we did
5 propose to remove that exception.

6 The comments were basically in
7 support of the proposal. They asked for some
8 clarification to make sure it's not affecting
9 pipelines that were already installed in the
10 ground. And we will adequately address those
11 comments when we develop the final rule and
12 move forward with that proposal.

13 Is there any comments on that
14 proposal?

15 MR. WIESE: John, this is Jeff. I
16 just want to add one thing for the members'
17 benefit because I think Andy would have said
18 this if he was here. I think we did a survey
19 right around the time whether there was any of
20 this pipe out there and there really isn't.
21 So, but NTSB wouldn't close based on that
22 survey. So we're going back to basically make

1 sure we take care of their issue. So I think
2 this is a non-issue to be honest with you but
3 it's something we need to do to clean up an
4 outstanding recommendation.

5 MR. GALE: And the commenters
6 agree with our statement of that fact as well.

7 This is a proposal related to
8 threading copper pipe that came from the GPTC,
9 effectively an editorial change where we
10 referenced a table that had been deleted and
11 therefore we just had to correct the
12 reference. And that's all we simply did. And
13 no negative comments were received on this
14 proposal.

15 We also looked at the issue of the
16 offshore pipeline condition reports which were
17 adopted or added into the regulations back in
18 1991. However, in August of 2004 we had
19 amended the regulations to address these types
20 of pipelines in terms of how they would
21 operate the pipelines, in terms of inspection
22 and repair, and how they would report

1 incidents related to pipelines, especially
2 those that were found to be exposed or
3 hazardous to navigation.

4 But however, when we did that rule
5 we left in place the reporting requirements
6 that had been adopted in '91 related to these
7 offshore pipelines condition reports. So all
8 we're doing effectively is cleaning up the
9 regulations and pulling out these reports from
10 the regulations.

11 And there was no negative comments
12 that were received to this proposal. If
13 there's no questions from the committee I'll
14 just keep moving on.

15 Another proposal, this I believe
16 was also from the GPTC which was related to
17 testing components other than pipe installed
18 in low-pressure gas pipelines. There was an
19 exception currently provided for those
20 pipelines that are operated at above 30
21 percent SMYS not to perform a certain test.
22 And effectively what they were proposing to do

1 was to apply that to pipes that are operating
2 below 30 percent SMYS. And we agreed with
3 GPTC here.

4 In this case the manufacturer has
5 to certify that the component was tested to at
6 least the pressure required for the pipeline,
7 the component was manufactured under a quality
8 control system and the component carries a
9 pressure rating.

10 Again, the commenters in this
11 situation were definitely in favor of the
12 proposal though they requested some editorial
13 amendments.

14 We also had a proposal related to
15 alternative MAOP notifications. When we
16 adopted the alternative MAOP regulations into
17 the pipeline safety regs we require that
18 operators notify PHMSA and the states 180 days
19 prior to commencement of operation that are
20 electing to establish and operate at a higher
21 MAOP.

22 In this rule what we propose to do

1 is that not only we require -- we propose to
2 require a 180-day notice prior to pipe
3 manufacture or construction activities also.
4 This notice would allow for PHMSA and the
5 state to review the procedure, specifications,
6 field reviews, operation, maintenance plans
7 and other documentation.

8 We did receive some negative
9 comments on this proposal. Some of the
10 commenters said it should only apply
11 prospectively, in other words not to the lines
12 that are already in play. Regulations should
13 include an alternative notice period measure
14 from the placement of the pipe purchasing
15 order to the start of the pipe manufacturing.
16 Language needs clarification was a common
17 theme. If operators wish to utilize pipe
18 stock that satisfies the regulations 180-day
19 notice would be impossible.

20 The concerns here seem to be
21 centered on the issue of pipe manufacturing,
22 not necessarily the construction requirement.

1 They didn't like the gotcha language. They
2 looked at this as kind of a gotcha method of
3 dealing with -- of adopting something with
4 pipe manufacturing.

5 But we're going to definitely
6 adequately address these comments and make
7 sure that there is no gotcha language in any
8 final rule related to this, and that we get
9 the information that we minimally need to do
10 our job without an undue burden on the
11 operators. We promise that.

12 We also -- one of the ideas in
13 this rule was related to the mapping system.
14 Currently the regulations on mapping have been
15 in play for numerous years, going back to the
16 Pipeline Safety Act of 2002, but they have
17 never been added to the regulations. So what
18 we're going to do through this proposal was
19 actually take the current requirements for
20 mapping and simply add them into the pipeline
21 safety regs and refer to the current
22 standards.

1 It's not changing any of the
2 attributes. It's not changing any of the
3 accuracy. That's the other rulemaking that I
4 mentioned. This is simply taking the current
5 standards related to mapping and bringing them
6 into the Pipeline Safety Act.

7 The comments generally were
8 supportive though they recommended some
9 editorial-type recommendations. And I
10 believe, Rick, did you have a comment on this?
11 Mr. Kuprewicz, did you have a comment? You're
12 good? Okay, very good.

13 We also made some changes
14 regarding welding and welding operators to
15 make sure it's clear regarding welding
16 operators that we expected them to operate in
17 the similar standard as welders. And this is
18 simply just cleaning up the regulations and
19 adding changes that are more current with
20 industry practices.

21 Again, commenters were generally
22 supportive though they recommended some

1 editorial changes or clarifications.

2 This is a proposal that Mr. Feigel
3 has requested that we move to a separate vote.
4 So we're going to take, during a break real
5 quick we'll move this and discuss this with a
6 separate vote.

7 What was that, Don?

8 MEMBER STURSMA: I guess my
9 question was on the additional design
10 requirements for steel pipe using the
11 alternative maximum allowable pressure. It
12 was unclear if based on comments there are
13 going to be some changes to the rule, the
14 proposed rule, or whether there are comments
15 that would be addressed in the rulemaking
16 preamble. It makes a difference on whether we
17 take -- we vote with number 1 or number 2 --

18 MR. GALE: Sure. I think in this
19 case, you know, I don't know if we want to get
20 into splitting words on such a proposal. I
21 think with deference if you allow us to make
22 a reasonable call and to make sure we address

1 those comments adequately. And make sure
2 there is no gotcha language like the
3 commenters are recommending.

4 MEMBER STURSMA: The question I
5 have, if we're going to vote on this in a
6 batch we have option 1 which is basically
7 adopt the rule as proposed, option 2 is adopt
8 the rule with modifications.

9 MR. GALE: Sure.

10 MEMBER STURSMA: So I think that
11 makes a difference on what we take a vote on
12 when it comes time to do it.

13 MR. GALE: Okay.

14 MEMBER HAMSHER: I think for the
15 ease of it though if we could do a mass vote
16 and reinforce -- use the language of 2
17 recommending that on those proposals where you
18 have indicated you're going to be responsive
19 to comments that we vote for the rule subject
20 to PHMSA actually doing what you say.

21 MR. GALE: Very well. This is the
22 last item that we're going to discuss prior to

1 voting on the lesser controversial issues. I
2 was going to let Jeff Gilliam real quick talk
3 about this proposal.

4 MR. GILLIAM: This is Jeff
5 Gilliam. I'm the director of engineering
6 research at PHMSA.

7 Just some background on this.
8 This really initiated from some low-strength
9 pipe that was found during some alternate MAOP
10 projects over the past few years.

11 Basically API 5L committee and
12 INGAA supports this change. And all this
13 allows us to do is to identify the low-
14 strength pipe at the mill prior to it getting
15 out to the right of way. That's the purpose
16 of this change.

17 MEMBER FEIGEL: I'm certainly not
18 opposed to it but have you straightened out
19 with API how they're going to mark this or
20 certify it?

21 MR. GILLIAM: Yes, they have done
22 that.

1 MEMBER FEIGEL: You're tracking
2 all this stuff? Okay.

3 MR. GILLIAM: Correct. Any other
4 comments? Basically that summarizes the
5 change.

6 MEMBER KUPREWICZ: I'm Rick
7 Kuprewicz with the public. Key operative word
8 here on that third bullet is all new pipe for
9 this service will receive an adequate mill
10 test.

11 MR. GILLIAM: That's correct.

12 MEMBER KUPREWICZ: Sounds like a
13 stupid question but there are some reasons for
14 that question.

15 MR. GILLIAM: Yes, that's correct.

16 MEMBER KUPREWICZ: All pipe
17 segments will undergo --

18 MR. GILLIAM: Will undergo the 95
19 percent pressure test at the mill, that's
20 correct. That's the purpose of the change.
21 It's a requirement, so -- and realize that
22 this pipe is only intended for the alternate

1 MAOP projects.

2 MR. GALE: Thank you, Jeff. At
3 this point in time that was the end of let's
4 call them less controversial items. If
5 there's no more -- I'm going to go back to the
6 chair. If there's no more comments from the
7 committee we can maybe ask if there's any
8 comments from the public.

9 CHAIR FORD: Are there any
10 comments from the public regarding what has
11 been presented? Hearing none we're ready for
12 the motion.

13 MR. GALE: So the language here,
14 and maybe we might -- we've added the numbers.
15 We could add the topics if that would be more
16 helpful, which the numbers were shown back in
17 the earlier slides which were the topics that
18 we're going to have individual votes on. One
19 being I believe it was construction
20 inspection, we have issues on indirect state
21 costs, we have odorization, the issue that Mr.
22 Feigel has raised on components fabricated by

1 welding, and the pipe joiner qualification
2 requirements.

3 CHAIR FORD: So we are voting en
4 masse on --

5 MR. GALE: Everything except for
6 those proposals, that's correct.

7 CHAIR FORD: Thank you.

8 MEMBER GARDNER: Is that
9 acceptable language? I'm looking at the
10 Federal Register and I don't see a number 1,
11 3.

12 MR. GALE: What it's tied to is
13 the slide that was earlier presented. If it's
14 better we could actually have the language of
15 the different proposals then. I just thought
16 it would be a little cleaner for everyone.

17 MEMBER GARDNER: I understand
18 we're doing this for efficiency but I want to
19 make sure that --

20 MR. GALE: It was tied more to the
21 list that was shown up earlier on the earlier
22 slide.

1 CHAIR FORD: Thank you. Is there
2 a motion? Denise?

3 MEMBER HAMSHER: Okay, I'll try.

4 MR. GALE: We're going to miss
5 you, Denise.

6 (Laughter)

7 MEMBER HAMSHER: I move that the -
8 - both committees take a vote and that the
9 proposed rule as published in the Federal
10 Register for items number listed as 2, 4, 5,
11 6, 7, 8, 9, 11, 12, 13, 14. So I did it.

12 CHAIR FORD: Not six.

13 MEMBER HAMSHER: Okay.

14 MR. GALE: If you want to add 16
15 in there I'm sure nobody would object.

16 (Laughter)

17 MEMBER HAMSHER: Maybe we'll do it
18 by exceptions. I'll move that the proposed
19 rule as published in the Federal Register
20 except for proposals number 1, 3, 6, 10, 15
21 and 16 are technically feasible, reasonable,
22 cost-effective and practical if PHMSA

1 considers the comments that were made to those
2 specific rules and incorporates those in the
3 final language.

4 CHAIR FORD: Is there a second?

5 MEMBER DAVIED: I second that
6 motion.

7 CHAIR FORD: All in favor?

8 (Chorus of ayes)

9 CHAIR FORD: Do you want a
10 separate roll call, Cheryl? Show of hands.
11 All in favor?

12 (Show of hands)

13 CHAIR FORD: Any opposed?

14 (Show of hands)

15 CHAIR FORD: The motion carries.

16 Thank you. We will now take a break. Fifteen
17 minutes.

18 (Whereupon, the foregoing matter
19 went off the record at 2:49 p.m. and resumed
20 at 3:10 p.m.)

21 CHAIR FORD: John, we've
22 reconvened. You may begin.

1 MR. GALE: Thank you, Ms. Ford.
2 Cameron's pulling it up right now. We have
3 six more issues to discuss as has been
4 identified by the different members.

5 We're going to start off with the
6 issue that has been raised by Mr. Feigel which
7 is the issue on components fabricated by
8 welding. On each of these issues we're going
9 to discuss the issues, we're going to review
10 the comments, we're going to have a committee
11 discussion. We'll have a public discussion
12 and then we'll have a separate vote. My
13 recommendation is that's the most effective
14 way to deal with these separate, distinct
15 proposals.

16 MR. WIESE: John, I wonder, in the
17 interest of time I'd ask the committee's
18 indulgence in not to breeze past things but
19 ask the committee and the public to be
20 succinct. You know, I'm not entirely sure
21 we're going to get to fitness for service this
22 afternoon which I'm a little concerned about

1 but we need to get through this vote. It's
2 the most important thing we have to do but
3 brevity is good. Thank you.

4 MR. GALE: So this is what we
5 propose. Thank you very much. This is a
6 proposal where based on the fact that the
7 pressure tests requirements in the recent ASME
8 Pressure Vessel Code in Section VII was
9 lowered from a test factor of 1.5 to 1.3.
10 However, this change created a difference in
11 the pressure testing requirements between ASME
12 and the requirements in 192.505(b) which
13 requires a test factor of 1.5 times the MAOP
14 for meter and compressor stations as well as
15 other Class 3 locations.

16 So what we merely simply tried to
17 do in this proposal was to add a clarification
18 in the 192.153 to point out to operators the
19 requirement to have a design test factor of
20 1.5 that was above and beyond the requirements
21 in the ASME Pressure Vessel Code because
22 that's how we interpreted the regulations.

1 Commenters, however, did not
2 necessarily agree with our proposal or our
3 opinion of the current regulations. They
4 didn't agree that it was a clarification and
5 believed that it was a significant change in
6 the regulations. They also wanted to clarify
7 that the amendment applied only to components
8 placed into service after the amendment's
9 effective date, effectively such as like a
10 grandfather clause. However, if it's true
11 that that's our opinion of the regulations
12 it's purely an interpretation and a
13 clarification. So that would be a difference
14 in what we actually proposed.

15 But some of the commenters also
16 stated that they had far-reaching impact, and
17 retesting and replacing these in-service
18 components would be unnecessary, very
19 expensive and take many years to complete.
20 Because again remember this is a rulemaking
21 that was supposed to have non-controversial,
22 non-substantive impacts on -- if it were

1 adopted as a final rule. So these commenters
2 are disagreeing with that. We effectively
3 believed it was an interpretive issue only and
4 we added clarification into the regulations.

5 And with that I'll turn it over to
6 Mr. Feigel who I believe may have a comment on
7 this topic.

8 MEMBER FEIGEL: This is a classic
9 case where I think the regulations are out of
10 step with the underlying standard that forms
11 the basis for design and construction of these
12 vessels. That 1.3 factor on pressure tests
13 was not just some arbitrary number pulled out
14 of thin air, it's on the basis of the stress
15 indices that are consistent and used for the
16 design and a wide array of other issues.

17 It is technically correct it
18 addresses the three fundamental issues for
19 doing a pressure test, leak test, obviate any
20 obvious, terrible, you know, design mistakes
21 and blending some critical cracks for fracture
22 purposes it's technically correct. I think

1 the regulation should be changed to align
2 itself with the Pressure Vessel Code.

3 MR. GALE: Thank you, Gene, but as
4 you're aware that's not what we proposed at
5 this point. All we were doing was trying to
6 add a clarification to the existing regs that
7 the standard is there. We can look at that
8 issue at a later date but right now the only
9 thing on the table was really to identify or
10 to add --

11 MEMBER FEIGEL: Well, the problem
12 with that is if you take an overt action of
13 that you're instantiating something that's
14 really technically incorrect. And you know,
15 that'll get buried and then to resurrect that
16 again I think frankly this ought to be
17 withdrawn and the action simply ought to be to
18 look at aligning it, your current regulations
19 with the Pressure Vessel Code.

20 MR. GILLIAM: Jeff Gilliam with
21 PHMSA. The only comment I will make here is
22 I think we can all agree we have always taken

1 the position that if there was a discrepancy
2 between incorporated reference or the
3 regulation itself the regulation governed.

4 So in this case this is a prime
5 example, okay, where an incorporated by
6 reference was changed. It was not consistent
7 with the regulation. Unfortunately some
8 people didn't realize that change.

9 MEMBER FEIGEL: Yes, but that -- I
10 don't disagree with what you're saying. I
11 think we all understand that the regulation is
12 paramount. That doesn't make it technically
13 correct.

14 The Boiler and Pressure Vessel
15 Code spent, you know, dozens of man years
16 studying this issue and again, it was not
17 simply a change in the pressure test factor.
18 That was simply done after the fact to align
19 itself with the stress indices for the design
20 basis for those vessels. And to just sort of
21 arbitrarily ignore that and say the regulation
22 rules when there is an incredible amount of

1 work that went into changing those design
2 rules, I strongly object.

3 MR. GALE: The other problem is if
4 we don't add the clarification into the
5 regulations the standard still is the standard
6 which we have in our regulations which is 1.5.
7 And operators could then think they could
8 comply with the 1.3 standard and would be in
9 violation of the regulation inadvertently.

10 MEMBER FEIGEL: I don't disagree
11 with that, but I strongly urge you to take a
12 serious look at changing the regulations and
13 don't have this discrepancy as you suggested,
14 depending on which side of that fence you're
15 on. All that does is give people opportunity
16 to inadvertently do the wrong thing. Because
17 the commercial practice, you know, across the
18 world will be the 1.3 with the tiny exception
19 of the handful of vessels that are made for
20 your purpose. People will have to carve that
21 out. It will cost extra money for no safety
22 benefit.

1 MR. GILLIAM: The standard itself
2 previously was 1.5, correct? Before the
3 recent change to 1.3. Isn't that correct?

4 MEMBER FEIGEL: That's correct,
5 yes.

6 MR. GILLIAM: Okay. So prior to
7 just the last couple of years everyone was
8 meeting the 1.5. And I understand that, you
9 know, industry may have decided it wasn't
10 necessary and that they could save money by
11 going to 1.3, but that does not change the
12 fact that the regulation always required 1.5.

13 And I'm not disagreeing with you,
14 okay. What I'm trying to say is the
15 regulation says what it does today. We're
16 trying to clarify what it does say and if
17 someone wants to propose a regulation change
18 in the future we're happy to approach that.
19 But at this point the regulation is what the
20 regulation says and we just want to clarify
21 that.

22 MR. GALE: Was there any other

1 comments from members? Don?

2 MEMBER STURSMA: Just point of
3 clarification. As I read this rule and its
4 location in the code it seemed to me this rule
5 would not be retroactive as some of the
6 commenters seem to have assumed. Is that
7 correct?

8 MR. GALE: Well, to me all we're
9 doing is clarifying an issue that we would
10 interpret the regulations today to read. So
11 in other words if you ask our opinion do our
12 regulations today require a standard of 1.5
13 our answer to that question is yes.

14 MEMBER STURSMA: I was referring
15 to some of the comments which apparently took
16 a look at this and seemed to assume that this
17 rule would be retroactive to existing
18 facilities. And I would like your response on
19 that.

20 MR. GILLIAM: Basically the
21 requirement has not changed. It's been the
22 same throughout.

1 MR. GALE: We're saying the
2 standard today is 1.5.

3 MR. GILLIAM: And it was --

4 MR. GALE: And it was a year ago.

5 CHAIR FORD: John, is this for a
6 vote?

7 MR. GALE: Anything from the
8 public?

9 CHAIR FORD: Members of the
10 public? Comments from the public? Hearing
11 none -- oh, I'm sorry.

12 MEMBER KUPREWICZ: I'm not a
13 voting member of the Gas Committee but I am a
14 representative of the public. And I'll just
15 tell you there's been a whole lot of
16 discussion, a lot of people under oath in
17 California. And it's very sensitive to have -
18 - well, I understand the honesty of the
19 discussion here which is good to have. We're
20 going to have a workshop Friday about changing
21 industry codes and referencing in the
22 regulation. Those should not be made lightly.

1 I don't know who's right or wrong
2 and what the debates going on on the technical
3 stuff in California but I've got a pretty good
4 idea. And I think whatever it is the public
5 needs to understand this is going on and
6 there's sound technical reasons for making
7 these changes.

8 Right now I just see this is an
9 administrative change which is already there
10 and that's the way the law is set up right
11 now, the regulation. If you want to make
12 changes in the industry and they're going to
13 be referenced into regulation there's going to
14 be some feedback on Friday that probably would
15 suggest that we want to be real careful
16 because it takes a higher standard in
17 reference in law and regulation. And there's
18 a lot of confusion on some of these hydro
19 testing issues right now. Anyway, sorry for
20 the ct.

21 CHAIR FORD: Thank you. Remember
22 to state your name for the recorder, please.

1 There is no one from the public. Is there a
2 motion?

3 MR. GALE: This is a Gas Committee
4 vote on, right?

5 CHAIR FORD: Gas Committee only.

6 MR. GALE: Can we nominate Denise
7 to be a member of the Gas Committee
8 temporarily?

9 (Laughter)

10 CHAIR FORD: Yes, we can. Okay,
11 Don.

12 MEMBER STURSMA: Just to get it up
13 for a vote.

14 MR. GALE: We have language up
15 there.

16 MEMBER STURSMA: Just to get it up
17 for a vote I will move that this regulation be
18 adopted as proposed, number 1.

19 MEMBER PEVARSKI: Rick Pevarski.
20 I'll be a second.

21 CHAIR FORD: Okay. Moved and
22 seconded. All in favor from the Gas Committee

1 raise your hand please.

2 (Show of hands)

3 CHAIR FORD: Opposed?

4 (Show of hands)

5 CHAIR FORD: One. Thank you.

6 Motion carries. John?

7 MR. GALE: Thank you, Ms. Ford.

8 The next issue to discuss is the proposal
9 related to odorization of gas. Currently in
10 the regulations in 49 C.F.R. 192.625 operators
11 are required to odorize gas transmission lines
12 in Class 3 or 4 locations.

13 However, there's a couple of
14 exceptions in those regulations to the
15 odorization requirement and one is which --
16 provides if the lateral line which transports
17 gas to a distribution center, if at least 50
18 percent of the length of that line is in a
19 Class 1 or 2 location you do not have to
20 odorize.

21 What we tried to do is propose a
22 definition or a clarification as to what we

1 meant by that. This came from a couple of
2 enforcement actions that we had undertaken and
3 this is the exact language that we had used in
4 those couple of enforcement actions.

5 So the proposal to revise the
6 exception to state that the length of the
7 lateral line for purposes of calculating
8 whether at least 50 percent of the lateral
9 line is in a Class 1 or 2 location is measured
10 between the distribution center and the first
11 upstream connection to the transmission line.
12 So it's effectively that last point that is
13 the issue of the proposal.

14 This is one of the most highly
15 commented topics we had in the rulemaking.
16 Some of the comments we received that the
17 comment -- the distinction between lateral and
18 transmission line appeared to lack logic as it
19 allows parts of a line originally considered
20 to be a lateral to change classification due
21 to introduction of a branch.

22 A very common theme was that it

1 was not cost-justified and the evidence was
2 not presented to show that the understanding
3 of a lateral line has caused safety issues
4 resulting from operators applying this
5 definition.

6 Another common theme was pending
7 further study an impact statement did not
8 adopt the proposal.

9 There were concerns about sulfur
10 dioxide emissions which unfavorably impact
11 ambient air quality in some areas that are
12 nonattainment for the particular matter of
13 SO₂, and would impose a greater burden on
14 operators.

15 The residual odor on end products
16 making the product unsuitable for use or
17 negatively affecting the commercial value as
18 well as residual odor in air emissions. And
19 that we should not adopt the proposal but
20 convene a public hearing or workshop with
21 various configurations of the lateral lines,
22 et cetera, to be evaluated.

1 This is the exact language that
2 you can see that we proposed. Right now the
3 current regulation ends right here at
4 location. And then what we add was merely the
5 language that you see in red which is as
6 measured between the distribution center and
7 the first upstream connection to the
8 transmission line.

9 But again the most common theme
10 for this proposal was that we should not adopt
11 the proposal and that it would have a very
12 negative impact on operators, not only the
13 pipeline operators but also operators of some
14 of the commercial facilities. And that we
15 should reconsider this proposal mainly due to
16 the cost impacts.

17 And that's my summary of the
18 proposal.

19 CHAIR FORD: Comments?

20 MEMBER STURSMA: Don Stursma.

21 Again, my comments on this didn't necessarily
22 say yea or nay but I don't really understand

1 what the problem is you're trying to address.
2 You say there's been enforcement actions.
3 What was the basis for an enforcement action?
4 Because on its face it seems like if I can go
5 from my distribution center and go to my first
6 upstream connection, I mean the first on the
7 line or the first from the distribution
8 center. I don't know, it just seemed like I'm
9 really totally unclear on why you're doing
10 this --

11 MR. GALE: Because operators --
12 sorry, Don. A lot of operators didn't
13 understand, you know, at least what our
14 opinion was of the requirement. And we were
15 looking at a case where if we had come up with
16 a definition of what we meant by it it seemed
17 reasonable and prudent on our point to let the
18 rest of the operators know what our opinion
19 was of this standard. Because some operators
20 were not complying with the standard because
21 we had multiple enforcement cases.

22 MEMBER STURSMA: But in terms of

1 language is the first upstream connection,
2 does that mean the furthest upstream point of
3 connection or the first connection measured
4 from the distribution center?

5 MR. GALE: Well, I think that's
6 some of the issues we have. As we put the
7 proposal out there I think that was some of
8 the concerns we had. As we got into the weeds
9 of the proposal, as we got into really
10 applying it it became difficult. It wasn't as
11 simple as we thought it was when we first
12 proposed it.

13 MEMBER STURSMA: Okay, well do you
14 have an answer to that issue of what is the
15 first upstream connection?

16 MR. GILLIAM: Okay. Yes, Don.
17 This is Jeff Gilliam, PHMSA. The -- this is
18 very complicated for some folks to think
19 through, but just think of it as multiple
20 lateral lines of a transmission company
21 servicing a town with multiple taps on the
22 different lines. And they may not be

1 relatively close to each other even though
2 they're parallel lines. They may not be
3 within 25 feet. They may be in a quarter mile
4 or a half a mile of each other, okay? As an
5 example.

6 Some people interpreted that to be
7 the furthest away transmission line all the
8 way to the distribution center being the
9 lateral length, therefore the 50 percent
10 criteria may not put them in the situation
11 where it needed to be odorized. Others, okay,
12 if you use the closest transmission line then
13 it might cause them to odorize. Or it could
14 be just the opposite depending on the length
15 of the lateral.

16 So all we're trying to do is some
17 people were not clearly understanding what the
18 very beginning point of that lateral should be
19 considering the downstream distance and that's
20 why all we're trying to do is clarify that.

21 MEMBER STURSMA: Well then I
22 certainly think the language needs some work

1 because when you said "first point" to me it
2 means the furthest upstream point which seems
3 to be the exact opposite of what your actual
4 interpretation of the meaning of this is.

5 MR. GILLIAM: Yes. Well, I didn't
6 write -- what I'll say is how I interpreted
7 the furthest upstream point is from the
8 distribution center. Yes, let's see the
9 language. That would help.

10 CHAIR FORD: Larry?

11 MEMBER DAVIED: Larry Davied. The
12 question I had related to the unintended
13 consequences that I think some of the
14 responders put in. And I'm not seeing how
15 that's addressed. Specifically the industrial
16 user who is taking gas and in their process
17 doesn't allow for the mercaptan to come in.
18 So you listed it as something that somebody
19 responded to but we didn't address how to
20 resolve that. So if somebody interpreted this
21 as having unintended consequences that raises
22 a concern as to how we're dealing with that.

1 It would be to me shortsighted not to respond
2 back to people who have put in that request.

3 MR. GALE: Yes, Larry. This is
4 showing the current proposal. This doesn't
5 show what some of the options we're
6 considering to address the comments we've
7 received. Some of the options we are looking
8 at is obviously one is to look at the -- adopt
9 the proposal. But one of the options we're
10 looking at potentially is to not adopt this
11 proposal and reevaluate it. And maybe some of
12 the comments that said hold a workshop and
13 reconsider this proposal has a lot of merit
14 for us.

15 MEMBER DAVIED: But clearly I'm
16 not hearing any way the intention was to
17 prohibit people from using propane in a
18 process.

19 MR. GALE: No.

20 MEMBER DAVIED: And go through
21 that level of change. And then that's what --
22 I'm not intimate with their issues but that

1 was what came back is that they can't stand
2 the mercaptan in that, and if this rule causes
3 you to do it it would really seem premature to
4 put it in place.

5 CHAIR FORD: Jeff and then Wayne.

6 MEMBER WRIGHT: Jeff Wright, FERC.
7 I had first, I'm kind of going to the opposite
8 end. I want to understand what a distribution
9 center is. Are we talking about a city gate?

10 MS. DAUGHERTY: It could be. It
11 could be. I will tell you that when we first
12 proposed this, Jeff, we had based it on two
13 enforcement actions that were pretty clear-
14 cut. When we got into it, we came up with a
15 definition that we thought that worked and we
16 made this proposal. Based on the comments we
17 went back out and found out there's a lot of
18 good questions, such as where is the -- what
19 is the distribution center, where is your
20 demarcation, where do you start the lateral
21 lines. You know, what is the appropriate
22 ranking. That's why we're wanting to get a

1 feel from the committee on how they feel about
2 it, whether we can address these comments as
3 well or if we need to defer.

4 MEMBER WRIGHT: I guess my
5 perspective says you're going to have a
6 lateral line off a transmission line that's
7 going to be a jurisdictional transmission
8 line. If you go beyond that in a city gate
9 you're getting into another jurisdiction,
10 getting into distribution lines. That's why
11 I was wondering if it ended at the
12 distribution center being a city gate because
13 if it isn't I think there are problems.

14 MS. DAUGHERTY: You can also have
15 -- your systems are so different. You can
16 have a series of distribution centers all
17 connected. You can have a lateral line and
18 have multiple distribution centers off one
19 lateral line. So it can become a very complex
20 system. So your question is -- you hit it
21 dead on.

22 MR. GALE: It's that complexity

1 that we are now understanding more fuller
2 that's making us think that pulling back on
3 this proposal and reevaluating it has a lot of
4 merit.

5 CHAIR FORD: Wayne and then Don.

6 MEMBER GARDNER: I guess I have
7 more of a procedural question. Since, John,
8 you're suggesting that it might be a good idea
9 to withdraw this proposal which I also agree
10 with, but it seems like the only way to do
11 that would be to deem that it's not
12 reasonable, technically feasible, and so forth
13 as under number 3, or can I make a motion to
14 withdraw the proposal?

15 MEMBER WRIGHT: Second.

16 (Laughter)

17 MR. GALE: I think you can use the
18 language at the bottom to say it's not
19 feasible. I think there's more discussion to
20 occur.

21 CHAIR FORD: We still have cards
22 up. Right. Donald?

1 MEMBER STURSMA: Don Stursma.
2 Another point of clarification. I see in a
3 number of comments a concern that lines that
4 are currently unodorized would have to be
5 odorized even if they serve downstream
6 industrial customers whose processes would be
7 affected by the presence of odorants. But I
8 don't see anything in this rule that conflicts
9 with 625(b)(2) which makes a specific
10 exception for lines with those kinds of end
11 users. So I'm thinking that the concerns that
12 this would somehow require lines to industrial
13 end users become odorized, I don't see that as
14 being a valid concern. Am I right on that or
15 am I missing something?

16 MS. DAUGHERTY: You're correct.

17 CHAIR FORD: Wayne?

18 MEMBER GARDNER: I would hate for
19 this to get lost because I think this is
20 somewhat important. We're seeing quite a bit
21 of pipes now coming out of the Marcellus shale
22 development that are principally in Class 1

1 locations and then moving through towns rather
2 quickly.

3 But at the same time some of the
4 issues that have been raised and the language
5 that I'm seeing here personally is a challenge
6 for me. So I would -- if the chair would take
7 a motion I'd be happy to make it.

8 CHAIR FORD: We have someone -- we
9 have to give the public a chance before we.

10 MEMBER GARDNER: We do?

11 CHAIR FORD: The public.

12 MEMBER GARDNER: I thought we
13 wanted to get out of here.

14 (Laughter)

15 MR. WIESE: Before we go to the
16 public, if you'll allow me, Wayne. First of
17 all, I think we vehemently agree on the issue
18 of rural gas gathering, you know, risky rural
19 gas gathering. So I get it and we agree.

20 This isn't really about that. But
21 I think that in all the haste for everybody to
22 throw up 1,000 objections we should understand

1 that underlying this there is a fundamental
2 good point that shouldn't get lost. You know,
3 this is one of the primary means of detection.
4 And so as we move into populated areas let us
5 not lose sight of the fact that our primary
6 objective is to protect people.

7 That said, this particular
8 proposal as it's laid out may have some
9 difficulties that, you know, need to be worked
10 and that's your decision. So I would just say
11 that, you know, particularly as it relates to
12 the public on this one let us not get up and
13 just hammer the same nail. If we have new
14 information that hasn't been, you know, thrown
15 into the mix for all let's do that. But
16 otherwise let's not just beat it.

17 CHAIR FORD: Is there any public
18 comment?

19 MR. GALE: Can we ask the
20 gentleman to come to the mike?

21 MR. VANSCOYOC: Thank you. I
22 appreciate it. I know you guys don't have a

1 lot of time. But my name is Jon VanScoyoc and
2 I work for the company Odor-Tech. We're a
3 manufacturer and supplier of gas odorants.
4 Been in the business for 60 years. I'm out
5 there in the field every day pretty much.

6 I hear your comments. Yes,
7 odorants are very vital. As you said they
8 bring safety to our homes, to our local
9 restaurants. We feel safe when we're there.
10 There's inconsistencies out there. I support
11 this and we definitely support this change.
12 I think you need to make some changes to the
13 language and make it more detailed as you've
14 discussed. And this is to somebody that's out
15 there every day. There's a lot of
16 inconsistencies in regards to the industries
17 and especially with the electric plants that
18 are now becoming gas-fired. Those sites are
19 not being odorized very much. And you know,
20 a lot of people work there. People want to be
21 safe when they're working. There's just
22 inconsistencies. So I really appreciate you

1 guys looking at this and looking at the
2 inconsistencies out there. And I hope you can
3 get it resolved. Thank you.

4 CHAIR FORD: Thank you. Is there
5 a motion to adopt? Or not to. Commissioner?

6 MEMBER GARDNER: Okay, I'll try
7 this. Wayne Gardner, Pennsylvania. The
8 proposed rule as published in the Federal
9 Register and the draft regulatory evaluations
10 are not currently technically feasible,
11 reasonable, cost-effective and practical.

12 MR. GALE: Real quick. Could we
13 add to that related to odorization? So it's
14 just related to the proposal related to
15 odorization. So it's not the rule in general.
16 So if you just use language along the lines as
17 the proposed rule as proposed in the Federal
18 Register related to odorization.

19 MEMBER GARDNER: My bad. The
20 proposed rule as published in the Federal
21 Register related to odorization of gas
22 transmission line are not currently

1 technically feasible, reasonable, cost-
2 effective and practicable.

3 CHAIR FORD: Is there a second?
4 Is this a joint vote? Just Gas.

5 MR. GALE: Gas only.

6 CHAIR FORD: All in favor? Raise
7 your hands, please.

8 (Show of hands)

9 CHAIR FORD: All opposed?

10 (Show of hands)

11 CHAIR FORD: Unanimous decision is
12 to adopt it, that it's not cost-effective.
13 Massoud?

14 MEMBER TAHAMTANI: So now what
15 happens to this issue?

16 MR. GALE: Well, with any action
17 by the committee it is a recommendation for us
18 to consider as we develop our final rule. The
19 final action for any rulemaking lies with our
20 Administrator. So we'll provide -- obviously
21 the recommendation of the committee carries a
22 lot of significant weight.

1 MEMBER TAHAMTANI: So could you go
2 back and look at the comments and address this
3 language and get it to where it needs to be
4 and still move it on?

5 MR. GALE: It is a possibility.
6 But right now we have the committee vote. I
7 mean, the final decision for any rulemaking
8 action is signed by our Administrator.

9 MR. WIESE: Given a unanimous vote
10 by the committee though I think it would be
11 difficult. I think it would be more likely
12 that we would take under advisement some of
13 the suggestions about going back and reopening
14 that particular element.

15 You know, one of the things when
16 we had internal discussions, I'm always keen
17 to know what's the cost of that. You know, is
18 there a risk that we're aware of? Are there
19 injuries or fatalities that come out of
20 accidents that are related? And I was told by
21 the staff that the answer is not to their
22 knowledge.

1 So I just wanted to assure the
2 committee, particularly Gas Committee who's
3 voting that we are not undertaking a delay on
4 something we know to be risky. It's a concern
5 that we think needs to be addressed. So I
6 think we're probably more comfortable with
7 taking it back under advisement than we would
8 be going counter to the advice of the
9 committee. Who is that guy? Did I not just
10 text you that we were voting?

11 (Laughter)

12 CHAIR FORD: What is your
13 pleasure, Andy? Okay. Abstain. thank you.

14 MR. GALE: Should I move to the
15 next topic, Ms. Ford?

16 CHAIR FORD: Yes, please.

17 MR. GALE: Okay. The next topic
18 to discuss is the issue that was the most
19 significantly commented on proposal we had in
20 this rulemaking related to conducting
21 construction inspections.

22 We proposed to revise the

1 regulations in both Part 192 and 195 to
2 specify that the construction inspection of a
3 transmission line or main cannot be conducted
4 by a person who participated in its
5 construction. And this proposal applied to
6 both contractor and non-contractor work.

7 And this proposal was based in
8 part on a petition from NAPSR. In its
9 comments to the proposal NAPSR stated the
10 following, that the resolution was intended to
11 preclude operators from allowing contractor
12 personnel to self-inspect their own work. It
13 was based on the experience that NAPSR members
14 concerned at the time with poor quality of
15 construction by the unsupervised contractors
16 and a resolution was not proposed mandatory
17 third party inspection of all construction
18 work.

19 Some of the comments that we got
20 on this, the most significant comment was in
21 regard to cost, that the commenters believed
22 this would have significant cost impacts.

1 They are very concerned about the use of the
2 word "person" and that some people could read
3 the word "person" to include the whole entity
4 of the company. Some of the commenters said
5 simply change the word "person" to
6 "individual" to clarify that it's not supposed
7 to be the whole company itself, and that third
8 party inspections should not be required.

9 There was many different comments
10 regarding the significance of this proposal,
11 that the cost impacts of adopting this
12 proposal would be a significant regulatory
13 action and would require full-blown cost-
14 benefit and regulatory impact assessments in
15 order to clear the OST and the OMB reviews
16 that are necessary for such a proposal, and
17 that we should just remove it and possibly
18 consider this in the future.

19 So one of the other common
20 comments was that we should make the
21 inspection and the new construction
22 requirements new OQ tasks and just add them to

1 the OQ requirements.

2 But the biggest comment by far was
3 the cost impacts potentially of this proposal.
4 NAPSR was concerned that we had extended it
5 beyond their recommendation, beyond
6 contractors, but in general the cost impacts
7 on the operators to adopt this requirement,
8 especially for some of the smaller operators
9 was quite significant, and that we should
10 basically again pull back on this proposal,
11 reevaluate it and possibly propose it in the
12 future after due consideration of the cost
13 impacts and the benefits of such a proposal.

14 Now for the benefit of the
15 committee in case they want to look at the
16 current language we have a slide for both the
17 requirements in Part 192 and for Part 195,
18 highlighting, showing what the current
19 requirements are and highlighting what we've
20 proposed. As has been pointed out to me just
21 in the last couple of minutes it was something
22 I believe was inadvertent. I can't recall

1 from when we drafted this a couple of years
2 ago that in the very first sentence here in
3 192 we simply changed the word "subpart" to
4 "part" which though it is a small change could
5 potentially have significant impacts on
6 compliance.

7 So with that being said I'm going
8 to leave it open to the discussion of the
9 committee members.

10 MEMBER TAHAMTANI: John, the same
11 issue could exist in the 195 code. I didn't
12 check that, so you may want to check to make
13 sure that's not part while you've got it in
14 draft.

15 MR. GALE: Thank you, Massoud.
16 We'll double-check that as well.

17 MEMBER FLECK: Susan Fleck,
18 National Grid. Looking at this from a
19 distribution company perspective I agree with
20 a lot of the comments that you just covered,
21 John. It feels to me that this would have
22 significant -- could have significant cost

1 impact on companies and it's not justified
2 from a technical perspective for inspection of
3 company crews.

4 I'm not arguing with the point
5 around contractor crews, I agree with NAPSR on
6 that one, but you haven't really justified
7 that with the company crews there's a problem
8 and therefore the problem needs a resolution
9 like this. And I think there could be
10 significant impact.

11 There's also a reasonability and
12 non-practical aspect to this as well. For a
13 lot of companies the company personnel who
14 currently do the inspection on new
15 construction for company crews doing the work
16 are bargaining unit. So they own this work.
17 It's been negotiated and those unions own this
18 work so you couldn't just give it away to an
19 outside consultant or to somebody else. It
20 would have to be negotiated and there could be
21 some significant time lag and some significant
22 difficulties with making that happen. So it's

1 not practical to just change the rule and
2 expect the company to be able to comply with
3 it.

4 MR. GALE: Is your concern in
5 terms of it being a third party type of
6 inspection or --

7 MEMBER FLECK: Yes, third party.

8 MR. GALE: So if it was just
9 changed to an individual it wouldn't be as
10 difficult?

11 MEMBER FLECK: That might make it
12 work, but I think you know, we'd have to think
13 about that and be very careful. Because if
14 you tried to transfer that workload from the
15 bargaining unit people who perform it
16 currently to non-bargaining unit people or to
17 an outside contractor you have some difficulty
18 around making that happen. It could take
19 years.

20 MR. GALE: Well, what about for
21 that work that's solely tied to contractors?

22 MEMBER FLECK: That -- well you

1 can do that with in-house personnel so you
2 don't have to make a change. We can do that.

3 MR. GALE: You can do an
4 inspection of contractor work with you. In
5 other words more consistent with the NAPS
6 proposal.

7 MEMBER FLECK: Exactly. I don't
8 have a disagreement with the way it was
9 originally -- this rule was originally
10 intended. When it expanded to cover company
11 crews is when I got a little problem with it.

12 And I guess the other piece of it
13 is, you know, just from a practical standpoint
14 if we're going to hire outside like third
15 party contractors to do this inspection work,
16 who's going to train them? Basically our
17 company people. So who's better set up to
18 actually, you know, do this work than our own
19 company resources?

20 MR. GALE: But what about the
21 issue of somebody who's performed the work and
22 gets to self-inspect his own work?

1 MEMBER FLECK: I think you're
2 super -- in most cases, most companies it's
3 supervisors performing that inspection or an
4 outside --

5 MR. GALE: Okay. So similarly
6 with contractors you would be okay then with
7 if -- as long as it's somebody within the same
8 company doing that inspection.

9 MEMBER FLECK: As long as we don't
10 have to hire additional people.

11 MR. GALE: Yes.

12 MEMBER FLECK: And again, it
13 depends on how you define person and how you
14 look at this whole thing. It could require us
15 to, you know, I -- probably National Grid has
16 1,000 company crews. How many inspectors am
17 I going to have to hire? I don't know.

18 MR. GALE: Well, I know -- I think
19 it was API's comment that simply changed the
20 word "person" to "individual."

21 MEMBER FLECK: I hadn't considered
22 that.

1 MR. GALE: Okay. Fair enough.

2 MEMBER FLECK: I hadn't considered
3 that. Something worth thinking about.

4 MEMBER FEIGEL: First of all I
5 want to be clear on what we're looking at.
6 We're looking at the actual language in the
7 Federal Register, not the original NAPSR
8 proposal?

9 MR. GALE: That's correct.

10 MEMBER FEIGEL: Is what I'm
11 looking at here? Okay.

12 In your proposed -- some language
13 that I personally still have a problem with
14 that I'll get to in a second that I think is
15 vastly superior to this. And it's on page 5
16 of that tab, the highlighted stuff in the
17 second bullet on that -- on page 5 of.

18 Now, having said that does PHMSA
19 make a distinction between what most the
20 construction world that has final examination
21 requirements such as radiography makes a
22 distinction between examination and

1 inspection.

2 And I'll give you a specific
3 example. Would that language prohibit a
4 welder from okaying his own fit-up? Because
5 that uses the word "inspection" and that is an
6 inspection activity. So I would have to have
7 somebody else come along and inspect that
8 welder's fit-up. That is unheard of in
9 commercial practice anywhere in the world,
10 including the nuclear industry.

11 I guess -- because that
12 distinction is important. I wouldn't have a
13 problem if we require a second individual to
14 be involved in the final examination if you
15 will, whether that's radiography, PT, or just
16 visual dimensional examination. But I have a
17 huge problem if you interpret inspection to
18 include any activity that -- in terms of like
19 fit-ups, for example. That will bring
20 construction projects to a halt.

21 MR. GILLIAM: Okay. This is Jeff
22 Gilliam with PHMSA. Just as a response. What

1 I say there, what we're talking about is the
2 final product, not during the process, a fit-
3 up or during the process of welding, but the
4 final acceptance.

5 And just to clarify it a little
6 bit more when we're talking about "person" and
7 you look in the regulation it does talk about
8 individual or corporation, et cetera. Under
9 this consideration we're talking about the
10 actual individual performing the task, like
11 the welder can't approve his own weld. That's
12 what we're trying to say. It has to be -- it
13 could be a qualified supervisor in the same
14 company or someone else, but it just can't be
15 the individual that's actually performing the
16 task. And we can clarify that in the preamble
17 somewhat if --

18 MEMBER FEIGEL: Then I would
19 suggest that you adopt in this proposed
20 language and replace "inspection" with "final
21 examination."

22 MEMBER DRAKE: I would second that

1 if that was an actual proposal.

2 (Laughter)

3 MEMBER WORSINGER: Rich Worsinger,
4 Rocky Mount. I support the NAPSR language.
5 I have concerns with the language though that
6 would require company employees' work to be
7 inspected by a third party. I know there's
8 been some discussion about supervisors. Many
9 companies have working supervisors and that
10 means they get down in the ditch and get
11 dirty. They're the ones that are putting
12 their hands on the pipe. So in those cases
13 you'd be talking about bringing another
14 supervisor in if one existed in some of our
15 small municipals to do this inspection.

16 The other thing I think just to
17 point out the difference between the concerns
18 with contractors which I think are legitimate,
19 that a contractor is there, they do the job
20 and they're gone. And a company crew, they're
21 the ones there. That's where they make their
22 livelihood. They're going to be there next

1 week, next year, for their whole career.
2 They're the ones that if something goes wrong
3 5, 10 years later are going to be held
4 responsible. They're the ones that maintain
5 that, they operate it. They don't have a
6 reason to cut corners like a contractor does.

7 And like I said, I can support the
8 NAPS R language, I think it's good, but I can't
9 support having employees of the utility, their
10 work being required to be inspected.

11 MEMBER GARDNER: As a regulator
12 and a former utility employer, employee I
13 support the NAPS R language. And I think that
14 it's quite appropriate to have a second
15 individual inspector work as done by others.
16 And whether or not that's a working
17 supervisor, or supervisor, or someone else in
18 the company. I think that that is a darn good
19 safety practice.

20 MEMBER DAVIED: This is Larry
21 Davied. And appreciate that this is going to
22 be separate liquid and gas vote here.

1 First and foremost, this proposal
2 does not in any way change what's to be
3 inspected. That's a statement and a question
4 both, but it is -- it doesn't get into
5 anything else. So today's requirements for
6 inspection are tomorrow's in this.

7 I very much support the individual
8 performing the work. I am confused by the
9 wording "other individuals who participated."
10 There needs to be a distinction and separation
11 because it's very vague language, an example
12 of which is am I part of the crew
13 participating in -- you know, when we were
14 talking about construction activities it is
15 all-encompassing. It's not to do a single
16 weld, it's to do a project typically, portions
17 of which, again, we're not changing what has
18 to be inspected.

19 But this wording here, it's
20 confusing and leaves open to very vague in
21 what that can mean in the eyes of the beholder
22 here. So we need to emphasize the individual

1 and there needs to be separation from this
2 language in who participated in. It's just I
3 can't inspect my own work is the intent.

4 MEMBER HAMSHER: I just want to
5 echo what -- Denise Hamsher with Enbridge --
6 echo what Larry said. The INGAA language as
7 proposed uses the word "a required inspection"
8 which I think reinforces Larry's point that
9 there are no new inspection requirements as
10 part of this. It's just if there's a required
11 inspection then that work cannot be inspected
12 by the individual who performed that task.

13 Which also I think address Dr.
14 Feigel's concern that this isn't, you know, a
15 fit-up or whatever. That's not a new
16 inspection requirement.

17 MEMBER FEIGEL: I just want to
18 reinforce that again. I mean I could quite
19 frankly read that to mean that if I did a
20 fabrication activity anyplace on that pipeline
21 then I could not inspect anywhere else on that
22 pipeline.

1 The INGAA language accomplishes
2 what you want to and it's vastly superior.
3 It's clear, concise and hits the nail on the
4 head.

5 MEMBER WEIMER: I guess I
6 understand all the arguments about -- Carl
7 Weimer with the Pipeline Safety Trust. I
8 understand all the arguments about the use of
9 person or individual. I guess I would like to
10 understand what PHMSA's rationale was. Were
11 you trying to require third party in or were
12 you just trying to make sure that the
13 individual doing the work wasn't --

14 MR. GALE: It wasn't trying to
15 require third party inspection.

16 MEMBER WEIMER: Okay. So you
17 really were looking just for the individual
18 couldn't inspect his own work.

19 MR. GALE: Exactly.

20 MEMBER WEIMER: Okay, thank you.

21 MEMBER SHELTON: Larry Shelton,
22 the liquid industry. The one comment I would

1 like to make on the NAPSRS wording is that it
2 uses the word "contractor." In our world that
3 can have multiple meanings. It can mean an
4 individual. It can also mean a company. And
5 within that company there may be a separate
6 inspection group that conducts those
7 inspections and we wouldn't want to preclude
8 that by using the language. I would like to
9 bring us back to using the word "individual"
10 to make it clear as to what the intent is.

11 MR. GALE: We're trying to type up
12 the INGAA language right now so people can see
13 it up on the screen.

14 MEMBER WORSINGER: Rich Worsinger,
15 Rocky Mount. Does PHMSA have any evidence of
16 when something has happened that is causing
17 them to want to make this change to include --
18 to modify NAPSRS's proposal to include all
19 utility crew work?

20 MR. GILLIAM: I'll use one broad
21 example that we're all familiar with. I think
22 if you look back at some of the facts even

1 from San Bruno and some of the original
2 construction work that was done there probably
3 at that time by company employees it was
4 approved by company employees but yet later
5 was defective. I think that's where you want
6 to look at an example of that. There's also
7 multiple other examples I think out there on
8 more recent pipe.

9 I think another example, okay,
10 would be on a project that crossed the country
11 from the Rockies to the east where there was
12 inappropriate fit-up and later failures during
13 hydrotest that was approved by the company and
14 their inspectors, okay? Another example would
15 be a lot of the alternate MAOP projects that
16 experienced low-strength pipe failures and
17 other things that had inspection but yet
18 failed to find these flaws.

19 So I think it's just prudent I
20 think as an industry for us not to have an
21 individual who is rewarded based on company
22 stock and other incentives to reduce cost

1 approve their own work in a safety-type
2 situation. I just think it's prudent to have
3 that second set of eyes review that.

4 MEMBER WORSINGER: I think in
5 those examples you gave there like the San
6 Bruno, if you had another company employee
7 come inspect that I don't think there would
8 have been a different outcome. And I also
9 submit that if this is such a concern I think
10 that there will be a lot of costs involved
11 with this and that this needs a full-blown
12 investigation and analysis of what the costs
13 would be. Because it would greatly impact
14 especially the small operators.

15 MEMBER HAMSHER: Denise Hamsher
16 with Enbridge. I want to echo something that
17 Larry Shelton said. The use of the word
18 "contractor" is a word that's really fraught
19 with problems. I urge you to avoid using it.

20 We have a lot of people who have a
21 desk, show up every day, a nameplate, but we
22 pay them in a way that would be considered a

1 contractor. So employment relationships these
2 days are multifaceted. We hire whole
3 companies, we hire individuals who are
4 ultimately contractors. So again, just
5 continue to urge you not only in this language
6 in front of us but in general to be careful
7 about how you use the term "contractor."

8 MEMBER FLECK: Sue Fleck
9 representing gas. I have a couple more
10 questions. I agree with what Rich has been
11 saying along the way. Agree with NAPSRS's
12 original pol, having this apply to non-company
13 personnel who are going to do the job and go
14 away.

15 But I want to get back to
16 something that was said earlier. When you
17 were talking about final examinations, what
18 about all the little inspections that happened
19 along the way? Is this just about the final
20 when the project is done? I don't think so.
21 It's about every little bit of the inspections
22 that are required as the pipe is being built

1 to make sure that everything's gone. And
2 asking for third party on that, it's got a
3 significant cost impact, potentially has a
4 significant cost impact. Even if it's just
5 hiring a new internal inspector, another
6 company person to do it. So I think it needs
7 to have a cost-benefit analysis if it's
8 applied to company crews rather than just
9 outside contractors.

10 MEMBER STURSMA: Don Stursma, Ohio
11 Utilities Board. Yes, the NAPSR resolution
12 only addressed --

13 MEMBER TAHAMTANI: Hey Mr.
14 Stursma, it's my turn.

15 (Laughter)

16 MEMBER STURSMA: I thought you
17 pointed at me. I'm sorry, Massoud. I yield
18 the floor.

19 MEMBER TAHAMTANI: All right, Don.
20 I told you I handled this morning, I handled
21 this afternoon, but when I ask to speak I
22 should be able to speak.

1 This -- we talk about the NAPSR
2 resolution. Actually we started it out of
3 state of Virginia, went onto the eastern
4 region, went onto the national level. And we
5 did that because we saw a lot of issues with
6 contractors doing the work and inspecting
7 their own work. This is a needed change. It
8 must be changed.

9 Now I understand all those that
10 claim that there are issues for small
11 operators to have somebody inspect their own
12 employees, I understand that. We also see the
13 same issues with the gas companies own
14 employees. Because the contractors do a lot
15 of work the gas company employees don't even
16 have to practice anymore to do the work. I'm
17 talking about the larger ones.

18 This is a real issue. But in
19 light of what we have to move forward and not
20 sit around for another year or two to fix this
21 NAPSR proposed -- and the word "contractor" is
22 not in the language. It is at the beginning

1 because we said the contractors causing these
2 issues. So you all need to read the language
3 properly. There's no word as far as
4 "contractor" in the language.

5 Now, the person I understand is
6 defined somewhere in the code and that has a
7 different meaning. So AGA has proposed and
8 INGAA has proposed that that be changed to
9 individual. NAPSR doesn't have an issue with
10 that. This is not a big deal. Let's focus on
11 getting this thing through for the contractors
12 and if we have data.

13 I have data that I can share with
14 you today on the number of issues that we have
15 seen since 2006 on all the cold joints, all
16 the great one, two and three leaks that have
17 been caused by contractor work. And I'll be
18 happy to go over that if you want. There's
19 plenty of data to support that we've got to
20 take care of the contractors. Too many
21 contractors are out there doing the work
22 without anybody looking. So let's not waste

1 all afternoon talking about this.

2 MEMBER BELLMAN: Mike Bellman,
3 city of Richmond. I guess one of my concerns
4 here is the vagueness of the language that's
5 currently being used. There's nothing here to
6 indicate as we were saying before the extent
7 of the inspection and when the inspection
8 happens.

9 We currently have -- I have 10
10 inspectors right now and I have 35 contractor
11 crews out there right now. And they rotate
12 between those crews. That's the reality and
13 I think you'll find that's the reality for
14 most of the gas companies. But we have hold
15 points set up. They're not going to do a
16 pressure test unless there's an inspector
17 there. They're not going to start their
18 fusion unless there's an inspector there.
19 They're not going to do certain tasks unless
20 the inspectors come check they're doing at
21 least that task correctly and then the
22 inspector moves onto the next crew. And

1 that's not -- there's nothing here in this
2 language that tells me I can do that. And so
3 I'm looking at this as a significant
4 rulemaking and should not be included as, you
5 know, no cause kind of a rulemaking because
6 I'm not seeing any limitation.

7 I'm not seeing any language that
8 says oh, don't worry company, you don't have
9 to do 100 percent inspection, you know,
10 there's only certain tasks that you need to
11 inspect. And so it's more a concern for
12 what's not in the language than really the way
13 it's worded right now. So your fix here
14 doesn't help me at all.

15 MR. GALE: You're not agreeing
16 with the INGAA fix either?

17 MEMBER BELLMAN: No.

18 MEMBER KUPREWICZ: Look, let's
19 step back here, folks. First of all, I want
20 to second what was said earlier. This is a
21 very important issue. Most of you in this
22 room are arguing I believe while you may be

1 sincere, you look back at your operations.
2 Not one of you is going to try to convince the
3 public that you aren't already doing this, all
4 right?

5 From what I've heard eloquently
6 said from across the table here is you want
7 two very important factors. The guy who's
8 doing the work isn't responsible for the final
9 checkoff. That's just common sense 101. The
10 public thinks you're doing that already. Most
11 of you are. I don't care if it's a contractor
12 or an employee of the company. I don't care
13 if it's a monkey. There better be
14 independence and some sort of degree of
15 qualification to verify that at least you met
16 two levels of independent check.

17 Now we can get there I think, and
18 I think it's very important that we get there
19 today. By the way I'm Rick Kuprewicz with the
20 liquid but I'm also talking about the public.
21 Thank you.

22 MEMBER STURSMA: Can I speak now,

1 Massoud?

2 (Laughter)

3 MEMBER STURSMA: Don Stursma.

4 First of all, as Massoud pointed out our
5 primary concern at the time among NAPSRS was
6 the contractors. But when you expand to
7 operator personnel as well you do run into an
8 issue with our small operators. I know in
9 Iowa we've got a lot of small towns, small
10 municipal operators. What have I said? Iowa
11 has a lot of small operators that are three,
12 two, maybe even one-man shops. And if they do
13 anything they're all doing it. There's nobody
14 left over that didn't get their boots muddy
15 that can inspect the work. So it's really
16 impractical to have a separate person inspect
17 their work. I think that's another reason it
18 should be limited to contractor personnel and
19 not to operator personnel.

20 And in response to the comment
21 that this would expand the amount of
22 inspection work required to be done the first

1 sentence up there is, except for the part
2 versus subpart part, the existing language of
3 the rule. And I don't see where -- or at
4 least it's very close to the existing language
5 of the rule. I don't know that that adds any
6 inspection requirements that would be above
7 and beyond what you're already doing.

8 It says the installation must be
9 provided -- inspection must be provided to
10 ensure the installation of the pipe or
11 pipeline systems. I see that as being
12 performance language. The system you just
13 described, you have rotating inspectors with
14 certain critical points they have to inspect.
15 To me at least that would comply with the
16 language of the rule. I don't see anything
17 that requires every single act would suddenly
18 become subject to inspection.

19 MEMBER WORSINGER: Rich Worsinger,
20 Rocky Mount. Just to discuss some further
21 concerns. I don't know exactly what's meant
22 by inspection here. Is it that the pipe is

1 installed at the proper depth? And if that's
2 a concern you'd need to have this person who
3 is not involved with the construction being
4 there for the entire time.

5 Is it to make sure the backfill
6 material around the pipe is proper and not
7 having rocks or something that would impinge
8 on the pipe? That would mean for any of these
9 operators, your in-house crews you would have
10 to have additional hired to stand there and
11 watch them. And it would significantly
12 increase costs.

13 MEMBER PIERSON: Craig Pierson,
14 liquids. I think the lead-in words "required
15 inspection" gives us the comfort that it's not
16 going to the level of detail that, like
17 backfilling. That gives us the comfort and we
18 can support the INGAA language on the liquid
19 side.

20 MR. WIESE: Well, as usual I come
21 to the defense of my friend Massoud when I say
22 to you we have seen ridiculous errors made by

1 contractors in the field. Stupid things that
2 none of you who are operators would abide by
3 and I know you wouldn't. But you're not
4 seeing them, you know.

5 The problem was if we think about
6 some of the projects that we showcased in our
7 construction workshop, feel free to go on our
8 website, by the way. Plenty of pictures,
9 plenty of examples of this. I'm not arguing
10 that there might not be ways that need to --
11 or fine-tuning that needs to be made.

12 But what I would resist would be a
13 notion that hey, this is too complex, let's
14 not think about it. Let's just punt again and
15 kick it down the road another couple of years.
16 We've been kicking it down the road for
17 awhile.

18 Really as we talk about 2.0 for
19 example let's get real. Quality assurance and
20 quality control are a critically missing
21 element that needs to get in there. This is
22 nothing more than quality control on a

1 critical task. You know, we have to get to a
2 place where we feel comfortable.

3 Now, I am sensitive and always try
4 to be sensitive to the really small operators.
5 I understand that's a different world. We've
6 come up with solutions to deal with that
7 before. Not to say that you're not incurring
8 a risk by doing some exemptions based on size
9 or whatever, but I'd like to think that the
10 committee is more constructive than just
11 saying, you know, gosh, I don't want to do
12 that because I'm worried that it might have an
13 effect that I'm not really entirely sure on.

14 I would welcome any suggestions
15 for improving the language that are out there
16 and I'm sure that Andy being the peacemaker
17 that he is will jump to my rescue here. But
18 I just wanted to agree with Massoud on this
19 one. There are too many problems. It has to
20 be addressed.

21 MEMBER ARMSTRONG: Lanny
22 Armstrong, liquids. From the emergency

1 responder perspective we see the end result of
2 this. And to me it's academic. This is a
3 critical safety function that needs to be
4 done.

5 And this language that INGAA has
6 proposed I think is -- it doesn't require
7 additional inspections. It doesn't define
8 additional inspections. It just says who can
9 do the inspections. And the inspections
10 shouldn't be done by the person performing the
11 task. Even if it's a supervisor, that's fine.

12 Plus these inspections in my
13 opinion, and I'm not from the industry. Like
14 I said, we just see the end result. But these
15 inspections, I'm assuming these people that
16 are doing the inspections have to be certified
17 to some level. So you're not just having just
18 some guy climb in a hole and say yes, it looks
19 good to me.

20 So to me it's a safety-critical
21 feature that really needs to be implemented.
22 If the cost factor is an issue have an

1 incident and see how much that's going to cost
2 you.

3 MEMBER DRAKE: Andy Drake with
4 Spectra Energy. I'll try to rise to the
5 occasion for you, Jeff, and champion you and
6 Massoud on this. I think this is something we
7 can move forward on. It seems like we're very
8 close.

9 Commissioner Gardner and I were
10 comparing notes here a few minutes ago and I
11 think we're both close enough that the NAPS
12 language and the INGAA language seem to be
13 very similar in a lot of ways I think. Either
14 of us probably could go either way on the
15 language.

16 I'd like to throw a straw man out
17 just because I'm hearing a lot of things that
18 seem very similar to me. If the INGAA
19 language just as an occasion, or to take the
20 NAPS language, either one. But if you took
21 the INGAA language and added the word "final"
22 in front of inspections to pick up Gene

1 Feigel's point, and added "contract
2 individual" those seem to address the issues
3 that I've heard around this table without
4 inducing an incredible, what I see, landfall
5 on us of obligation.

6 Is there concerns with that?

7 There are concerns with that. Okay. Maybe
8 you can help me with that because I can't --
9 I'm not hearing those.

10 MEMBER WORSINGER: Rich Worsinger,
11 Rocky Mount. Rocky Mount, we have 20
12 employees in our gas department. We have two
13 construction crews. They're two three-man
14 crews, the supervisor and two construction
15 workers. If we needed somebody to do an
16 inspection of their work we would have to hire
17 two more employees to enable -- to do that
18 work. If somebody's going to go inspect them.
19 And I guess what is a final inspection when
20 you're installing main down block after block
21 of a city? Is that when you're pressure-
22 testing it?

1 MEMBER DRAKE: I tried to actually
2 add the word "contract individual" in there on
3 purpose to pick up the point you were bringing
4 up about company employees. I respect the
5 fact that a small company crew, having to have
6 someone outside that company crew would be a
7 burden and probably unnecessary.

8 MEMBER WORSINGER: I think we're
9 both saying the same thing then. I support
10 the NAPSRS language and agree with Massoud's
11 point about contractors. There are some
12 contractors out there that are doing
13 substandard work. My concern is requiring it
14 for company employees, to have an inspector to
15 inspect the work that they didn't perform.

16 MEMBER FEIGEL: I'm a little bit
17 nervous about the distinction between
18 contractors and operators. I mean, there's
19 the moral point that has been made that this
20 is my home and I don't want to foul it. That
21 doesn't address the technical issue about the
22 competence of the relative people and are they

1 doing the right thing.

2 I mean, at the end of the day the
3 pipe's going to be in the ground regardless of
4 who put it there. Again, I think the sense of
5 what INGAA has proposed there, and I certainly
6 agree with Andy. In fact, I was the one who
7 brought it up. I think we ought to say "final
8 inspection." And no, that does not mean the
9 final hydro because there are acceptance
10 criteria for individual welds and activities,
11 and that is the final inspection for that weld
12 and that weld and that weld.

13 MEMBER WORSINGER: Do you mean
14 welds or fuses? Most pipe that --

15 MEMBER FEIGEL: Fine. I'm good
16 with that. Whatever the activity is there's
17 some acceptance criteria for each segment of
18 that and that's what we're talking about.

19 MEMBER TAHAMTANI: I disagree with
20 the word "final." There are a lot of things
21 that you do long before you put that pipe to
22 rest. Welding is only one. Making sure that

1 it's properly coated, jeeped, the backfill is
2 okay, the bedding is okay, all of that makes
3 a good pipeline. It's not just the pressure
4 test.

5 Now, I asked for the -- Andy,
6 thank you for trying to help me with this
7 task. I hear that the NAPSRS language is okay.
8 I've asked the NAPSRS language to be put on the
9 screen. I think if we can change the word
10 "person" in the NAPSRS's language to
11 "individual" we may be there.

12 MR. GALE: I'm typing it up right
13 now.

14 MEMBER TAHAMTANI: They're typing
15 it up. But it's in your handout on page 3 if
16 you want to study it. It's in bold under
17 "Therefore, be it resolved."

18 MR. GALE: Don, the language that
19 we just posted up on the screen, is that your
20 language, sir? Except for the typos.

21 MEMBER STURSMA: That is the NAPSRS
22 language. However, I would point out that

1 NAPSR proposed this as a change to 192.305
2 when the rule is actually proposed to be
3 placed in 192.204.

4 MR. GALE: Okay.

5 MEMBER HAMSHER: And further I
6 think you just need to redline the word
7 "person" needs to be struck and substituted
8 with "individual."

9 MR. GALE: I think we can all
10 agree to that.

11 MR. WIESE: Just since -- Gene,
12 did you?

13 MEMBER FEIGEL: I'm still going to
14 push for the INGAA language because it I think
15 accomplishes the same thing and is much more
16 precise. This would be open to
17 interpretation. You know, some of the small
18 municipals are saying I've got a two-man crew
19 with one supervisor. Now in my world that
20 supervisor is responsible for construction and
21 is part of that activity and therefore could
22 not do that inspection. The INGAA language

1 would allow that and some people might object
2 to that. But then you've got a true cost-
3 benefit argument here that you're going to
4 have to address.

5 MEMBER BELLMAN: I think we're
6 very close. I think that this language is
7 looking a lot better.

8 The issue I have is moving it from
9 the 224 to the 305. And you have not proposed
10 that to the public in your NPRM. So they have
11 not had a chance to look at the implications.
12 Because this is talking about an inspection in
13 accordance with the part, all of 192. The
14 original word in 224 is an inspection in
15 accordance with the subpart, the -- that
16 section of the code. So moving, I think
17 moving it to another part of 192 would have --
18 would create a problem.

19 MR. GALE: Mike, could you repeat
20 that, please? Sorry.

21 MEMBER BELLMAN: I think there was
22 a suggestion that they move this to 305. No,

1 the original. Oh, I thought you were moving
2 it from 224 to 305. Okay. We're all right
3 then.

4 MEMBER WEIMER: Thank you. Carl
5 Weimer of the Pipeline Safety Trust. I'm
6 actually really glad that I'm on the Liquids
7 Committee now and not the Gas Committee
8 because I think it's much easier for us
9 because we're not dealing with a lot of these
10 small municipal operators that have small
11 crews. So with that in mind for the Liquids
12 Committee I am really supportive of the INGAA
13 language because I think that gets us to where
14 we want to go for the Liquids Committee. I'll
15 let the Gas Committee deal with how they want
16 to deal with all these small municipal groups.

17 MR. GALE: On a procedural matter,
18 Ms. Ford. On the Liquid. We've still got to
19 hear from the public.

20 MEMBER DRAKE: Andy Drake with
21 Spectra Energy. Thanks, Carl. I'm trying to
22 help move this along. I'm kind of leaning

1 back to the INGAA language all of a sudden.

2 The one word that's really
3 catching me here, Massoud, in particular is
4 the word "any." And I think that's what I
5 hear with Gene and it is a valid concern. And
6 that is no operator shall use any individual
7 to perform the required inspections if that
8 individual is performing any construction
9 activities subject to inspection. That's a
10 lot of -- that's a pretty wide net. That
11 means anybody involved in the construction
12 can't do any of the inspections, even if
13 they're doing different things. The
14 supervisor. That's pulverizing. So if that
15 is important to you you need to help me
16 understand that because I think that is a --
17 to get that word in there is a big deal.

18 If it's "the" inspection, you
19 know, that's different. That's the conflict
20 of interest. That person can't inspect the
21 thing they just did. That's different than
22 anything that's going on out here. But in the

1 interest of that if that's -- if that word
2 changed "any" to "the" I think that would help
3 me a little bit.

4 If that's not doable my
5 recommendation would be the INGAA proposal
6 with the last sentence that NAPSRS has added
7 here to address the municipals. And that
8 might help break this discussion down a little
9 bit.

10 MEMBER TAHAMTANI: I believe this
11 language was drafted by Don Stursma.

12 (Laughter)

13 MEMBER STURSMA: I thought the
14 language came from Virginia. Isn't that what
15 you said earlier?

16 (Laughter)

17 MEMBER TAHAMTANI: That was after
18 you messed with it. We have no problem with
19 what you're saying, Andy. We mean the
20 inspection on the job that was done, not any
21 and all. So if we can -- we can alter that.

22 MR. WIESE: While the change is

1 being made, this is Jeff. I'll just make a
2 rhetorical comment that I think that we're at
3 a place where we have an agreement in
4 principle and can move forward.

5 But I'd like to reiterate what
6 Gene said. I think there's a bigger game
7 afoot, you know, that we're going to have to
8 take on sooner or later. It is the broader
9 QA/QC issue but I think it's too complex to
10 take on now in the guise of this proposal. So
11 I just want to for the record say that I don't
12 think we're done with this issue. This just
13 resolves an immediate issue that clearly we're
14 seeing whether it's state or federal.

15 But I think we are cognizant of
16 the impact on smaller operators and I'm not
17 sure that anyone intended to say that a
18 supervisor who wasn't actually performing the
19 task couldn't be the person who was actually
20 being the second set of eyes. You know, I
21 would think in many ways that's part of their
22 job. But it is a second set of eyes. That's

1 the point.

2 MEMBER PIERSON: Craig Pierson,
3 Hazardous Liquids. Can we in the second
4 sentence mimic the INGAA language that said
5 "use an individual to perform a required
6 inspection?" "No operator shall use an
7 individual to perform a required inspection if
8 that individual." That mimics some INGAA
9 language.

10 MR. WIESE: So what we're orbiting
11 on if anybody wants to focus so we can maybe
12 get ready for a vote is on the NAPS R language
13 as amended here, right? Ms. Ford, the public.

14 MEMBER BEACH: Denise Beach, NFPA.
15 I think that the end of that second sentence
16 should incorporate more of the INGAA language.
17 I think it should read "No operator shall use
18 an individual to perform a required inspection
19 if that individual performed the construction
20 task requiring inspection."

21 MEMBER PIERSON: Craig Pierson,
22 Liquids. Support that suggestion.

1 MEMBER STURSMA: I'm just looking
2 at the language. I just wonder if we need the
3 word "required" "requiring" twice in the same
4 sentence. Just wordsmithing a little bit.

5 MEMBER KUPREWICZ: -- 192.305
6 right now. Correct? I just need to
7 understand. Okay.

8 CHAIR FORD: Is there a motion?
9 Is there anyone from the public?

10 MR. BENNETT: Phil Bennett with
11 the American Gas Association. Really I want
12 to say that this has been an excellent
13 discussion by the advisory committee. And
14 first, this is clearly not a miscellaneous or
15 insignificant rule even though it was titled
16 as such. But I think they modified it so that
17 the parties can agree.

18 And I would urge PHMSA to use the
19 advisory committee more often up front rather
20 than waiting till the last minute to save the
21 day and solve all these issues. But
22 seriously, it is a very diverse group.

1 They're a very good sounding board and a lot
2 of the issues like, you know, modifying
3 integrity management with liquids and gas
4 really should come to this committee ahead of
5 time and get some of their good times up
6 front.

7 CHAIR FORD: Is there a motion?

8 MR. ERICKSON: John Erickson,
9 APGA. I just want to thank you. I think you
10 addressed all the concerns we had. And what
11 I really want to see is how the transcript has
12 Don describing how many operators there are in
13 Iowa.

14 (Laughter)

15 CHAIR FORD: Last call. Is there
16 a motion? Oh, I'm sorry. Don?

17 MEMBER STURSMA: Yes. Again, in
18 the last sentence where it says "Nothing in
19 this section should" the original proposal was
20 "shall." I want to make sure that everybody
21 is -- want to make sure that "should" versus
22 "shall" is what people want before we have a

1 motion on it. "Shall" was what was in the
2 original NAPSRS resolution.

3 MEMBER BEACH: Why do you need
4 "shall" or "should?" Nothing in this section
5 prohibits. You don't get paid by the word.

6 (Laughter)

7 CHAIR FORD: Okay. Thank you.
8 Fair answer. Good, Denise. That's good.
9 Okay, Don's okay with that. Is there a
10 motion? Oh, I'm sorry. Andy?

11 MEMBER DRAKE: I would like to
12 propose a motion.

13 CHAIR FORD: Thank you.

14 MEMBER DRAKE: This is only for
15 the Gas group because Carl's already proposed
16 a motion for the Liquid group. But the
17 proposal that I would make is that the
18 language that we've drafted through this
19 discussion be adopted, that the proposed
20 language as shown on the screen here is
21 technically feasible and reasonable and cost-
22 efficient and practicable, and would make a

1 motion that we adopt that language into the
2 standard, into the regulation.

3 CHAIR FORD: Is there a second?

4 MEMBER BELLMAN: Second.

5 CHAIR FORD: It's been moved and
6 seconded. And it's a vote for the Gas
7 Committee only. All in favor?

8 (Show of hands)

9 CHAIR FORD: Thank you. Any
10 opposed?

11 (No response)

12 CHAIR FORD: Unanimous decision.
13 It's unanimous and it's adopted. Thank you.
14 Now we need a motion from the Liquid
15 Committee. Denise?

16 MEMBER HAMSHER: The proposed rule
17 in 195.204 as published in the Federal
18 Register and draft regulatory are technically
19 feasible, reasonable, cost-effective and
20 practicable if the language is modified to
21 encompass the modified NAPS R language that has
22 been proposed and shown on the board.

1 CHAIR FORD: Is there a second?

2 MEMBER WEIMER: I second.

3 MEMBER PIERSON: Craig Pierson,
4 Hazardous Liquids. Do we need to modify the
5 first sentence for the liquids?

6 MEMBER HAMSHER: And I referenced
7 our paragraph.

8 MEMBER PIERSON: Okay, thanks.

9 CHAIR FORD: Thank you, Craig.
10 All in favor?

11 (Chorus of ayes)

12 CHAIR FORD: Opposed?

13 (No response)

14 CHAIR FORD: It's a unanimous
15 decision that's been adopted. Thank you.

16 MR. GALE: Two more. These should
17 be easier, much easier. Actually this next
18 one should be a lot easier.

19 One of the proposals again which
20 was based on a recommendation from NAPSR dealt
21 with the requalification or qualification of
22 plastic pipe joiners. We propose to revise

1 the requirements so that during any calendar
2 year not exceeding 15 months that person
3 doesn't make any joints under that procedure
4 or any production joint is found unacceptable
5 by testing under 192.513. That was different
6 than what was in the current regulations which
7 would have allowed 3 percent or a certain
8 number, a higher number of joints that were
9 found unacceptable that the operators didn't
10 have to requalify.

11 We received a lot of negative
12 comments on this but what we found out later
13 is that the commenters weren't so much
14 concerned about the proposal but the language
15 we used in the preamble to justify the
16 proposal. And some of the commenters now
17 would support the NAPS SR proposal -- again,
18 this is based on a NAPS SR proposal -- as long
19 as the preamble clearly articulated that it
20 wasn't based on concerns with the quality of
21 the joints or the current standard, but this
22 was a new change to their qualification

1 requirements to make it a little bit less
2 burdensome on the operators.

3 Don, do you have any comments you
4 want to make since this was based on your
5 proposal?

6 MEMBER STURSMAS: You anticipated
7 me, yes. Don Stursma. And I'd like to point
8 out that NAPSRS proposed this resolution, this
9 rule change not because of some regulatory
10 concept of nirvana but because operators came
11 to us asking states, I think four states to
12 grant waivers allowing them to do it this way
13 because they thought it was greatly to their
14 benefit.

15 In Iowa I think almost all of our
16 operators, industrial and municipal, are under
17 the Iowa waiver because they all wanted it.
18 We had one holdout that didn't get in any of
19 the group petitions. I think that was by
20 accident rather than design. So when we
21 proposed it we thought this was something that
22 would -- was actually better than the current

1 rule. And also believe that the industry felt
2 the same way, or at least a lot of industry
3 did.

4 Some of the comment, like I said,
5 I think most people read the preamble and not
6 the proposed rule. There was nothing in the
7 proposed rule that would require every bad
8 plastic joint would mean that the person is
9 disqualified.

10 Now, one difference is that this
11 says a person can be disqualified after any
12 production joint is found acceptable by
13 testing under 192.513. It can be up to three
14 under the current rule. But I ask you to
15 think about that a little bit. How often do
16 you have a production joint fail during a
17 pressure test? From my knowledge it almost
18 never happens and if it does that joint is so
19 bad you don't want that guy doing any jointing
20 for you.

21 I've seen some incredibly bad
22 joints that failed later that survived the

1 initial pressure test just fine, so how bad
2 does it have to be to fail during the original
3 pressure test? So.

4 MR. GALE: Thank you, Don. Like I
5 said there was a lot of comments on this that
6 were concerned about the cost impacts. But I
7 think as operators read the rule later they
8 determined that it wasn't as cost impact as
9 they were concerned about, though they were
10 concerned about some of the preamble language
11 explaining it or justifying the proposal. So
12 I think in general I think if anybody from the
13 public or any of the other industry groups
14 want to make a comment I believe in general
15 the commenters are supportive of this proposal
16 at this time.

17 This is a vote solely of the Gas
18 Committee. If there's any comments from
19 members at this point?

20 CHAIR FORD: Is there a motion?

21 Oh, I'm sorry.

22 MEMBER WORSINGER: Rich Worsinger,

1 Rocky Mount. Just let me make sure I
2 understand this. If I'm fusing, making a
3 joint and I see a I messed up. I slipped,
4 whatever, and it's a bad joint and I know it
5 and I cut it out. Would that qualify as a bad
6 joint? I'm seeing heads nodding no. Okay, so
7 that doesn't count. For somebody that
8 realizes they made a bad joint and then they
9 don't try to pass it off. Good, thank you.

10 CHAIR FORD: Is there a motion
11 from the Gas Committee?

12 MEMBER STURSMA: I forgot one
13 point of order that the original NAPS
14 resolution did say that everybody should be
15 requalified at a 1-year interval, not just
16 those that hadn't made a joint. I missed that
17 in my earlier comments. So there is a
18 substantial difference between this rule and
19 what NAPS originally proposed.

20 And again, most of the operators
21 in Iowa and I understand other states too
22 routinely re-qualify all their people every

1 winter and by requalifying them every winter
2 they didn't have to keep track of who had or
3 hadn't made any joints.

4 MR. GALE: Don, is that your
5 original language I have there at the last
6 bullet?

7 MEMBER STURSMA: That should be
8 requalified.

9 MR. GALE: Okay, not pre-
10 qualified.

11 (Laughter)

12 MR. GALE: No mortgage loans here.

13 MEMBER STURSMA: Let me look at
14 the language a second. Yes, that is it. Of
15 course we would also -- as part of this
16 package current rules of 192.185(c)(1) and
17 (c)(2) would be struck. They would become
18 unnecessary if this rule changes.

19 MR. GALE: Exactly. This would
20 replace that.

21 MEMBER STURSMA: Yes. So that is
22 the NAPSRS proposed language. As I said I

1 would certainly recommend this language
2 instead of the language that was contained in
3 the Notice of Proposed Rulemaking.

4 CHAIR FORD: Is that the motion?
5 Are you making a motion?

6 MEMBER STURSMAN: I will make a
7 motion that the NAPS language as just shown
8 on the screen be adopted as number 2, the
9 proposed rule as published in the Federal
10 Register is technically feasible, reasonable,
11 cost-effective and practicable if the language
12 originally proposed by NAPS is adopted.

13 CHAIR FORD: Sue had her card up
14 and I didn't see it, I'm sorry.

15 MEMBER FLECK: Sue Fleck
16 representing Gas. Two things I wanted
17 clarification on. Don't really have an issue
18 with the proposal but two clarifications.

19 If we go and adopt this, does this
20 eliminate the paperwork and tracking that
21 currently is required when you're trying to
22 track the three failures and all that? So

1 that would be clarification. We'd want that
2 to go away.

3 And the second thing I'm
4 interested in is when you talk about the
5 requalification, is that similar to the waiver
6 for the Kansas Commission where everything is
7 done right up to but not including an actual
8 fusion for the requalification? Or does it
9 include an actual fusion?

10 MR. GALE: Well, on your first
11 comment, I mean we would be getting rid of the
12 requirement to keep track of --

13 MEMBER FLECK: Thank you.

14 MR. GALE: -- or the three
15 failures so therefore there would be no
16 paperwork requirement for that.

17 I'm not familiar with this other
18 waiver that you referred to, so.

19 MEMBER FLECK: Yes, the language
20 says requalifying by reviewing and taking all
21 steps leading up to joint production but
22 without completing the joint. That's the

1 Kansas waiver.

2 CHAIR FORD: Don, while we are
3 conferring.

4 MEMBER STURSMA: Okay, on the
5 first part yes, elimination of all the record-
6 keeping requirements is one of the reasons
7 that operators wanted the waiver saying that.

8 And as far as the Kansas system I
9 think there may be some variations from state
10 to state on what they will accept as being a
11 qualifying joiner test and I don't see
12 anything in this rule that would change that.
13 I think that's a whole separate question.

14 MEMBER FLECK: So that would be
15 done state by state the way it is now.

16 MEMBER STURSMA: I don't see any
17 change --

18 MEMBER FLECK: I don't either.

19 MEMBER STURSMA: -- at all in what
20 a state will accept as being a qualifying
21 joiner test.

22 CHAIR FORD: I have a motion on

1 the floor. Is there a second? Oh, I'm sorry.

2 MEMBER BEACH: Can I ask that the
3 proposed -- sorry, Denise Beach, NFPA. Can I
4 ask that the proposed language be put back up
5 on the screen?

6 MR. GALE: The NAPSR proposal.

7 CHAIR FORD: It seemed that I
8 omitted the public again.

9 MR. GALE: It's the last bullet.

10 CHAIR FORD: Hearing none then the
11 motion still stands. I still, I'm waiting for
12 a second.

13 MEMBER GARDNER: Second.

14 CHAIR FORD: Thank you. It has
15 been moved and properly seconded. From the
16 Gas Committee. All in favor?

17 (Show of hands)

18 CHAIR FORD: Opposed?

19 (No response)

20 CHAIR FORD: The motion is adopted
21 unanimately. Thank you.

22 MR. GALE: Ms. Ford, I apologize

1 but I was incorrect. There was two more
2 proposals. But you can blame Mr. Stursma on
3 this one. This may be a quick one, I don't
4 know. We'll see how it goes.

5 One of the things we proposed in
6 the rulemaking dealt with our state grant
7 program. I'm the one that lives 50 miles
8 away. Where PHMSA reimburses states for a
9 portion of the cost incurred in administrating
10 their pipeline safety programs. And Congress
11 appropriates these reimbursement funds on a
12 regular basis.

13 In the 2006 Act the PIPES Act
14 removed a provision that imposed a 20 percent
15 cap on state grant expenses. PHMSA proposed
16 to incorporate in the regulations a 20 percent
17 limit on indirect expenses for grants to state
18 pipelines.

19 We had -- we didn't get a lot of
20 comments on this. We had -- the comments were
21 mainly from some of our state partners that
22 said that the limit was arbitrary and

1 capricious and may prevent recovery of
2 legitimate costs to state participation in
3 federal and state pipeline programs. There
4 was concerns with OMB Circular A-87. It was
5 not clear as to why our rationale for imposing
6 this rule and that states may have different
7 methods of allocating costs within their
8 budgets and no basis is presented for
9 punishing the states that distributes a larger
10 portion of their cost as indirect costs.

11 That's a quick summary. We
12 literally had very few comments. We probably
13 only had about two or three comments on this
14 proposal mainly from our state partners. Mr.
15 Stursma, you had requested that this be part
16 of an individual vote. Would you like to make
17 a comment on this?

18 MEMBER STURSMA: Yes. Don Stursma
19 again. For those of you who are not aware
20 when states get their pipeline safety grants
21 it is not a block grant, a set amount of
22 money. Instead we are reimbursed for our

1 actual expenses and the portion of those
2 expenses that can be claimed as indirect cost
3 is limited to 20 percent.

4 That was fortunately in law. I
5 mean, it always kind of stuck in the craws of
6 some of the states but it was -- when it was
7 in the law we realized we had no choice. Now
8 that it's not in the law we see no real reason
9 for introducing it.

10 Different states do their
11 budgeting and accounting differently. They
12 may allocate their costs differently. And a
13 state may have indirect costs that exceed 20
14 percent. That is completely legitimate. It's
15 a cost of doing business. I don't understand
16 why we should need an arbitrary limit.

17 If there's concern that perhaps a
18 state would abuse the process by trying to
19 load stuff into their indirect cost, first of
20 all our indirect costs are required to be
21 approved at the federal level so there is a
22 review process to make sure we're not loading

1 all kinds of stuff in there. Plus every
2 couple of years the PHMSA state programs group
3 comes around and I guess checks our homework
4 to make sure that we are properly allocating
5 our costs. So there's really no potential for
6 abuse here.

7 I've heard it said that of the
8 states that have asked for indirect costs
9 nobody's asking for more than 20 percent.

10 Well, I have reviewed at least some of those
11 indirect cost proposals and yes, the states
12 that have higher indirect costs, they just
13 quit counting at 20 percent. It doesn't mean
14 they don't have legitimate indirect costs that
15 are higher than that but they just quit
16 counting at 20 percent assuming they wouldn't
17 get any more anyhow.

18 And of course you may be thinking,
19 you know, do I have a dog in this fight. And
20 not -- sort of. I have been able to keep our
21 Iowa indirect costs under 20 percent but there
22 is a cost of having to take some costs that in

1 another language could be done either as a
2 direct or indirect cost. I have to go through
3 some shenanigans to make sure that they can be
4 accepted as indirect costs rather than in
5 direct costs.

6 But I can stay -- historically
7 I've been able to stay under 20 percent so I
8 can't say that my -- I don't have a big dog in
9 this fight personally.

10 MEMBER FEIGEL: I'm just curious
11 why this is an appropriate subject for a
12 rulemaking at all.

13 MS. DAUGHERTY: I'll try to speak
14 to that. Originally the language was in the
15 act, there was a limit. And we believe
16 through some legal research that it was
17 inadvertently dropped. When they made
18 revisions to the act they just dropped it.
19 And so it disappeared.

20 When our folks go out to look at
21 state programs there was no -- effectively no
22 upper bound on indirect costs. So that could

1 go 20 percent, 30 percent, 40 percent. There
2 was no guidance that said this is where it
3 needs to be, this is a good range, this seems
4 appropriate. So what we were attempting to do
5 was to reinject that guidance and say this is
6 where we believe it should be.

7 MEMBER FEIGEL: I don't pretend to
8 understand all the nuances of the law and
9 appropriate administrative decisions by
10 regulatory agencies. But you haven't really
11 answered my question to my satisfaction.

12 Why is this subject to a public
13 rulemaking? You've got a law that underlies
14 this and I would assume you've got some
15 administrative discretion for these kind of
16 issues to administer it. I'm agnostic on the
17 whole damn thing.

18 MEMBER TAHAMTANI: Yes. Thank
19 you, Gene, I was wondering the same thing. We
20 were capped by 20 percent for years and then
21 we had PHMSA tell us that you better have an
22 indirect plan approved by the federal

1 government or it's going to go to zero. And
2 currently we think that if we don't have a
3 plan at the state level for the indirect cost
4 we're not going to get any indirect cost. So
5 we see this rule.

6 I guess I had a question, Linda.
7 Have you all changed your philosophy about how
8 you're going to treat us on this?

9 MS. DAUGHERTY: We're always kind
10 and gentle with you, Massoud.

11 MEMBER TAHAMTANI: It doesn't
12 appear so, but.

13 (Laughter)

14 MEMBER GARDNER: I guess I'm
15 adding onto the questions that's been asked
16 already. And that is do you have a schedule
17 of what's included and what can be included in
18 direct costs? And if the list that the states
19 provide to you are inclusive of that schedule
20 then why do you need to have an upper limit?

21 MS. DAUGHERTY: Gee, I thought you
22 were going to bail me out there. No, I think

1 we are looking at just restoring a standard
2 guidance level. Yes, we do have some guidance
3 on what can be included in direct costs but
4 you can see some wide variations. Fortunately
5 I think most people over the years have
6 maintained that but there's nothing in the law
7 that would prevent people from having
8 something that would be rather high. So this
9 would be an attempt to provide a target to say
10 this is where we think people should look at.

11 MR. WIESE: I think my only
12 comment on this one is I'm sort of sympathetic
13 to the point that Gene raised. I cannot -- if
14 Zach were here, Zach Barrett, he'd probably
15 have something I haven't thought of. But I
16 have no idea why we have to have a rule on
17 this. I think there's OMB guidance and other
18 things of what constitutes indirect, you know.
19 I apologize for saying that at this point in
20 the game but it's something that we'll have to
21 have counsel look into. If it is not required
22 by rulemaking I don't know why we should do

1 that.

2 I think it, you know, on the other
3 hand and I think we're -- it doesn't change
4 our tone towards our state partners. But we
5 have had some cases where we've gone back to
6 some and I think you guys know we went back to
7 a few state partners who actually had some
8 things I think most of us wouldn't have
9 considered were legitimate expenses in there.

10 Well, at any rate I would take it
11 under advisement. Unless the committee is
12 prepared and I think really I have to defer to
13 the state folks. Unless you're prepared to
14 vote on this one I sort of think we need to
15 take another look about what the existing
16 guidance from OMB is on indirect costs and
17 whether or not that can't be done through
18 policy and process.

19 MR. GALE: I agree, Jeff. I don't
20 think the committee needs to really take a
21 vote on this. We've been working on this with
22 you all and we'll get to where we need to get.

1 MR. WIESE: Do we move to the
2 public?

3 CHAIR FORD: Comments from the
4 public? No comments from the public. Don, do
5 you have your card up?

6 MEMBER STURSMAN: I think I heard
7 Massoud say we don't need a vote on it and I
8 guess I would -- we're going to see the states
9 fight here. I personally would prefer we did
10 have a vote and the vote would be I guess
11 number 3 is the only option is to basically
12 take this off the table. I think we seem to
13 have some consensus that it's -- may not be
14 necessary or appropriate as a rule. And
15 rather than leaving it hanging I would just as
16 soon see a vote that it be taken off the
17 table. And apparently the only way to do that
18 is with the language in number 3. So with
19 that I would move that the proposed rule,
20 what's it called.

21 MR. WIESE: Just one quick
22 question, Don. I mean, I guess procedurally

1 I see your point. But the only question I
2 would have is having gone through all the
3 proposal and the comment and the discussion it
4 seems to me that if there is an option to
5 table, you know, for later discussion. It's
6 not going to move forward without a vote from
7 the committee. So if there is a motion -- if
8 it's possible to table it while we do the
9 additional work and better inform the
10 committee about the range of options here I
11 think I would like to exercise that. But I
12 don't know procedurally if you have a table.

13 MEMBER GARDNER: Madam Chair?

14 CHAIR FORD: Yes.

15 MEMBER GARDNER: I move that the
16 matter be tabled for future discussion.

17 CHAIR FORD: Any second?

18 MEMBER DRAKE: Second.

19 CHAIR FORD: All in favor?

20 (Show of hands)

21 CHAIR FORD: Opposed?

22 (Show of hands)

1 CHAIR FORD: All in favor.

2 MR. GALE: The last item to be
3 discussed is going to be presented by Mr. Mike
4 Israni. This is only a liquid issue I'm just
5 saying for the gas guys.

6 MR. ISRANI: I'm Mike Israni.
7 This proposal I believe is even easier than
8 all the non-controversial proposals that you
9 voted earlier and so we should be out in 5
10 minutes. Okay.

11 Now, in this proposal all we are
12 doing is trying to put back a missing sentence
13 from 2007 Federal Register. And I'll explain
14 to you how we introduce that in this
15 miscellaneous rulemaking.

16 So if you look at this current
17 slide this is the current language for the gas
18 integrity management -- for the liquid
19 integrity management in the high-consequence
20 areas. And if you pay attention to this
21 sentence here, "An operator must calculate
22 temporary reduction in operating pressure

1 using the formula such and such of ASME
2 B31.4." And it stops there. Actually in 2007
3 Federal Register we had a further sentence
4 which allowed alternative formulas to use.
5 And we go to the next slide.

6 And you'll see the missing
7 sentence from 2007 is here in the purple
8 language. If the formula's not applicable to
9 the type of anomaly or would produce a higher
10 operating pressure an operator must use
11 alternative acceptable method to calculate --
12 reduce operating pressure. So that sentence
13 Federal Register missed when they came up with
14 the code. And all we are attempting was to
15 put that same sentence back. But in doing so
16 we modified some wording there which triggered
17 a couple of comments. So the next slide will
18 show you what we modified.

19 Now, what you see here, the red
20 text here is the modified language. And what
21 is in the purple underneath is the original
22 language, missing language that we were trying

1 to put back. This text here we introduced
2 because -- let me go back to the previous
3 slide. Here we are saying to calculate using
4 this ASME B31.4 section which was referring
5 back to same B31G and RSTRENG and all those
6 which we already had in our paragraph (B) of
7 this section. So all we did was instead of
8 that we introduced this paragraph (B). So we
9 didn't need that ASME section.

10 And by doing this we also made a
11 small wordsmithing here. We introduced
12 another formula calculation method using
13 195.106 and that's where we got the comments
14 for because this was a newer language and this
15 was -- the paragraph (B) was not controversial
16 at all.

17 So on this one, this rulemaking we
18 got comments, we got only a couple of
19 comments, comments from API and AOPL and they
20 suggested language here and all they said was
21 to -- they accepted our changes by using
22 formula, paragraph (B) but they introduced

1 this additional 2-month prior to the date of
2 inspection in the language. And this wasn't
3 any controversial issue because we have an FAQ
4 on the liquid which allows this 2-month period
5 for calculating your -- this reduction of
6 pressure.

7 So we don't have any issues with
8 the language which is being proposed here by
9 API because this -- we currently have in our
10 FAQ under 7.1 FAQ under the liquid integrity
11 management rule.

12 Now, because all the changes that
13 are being made here was to pick up the
14 language that was missing and take out the
15 ASME reference and get paragraph (B) and our
16 guidance was already giving them 2 months
17 prior date to calculate the operating pressure
18 we don't see any problem with this revised
19 language, what they propose. And we
20 accordingly will respond to this in our final
21 rulemaking.

22 MEMBER SHELTON: We passed around

1 a handout that has three columns on it. And
2 the first column shows the rule change as
3 proposed. The second column shows the comment
4 provided by API as shown up there on the
5 screen.

6 After those comments were
7 submitted we had further discussions among
8 integrity managers at API and came up with a
9 slightly revised third column. And the
10 difference between the second column and the
11 third column is highlighted there. It changes
12 from the 2 months prior to the inspection to
13 the 2 months prior to -- based on actual
14 operating pressure 2 months prior to the
15 effective date of the pressure reduction. In
16 other words, for the previous 2 months from
17 that moment that we're taking that reduction
18 we think it's logical to use the most recent
19 data.

20 It could have been months, maybe
21 even many months ago that the tool was
22 actually run and that the inspection was done

1 and so it's based on old data at that point.
2 By using the most recent 2 months we're
3 effectively taking the 20 percent reduction
4 from what the pipe has most recently seen.

5 And that should be actually more
6 conservative in that the -- if the line was
7 run at a lower pressure in the previous 2
8 months we would take 20 percent then off that
9 lower pressure and that would be allowed then
10 to go back to old data that says it could
11 actually have been at a higher pressure. So
12 we think that this change makes sense. And we
13 understand that what the FAQ says and the
14 reason before it and we would hope that the
15 FAQ could be revised to match this language
16 here as well.

17 MR. ISRANI: Thank you, Larry.

18 CHAIR FORD: Any other remarks,
19 discussion? Oh, I'm sorry, Rick.

20 MEMBER KUPREWICZ: Rick Kuprewicz
21 on the Liquid Committee. I've just got to
22 play devil's advocate. I'm a little sensitive

1 to some of this stuff. This may be not a bad
2 issue here. But if the lawyers were running
3 the operation and making those decisions they
4 could come up with the idea of before you ran
5 an inspection raise the hell out of your
6 operating pressures and hope it doesn't fail.
7 Well, I don't think most operators would do
8 that.

9 Is that a legitimate -- am I
10 missing something here? I don't want to make
11 something that doesn't exist but I'm a little
12 sensitive to pressure increases.

13 MEMBER SHELTON: As I understand
14 that was one of the concerns when the FAQ was
15 written was that after I run the tool I could
16 run the line a little bit harder, trying to
17 get that. Well, whether it's based on when
18 the tool is run or based on when we get the
19 final report on the tool if someone were
20 inclined to game it they -- it would certainly
21 just change the time that they're actually
22 gaming it for that reference. But the reality

1 is that we seldom have the pipeline capacity
2 and I can say never have the nerve to actually
3 game it that way.

4 MEMBER KUPREWICZ: Most wouldn't.
5 And the 20 percent buys you a pretty quick for
6 an immediate repair. You're fixing it fairly
7 quickly. I don't have any comment.

8 CHAIR FORD: Linda?

9 MS. DAUGHERTY: Just a question.
10 Actually I probably should let Jeff ask it.
11 But how can you assure that your defect has
12 not grown between the date of the inspection
13 and the date of the pressure reduction? Would
14 it be possible that you would have a change in
15 actual defect?

16 MEMBER SHELTON: Well, it is
17 possible that you could have a change in the
18 actual defect which is why we think the more
19 recent data is what's the most valid data to
20 base the pressure reduction on. The most
21 recent data being the pressure at which it's
22 most recently operated safely.

1 MEMBER DAVIED: Larry Davied.

2 Basically I think the liquid industry here is
3 aligned with trying to be conservative. And
4 so stating that recent time here is trying to
5 be more restrictive to that question. And I
6 think, Rick, it even goes to yours because
7 without that going back any point in time we
8 don't think is appropriate. So trying to
9 align with what the FAQs tell you today are
10 the 60 days, taking the 20 percent reduction.
11 It is a -- viewed to be an immediate repair
12 condition that has not failed. So taking a
13 pressure reduction upon discovery of that is
14 aligned with trying to be conservative there.

15 MR. GILLIAM: Jeff Gilliam, PHMSA.
16 If you want to make a real conservative
17 approach I would propose a little different
18 wording, that perhaps you use the lowest
19 pressure either preceding the evaluation or 2
20 months prior to your identified of the
21 pressure reduction. That way it's absolutely
22 20 percent of the lowest number that it's

1 seen.

2 And the only reason I'm suggesting
3 that is there is a possibility that you would
4 operate at a higher pressure and a defect
5 could not fail, but could be growing. And
6 then you're taking a 20 percent reduction on
7 a higher pressure versus at least the 20
8 percent prior to you identifying the defect
9 existed.

10 Now I do agree with you there is a
11 possibility that you could be operating at a
12 lower pressure but I'm not sure that would be
13 likely.

14 MEMBER DAVIED: I very much
15 misspoke if I left the impression of trying to
16 take a most conservative because that was not
17 -- I think it's important to take an
18 appropriately conservative and that's the
19 recognition that the pipeline has been in
20 service in near recent terms at that pressure.
21 Taking a 20 percent reduction from that is a
22 conservative approach to it. So I did not

1 intend -- if I did I misspoke.

2 CHAIR FORD: Further discussion?

3 MR. GILLIAM: Jeff Gilliam with
4 PHMSA. I'll make one general comment. There
5 was lots of discussion and lots of debate that
6 went into those original FAQs. I would not
7 recommend going away from that with our
8 philosophy here unless we take that back and
9 do a lot of discussion internally. But I
10 would rather keep it just as the FAQ currently
11 says. The industry has been following that
12 for some time. It appears to have been
13 successful and I don't see a reason to vary
14 from that at this point.

15 CHAIR FORD: Rick?

16 MEMBER KUPREWICZ: Yes, as a
17 representative of the public I also have an
18 obligation. I'm not here to punish the
19 industry but I get a little nervous. I think
20 there's going to be a lot of discussion about
21 pressure cycling and growth phenomena, both
22 liquid and gas. And I don't know if this is

1 the more conservative approach. Maybe the
2 check is in how quickly you get to the repair
3 for an immediate repair. But my first
4 reaction from a technical aspect is you could
5 have an anomaly that especially on a liquid
6 line that could really be growing and moving
7 you away from the -- the 20 percent
8 historically has proven fairly reasonable but
9 there have been failures even at the 20
10 percent reduction. So I'm a little
11 uncomfortable but I'll listen to the committee
12 if they have other suggestions.

13 But I'm supportive of PHMSA's
14 position of staying fairly conservative
15 especially on the more aggressive cycle lines
16 which I think you're going to find are more
17 than just liquid. Thank you.

18 CHAIR FORD: Massoud?

19 MEMBER TAHAMTANI: Just for the
20 record I support what was said by you and also
21 our technical expert down there.

22 CHAIR FORD: Is there a motion?

1 Public?

2 MR. LIDIAC: I think that -- this
3 is Peter Lidiak with API. I mean, I think
4 that the liquid integrity managers are
5 satisfied with the proposed revisions that
6 PHMSA put forward. We actually intended to
7 put forward a more conservative suggestion
8 with the third column that was passed out and
9 I believe it is a more conservative position
10 but if you would rather not have that and
11 revert to what the PHMSA staff has proposed
12 we're satisfied with that.

13 MS. DAUGHERTY: You know, it's one
14 of those things that we have to think through.
15 You know, it is a proposal. We have to figure
16 out, you know, based on our -- we propose --
17 we have an FAQ on what we think is
18 conservative like Jeff pointed out. It would
19 be hard for us to support on the fly a
20 revision. We'd have to think that through.

21 It may be more conservative and it
22 may be a great idea, but I don't know what the

1 appropriate process here is and how the
2 committee votes. But whatever the case we
3 will take back both ideas and be looking at
4 them. I think on the record though we have
5 the original proposal, John, is that correct?
6 Do we have the -- yes, we have the original
7 proposal on the record to the committee. When
8 a secondary proposal is introduced in the
9 group does that also go on the record so we
10 can consider it? Okay. So we can look at
11 both. Thank you.

12 MEMBER DAVIED: This is Larry
13 Davied again. I guess without -- I'm
14 confused. Without specifying what the time
15 span is for considering the pressure drop it
16 leaves it very vague and open. So it's
17 critical that it has a defined term where it's
18 established that the pipeline has been safely
19 operating and that pressure reduction is taken
20 from it. And that is the intention of having
21 the 60-day period versus picking any point in
22 time that could be seen.

1 And again, that is I believe
2 consistent with what our FAQs are allowing us
3 to do. These are the immediate repair
4 conditions, the implication is going in and
5 not running for long periods of time there.
6 It is to go and fix the anomaly. But it's
7 critical that that time be defined.

8 MEMBER SHELTON: I'm just trying
9 to be clear on which version we're looking at
10 now. Because I understood that Mike did
11 present the middle column up here as being
12 acceptable, was that correct? Which was the
13 comment provided by API. I think it was the
14 next slide. Okay.

15 CHAIR FORD: Craig?

16 MEMBER PIERSON: Craig Pierson,
17 hazardous liquids. Making a motion that
18 proposed rule as previously pictured and
19 submitted by AOPL/API as dated March 9th, 2012
20 -- if you wanted to do this you could do it --

21 (Laughter)

22 MEMBER PIERSON: -- is technically

1 feasible, reasonable, cost-effective and
2 practicable.

3 CHAIR FORD: Second. Is there a
4 second?

5 MEMBER ARMSTRONG: I'll second it.

6 CHAIR FORD: Okay. It's been
7 moved and properly seconded. All in favor
8 raise your hands.

9 (Show of hands)

10 CHAIR FORD: All opposed?

11 (No response)

12 CHAIR FORD: The motion is adopted
13 unanimously. Thank you. Thank you.

14 MR. GALE: There's only three more
15 items, ma'am. No, I'm just joking.

16 (Laughter)

17 MR. GALE: Thank you.

18 CHAIR FORD: This meeting is now -
19 - Linda, did you have any closing remarks?

20 MS. DAUGHERTY: Yes. I am very
21 impressed with this group. You guys came to
22 resolution on some very controversial items.

1 I'm very proud of you and impressed.

2 Jeff had to step out. He wanted
3 me to remind everyone that we start bright and
4 early at 9 a.m. tomorrow morning here. We'll
5 be split up into two groups, the liquid group
6 -- we're not sure exactly how they're dividing
7 this up. Apparently this room is being split.
8 So you'll either be coming into that side of
9 the room or this side of the room and we'll
10 have a lot of good information to cover. And
11 we'll reconvene at 9. Thank you.

12 CHAIR FORD: Thank you.

13 (Whereupon, the foregoing matter
14 went off the record at 5:15 p.m.)

15

16

17

18

19

20

21

22

A	
AB 211:17	accomplishes 312:1 334:15
abide 326:2	accomplishments 12:10
ability 45:22 125:22 200:6 216:2 218:3	accountant 104:20
able 103:17 109:3 109:20 110:1,11 110:14,15 126:11 135:17 152:19 196:19 200:3,16 204:19 211:10 213:19 225:19 242:16 302:2 317:22 359:20 360:7	accounting 358:11
absence 72:15 73:14 173:6	Accufacts 2:15
absolute 80:10	accuracy 220:8 256:3
absolutely 143:22 162:17 163:2 202:21 375:21	achieve 51:12 68:1
Abstain 296:13	achieved 64:21 156:1
abuse 358:18 359:6	acquisition 130:22
academic 328:2	acronym 7:11
Academy 42:12 50:22 154:20 156:20	act 10:22,22 11:8 15:21 40:12 41:21 42:21 81:13 88:12 181:14 188:1,1 192:17 194:13 210:5 215:20 216:22 218:15 244:18 255:16 256:6 324:17 356:13,13 360:15 360:18
accelerate 40:2 145:19 200:16	action 4:10 14:18 14:20 15:1 17:16 17:17 38:10 39:9 55:10 67:6 68:9 83:12 85:22 90:17 90:21,22 98:20 206:12 209:12 212:3 216:6 217:9 220:7 244:17 269:12,17 281:3 294:16,19 295:8 298:13
accelerated 120:17	actions 55:9,21 58:9,14,15 61:8 83:21 91:6,11,14 207:20 218:18 225:7 233:9 278:2 278:4 281:2 286:13
accept 136:1 354:10,20	active 100:5 151:20
acceptable 75:5 262:9 348:12 368:11 381:12	actively 45:11 61:19 75:19
acceptance 307:4 332:9,17	
accepted 360:4 369:21	
access 119:17 126:11	
accident 36:1 91:2 347:20	
accidents 90:18,20 295:20	
accomplish 150:21	
	activities 58:20 60:20 98:11 108:4 133:20 148:17 254:3 310:14 332:10 337:9
	activity 7:2 82:18 107:13,18 113:3,7 113:9 115:6 127:7 135:3 141:18 195:5 306:6,18 311:20 332:16 334:21
	acts 10:21
	actual 94:22 132:16 192:12 284:3 305:6 307:10 308:1 353:7,9 358:1 371:13 374:15,18
	actuality 234:12
	add 24:4 87:12,15 93:17 97:7 123:5 130:19 138:1 144:4 206:8 226:5 244:2,5 247:16 250:16 255:20 261:15 263:14 266:17 269:6,10 271:4 280:4 293:13 298:22 331:2
	added 131:7 251:17 255:17 261:14 268:4 329:21 330:1 338:6
	adding 116:5 161:19 210:2 219:4,9 220:11 226:21 235:9 247:6 256:19 362:15
	addition 11:9 13:6 61:9 91:11 94:14 212:11 214:11 216:7
	additional 39:17 58:15 92:12 125:12 194:20 207:19 214:13 235:14 257:9 304:10 325:10 328:7,8 366:9 370:1
	address 41:16,17 45:17 50:1 91:14 91:19 148:1 179:11 181:14 211:9,15 212:2 216:7,9 233:3,10 234:2 250:10 251:19 255:6 257:22 281:1 284:19 285:6 287:2 295:2 311:13 330:2 331:21 335:4 338:7
	addressed 232:10 257:15 284:15 296:5 317:12 327:20 342:10
	addresses 179:12 200:5 268:18
	addressing 62:2
	adds 98:14 324:5
	adequate 190:7 192:8 202:19 245:17 248:3 260:9
	adequately 149:3 189:16 190:10,15 232:11 250:10 255:6 258:1
	adhere 11:7
	adjourn 161:12 173:16
	adjudication 188:21
	administer 361:16
	administrating 356:9
	administration 1:2 3:2,15,16,18 43:16 44:3 154:18
	administration's 41:8,10
	administrative 41:21 190:15 217:2 218:9 275:9 361:9,15
	Administrator 3:1 3:3,5,7 4:3 9:9 23:1,12 29:9 31:15 32:5,7 36:12 38:6 39:6,8 39:16 43:17,18 47:5 54:15 55:14 94:17 172:7 294:20 295:8
	Administrator's 51:7
	ado 56:10
	adopt 190:3 215:21 216:3 222:13 225:14 234:7 245:16,22 246:2 258:7,7 279:8,19 280:10 285:8,10 293:5 294:12 299:7 307:19 344:1 352:19
	adopted 58:2 61:11 68:21 164:15,20 251:17 252:6 253:16 268:1 276:18 343:19 344:13 345:15 352:8,12 355:20 382:12
	adopting 204:15 255:3 298:11
	advance 28:6 52:4 83:18 177:2
	advanced 189:4 221:22
	advancing 59:15 61:2
	advent 81:22
	advertise 159:17
	advice 29:6 51:11

51:12 296:8	aggressive 248:14 378:15	Allentown 38:18	132:9 134:15 180:20	209:4,10 211:4,22 214:5 224:3
advise 25:4 29:14	aging 93:5	Alliance 176:20	American 3:19,20	answer 62:17 90:9 97:2 129:10
advisement 295:12 296:7 364:11	agnostic 361:16	allocate 358:12	3:22 56:18,22	165:17 171:18
Advisor 3:10	ago 11:16 33:3 72:8 73:11 79:7 81:19	allocating 357:7 359:4	57:2 97:8 99:5,7	273:13 282:14
advisory 1:6,9 3:12 7:14,15,21 8:2,3	102:13 103:13	allocation 33:21	103:14 105:5	295:21 343:8
12:13 21:17 22:6	117:5 122:13,13	allow 24:3 55:22	117:11 122:18	answered 232:11 361:11
81:10 95:20	132:7 155:12	61:22 196:4 254:4	341:11	answering 204:12
205:20 208:4	162:4,4 170:21	257:21 284:17	amount 38:5 69:14	answers 26:2 53:15 171:19
215:7 341:13,19	171:21 183:12	290:16 335:1	94:18 114:2,20	anticipated 347:6
advocacy 39:14	274:4 300:2	allowable 257:11	115:3 124:19	anybody 84:16
advocate 47:1 372:22	329:10 371:21	allowed 346:7	125:7 129:6	161:21 202:11
affect 136:20	agree 25:11 172:22	368:4 372:9	130:17 270:22	230:21 235:19
144:22 198:4	238:21 251:6	allowing 297:11	323:21 357:21	242:19 319:22
afford 30:6 46:20	267:2,4 269:22	347:12 381:2	amounts 27:16	337:11 340:11
affordable 57:13	288:9 290:17,19	allows 127:11	115:7	349:12
afoot 37:18 339:7	300:19 301:5	129:19 249:21	analysis 15:6,22	anymore 161:14
afternoon 173:20	316:10,11 327:18	259:13 278:19	16:10 71:16 77:11	226:5 318:16
265:22 317:21	331:10 332:6	370:4	84:7 100:4 103:10	anyplace 311:20
320:1	334:10 341:17	alluded 41:3 83:8	144:18 203:11	anytime 88:19 249:13
AGA 57:5,15 58:4	364:19 376:10	all-encompassing	248:2 315:12	AOPL 67:10
61:8,10,12,16	agreed 170:18	310:15	317:7	369:19
62:6 85:3 86:22	253:2	all-inclusive 62:20	analysts 104:18	AOPL/API 381:19
87:9 99:9 223:14	agreeing 321:15	alter 338:21	analyze 68:7	apace 132:18
319:7	agreement 154:6	alternate 235:2,8	ANDREW 2:3	apart 16:13
AGA's 57:17 58:2	154:11 339:3	259:9 260:22	Andy 4:13 20:13	APGA 87:11,16
99:15	ahead 20:1 138:12	314:15	56:4,8 71:21 72:4	95:21 99:8,10,12
agencies 18:10	170:5 199:6 226:1	alternative 253:15	86:16,17 250:17	99:20 342:9
146:10 180:1	342:4	253:16 254:13	296:13 327:16	API 32:16 67:11
198:17 361:10	air 7:11 268:14	257:11 368:4,11	329:3 332:6 333:5	85:3 216:13
agency 7:6 39:8	279:11,18	alternatives 144:16	336:20 338:19	249:20 259:11,19
53:7,20 177:7	airline 74:16	altogether 164:20	343:10	369:19 370:9
182:2 185:15	Alabama 182:15	180:18 218:3	anemic 108:7	371:4,8 379:3
191:13 193:16	182:18	ambient 279:11	angles 28:16	381:13
197:8	Alan 3:6 45:8 46:16	amended 251:19	announce 179:14	API's 304:19
agenda 5:13 6:6 9:3	137:10	340:13	announced 186:9	apologize 63:9
9:7 13:9 15:3	albeit 108:7 166:9	amendment 267:7	222:1	172:15 355:22
26:3 55:6 88:18	Alberta 119:3	amendments	announcement	363:19
88:19 92:21 93:8	Alcohol 249:10	216:20 232:17	15:13 179:4,15,17	apparent 73:13
143:9 174:7 175:8	align 185:17 269:1	235:14 253:13	annual 62:11	apparently 273:15
186:16 200:20	270:18 375:9	amendment's	annually 186:3	365:17 383:7
226:5,8	aligned 162:19	267:8	anomalies 78:3	appear 362:12
agendas 93:3	163:2 375:3,14	America 10:7	235:7 236:18	
agent 88:12	aligning 269:18	108:1 112:8	anomaly 77:22	
aggregate 116:9	alive 55:3 132:9	115:15 118:21	142:22 143:2	
	allegations 246:14	125:9 131:20	368:9 378:5 381:6	
			ANPRM 13:12	

appeared 278:18	approve 307:11 315:1	33:3 53:2,13 90:3 98:5 317:2 347:11 359:9	assuming 183:20 328:15 359:16	223:13
appears 377:12	approved 314:4,13 358:21 361:22	ASME 266:7,11,21 368:1 369:4,9 370:15	assumption 139:18 139:20 140:6	automatic 59:7,11
applaud 163:14	April 17:17 93:14	aspect 100:9 143:8 160:7 169:11 301:12 378:4	assumptions 140:16	automatically 176:15
applicable 368:8	arbitrarily 270:21	aspects 137:9 211:1	assurance 31:13 326:19	autopsy 29:4
application 48:14 81:13	arbitrary 268:13 356:22 358:16	assess 181:19 191:6	assure 296:1 374:11	available 51:21 67:10 84:16 86:2 100:2 111:2,6 113:14 123:3 127:20 150:19 152:22 156:11 159:11 161:5 171:1 182:21 185:11 187:17 191:19 198:9 215:21 216:9,12 216:13,13
applications 219:17	arduous 95:3	assessing 192:11	asymptomatic 73:20	attempt 92:4 363:9
applied 64:22 267:7 297:5 317:8	area 60:3,11 61:5 94:4 109:17 113:18,18 144:20 147:4,7 151:21 159:4 167:20 169:18 172:10 194:15 209:20	assessment 31:1,7 78:13 212:6 224:8 224:14,15	attempting 361:4 368:14	averages 64:14 65:14,15
applies 30:19 188:10,12	areas 78:8 85:20 113:5 114:9 129:3 201:10 210:11 212:6 243:15,21 279:11 291:4 367:20	assessments 31:3 31:12 46:19 111:22 112:1 224:10,12,16,18 298:14	attend 43:5	award 186:3,4
apply 81:3 126:1 197:14 253:1 254:10 316:12	argue 30:11	asset 80:17 131:22	attention 37:19 41:1 73:4 170:16 193:19 367:20	awarded 185:8,14
applying 77:20 279:4 282:10	arguing 301:4 321:22 326:9	assets 81:4,14	Attorney 3:13	awards 186:5,8
appreciate 9:22 10:4,10 19:1,9 72:10 89:11 103:5 128:5 136:11 145:4 161:9,18 162:16 173:12 175:5 199:5,22 205:4 291:22 292:22 309:21	argument 335:3	assist 100:6	attributes 220:10 220:12 256:2	avoid 179:5,9 180:16,17 315:19
appreciative 19:21	arguments 136:12 312:6,8	assistance 10:4 98:13 160:19 161:1	at-fault 192:9,12	aware 55:20 105:3 118:8 165:21 175:20 176:11 219:20 221:6,15 269:4 295:18 357:19
approach 76:21 79:6 85:4 142:21 162:20 166:6 170:4 178:15 198:5 272:18 375:17 376:22 378:1	Arkansas 184:2	assisted 137:14	audience 63:10 152:18 159:13	awful 72:16 109:12 113:14
approaching 107:22	Armstrong 2:11 20:21,22 149:7,8 156:14,15 165:22 169:10 327:21,22 382:5	assisting 14:3	audiences 106:3	awhile 23:17 25:14 50:12 86:12,14 89:5 135:1 189:8 326:17
appropriate 32:11 90:20 96:14 159:9 165:20 178:20 196:9 286:21 309:14 360:11 361:4,9 365:14 375:8 380:1	array 66:21 268:16	Associate 3:3,5,6 22:22	audit 12:5 14:4	eyes 264:8 345:11
appropriately 59:1 376:18	articles 101:21	associated 13:20 51:3 97:1 113:6 125:12,17 129:20 137:22 213:13 224:17 225:1	auditing 12:4 14:7 45:11	A-87 357:4
appropriates 356:11	articulated 346:19	association 3:19,21 21:22 56:19 57:2 88:2 94:11 97:9 99:5,7 103:14 152:4 154:7 157:2 341:11	audits 14:10 46:3	a.m 1:18 6:2 101:7 101:8 383:4
	asked 38:6,7 39:7 55:8,21 56:2 83:20 101:16 102:22 103:5 145:19 164:10 199:5,8 250:7 333:5,8 359:8 362:15	associations 177:9 197:11	audit 12:5 14:4 14:7 45:11	
	asking 17:18 18:10	assume 126:3 273:16 361:14	auditing 12:4 14:7 45:11	
		assumed 273:6	August 19:20 177:5 211:4 222:2 251:18	
			Australia 138:7	
			authored 156:21	
			authorities 185:11	
			authority 41:6 188:3,7,8,10,17 190:6,13 191:11 191:12,15,15,18 193:20 195:20 196:11 217:19 218:5,7	
			authorizations 219:18	
			authorized 219:17	

B	293:19 348:7,19 348:21 349:1 350:4,5,8 373:1	299:10 303:16 365:11 375:2	267:5 268:3 297:21	105:12 107:17 116:12 130:1,1,7 142:14 155:19 210:17 319:10 337:17 360:8
B 2:15 3:18 234:22 243:2,4,7 246:8 369:6,8,15,22 370:15	bag 168:4,9 bail 362:22 balance 113:13 122:18 balanced 190:4 192:10 Baldwin 3:13 23:9 23:9 Ballrooms 1:17 Baltimore 152:5 bandwagon 95:19 bang 83:4 banquet 16:9 bar 61:9 189:14 barbecue 168:3 bare 18:2,16 42:4 barely 173:21 bargaining 301:16 302:15 barrel 131:8 barrels 111:5 Barrett 363:14 bars 92:13 base 81:22 133:5 139:17,18 140:5 140:13 374:20 based 34:3 63:18 192:4 243:16 244:1 246:21 250:2,21 257:12 266:6 286:12,16 297:7,13 314:21 327:8 345:20 346:18,20 347:4 371:13 372:1 373:17,18 379:16	Basin 118:19 119:1 basis 41:1 93:22 154:4 207:15 208:8 211:6 215:12 268:11,14 270:20 281:3 356:12 357:8 batch 240:22 258:6 bay 159:4 Beach 2:2 21:21,21 340:14,14 343:3 355:2,3 beat 34:22 291:16 becoming 292:18 bedding 333:2 began 24:7 40:18 63:20 64:19 beginning 11:2 14:3 283:18 318:22 begins 67:11 68:2 begun 6:14 41:22 42:10 94:19 150:4 162:3 behalf 9:20 behavior 81:11 84:3 197:16 behest 98:12 beholder 310:21 believe 16:20 17:8 28:10 29:16 30:9 33:11,12 35:22 45:17 51:1 134:9 147:3 151:10 153:7,9 155:13 172:9 175:8 176:19 201:12 248:8 252:15 256:10 261:19 268:6 299:22 321:22 338:10 348:1 349:14 360:15 361:6 367:7 379:9 381:1	believes 113:11 Bellman 2:2 4:14 20:18,18 87:14 97:6,7 99:2,2 320:2,2 321:17 335:5,21 344:4 benchmark 61:22 benefit 203:15 217:16 250:17 271:22 298:14 299:14 335:3 347:14 benefits 299:13 benefit-cost 203:11 Bennett 3:19 173:1 173:6 341:10,10 best 61:21 62:14 69:16 77:5 79:22 126:18 137:11 142:9 160:14 180:16 196:17 197:6,14,19 198:9 205:21 206:4 208:19 219:15 242:3 bet 106:21 better 47:1 60:2 62:2 68:16 69:7 71:16,17 75:19 77:9,10,10,11 82:1,2,3,4,5 115:1 138:18 159:8 167:19 177:22 183:2 262:14 303:17 322:13 335:7 347:22 361:21 366:9 beyond 45:14 58:3 59:4 64:5 65:1 71:7,8 77:16,21 141:17 201:9 214:6 266:20 287:8 299:5,5 324:7 big 99:11 100:21	bigger 165:15 339:6 biggest 78:17 83:4 123:12 299:2 bill 41:8 48:2 53:9 54:14 198:1,2,11 billion 53:10 111:5 114:6 115:3 125:3 126:10 131:15 billions 143:11 249:1 bills 41:9 biofuels 219:4 248:13 bipartisan 10:21 bit 6:5,18 27:22 28:5 33:9,17 42:2 44:14 45:5 46:16 49:3 56:18 72:6 72:16 86:22 87:16 99:17 101:14 102:5 104:3 110:1 113:16 117:9,10 121:15 124:8 132:16 139:16 155:3 174:1 179:6 215:18 231:3 233:5 289:20 307:6 316:21 331:16 338:3,9 341:4 347:1 348:15 373:16 Blackberry 161:13 blame 102:1 356:2 blank 230:14 blending 268:21 blessing 246:16 Blinder 137:10 block 59:8 330:20 330:20 357:21 blog 180:10 blogs 177:10
back 10:12 11:19 17:13 19:15 21:11 52:22 64:10 66:7 73:19 74:19 81:11 101:11 102:4,20 102:21 105:1 107:18 109:16 111:20 113:10 133:9 134:1,10 135:1 139:9 147:2 150:22 168:8 171:14 172:19 174:17 175:5 199:8 200:20 209:6 211:4 218:5 221:14 222:11 223:19 231:15,15 231:20 232:16 234:13 238:1 247:7 250:3,22 251:17 255:15 261:5,16 285:2 286:1,17 288:2 295:2,13 296:7 299:10 313:9,22 316:15 321:19 322:1 337:1 355:4 364:5,6 367:12 368:15 369:1,2,5 372:10 375:7 377:8 380:3	backfill 325:5 333:1 backfilling 325:17 background 56:18 72:6 103:12 176:10 187:21 200:17 259:7 backlash 33:16 34:2 backstop 190:6 bad 19:3 37:1	believed 29:21	big 99:11 100:21	

180:10	brevery 266:3	140:15	calculate 367:21	180:3,5 181:2
blows 102:12	brief 63:2 88:1 92:9	building 43:6 58:18	368:11 369:3	Canada 108:2
blue 92:13 183:21	146:22 236:1,3,7	148:20 153:10	370:17	115:14 123:6
bluntly 83:21	briefing 4:3,6,10	180:8	calculating 278:7	125:8
board 2:7 20:10	4:16,19,22 5:13	buildings 214:9,9	370:5	Canadian 118:18
22:15 33:2 41:14	5:18 9:8 26:3	built 41:10 68:11	calculation 369:12	118:22 119:1
41:17 45:1 58:2	147:9	119:8 123:15,15	calendar 346:1	cap 203:19 356:15
61:10 62:6 94:9	briefly 68:22 176:3	123:16 126:5	California 53:6	capabilities 160:22
173:3 317:11	bright 383:3	139:18 316:22	105:11 152:9	capable 141:7
342:1 344:22	bring 18:21 32:1	bulk 176:6	159:4 274:17	capacity 48:6
boards 95:20	134:1 135:4	bullet 158:13,13	275:3	108:11 142:9
body 191:14	201:21 220:2	260:8 305:17	call 4:2,10 8:19,20	374:1
Boiler 2:4 270:14	231:12,19 232:1	351:6 355:9	8:21 15:14 17:16	capital 131:6,11
bold 333:16	233:16 292:8	bulletins 12:13	17:17 39:9 44:15	135:9 146:2,2,3
bolts 209:5 211:3	306:19 313:9	81:11	49:10 55:10,18	capped 361:20
232:14	bringing 35:16	bullets 47:8 155:2	67:6 90:17 91:4	capricious 357:1
bomb 86:4	102:2 256:5	197:22	95:15 97:16 98:20	captured 96:20
bombed 86:5	308:13 331:3	bunch 86:8	154:2 155:22	car 130:18 166:16
books 193:21 204:3	broad 66:21 211:11	Burdeaux 232:8	160:13 162:13	carbon 139:21
boom 105:18	313:20	burden 143:17	175:17 176:13,15	219:6
booths 152:1 168:3	broaden 101:17	162:21 165:14	179:6,10 182:1	card 9:4 56:2
boots 323:14	broader 204:13	234:3 255:10	183:17 185:15	352:13 365:5
bore 110:9,19	339:8	279:13 331:7	192:17,18 193:1	cards 171:8 288:21
borrow 52:9	brochure 152:20	burdensome 347:2	194:14,14,20	care 183:5 194:19
bothered 105:21	152:22 159:11	Bureau 249:10	195:1,11 196:2	251:1 319:20
106:2	brochures 152:16	bureaucratic 7:16	198:15 201:20	322:11,12
both/and 81:20	broken 125:5	buried 269:15	202:11 204:1,1	career 43:21 309:1
bottom 35:3 126:13	brought 15:17	burn 121:14	227:12 257:22	careful 275:15
288:18	172:3 232:6 332:7	business 57:7,11	261:4 264:10	302:13 316:6
bought 106:10	Broussard 157:6	79:4,4 90:10	342:15	carefully 70:10
132:5	Bruce 3:18 4:17	103:11 146:7	called 9:1 40:16	Carl 2:22 10:7 22:2
bound 360:22	101:13,14,16	292:4 358:15	113:19 153:13	26:22 27:4,10
box 33:21	102:22 103:3	businesses 57:13	154:12 179:5	34:8 36:5 46:22
bragging 11:16	128:4 132:13	busy 10:19 12:21	205:19 215:19	136:10 164:1
brain 146:5	145:4	12:21	216:18 365:20	241:15 242:8
branch 59:3 278:21	Bruce's 145:9	butanes 121:18	calling 180:4	247:19 248:10
brand 219:13	Bruno 11:12 38:18	Butters 32:7 173:1	218:11	312:6 336:4,21
breadth 209:14	40:9 72:20 73:12	button 26:13	calls 198:2 204:12	Carl's 343:15
break 7:1 101:4,5	89:16 98:15 143:2	buttons 26:14	249:5	Carolina 21:20
146:22 226:10	314:1 315:6	buy 106:8 130:18	Cameron 3:17 23:6	carpet 86:4,5
231:6 257:4	buck 83:4	130:18	26:6 230:7 232:1	carries 253:8
264:16 338:8	buckets 131:17	buys 374:5	Cameron's 241:4	264:15 277:6
breakdown 31:1	budget 16:2 206:13	B31G 369:5	265:2	294:21
breath 17:11	budgetary 167:4	B31.4 368:2 369:4	campaign 175:16	cars 32:4
breeze 265:18	budgeting 358:11	_____	175:16 176:11,22	carve 271:20
breezed 165:4	budgets 357:8	C	178:10,16,18,19	case 39:18,19 129:8
brethren 18:14	build 28:18 140:5	_____	178:22 179:2,18	131:13 133:5
		c 2:8 351:17		

139:17,18 140:1,5 140:11 149:21 163:12 229:18 232:9 253:4 257:19 268:9 270:4 281:15 299:15 380:2 cases 193:11 232:12 233:7 234:9 281:21 304:2 308:12 364:5 cast 18:16 42:3 catch 67:14 catching 337:3 categories 91:9 category 66:15 causal 66:22 cause 36:9 66:13,15 93:13 105:10 160:16 189:20 204:18 283:13 321:5 caused 134:20 279:3 319:17 causes 192:20 195:10 286:2 causing 313:16 319:1 cautious 134:22 cede 29:17,18 cell 9:3 cement 105:17 census 215:9 center 1:17 277:17 278:10 280:6 281:5,8 282:4 283:8 284:8 286:9 286:19 287:12 centered 254:21 centers 287:16,18 central 169:19 CEO 81:4 CEOs 80:21 certain 84:8 120:3 123:1 130:4 137:13 140:16	144:4 219:6 249:18 252:21 320:19 321:10 324:14 346:7 certainly 9:7 82:1 111:17 123:4 143:16 154:4 159:14 163:17 177:18 178:1 179:22 180:14 184:10 198:19 259:17 283:22 332:5 352:1 373:20 certificates 23:13 certification 25:3 25:12 certified 328:16 certify 253:5 259:20 cetera 31:20 32:21 208:6 220:15 279:22 307:8 CGA 94:8,10 178:5 178:6,20 205:19 205:21 chair 1:18,21 8:6 19:17 23:11 26:1 51:17,20 52:12 53:21 55:5 63:5 71:20 72:4 86:16 87:17 97:3 99:1 101:2,9 128:2 132:10 154:10 162:12 172:13,20 199:1 200:19 205:2,15 226:7 228:8,17 229:5 241:15 242:8 246:11 261:6,9 262:3,7 263:1,12 264:4,7,9,13,15 264:21 274:5,9 275:21 276:5,10 276:21 277:3,5 280:19 284:10 286:5 288:5,21	289:17 290:6,8,11 291:17 293:4 294:3,6,9,11 296:12,16 341:8 342:7,15 343:7,13 344:3,5,9,12 345:1,9,12,14 349:20 350:10 352:4,13 354:2,22 355:7,10,14,18,20 365:3 366:13,14 366:17,19,21 367:1 372:18 374:8 377:2,15 378:18,22 381:15 382:3,6,10,12,18 383:12 chaired 92:18 chairman 229:18 chair's 171:11 challenge 54:3 96:13 97:1 152:9 165:16 198:7,18 290:5 challenges 96:19 100:18 104:7 120:1 158:2 challenging 69:18 106:3,7 chamber 16:17 champion 329:5 chance 231:11 290:9 335:11 change 7:7 25:14 30:9,10 33:10 78:20 83:10 102:9 102:18 114:15 117:14 124:6 125:20 126:15,16 136:20 141:16 142:20 144:15 145:2 197:15,15 209:21 218:1,19 230:15 233:11 241:5 244:9,10 245:7,9 251:9 259:12,16 260:5	260:20 266:10 267:5 270:8,17 272:3,11,17 275:9 278:20 285:21 292:11 298:5 300:4 302:1 303:2 310:2 313:17 318:7 333:9 334:1 338:22 346:22 347:9 354:12,17 364:3 371:2 372:12 373:21 374:14,17 changed 7:20 15:21 113:17 269:1 270:6 273:21 300:3 302:9 304:19 318:8 319:8 338:2 362:7 changes 5:18 8:16 14:17 19:5 24:22 25:18 30:12 81:11 83:6 84:22 103:7 104:3 122:9 123:6 127:5 160:12 183:21 184:12,15 216:20 220:6 231:15 233:3,14 234:15 235:10 239:9 256:13,19 257:1,13 275:7,12 292:12 351:18 369:21 370:12 371:11 changing 7:17 8:11 65:6 117:6 124:16 247:15 256:1,2 271:1,12 274:20 310:17 channels 150:16,17 156:9 characterization 182:8 185:20 characterized 78:14 charge 215:22 chart 35:22 92:9	109:16 chase 67:13 check 187:6 240:3 240:5 300:12,12 320:20 322:16 378:2 checkbook 130:16 checkoff 322:9 checks 359:3 chemical 74:17 165:8 168:17 Cheryl 3:12 6:10 8:19 22:19 87:19 207:6,16 228:21 231:9 264:10 Chicago 132:4 152:10 chief 3:13 20:22 23:10 103:13 149:6,7 153:8,9 156:14 170:17 chiefs 100:14 152:4 177:7 China 138:10 choice 358:7 choose 226:10 Chorus 264:8 345:11 circle 182:19 Circular 357:4 cited 191:3 city 2:2,8,11 20:19 20:22 44:21 97:7 99:3 100:11 171:2 286:9 287:8,12 320:3 330:21 civil 191:11 217:1 claim 232:4 318:10 claimed 358:2 clamp 6:19 clarification 250:8 254:16 266:17 267:4,13 268:4 269:6 271:4 273:3 277:22 289:2 352:17 353:1 clarifications 257:1
--	--	---	---	--

352:18	187:10 209:6	30:2 61:6 73:16	90:14 136:14	258:19 260:4
clarify 231:6 267:6	211:5	96:14 106:9	147:6 165:11,20	261:6,8,10 264:1
272:16,20 283:20	closely 154:19	108:14 109:1	187:9 203:12	265:10 273:1,15
298:6 307:5,16	closer 91:18 136:2	111:20 121:18	205:17 206:8	274:10 278:16
clarifying 273:9	162:1	122:3 132:4 139:9	207:2,21 209:6	280:19,21 285:6
class 48:21 243:12	closest 283:12	142:2 146:18	211:5 235:19,20	285:12 286:16
266:15 277:12,19	closing 382:19	168:8 186:12	236:4,6 244:21	287:2 289:3 292:6
278:9 289:22	coalbed 116:20	194:16 199:8	245:21 256:10,11	295:2 297:9,19
classic 268:8	coal-fired 118:9	200:9 204:5	268:6 269:21	298:9,20 300:20
classification	coast 119:14	219:15 222:18	278:17 291:18	346:12 347:3
278:20	123:20 217:19,20	227:2,7 281:15	297:20 299:2	349:5,18 350:17
clause 267:10	coated 333:1	284:17 291:20	304:19 312:22	356:20,20 357:12
clean 30:2 251:3	coating 195:8	295:19 306:7	323:20 339:2	357:13 365:3,4
cleaner 262:16	code 7:17 91:12	315:7 320:20	348:4 349:14	368:17 369:13,18
cleanest 80:18	92:11 170:9 266:8	325:20 327:6	353:11 357:17	369:19,19 371:6
cleaning 252:8	266:21 269:2,19	342:4 373:4	363:12 366:3	Commerce 1:22
256:18	270:15 273:4	comes 8:19 37:18	371:3 374:7 377:4	19:19
cleanly 56:21	300:11 319:6	95:15 106:4	381:13	commercial 116:4
cleanup 45:5,15	335:16 368:14	117:12 121:3	commentary 28:15	116:7 134:16
217:3	codes 274:21	130:17 137:5	commented 278:15	214:8 271:17
clear 30:14 31:13	cognizant 26:20	168:1 185:2	296:19	279:17 280:14
34:4,15 53:4	339:15	258:12 359:3	commenter 239:16	306:9
54:16 82:17	cohort 6:12	comfort 325:15,17	commenters 251:5	commercials 59:4
203:17 233:5	coin 106:21	comfortable 296:6	253:10 254:10	commission 1:22
256:15 286:13	coined 34:12	327:2	256:21 258:3	2:5,9,21 19:19
298:15 305:5	cold 319:15	coming 9:18 10:2	267:1,15 268:1	20:12 21:9 22:12
312:3 313:10	Colette 10:8	18:19 30:10 44:19	273:6 297:21	91:22 93:11 129:7
357:5 381:9	collaborating	48:4 57:5 98:7	298:4 346:13,16	353:6
clearance 18:11	59:19	101:20 103:17	349:15	commissioned
clearly 32:15 39:5	collaborations 58:7	116:18 118:8,11	commenting 201:2	42:11
53:6 65:3,6 70:20	colleagues 103:22	119:21 127:4	comments 27:22	Commissioner
71:18 222:19	collect 110:11	134:10 135:14	28:9,22 29:11,13	19:15 51:18 71:22
283:17 285:15	114:12 211:19	136:17 145:4,11	55:6 97:16,17	93:6 293:5 329:9
339:13 341:14	220:10	145:20 146:18	101:3 130:13	commissioners
346:19	collecting 64:10	147:6 161:9	143:21 187:11	92:22 93:4
click 183:19 184:4	110:21	171:14,22 172:1	189:8,11 195:15	commit 180:1,4
clicked 184:1	color 139:12	206:1 207:4	201:6 203:13	commitment 48:11
clicker 56:14	colors 193:14	289:21 383:8	205:9,11,13,14	57:4,17 58:5
climb 328:18	Columbus 32:4	command 100:17	212:15 230:5	61:10 67:17 68:3
close 28:5 29:8 51:6	column 371:2,3,9	169:15	235:15 239:7,8	82:18 83:8 99:13
51:13 145:21	371:10,11 379:8	commencement	244:13,13,15	177:22
172:14 173:8	381:11	253:19	245:13 246:8,9	commitments 58:6
208:15 212:17	columns 371:1	commensurate	247:17 250:6,11	82:9
250:21 283:1	combination 241:1	43:10	250:13 251:13	committed 58:19
324:4 329:8,11	combining 233:18	comment 29:14	252:11 254:9	69:2 92:20 93:11
335:6	come 11:10 12:12	54:2 55:2,21	255:6 256:7	committee 1:5,6,9
closed 12:20	12:13 18:4 21:11	88:16,22 89:1	257:12,14 258:1	1:9 2:1,10 3:12

4:4,5,9,15,18,21 4:24 5:16 7:10,14 7:15,19 8:2,3,9,10 8:21 20:7 21:6,17 21:20 22:1,4,7,10 22:13,15 23:15 24:2,9,11,19 25:4 26:20 28:2 31:22 45:11 62:7 92:21 96:22 101:4 145:5 156:19 161:19 205:19,20 206:19 207:7 208:5 215:7 222:12 227:22 229:8,16 238:15 239:19 252:13 259:11 261:7 265:10,19 274:13 276:3,5,7,22 287:1 294:17,21 295:6,10 296:2,2 296:9 299:15 300:9 327:10 336:7,7,12,14,15 341:13,19 342:4 344:7,15 349:18 350:11 355:16 364:11,20 366:7 366:10 372:21 378:11 380:2,7 committees 1:17 21:13 69:21 70:1 94:10 96:22 236:8 238:9,10,12 240:11 263:8 committee's 25:10 64:7 217:16 239:2 265:17 commodities 105:16,17,19,21 106:12,14 163:8 commodity 106:4 107:5 144:12 common 78:19 83:17 176:19 178:19 180:2 244:15 245:8	254:16 278:22 279:6 280:9 298:19 322:9 communicate 33:6 60:15 158:19 communicating 68:16 71:4 164:12 165:3 communication 150:19 156:9 157:18 158:14 159:8,9 communications 70:8 78:11 148:18 communicators 75:17 communities 32:9 149:1,17 153:17 160:21 162:2,6 community 39:14 73:9 85:1,9 149:5 150:8,10 151:3 153:14 156:7 161:1 166:7 companies 56:17 56:21 57:1,5 58:5 60:12 61:22 62:13 62:14,18 71:11 78:16 80:4 81:7 83:9 89:14 129:16 179:22 301:1,13 304:2 308:9 316:3 318:13 320:14 company 21:16 34:1 62:16 99:10 104:10 282:20 292:2 298:4,7 300:19 301:3,7,13 301:15 302:2 303:10,17,19 304:8,16 307:14 308:6,20 309:18 313:4,5 314:3,4 314:13,21 315:6 317:6,8 318:15 321:8 322:12 331:4,5,6,14	company's 131:4 compared 63:21 138:13 144:10 comparing 222:16 329:10 compete 138:6 186:6 competence 331:22 competing 135:8 135:20 competition 128:16 128:19 129:2,13 135:10 138:20 144:16,22 competitive 106:4 127:17 186:2 complain 55:14 complaint 192:3 complaint-driven 192:4 complement 178:19 complete 212:12 217:12 267:19 completed 140:6 completely 10:16 11:21 96:5 147:1 358:14 completing 353:22 completion 110:16 113:21 114:5 225:5 236:7 completions 109:8 complex 128:22 287:19 326:13 339:9 complexity 135:12 136:4 287:22 compliance 96:8,15 245:15 300:6 complicated 94:20 134:3 137:1 141:2 144:18 282:18 complicating 221:12 comply 41:22 245:19 250:1	271:8 302:2 324:15 complying 281:20 component 253:5,7 253:8 components 32:17 60:5 144:4 145:1 235:8,12 239:11 252:17 261:22 265:7 267:7,18 composite 223:10 223:12 comprehensive 154:13 157:20 189:10 compressor 220:13 221:5 266:14 compressors 221:11 comprise 88:14 compromises 11:5 computer 140:19 Conceivably 121:13 concept 347:10 concern 35:6 36:9 246:20 284:22 289:3,14 296:4 302:4 311:14 315:9 321:11 323:5 325:2 331:13 337:5 358:17 concerned 265:22 297:14 298:1 299:4 346:14 349:6,9,10 concerns 129:1 254:20 279:9 282:8 289:11 308:5,17 320:3 324:21 330:6,7 342:10 346:20 357:4 373:14 concise 312:3 conclude 137:10 concludes 198:22	conclusions 64:20 concurrently 220:2 condensate 124:5 condensates 111:7 condense 147:12 161:8 condition 235:5 239:11 251:16 252:7 375:12 conditions 224:11 381:4 conduct 8:21 29:4 95:8 149:19 224:10 234:21 conducted 197:9 297:3 conducting 8:15 296:20 conducts 178:6 313:6 conference 152:2,4 152:6,7,8,10 172:21 173:12 177:18 conferences 152:2 153:1 177:16 222:1 conferring 354:3 confidence 143:7 configurations 279:21 confirming 58:21 conflict 204:2 337:19 conflicts 201:18 289:8 confused 310:8 380:14 confusing 231:10 310:20 confusion 275:18 Congress 10:20,21 16:15 30:7 37:11 38:7 40:9 43:20 47:20 48:1 73:7 90:3 98:4,12 196:12 198:19
--	--	---	---	--

201:10 218:4 356:10 congressional 41:9 54:12 177:10,11 208:10 210:4 212:10 219:2 conjunction 160:4 205:20 connected 287:17 connection 145:9 278:11 280:7 281:6 282:1,3,3 282:15 consensus 43:1 48:17 166:3 168:15 206:5 224:9 365:13 consequence 74:6 consequences 37:3 82:14 147:18 284:13,21 conservative 372:6 375:3,14,16 376:16,18,22 378:1,14 379:7,9 379:18,21 consider 87:8 129:18 208:8 218:18 229:8 294:18 298:18 380:10 considerable 148:9 consideration 299:12 307:9 considerations 59:10 considered 91:2 178:17 202:19 278:19 304:21 305:2 315:22 364:9 considering 8:14 283:19 285:6 380:15 considers 264:1 consistency 84:21 85:4	consistent 36:22 52:15 235:12 247:14 268:15 270:6 303:5 381:2 constant 94:1 constantly 59:17 constitutes 363:18 constitution 49:18 constrain 45:22 construction 31:16 46:19 58:19,20 59:9 234:21 235:17,20 236:15 254:3,22 261:19 268:11 296:21 297:2,5,15,17 298:21 301:15 305:20 306:20 310:14 314:2 325:3 326:7 330:13,14 334:20 337:8,11 340:19 constructive 327:10 consultant 301:19 Consumer 182:12 consuming 102:15 consumption 112:9 115:18 116:2 consumption's 35:8 contact 152:12 contain 163:9 contained 201:14 352:2 contentious 195:16 context 133:4 139:16 175:11 continue 19:13 59:18 70:18 71:14 210:9 316:5 continued 116:8,16 continues 44:5 continuing 71:13 106:1 112:15 152:8 170:20 continuous 85:6	continuously 75:3 contract 330:1 331:2 contracted 129:4 contractor 67:21 297:6,11 301:5 302:17 303:4 308:19 309:6 313:2 315:18 316:1,7 318:21 319:4,17 320:10 322:11 323:18 contractors 31:19 61:13 297:15 299:6 302:21 303:15 304:6 308:18 316:4 317:9 318:6,14 319:1,11,20,21 323:6 326:1 331:11,12,18 contribute 178:11 control 14:6 29:2 29:16 31:13 46:9 46:10 59:7,11 95:6 96:3 139:21 187:19 212:7 253:8 326:20,22 controversial 227:11,13,15,21 228:2 230:1 236:2 236:10 259:1 261:4 369:15 370:3 382:22 controversy 200:15 convene 279:20 conventional 112:16 113:4 114:10,18 conversation 75:7 conversations 74:22 145:22 convince 322:2 cooperative 154:6 154:11 158:16 coordinate 213:10 coordinated 197:13	coordination 60:19 77:11 coordinators 154:3 copies 57:19 copper 235:4 239:10 251:8 copy 61:17 152:19 corner 65:10 corners 309:6 corporation 2:21 21:8 307:8 correct 214:21 224:20 234:1 238:17 240:18 251:11 260:3,11 260:15,20 262:6 268:17,22 270:13 272:2,3,4 273:7 289:16 305:9 341:6 380:5 381:12 correctly 320:21 corrosion 77:22 78:1 210:12 212:6 224:13,14 248:6 248:16 corrosive 248:5 cosponsoring 95:8 cost 59:21 125:2,12 125:16 128:12,14 144:4 145:1 203:14 216:10 219:3 230:11 235:3 245:7,7,14 271:21 280:16 294:1 295:17 297:21,22 298:11 298:13 299:3,6,12 300:22 314:22 317:3,4 328:22 329:1 335:2 343:21 349:6,8 356:9 357:10 358:2,15,19 359:11,22 360:2 362:3,4 costs 112:4 129:19	236:17 238:4 261:21 315:10,12 325:12 357:2,7,10 358:12,13,20 359:5,8,12,14,21 359:22 360:4,5,22 362:18 363:3 364:16 cost-benefit 41:19 143:12 203:9 214:12 317:7 cost-benefits 214:15 cost-effective 230:17 263:22 293:11 294:12 344:19 352:11 382:1 cost-effectiveness 229:13 cost-justified 279:1 Council 103:20 counsel 3:13 23:10 29:6 363:21 counsel's 47:16 count 350:7 counter 296:8 counting 359:13,16 country 10:3 62:8 102:6,9,19 149:13 152:8 159:2 164:18 176:2 177:15 202:13 222:2 314:10 couple 6:9 26:16 27:21 28:21 33:3 36:5,9 44:21 47:7 47:8 49:17 58:16 99:11 130:12 137:5 143:21 146:9 222:14 225:21 234:9 240:5 272:7 277:13 278:1,4 299:21 300:1 316:9 326:15 359:2 368:17
--	--	--	--	--

369:18	325:9 330:13,14	285:4 299:16,18	176:17 177:20	23:2 34:12 50:18
course 15:20 36:13	336:11	346:6,21 347:22	181:9 182:5 183:8	94:21 286:10
94:8 95:21 99:9	crime 6:13	348:14 351:16	184:5 185:2,5,9	287:14 289:16
100:10 150:9	crisis 105:11	367:16,17	185:18 186:13,18	360:13 362:9,21
160:22 176:16	criteria 78:4 82:16	currently 147:5	188:2,4,5,11	374:9 379:13
189:1,19 190:11	190:9 191:4,5	210:13 219:16,20	189:15,17,19,20	382:20
194:1 202:16	203:22 204:20	219:22 220:8,21	189:22 190:2,4	daunting 198:6
203:8,9 351:15	209:19 210:11	222:9 224:6 225:2	192:1,7,15,21,21	Davied 2:12 20:6,7
359:18	212:5 283:10	225:16 252:19	193:6 195:6,9,10	162:15,16 264:5
cover 49:7 57:6,22	332:10,17	255:14 277:9	195:22 196:6,10	284:11,11 285:15
194:4 213:2,21	critical 161:17	289:4 293:10,22	196:14,15,17,21	285:20 309:20,21
248:6 303:10	163:5 178:3 221:9	301:14 302:16	198:4,14,21 202:8	375:1,1 376:14
383:10	268:21 324:14	320:5,9 352:21	203:21 206:1	380:12,13
covered 49:5	327:1 328:3	362:2 370:9	212:22	day 7:4 8:5 27:13
202:20 213:1	380:17 381:7	377:10	damaged 195:4	33:9 41:15 89:16
300:20	critically 326:20	curriculum 154:12	damaging 249:3	89:22 90:13,15
covering 175:6	cross 182:20	156:22 159:21	damn 361:17	160:7 177:4,5,12
covers 196:13	crossed 16:16	curve 64:14 68:13	Dan 23:22	177:20 208:17
211:12	314:10	70:6 71:18 112:20	Dana 3:15 23:4	213:18 292:5,15
crack 110:8	crosshair 183:1	Cushing 123:19	darn 309:18	315:21 332:2
cracking 210:12	crossings 49:7	customers 116:3,6	dashed 65:15	341:21
224:14 248:17	crucial 31:20 32:12	134:17 289:6	data 15:3,5,6 16:7	days 6:20 10:13
cracks 268:21	32:18 33:7 200:5	cut 161:8 286:14	16:10 35:1 37:14	33:3 89:7 102:13
Craig 2:17 4:12	crude 104:1 122:4	309:6 350:5	42:7 50:13 60:2	225:21 253:18
10:9 21:2 56:4,7	122:6 123:10	cutely 34:12	62:12,13 63:15,19	316:2 375:10
63:6 71:20,21	124:1,5,11 135:14	cycle 68:11 378:15	64:10,14,18 69:13	day-in 28:3
86:17 132:11,12	135:15,21 136:1,3	cycles 81:13	70:14 71:16,17	day-out 28:3
325:13 340:2,21	crudes 111:7	cycling 377:21	72:18,19 77:10	dead 287:21
345:3,9 381:15,16	135:18	Cynthia 3:1 4:3 9:9	78:11 84:11 85:7	deadlines 82:20
crashed 45:4	cry 33:16	29:21 42:3 44:3	96:18,20 181:16	deal 48:22 78:1
craws 358:5	ct 275:20	48:11	193:11 196:17,20	93:2 107:21 121:6
craziest 52:17	cubic 111:3 112:3	C-D 1:17	196:20,22 197:1,2	122:1 123:22
crazy 26:10 90:5	114:6,14 115:3	C-O-N-T-E-N-T-S	198:9 211:20	124:21 149:9
create 130:6 158:5	134:18	4:1 5:10	214:13,22 220:8	150:12 165:1
170:19 335:18	cultural 81:16	C.F.R 277:10	245:9 319:12,13	197:22 265:14
created 205:19	culture 61:11,15		319:19 371:19	319:10 327:6
266:10	68:2 71:6,9 78:21	D	372:1,10 374:19	336:15,16 337:17
creation 127:6	79:5,15 80:3 82:5	daily 93:21	374:19,21	dealing 46:2 48:18
creative 196:18	84:9 89:6,8,13,18	Dakota 38:20	data-driven 28:21	50:10 139:20
credit 72:3 170:20	89:21	damage 4:22 39:1	date 50:9 51:14	141:7 144:3 167:2
175:1	curiosity 205:3	41:12 46:20 47:9	184:8 267:9 269:8	169:17 210:19
crew 308:20 310:12	curious 360:10	49:12,21 60:6,8	370:1,17 371:15	223:20 227:4
313:19 320:22	current 32:22	66:22 70:7 93:9	374:12,13	249:10 255:3
331:5,6 334:18	154:10 196:4	93:12,16,18	dated 381:19	284:22 336:9
crews 301:3,5,7,15	216:21 255:19,21	160:16,18 174:9	dates 50:16 219:10	deals 232:2
303:11 304:16	256:4,19 267:3	174:12 175:9,12	dating 64:10	dealt 209:10
317:8 320:11,12	269:18 280:3	175:14,21 176:4,7	Daugherty 3:5 23:2	235:16 249:16

345:20 356:6	deficiencies 214:21	315:15 340:14	designations	deviations 108:16
death 35:4,14	define 155:21	343:8 344:15	117:11	devil's 372:22
debate 115:11	194:5 304:13	355:3	desire 236:5	DeWitt 232:8
137:5,20 139:2	328:7	Denise's 135:7	desk 315:21	de-bottlenecking
377:5	defined 167:16	dent 71:18 195:8	despite 19:2 79:7	123:19
debated 49:13	319:6 380:17	department 1:1	detail 57:21 63:2	dial 43:2 176:14
debates 115:9	381:7	20:19 95:12	85:19 124:8 155:4	diameter 220:12
128:8 275:2	definitely 208:7,20	122:16 137:21	215:8 227:17	difference 43:22
debating 26:7	212:19 217:11	152:5 154:18	325:16	163:17 166:11
decade 106:15	220:17 225:22	167:4 330:12	detailed 120:7	257:16 258:11
December 15:10	253:11 255:5	departments 60:16	292:13	266:10 267:13
151:9 167:22	292:11	60:16	detailing 91:6	308:17 348:10
decided 175:2	definition 36:4	depend 96:5	details 141:10	350:18 371:10
272:9	38:17 212:4 219:5	dependable 198:10	213:22	differences 222:18
decision 201:20	246:5 247:6,7,15	dependence 123:4	detection 42:11	different 11:6 13:7
291:10 294:11	247:17 248:1	127:1	69:8,11 210:1	36:3,19 54:7 73:5
295:7 344:12	277:22 279:5	depending 200:2	225:4 291:3	77:14 81:17,18
345:15	281:16 286:15	271:14 283:14	determination 53:9	95:13 105:10
decisions 361:9	degree 322:14	depends 304:13	determinations	110:16 119:6
373:3	delay 244:16 296:3	depletable 106:5	190:16	123:11 128:13
decision-making	deleted 251:10	127:17	determine 14:17	131:17 133:18
214:15	deliver 57:2 89:9	depletion 106:14	54:5 96:7 188:18	137:6,9 138:19
deck 39:9	deliverability	107:21	192:8	158:3,4 164:14
decks 233:5	108:10 133:20	depressed 132:15	determined 229:20	165:14 177:16
declare 193:8	delivered 40:8	depth 49:6 325:1	349:8	204:16 205:18,18
decline 64:9,12,22	87:10	deputy 3:5,6 17:21	determining	208:15 209:14
65:4,17 66:9,16	deliveries 134:5	32:7,8 45:9 172:7	190:10	210:7 211:1,7,12
66:16 115:5	delivering 44:8	derivative 79:13	detract 131:16	212:2,9,11 215:17
116:17	delivery 57:12	Des 172:21	develop 59:20	218:13 220:10,11
declining 119:2	demand 107:4	describe 109:6	157:20,22 166:8	220:18,21 222:16
decrees 177:12	115:21 118:6,12	described 89:21	182:4 219:11	223:3 224:12
dedicated 178:13	118:14,20 122:22	99:15 324:13	245:14 250:11	225:1,8,15,17,18
209:13	demands 90:2,8	describing 342:12	294:18	225:20 227:6
deem 236:2 288:11	demand-side	description 135:7	developed 99:21	230:7 232:20
deemed 188:13	140:17	descriptions 130:9	109:22 112:13	233:10 234:6,7,17
194:10	demarcation	deserve 233:12	117:2,4 152:20	234:20 236:8,13
deeper 72:11	286:20	design 142:12	160:3 183:11	236:20 238:12,13
Deepwater 14:15	demographic	219:3 223:14	187:1 189:10	239:14 262:15
38:1,3,13	146:11	257:9 266:19	developing 59:10	265:4 282:22
defect 374:11,15,18	Demonstrating	268:11,16,20	60:1 138:5 148:18	287:15 298:9
376:4,8	78:5	270:19 271:1	153:10 187:15	315:8 319:7 327:5
defective 314:5	denial 234:13	347:20	210:10 212:5	337:13,19,21
defense 325:21	Denise 2:2,14 21:15	designated 185:12	214:13 219:7	346:5 357:6
defer 232:12 287:3	21:21 23:17,18	191:13	development 50:7	358:10 375:17
364:12	24:4,5,7 25:1,20	designating 176:13	68:22 112:4 119:4	differently 358:11
deference 227:2,22	27:15 263:2,5	209:20	121:21 158:17	358:12
239:19 257:21	276:6 311:5	designation 217:8	199:21 289:22	difficult 42:16 67:6

95:1,3 183:15 193:18 216:15 240:17 282:10 295:11 302:10 difficulties 291:9 301:22 difficulty 167:8 302:17 dig 15:15 160:13 175:17 176:14 179:6,10 192:18 194:13,18 202:1 204:2 digest 225:19 digestible 184:7 digesting 187:14 diggers 180:21 digging 94:1,5,7 177:4,13 179:9 180:1 dilbit 42:13 51:4 dilemma 48:22 dimensional 306:16 diminishing 73:21 DIMP 94:19 181:13 dinner 106:8,10 168:3,9 dioxide 279:10 dioxides 219:6 direct 224:13,15 360:2,5 362:18 363:3 direction 25:18 85:10 directional 109:9 directly 194:12 201:17 208:2 222:21 director 3:8,14 259:5 directors 61:10 62:7 88:3 94:9 dirty 308:11 disagree 205:7 270:10 271:10	332:19 disagreeing 268:2 272:13 disagreement 239:22 303:8 disappeared 244:8 360:19 disclaimer 104:12 disconnection 85:9 discover 89:17 discovery 375:13 discrepancy 270:1 271:13 discrete 71:1 discretion 361:15 discretionary 84:8 discuss 15:19 216:1 243:1 257:5 258:22 265:3,9 277:8 296:18 324:20 discussed 129:9 155:13 215:5 234:10 235:21 292:14 367:3 discussing 62:7 148:8 discussion 4:4,9,15 4:18,21,24 5:16 26:2 63:15 64:7 142:18 145:6 155:20 205:17 227:12 231:22 237:10,21,21 265:11,11 274:16 274:19 288:19 300:8 308:8 338:8 341:13 343:19 366:3,5,16 372:19 377:2,5,9,20 discussions 53:14 54:22 295:16 371:7 dispersed 165:15 disposal 161:2,3 disqualified 348:9 348:11	disregard 192:19 disruption 134:19 disseminate 84:20 dissemination 163:7 distance 283:19 distinct 105:8 265:14 distinction 278:17 305:19,22 306:12 310:10 331:17 distracted 32:19 53:6 distributes 357:9 distribution 4:12 13:22 14:1 37:4 46:11 56:7,17,20 57:7 60:6 87:4,5 121:8 129:16 144:5,14 246:3,5 277:17 278:10 280:6 281:5,7 282:4 283:8 284:8 286:8,19 287:10 287:12,16,18 300:19 ditch 308:10 divergent 173:4 diverse 185:2 341:22 dividing 383:6 doable 338:4 docket 52:2 186:19 189:6 201:6 245:10 document 91:5,20 166:5 175:19 176:1 documentation 246:14 254:7 documenting 79:19 dog 68:13 70:6 170:15 359:19 360:8 doing 12:9 13:11 14:9,13,14 15:10 18:4 25:17 45:5	49:6 50:22 52:17 62:22 67:8,18 69:17 70:5 76:13 77:8 82:1,2,3 83:11 94:12,15 95:15 98:14 110:11 112:18 114:4 116:4 133:7 140:14 142:14 147:9 148:3 151:3 163:15 177:19 179:9 186:11 207:14 214:17 216:17,19 222:14 224:3 225:2 244:6 247:13 252:8 258:20 262:18 268:19 269:5 273:9 281:9 301:15 304:8 312:13 318:6 319:21 320:20 322:3,8,10 323:13 324:7 327:8 328:16 331:12 332:1 337:13 348:19 358:15 367:12 368:15 369:10 dollars 69:4 130:1 131:16 143:11 249:1 domestic 4:16 102:10 dominant 66:4 Don 90:13,14 92:6 97:12,12 200:21 200:21,22 205:4 231:2,4 238:7,11 243:22 244:12 246:12 247:4 257:7 273:1 276:11 280:20 281:12 282:16 288:5 289:1 317:10,19 323:3 333:18 338:11	342:12,16 347:3,7 349:4 351:4 354:2 357:18 365:4,22 Donald 2:7 99:1 172:22 173:8 246:11 288:22 donating 7:5 Don's 205:4 343:9 dot 38:4 43:5 176:11 178:10,17 180:8,9 182:11,13 182:15 217:21 218:2 dots 113:20 DOT-centric 179:1 double 12:18 34:9 38:6,7 double-check 300:16 double-edged 141:22 doubling 16:6 doubt 65:8 93:10 161:22 doubtless 6:11 downstream 283:19 289:5 dozens 270:15 do-loop 10:14 Dr 311:13 draft 203:8 293:9 300:14 344:18 drafted 300:1 338:11 343:18 drafting 13:19 209:8 210:13 Drake 2:3 4:13 20:13,13 72:5 80:7 307:22 329:3 329:3 331:1 336:20,20 343:11 343:14 366:18 dramatic 122:6 draw 102:4,20 193:18 drawdown 105:11 drawing 146:6
---	--	---	--	--

drawn 37:21	316:16 321:20	223:21 327:13	element 78:19	Emmitsburg
drew 64:20	338:15 350:17	effective 59:20 62:2	182:14,14,16,18	154:21
drill 109:15 110:1,1	367:9	96:7 149:20	295:14 326:21	emphasis 163:10
112:15 114:18	early 61:10 96:10	157:18 158:14	elements 46:14	emphasize 43:7
drilled 109:17,19	206:19 221:21	168:12 171:22	73:17 75:10 79:1	310:22
113:21	222:3 383:4	176:17 181:8	79:18 80:15 181:8	employee 33:4
drilling 107:13,17	earn 131:1,11	182:17 185:18	181:11,20 185:17	62:11 67:21 89:19
108:8,13 109:9,10	ears 68:18	189:18 190:4	186:1	181:15 309:12
113:3,4,7,9 114:9	ease 258:15	230:12 265:13	eligible 185:12	315:6 322:12
115:6 126:17	easier 71:1 120:15	267:9 294:2	eliminate 163:11	employees 33:5
133:20 135:3	227:1 336:8	371:15	198:19 222:10	100:12 179:21
drills 60:19	345:17,17,18	effectively 60:15	239:3 352:20	308:6 309:9 314:3
drive 26:10 75:2	367:7	110:3 124:10	eliminated 11:21	314:4 318:12,14
84:13 160:12	east 118:5 119:14	149:3 237:1 251:9	eliminates 198:12	318:15 330:12,17
214:14	314:11	252:8,22 267:9	elimination 235:6	331:4,14
driven 116:2	eastern 318:3	268:2 278:12	239:10 240:13	employer 309:12
126:16 127:19	easy 49:19 171:5	360:21 372:3	354:5	employment 316:1
140:10	197:5 228:10	efficiencies 107:6	eloquently 322:5	en 159:16 240:8,16
driver 115:17	241:11,12,17,20	efficiency 116:8	elsewise 37:11	241:13 262:3
116:12	242:12	142:10 262:18	else's 53:8	enable 60:4 330:17
drivers 141:12	eating 168:7,11	efficient 233:4,19	embracing 40:6	enacted 46:6
drives 80:14 82:5	170:12	343:22	emergence 40:3	Enbridge 2:14
driving 79:1	echo 135:6 311:5,6	efficiently 116:5	emergencies 149:4	21:16 131:14
drop 380:15	315:16	effort 61:20 70:17	149:10 150:12	311:5 315:16
dropped 107:18	economic 40:3	153:16 155:11	154:13,15 156:22	encompass 344:21
108:13,17 113:10	127:6,11 131:21	165:6 181:4,4,5,7	159:20 162:3	encompasses 63:21
114:10 360:17,18	economics 138:18	efforts 10:10 61:5	emergency 4:19	encounter 38:15
drove 65:3	economist 103:14	148:15 155:1	15:8,9 32:10,10	encourage 86:3
dryer 121:1	104:17 126:3	175:18 176:8	59:1 60:18 70:19	88:5 187:6 190:3
due 191:3 278:20	137:8	181:2 196:16	71:3 100:13	196:8
280:15 299:12	economists 104:18	201:19	147:10,15 148:10	encouragement
dwarves 179:8,9	137:8	EFRDs 210:2	148:20 149:1,16	92:1
dwelt 40:19 48:5	economy 137:7,16	EFVs 59:2 214:4,6	150:8,10,11,14	encroaching 35:10
dwelling 214:8	147:20	eight 68:21 70:16	151:2,6,9 152:7	ended 234:13
dynamics 138:11	Edens 23:21	162:4 163:18	152:12 153:15	287:11
138:14	editorial 216:20	either 29:2 43:2	155:4,9 156:7	endless 60:17
D.C 1:18 6:16	233:14 235:14	129:15 202:8	157:14,19,21	ends 34:5 280:3
174:22	239:6,9,16 240:21	213:4 240:10	158:18 159:1,6,15	enemy 70:22
<hr/>	251:9 253:12	246:16 321:16	159:19,22 160:22	energies 83:3
E	257:1	329:13,14,20	164:4,5,12,14,21	energy 2:3,8 4:16
E 2:4,5	editorial-type	354:18 360:1	165:3 166:7 167:1	9:22 20:14 21:16
earlier 28:10 115:5	256:9	375:19 383:8	167:9 170:8 172:1	22:12 35:8 57:9
122:8 132:14	educate 93:3 151:4	electing 253:20	172:2,8 174:8	79:16 83:22
165:12 167:10	151:5	electric 115:19	180:14 193:1	102:10,12 103:9
174:13 197:19	education 103:20	221:10 292:17	197:4,7 327:22	105:11 107:8
236:20 261:17	170:21 181:16	electricity 116:1	emissions 279:10	122:16 123:2
262:13,21,21	effect 66:6 184:16	221:7	279:18	125:21,21 126:15

129:7 136:15	enormous 69:14	estimates 245:14	exactly 86:13	72:2
137:22 140:12	ensure 58:9 96:8,15	et 31:20 32:20	114:13 131:19	excellent 98:2
329:4 336:21	324:10	208:6 220:15	144:7,7 171:4	165:9 173:3
enforce 188:3	entertain 63:4	279:22 307:8	239:15 303:7	341:12
189:2,17 190:20	161:10	ethane 121:3,10,12	312:19 324:21	exception 66:17
190:21,22 191:12	entire 12:17 24:9	121:15	351:19 383:6	89:14 211:20
192:2 194:7 196:5	28:11 114:3	ethanol 32:3 235:3	examination	212:8 249:21
196:8 218:3	137:16 152:18	239:10 247:7,10	305:20,22 306:14	250:4,5 252:19
enforcement 17:7	186:22 325:4	247:16,22 248:4,4	306:16 307:21	271:18 278:6
41:4,6 47:12 71:8	entirely 187:19	248:6,16 249:2,12	examinations	289:10
90:21,22 96:8,10	265:20 327:13	249:15	316:17	exceptions 209:18
96:15 176:5 188:1	entities 38:4 80:5	ethanol-based	examining 68:15	263:18 277:14
188:5,7,14,17,19	129:15	248:13	example 8:20 29:20	excess 48:14
189:18 190:5,6,7	entity 298:3	ethylene 121:13	53:4 54:9 93:4	excessive 202:21
190:11 191:1,6,11	environment 38:11	evacuate 169:22	143:2 165:4	exciting 127:13
191:14,18,19	38:22 147:19	evacuating 166:18	183:16 184:14	excuse 158:13
192:10 193:16,20	environmentally	evaluate 84:5 178:7	206:10 211:13	160:1 204:8
194:11 201:11	126:20	188:19 194:4	270:5 283:5 306:3	execute 83:14
202:19 216:19	envisioned 245:1	229:12	306:19 310:11	executed 33:14
217:1,18 218:5	episodic 70:18	evaluated 279:22	313:21 314:6,9,14	execution 77:9
278:2,4 281:2,3	equation 40:5	evaluating 78:12	326:19	executive 18:9 62:5
281:21 286:13	43:12	evaluation 181:22	examples 132:3	67:17 86:10
enforcing 192:1	equipment 129:21	375:19	314:7 315:5 326:9	executives 32:18
203:21	245:19	evaluations 188:21	excavate 192:19	33:6 73:11 84:15
engage 60:13	era 105:19	293:9	194:17	exempt 202:4
167:10	Erickson 3:20	event 17:22 163:21	excavation 4:22	exemption 193:10
engaged 32:19	342:8,8	179:16 221:10	38:19 41:11 47:9	193:12,13 195:12
61:19 90:19 92:15	errors 234:2	events 35:16 38:16	49:12 93:12	198:3 201:17
96:1 169:12	325:22	39:3 74:6 197:18	160:16 174:9,11	202:5,9
engagement 60:9	esoteric 74:22	everybody 37:18	189:15,19,20	exemptions 49:13
168:19	especially 18:15	57:20 76:12 98:21	190:2 192:1 193:6	50:1 193:5,9
engaging 60:12	142:10 198:8	101:20 109:5	195:1,5,22 196:10	198:3,16,20 202:6
167:8	208:8,16 252:1	145:9 163:19	196:13 197:12	327:8
engine 79:1 82:5	292:17 299:8	168:4 290:21	212:22	exercise 218:7
engineer 232:4,5	315:14 378:5,15	342:20 350:14	excavator 60:9	366:11
engineering 3:14	essential 153:11	everybody's 168:7	94:5 183:17 191:2	exist 89:10 150:17
10:12 259:5	174:1,3	everyday 149:12	192:20	150:20 194:15
engineers 75:14	essentially 189:14	everything's 168:5	excavators 180:21	300:11 373:11
enhance 58:3 88:5	194:19	317:1	188:4,10,11,22	existed 308:14
91:9 93:18,22	establish 157:17	evidence 245:10	192:13,17 193:6	376:9
enhanced 69:13	158:14 190:9,14	279:1 313:15	194:6,8,9,14	existing 69:6
93:15 99:13	190:19 253:20	evil 46:2	195:5,20 196:13	119:16 128:20
enhancement	established 204:17	evolution 31:4	204:9	142:5,22 148:15
86:21	380:18	evolve 71:14	exceed 358:13	150:16,16 156:5
enhancing 57:18	estimate 113:22	evolving 59:17	exceeding 219:4	156:12 196:17
58:6	estimated 113:22	exact 191:7 278:3	346:2	269:6 273:17
enjoyed 89:12,20	114:2,12	280:1 284:3	excellence 67:14	324:2,4 364:15

exists 129:13	137:21 138:6	172:15 173:21	FAQs 375:9 377:6	352:9 357:3
expand 82:11	exporter 124:15	190:22 217:17	381:2	358:21 361:22
171:15 209:21	exports 137:5	251:6 266:6	far 66:17 93:9	367:13 368:3,13
323:6,21	138:17	270:18 272:12	132:7 169:1 179:3	federal/state 88:15
expanded 160:2	exposed 66:4 252:2	291:5 331:5 332:6	201:9 235:16,21	feed 83:17 168:2
167:17 303:10	exposure 171:17	factor 52:15 142:12	299:2 319:3 354:8	feedback 187:13
expanding 58:19	extend 77:15	223:15 266:9,13	farmers 180:20	275:14
59:2 166:2 214:6	extended 299:4	266:19 268:12	202:14	feeding 38:14,22
expansion 130:20	extending 82:2	270:17 328:22	farming 202:7,10	feel 87:13 200:8
167:12	extends 88:7	factors 322:7	far-reaching 54:19	230:16 287:1,1
expansions 129:22	extensive 187:12	facts 245:11 313:22	267:16	292:9 326:7 327:2
expect 194:9 302:2	201:6	fail 34:3 348:16	fascinating 136:9	feelings 205:1
expectations 43:8	extent 18:13	349:2 373:6 376:5	fashion 163:16	feels 300:21
61:12	200:14 320:6	failed 314:18	233:4,19	feet 110:4,20,21
expected 61:14	external 29:12 70:8	348:22 375:12	fast 45:15 82:15	111:3 112:3 114:6
80:11 98:18	externally 14:13	fails 90:8	fastest 140:11	114:14 115:3
256:16	extra 271:21	failure 147:21	FastLane 180:10	134:18 174:6
expedite 18:11	extras 159:12	failures 37:13	fatalities 36:7,15	220:9 283:3
219:16	extremely 10:1	314:12,16 352:22	37:7 38:19 295:19	Feigel 2:4 22:14,14
expedited 14:5	13:9 151:20	353:15 378:9	fatality 160:17	139:10 237:6,9,15
expenditures	202:17	fair 38:5 45:16	fault 53:8 196:10	237:20 257:2
126:10 144:1,2	eyes 310:21 315:3	47:21 89:8 129:6	favor 253:11 264:7	259:17 260:1
expenses 356:15,17	339:20,22	192:10 305:1	264:11 276:22	261:22 265:6
358:1,2 364:9	F	343:8	294:6 344:7	268:6,8 269:11
expensive 114:18	F 2:6	fairly 6:6 36:14	345:10 355:16	270:9 271:10
114:20 267:19	fabricated 235:13	38:11 189:10	366:19 367:1	272:4 305:4,10
experience 52:15	261:22 265:7	215:11 218:8	382:7	307:18 311:17
68:6 246:22 247:1	fabrication 311:20	240:21 248:14	FCC 176:12	331:16 332:15
297:13	face 60:20,20 96:19	374:6 378:8,14	fear 48:5 249:3	334:13 360:10
experienced 32:2	138:19 167:7	fairy 179:7	feasibility 229:12	361:7
126:14 246:18	281:4	fall 34:17 206:19	feasible 230:11,17	Feigel's 311:14
314:16	facilitate 55:7	falling 208:2	263:21 288:12,19	330:1
experiences 106:5	159:8 231:22	fallout 28:4 44:5	293:10 294:1	fell 75:11
127:18	facilities 49:21 71:1	49:8	343:21 344:19	felt 75:10 76:2
experimenting	88:9,11 118:9	falls 81:1,3 92:13	352:10 382:1	77:19 348:1
248:12	119:15,17 130:5	92:14	feature 328:21	FEMA 154:20
expert 378:21	165:10,13 195:2	familiar 79:3	February 133:10	fence 271:14
experts 70:4	204:11 214:10	148:13 157:3	federal 2:8 8:18	FERC 40:1 129:15
expiration 219:10	273:18 280:14	171:16 181:10	18:14 22:12 91:11	221:6,21 286:6
explain 367:13	facility 131:7	196:21 217:16	129:7 189:3 190:6	field 3:7 45:9 62:4
explaining 349:11	facing 94:16 98:6	313:21 353:17	190:19 194:6	94:2 96:21 147:2
explicit 202:9	151:19	family 59:5 130:16	201:15,22 203:22	202:14 204:19
explore 138:8	fact 17:4 19:3 34:9	130:19	229:11 230:10	254:6 292:5 326:1
146:14	79:7 93:6 107:4	fantastic 151:17	247:9 262:10	Fifteen 103:13
exponentially	112:18 134:3	FAQ 370:3,10,10	263:9,19 293:8,17	264:16
225:16	140:10 166:22	372:13,15 373:14	293:20 305:7	fifth 192:6
export 136:19,20		377:10 379:17	339:14 344:17	fight 359:19 360:9

365:9	finished 10:16 46:9	358:19 371:2	focus 15:13 32:21	262:3,7 263:1,12
fighter 152:7	46:11,13 52:4	378:3	35:20 37:3,10	264:4,7,9,13,15
fighters 150:11	87:15	Fiscal 16:2	41:11 75:20 83:2	264:21 265:1
159:16 162:5	fire 2:2 20:22 21:22	fit 169:14 307:2	89:4 120:13 148:9	274:5,9 275:21
169:19 171:4	32:6 60:15 100:14	fitness 47:4 77:13	172:11 319:10	276:5,10,21 277:3
figure 62:13 75:17	150:10 152:4,5,7	78:5 82:1 84:4	340:11	277:5,7 280:19
121:9 125:22	153:4,8,9 154:7,8	265:21	focused 46:18	284:10 286:5
127:21 134:7	154:17,20 156:18	fit-up 306:4,8	75:15 87:4 113:7	288:5,21 289:17
379:15	156:20 157:2	311:15 314:12	123:12 153:20	290:8,11 291:17
figuring 121:22	159:15 162:5	fit-ups 306:19	157:16 165:6,13	293:4 294:3,6,9
filed 201:5	167:4 169:19	five 93:18 95:14	188:2 196:12	294:11 296:12,15
fill 17:14 215:2	171:4	208:14 227:16	focuses 153:17	296:16 336:18
230:13	Firearms 249:11	238:22	focusing 46:21	340:13 341:8
final 47:13,14	fired 174:15	fix 318:20 321:13	folks 12:21 14:9	342:7,15 343:7,13
187:15,16 206:21	firehouse 171:7	321:16 381:6	26:19 34:7 47:17	344:3,5,9,12
217:4 250:11	FireRescue 153:5	fixed 33:21 165:10	67:18 152:18	345:1,9,12,14
255:8 264:3 268:1	firm 144:12	165:13	161:2 177:19	349:20 350:10
294:18,19 295:7	firming 113:12	fixing 34:11 240:1	221:15 243:15	352:4,13 354:2,22
305:20 306:14	132:21,21 133:19	374:6	282:18 321:19	355:7,10,14,18,20
307:2,4,20 316:17	first 6:15 9:2,7,16	flag 85:11 203:10	360:20 364:13	355:22 365:3
316:19 322:8	14:7 15:11 25:2	flat 116:11	follow 54:12 56:5	366:14,17,19,21
329:21 330:19	26:3 27:14 31:2	flaws 314:18	63:11 204:21	367:1 372:18
332:7,9,11,20	31:21 43:20 46:10	Fleck 2:4 4:12	237:5	374:8 377:2,15
370:20 373:19	46:12,13 47:7,7	10:10 21:4,4	followed 59:1	378:18,22 381:15
finalizing 13:15	51:2 54:1 58:17	56:11,11 86:19	following 8:14	382:3,6,10,12,18
finally 40:9 127:14	63:16 69:8 75:20	300:17,17 302:7	297:10 377:11	383:12
180:11 191:2	82:21 99:14	302:11,22 303:7	follow-through	forecasts 104:11,16
193:4	105:10 111:10	304:1,9,12,21	47:3	133:17 137:17
financed 129:5	113:4 127:16	305:2 316:8,8	food 130:19	forefront 68:5
financial 128:12	128:4 132:11	352:15,15 353:13	foot 86:8	foregoing 101:6
find 42:17 60:14	133:19 135:3	353:19 354:14,18	forbidden 7:16	173:17 264:18
61:15 71:2 106:3	139:15 144:11	flexibility 121:5	force 93:1 95:18,19	383:13
112:19 124:18	155:4,9,20 158:13	175:5 199:5	forces 66:18	foreign 123:5
135:21 167:18	160:15 171:13	flexible 33:12	Ford 1:18,21 6:13	125:20 127:2
171:15 314:18	181:3 191:10	flip 65:9 66:12 71:5	8:6 19:15,17	foremost 31:2
320:13 378:16	199:4 208:22	flipping 67:3	23:11 26:1 51:17	310:1
findings 40:8 44:11	228:7 230:9	flooding 49:9	52:12 53:21 55:5	forever 163:11
48:3	232:18 237:2	floor 317:18 355:1	63:5 71:20 72:4	forget 44:20
fine 6:6 173:6	242:22 278:10	Florida 44:21	86:16 87:17 97:3	forgetting 50:4
202:1 229:5	280:7 281:5,6,7	118:1	99:1 101:2,9	Forgive 26:16 28:1
328:11 332:15	282:1,3,11,15	flow 48:14 117:7,11	128:2 132:10	forgot 17:15 50:8
349:1	284:1 286:7,11	117:13,14 146:3	172:20 199:1	350:12
fine-tuning 326:11	290:16 300:2	flowing 119:19,20	200:19 205:2,15	forgotten 6:11 15:7
fingerprint 74:5,12	305:4 310:1	132:6	206:7 226:7 228:8	form 178:12 179:5
fingers 16:16	321:19 323:4,22	flows 124:4	228:17 229:3,5	249:7
finish 21:13 32:13	341:14 345:5	fluid 6:6 155:15	241:15 242:8	forma 216:5
47:8 168:7 206:20	353:10 354:5	fly 379:19	246:11 261:9	formally 180:4

format 46:18 184:7	foundation 120:5 151:14 176:16	315:11	228:12,16,19	221:2,4,4,17
formation 110:13 114:11	founded 56:19	fun 7:1 27:7	231:2,12,19 237:8	241:16 242:6
formations 109:14	four 26:14 95:2,14 182:18 347:11	function 328:3	237:12,18,22	262:8,17 288:6
formed 93:1	fourth 191:21	functions 184:21	238:6,10,17,21	289:18 290:10,12
former 309:12	fracking 109:5	fund 43:14	240:19 241:4,21	293:6,7,19 309:11
forms 268:10	fracture 268:21	fundamental 30:22 75:13 76:6 81:6	242:7,9,14,17	329:9 355:13
formula 368:1 369:12,22	fractures 110:16	81:16 122:9,17	244:12 247:4	362:14 366:13,15
formulas 368:4	fracturing 109:7 110:7 126:18	126:14 131:20	249:14 251:5	garnered 73:4
formulating 155:18	frame 217:4	150:6 163:6	257:18 258:9,13	gas 1:6 3:19,20
formula's 368:8	frames 207:4	268:18 291:1	258:21 261:2,13	4:12,13 7:14 8:2
forth 98:5 120:11 122:22 137:17	framework 33:12 39:12	fundamentally 74:8 123:6 125:19	262:5,12,20 263:4	13:16 20:20 21:5
144:4 288:12	frankly 79:2 119:9 133:3 249:9	127:1 218:8	263:14 265:1	21:20 22:1,6,13
fortification 39:12	fraught 315:18	funded 157:1	266:4 269:3 271:3	22:15 30:18 37:4
Fortran 10:13	free 87:13 137:9,18 215:21 326:7	funding 58:14 141:18 158:15	272:22 273:8	47:17 48:12 56:7
fortunately 358:4 363:4	frequency 81:5 166:13	176:19 178:13	274:1,4,7 276:3,6	56:8,18,20 57:2,3
Forty-five 226:18 226:20	fresher 186:12	198:12,13,13,14	276:14 277:7	57:6,8,11,12
forum 15:9 50:4,7 151:8,10,11,14,17	Friday 42:20 48:19 216:1 274:20	198:15	281:11 282:5	58:11 72:7 87:10
167:21 181:19	275:14	funds 69:6 356:11	285:3,19 287:22	88:9,13 92:21
forward 16:1,10 18:3,15 19:12,13	Fridays 155:12	further 56:10 136:4 215:5,8	288:17 291:19	97:8 99:3,5,7,8,8
44:20 48:1,11	friend 97:21 325:21	221:12 236:22	293:12 294:5,16	103:13,14 104:6
51:12,15 54:9	friends 49:16	279:7 324:20	295:5 296:14,17	105:2,5 108:2,12
86:8 115:8,16	front 17:6 33:5 37:15 45:3 52:1	334:5 368:3 371:7	300:15 302:4,8,20	108:22 109:12,20
116:12 122:3	59:15 63:8 203:10	377:2	303:3,20 304:5,11	110:10,11 111:3,4
123:21 128:9	fruit 34:16 240:14	furthest 282:2 283:7 284:2,7	304:18 305:1,9	111:8 112:2,8
138:7 145:8	frustrating 76:4	fuses 332:14	312:14,19 313:11	113:4,5,12,19
146:15 151:15	fuel 56:21 121:14	fusing 350:2	321:15 333:12,18	114:2,20 115:4,18
155:14,18 158:11	fuels 248:13	fusion 320:18 353:8,9	334:4,9 335:19	115:20 116:3,6,9
210:14 214:12	full 11:19 13:9 14:10 168:9	futile 30:11	336:17 345:16	116:10,19 117:1,3
221:16 223:1	201:21 226:1	future 29:16 47:11 49:1 72:3 115:10	349:4 351:4,9,12	117:12,17 118:12
225:7 227:3,8	fuller 16:9 288:1	117:3 127:4	351:19 353:10,14	118:14,22 119:10
241:14 250:12	fully 99:14 169:8	180:20 212:3	355:6,9,22 364:19	120:13,14,17,22
318:19 329:7	full-blown 298:13	272:18 298:18	367:2 382:14,17	121:1,3,6,7,16
339:4 366:6 379:6 379:7		299:12 366:16	gallons 64:2	122:7 124:12
foul 331:20			galore 42:9 49:4	125:13 127:8,16
found 129:21 164:11,16 203:11			game 138:13 139:7 170:5 339:6	132:14,16,20,22
252:2 259:9			363:20 373:20	133:6,13,21 138:8
286:17 346:4,9,12			374:3	139:13 141:6
348:12			game-changer 112:10	142:3,7,8,10
			gaming 373:22	210:21 211:2,18
			GAO 11:22 30:8 46:3	212:8 215:6 221:7
			gaps 31:6 34:10	229:9 234:22
			Gardner 2:5 20:11 20:11 51:18,19	235:13 238:5,19
			52:7 71:22 72:1	243:2,4,7,11,17
				244:20 246:8,22
				252:18 274:13
				276:3,5,7,22
				277:9,11,17

284:16 290:18,19	Geography 70:22	gives 191:8 325:15	106:12 110:19	169:17,21,21,22
292:3 293:21	geopolitical 102:17	325:17	116:10 119:12	170:1,3,4 171:12
294:4,5 296:2	Georgia 15:11	giving 53:18 215:5	201:9 309:2 356:4	172:14 173:22
309:22 316:9	38:19 155:8	234:13 370:16	375:6	174:7 175:8,10,13
318:13,15 320:14	157:11,16,21	glad 6:16 8:11	going 7:13 10:14	175:19 181:1
330:12 336:7,15	158:9	173:14 336:6	16:18 17:21 24:4	184:20 186:14
341:11 342:3	Geraldine 23:21	glaring 166:21	27:1,17 29:13	188:19 189:2
343:15 344:6	getting 6:4 11:20	global 105:16	32:5 35:9,9 38:3	190:16 197:13
349:17 350:11	33:4 42:1 43:9,19	129:18	39:7 42:19 47:8	198:6,17 199:13
352:16 355:16	48:21 50:14 70:1	globally 102:5	51:11,12,15,20	201:1,21 202:6
367:5,17 377:22	70:3,4 71:15 78:8	go 8:20 10:12 12:8	53:11,13 54:14	204:4,17 208:18
gases 121:1	108:6 114:6,21	12:11 16:10 18:5	56:5 57:21,22	211:19 212:17
gas-bearing 110:5	116:16 117:5	25:13 45:13 48:9	60:10,22 63:14	213:15,21,22
gas-directed	122:8 124:14	50:8 65:5,9 71:6	64:19 66:20 68:13	214:1 216:2,5,8,9
107:13	129:3 140:21	75:22 80:12 101:4	70:6 71:5,6 75:8	216:15 220:2
gas-fired 292:18	150:2 153:7	101:5 106:1,19	82:13 86:12,13	222:1 224:1 225:6
gate 286:9 287:8,12	201:10 217:10	110:8 120:7,8	94:3 95:4 97:5,7	225:11,12,21
gather 214:13	223:3,19 259:14	124:8 141:2	97:15 101:12	226:8 228:21
gathering 42:14	287:9,10 319:11	143:15 144:10	102:6,16 103:17	229:15 231:7,12
48:10,12 63:20	353:11	146:22 151:12	103:18 104:2,5	232:12 233:13,15
120:10 133:21	get-together 213:5	155:3 168:6,8,18	105:18 106:15,16	234:13 236:2,11
161:5 212:8	Gilliam 3:14 232:7	172:14 174:14	106:19 107:7,14	237:1,3,7 241:6
234:22 243:3,5,7	259:2,4,5,21	181:19 187:6	108:9,12,19,20	241:19 242:15
243:12 244:20	260:3,11,15,18	188:17 190:16	111:20 112:16	244:22 246:13
246:8,19,20 247:1	269:20,20 272:1,6	199:2,6 200:3	114:16 115:7,18	248:9 249:9,13
247:3 290:18,19	273:20 274:3	201:2 202:12	115:19 116:12,14	250:22 255:5,15
gatherings 246:15	282:16,17 284:5	206:12,14 228:21	117:22 118:13	255:18 257:4,13
Gee 362:21	306:21,22 313:20	231:7 238:1 242:4	119:2,3,15,18	258:5,18,22 259:2
Gene 22:14 139:5,9	375:15,15 377:3,3	242:20 261:5	120:1,2,7,16,18	259:19 261:5,18
237:5,13 269:3	give 9:14 10:5	281:4,5 285:20	121:10,22 122:9	263:4 265:5,8,9
329:22 334:11	23:12 27:1 46:21	287:8 290:15	122:18,21 123:1,1	265:10,21 272:11
337:5 339:6	53:4,15 56:17	295:1 316:13	123:21 124:6,20	274:20 275:2,5,12
361:19 363:13	62:21 72:6 85:20	319:18 326:7	126:1,2,10 127:15	275:13 286:7
general 12:1,3 98:5	87:18 101:16	329:14 330:18	127:16 128:8,8	287:5,7 295:13
175:14 196:22	102:22 104:4	336:14 352:19	129:17 131:18	296:8 300:7
234:11 293:15	136:22 137:2	353:2 360:2,20	132:18 134:8,9,21	303:14,16 304:17
299:6 316:6	139:16 147:14	361:1 362:1 368:5	136:8 138:6,15	308:22 309:3,21
349:12,14 377:4	170:13 172:13	369:2 372:10	139:7,13,19 141:4	316:13 320:15,17
generally 256:7,21	175:1 187:7	380:9 381:6	141:9,11,11 142:2	320:19 322:2
generation 115:19	206:10 215:2	goal 57:11 67:12,15	142:9,17 143:10	325:16 329:1
116:11 118:2,6,7	224:15 227:17	74:20 75:1 148:1	143:12,19,20	330:18 332:3
119:5	236:3 271:15	148:9 150:6,21	144:4,6,8,12	334:13 335:3
gentle 362:10	290:9 301:18	151:3 163:11	145:8,17,20	337:22 339:7
gentleman 173:2	306:2	goals 73:17 147:17	146:15 147:8,12	362:1,4,8,22
291:20	given 19:2 101:13	155:15 156:1	147:15 155:3,7	365:8 366:6 367:3
geographically	134:6 173:21	157:15	157:10 158:6,8,20	375:7 377:7,20
182:10	236:6 295:9	goes 18:22 105:1	163:4,5 168:18	378:16 381:4

good 6:3 9:10,11 11:4 28:7,13,18 35:12 42:5 45:3 48:15 49:2 52:8 52:10 73:19 87:21 93:17 94:11 96:21 104:18 132:1 137:18 145:15 161:7 165:4,19 173:20 174:5 187:13 221:17 234:9,11 256:12 256:12 266:3 274:19 275:3 286:18 288:8 291:2 309:8,18 328:19 332:15 333:3 342:1,5 343:8,8 350:9 361:3 383:10	357:21 Granted 165:9 grants 93:20 160:19 176:4 185:6,10,16 186:2 202:18 235:3 356:17 357:20 graph 64:3 graphic 107:11 123:9 grasp 31:15 grateful 173:11 gravity 135:15 209:18 gray 107:12 183:22 great 16:14 19:5,8 28:13,13 75:15 101:11 136:11 151:13 156:18 157:4 162:7 165:1 180:21 193:15 199:20 319:16 379:22 greater 64:1 122:14 244:22 279:13 greatest 75:16 greatly 315:13 347:13 green 182:13 Greg 156:20,21 grid 2:4 21:5 140:16 300:18 304:15 Grimm 179:5,10 ground 94:6 176:20 178:19 180:2 250:10 332:3 Groundhog 27:12 33:9 group 7:21 35:17 72:7 82:17 155:5 155:10 156:14,16 157:13,13 158:9 164:17 166:2 183:13 192:13	199:20 206:2 240:22 313:6 341:22 343:15,16 347:19 359:2 380:9 382:21 383:5 groups 52:16 55:9 55:17,20 95:10 100:5 248:15 336:16 349:13 383:5 grow 59:18 141:12 growing 35:7 43:8 140:12 376:5 378:6 grown 225:16 374:12 growth 115:12 116:7 117:6 118:1 118:1,20 122:6 140:8 178:9 377:21 guarantee 208:19 guard 85:21 217:19 217:21 guardians 67:22 gubernatorial 177:11 guess 48:4 52:14 100:9 124:3 133:3 139:15 141:9 142:1 203:19 213:2 257:8 287:4 288:6 303:12 306:11 312:5,9 320:3 330:19 359:3 362:6,14 365:8,10,22 380:13 guessing 226:19 guesstimating 212:18 guidance 84:1 172:13 248:19 361:2,5 363:2,2 363:17 364:16 370:16	guide 158:17,19,22 159:5 Guidebook 159:22 guided 154:22 guidelines 59:10 60:1,4 85:20 guiding 166:5 guise 339:10 gulf 123:20 132:8 gun-shy 249:2 guy 296:9 322:7 328:18 348:19 guys 99:11 142:3 168:8 199:18 208:13 218:17 227:2 229:7 239:20 291:22 293:1 364:6 367:5 382:21 Gwynette 157:6	handled 317:20,20 handles 204:14 handout 57:18 63:8 86:20 124:7 333:15 371:1 handouts 63:12 hands 159:12 264:10,12,14 277:2,4 294:7,8 294:10 308:12 344:8 355:17 366:20,22 382:8,9 Handy 99:22 Hanesville 113:19 hanging 365:15 happen 16:19 25:16 48:13 104:8 106:18 107:4,10 109:4 115:10 122:21 126:11 139:13,19 140:9 237:19 301:22 302:18 happened 40:21 106:22 107:16 108:5 115:11 121:21 313:16 316:18 happening 31:17 40:6 249:13 happens 115:22 116:22 294:15 320:8 348:18 happy 11:2 18:5 28:6 97:2 127:22 161:10 272:18 290:7 319:18 hard 10:17 13:3,5 16:19 17:20 47:10 47:15,16 109:18 117:9 151:2 163:20 174:21 379:19 harder 134:7 137:15 373:16 harm 147:19 harmed 137:14
--	---	--	--	--

harmonization 221:7	274:10 279:20 285:16 329:17 330:9 355:10	326:13	202:14 210:15 212:18 287:20	hot 133:12 170:15 hotly 49:13 HOTZONE 152:2
Hartford 2:4 22:15	hearings 11:11 54:13 82:11	he'll 45:10	hits 312:3	hour 78:7 172:14 172:18 219:1 226:19 228:5,6
haste 290:21	hears 229:18	high 7:3 126:17 143:9 363:8	Hjalmarson 157:6	House 16:17
hate 289:18	heat 9:13	higher 69:10 121:15 132:21 134:18 135:15 143:18,19 200:5 253:20 275:16 346:8 359:12,15 368:9 372:11 376:4,7	hold 17:11 285:12 320:14	households 56:22
hats 99:4	heating 134:16	highest 17:19 61:14	holding 34:18	Houston 151:17 152:3
haul 25:19	heavier 135:17,18	highlight 58:17	holdout 347:18	hub 105:2,3 107:12 132:3 133:13
hazard 160:9,11 243:18	heavily 79:3 181:22	highlighted 234:18 236:19 237:3,4 305:16 371:11	hole 328:18	huge 15:2 31:6 79:9 85:11 111:1,6 131:11 167:3,6,6 306:17
hazardous 1:2,8 2:10 3:2,14,15,17 4:12 8:8 13:11 21:3 45:7 56:8 147:20 158:15 164:19 165:7 166:5,9 209:3 219:5 229:9 235:7 236:18 247:6,11 247:16 252:3 340:3 345:4 381:17	heavy 41:18,18 54:21	highlighting 194:1 299:18,19	home 70:3 80:12 331:20	human 146:2,3
hazmat 152:10 153:18,18	heck 7:12	highlights 58:1,4 152:21	Homeland 154:19	humidity 6:22
HAZWOPER 167:14	held 24:17 62:6 155:11 309:3	highly 278:14	homeowner 202:1	hunky-dory 168:5
HCA 212:5,6	hell 373:5	high-confidence 143:14	homeowners 195:13	hurt 189:21
HCAs 48:22 65:1 77:4,16,21 78:1,2 78:5	help 42:8 58:9 76:16 83:14 84:19 84:20 91:9 94:11 96:2,2 156:4,6 158:18 159:7 160:12 162:9 176:20 178:14 180:13 185:1,17 197:4 206:3 207:12 214:14,14 231:22 284:9 321:14 330:8 333:6 336:22 337:15 338:2,8	high-consequence 38:16 166:13 209:20 367:19	homes 57:13 59:5 292:8	hydraulic 109:7 110:7
head 312:4	helped 41:7 75:7	high-level 103:1 136:22	homework 359:3	hydro 275:18 332:9
headed 25:17	helpful 33:19 62:19 261:16	high-tech 71:13	homing 101:19	hydrocarbon 125:21
heads 350:6	helping 93:20 153:17 207:7	high-volume 109:7 110:7	honest 54:6 251:2	hydrocarbons 109:1,12 111:15 112:17 115:7 127:2
hear 9:11,14 34:13 39:10 41:12 50:2 72:2 104:13 128:13 292:6 333:7 336:19 337:5	henceforth 7:7,13 7:22	Hildebrand 156:21 172:3	honestly 95:2 96:4 174:22 199:11	hydrostatic 235:1
heard 27:11 29:10 30:17 55:13 85:5 85:5,6 96:22 109:4 199:18 322:5 330:3 359:7 365:6	Henning 3:18 4:17 101:13 103:4 128:21 133:2 136:21 139:15 143:20	hire 303:14 304:10 304:17 316:2,3 330:16	honesty 274:18	hydrotest 314:13
hearing 41:6 50:5 55:11 76:20 101:4 164:9 261:11	Henry 105:2,3 107:12 133:13	hired 325:10	Honorable 1:18,21 2:5 10:8	hyperbole 44:14
	hey 95:17 143:13 231:4 317:13	hiring 317:5	hope 17:10 47:13 47:14 51:6 91:22 145:8 187:16 197:20 293:2 372:14 373:6	
		historical 162:21	hopeful 47:10 163:4	
		historically 135:16 360:6 378:8	hopefully 10:15 42:8 57:20 61:5 145:6 159:6 214:2 217:9 220:15	
		history 104:21 105:20 106:17	hoping 217:5 223:1	
		hit 58:1 76:19 82:22 83:1,1	horizon 14:15 38:1 38:3,13 176:9	
			horizontal 109:9 126:17	
			horribly 203:18	
			hospitalizations 36:3	
			host 34:18	
			hosted 151:16 152:1 179:15	
				I
				IBR 223:19,21
				ice 31:10
				ICF 3:18 4:17 101:13,15 103:8 103:22 111:22 113:11 117:14 124:3 133:4 139:17
				ICF's 115:16 138:2
				ICS 100:16
				ID 189:6
				idea 67:14 182:11 233:5 275:4 288:8

363:16 373:4 379:22 ideas 62:21 227:3,8 255:12 380:3 identical 189:16 identified 78:14 112:2 240:20 265:4 375:20 identify 34:10 62:1 137:13 205:21 206:3 211:7 212:16 222:19 227:14 259:13 269:9 identifying 376:8 IG 12:20 30:7 45:6 46:3 ignore 30:7 270:21 II 218:12 ILI 31:20 ill 80:13 Illinois 1:21 19:19 44:20 132:3 184:3 imagine 10:19 38:12 249:3 immediate 81:10 339:13 374:6 375:11 378:3 381:3 immediately 82:19 IMP 34:13 impact 166:16 203:7 225:22 244:22 245:3,6,7 248:18 267:16 279:7,10 280:12 298:14 301:1,10 315:13 317:3,4 339:16 349:8 impacted 36:16,20 impacts 88:20 233:16 267:22 280:16 297:22 298:11 299:3,6,13 300:5 349:6 imperfect 196:20 impinge 325:7	implement 78:15 188:16 implementation 14:5 148:4 160:8 185:22 223:22 implemented 139:22 181:8 182:14,15,16,18 182:19 184:13 328:21 implementing 64:11 78:11 181:20 implication 111:12 381:4 implications 104:5 108:18 126:22 128:7,18 145:10 146:12 335:11 implicit 202:9 important 9:19 10:2 25:11 29:7 30:3 36:16 37:2 45:17 47:21 48:7 54:10 64:8 141:11 161:20 200:13 211:9 217:14 220:19 223:5 266:2 289:20 306:12 321:21 322:7,18 337:15 376:17 importantly 243:19 imported 122:18 importing 102:14 imports 118:22 impose 234:2 279:13 imposed 356:14 imposing 357:5 impossible 254:19 impractical 323:16 impressed 102:7 382:21 383:1 impression 376:15 impressive 171:10 improve 14:21 15:1	15:3,6,14 57:16 58:7 60:19 61:20 62:9,22 66:20 69:12 70:20 75:3 76:3 77:7 159:19 160:21 185:22 214:22 improvement 60:3 65:2,7 79:9 82:6 85:6 116:8 improvements 72:17 improving 19:13 60:8 70:7 78:10 78:12 148:19 220:7,9 327:15 inadequacy 31:11 inadequate 188:5 188:13 190:21 191:1 193:8 194:10 inadvertent 244:10 299:22 inadvertently 271:9,16 360:17 inappropriate 314:12 incentives 314:22 incidence 66:2 incident 11:13,15 14:15 73:12 100:16,17 160:15 163:20 168:21 169:5 180:17 196:17 218:20,21 219:1 250:3 329:1 incidents 35:4,14 62:8 63:17 65:11 65:12,14 66:9,14 66:18 67:12 72:20 72:21 78:10 82:14 96:4,4 148:7 153:18,19 160:17 169:13 189:21 252:1 inclined 373:20 include 16:6 58:7	167:17 254:13 298:3 306:18 313:17,18 353:9 included 321:4 362:17,17 363:3 including 40:17 61:21 62:11 148:17 171:2 177:2 247:22 248:13 306:10 353:7 inclusive 362:19 inconsistencies 234:2 292:10,16 292:22 293:2 inconsistent 84:3 incorporate 178:16 215:13 224:9 340:16 356:16 incorporated 2:16 215:15 270:2,5 incorporates 204:13 264:2 incorporation 48:17 incorrect 269:14 356:1 increase 16:3 69:3 69:5 111:1 325:12 increased 98:16 118:22 141:5 increases 106:6 127:18 373:12 increasing 16:7 60:21 61:3 115:7 incredible 36:2 270:22 330:4 incredibly 348:21 incremental 69:5 125:3 incumbent 73:1 incurred 356:9 incurring 327:7 independence 123:2 136:16 322:14 independent	322:16 Indianapolis 152:6 indicate 320:6 indicated 103:8,15 126:14 258:18 indicative 29:1 39:4 indices 268:15 270:19 indirect 235:3 236:17 238:4 261:20 356:17 357:10 358:2,13 358:19,20 359:8 359:11,12,14,21 360:2,4,22 361:22 362:3,4 363:18 364:16 individual 71:10 115:4 130:9 140:4 248:11 261:18 298:6 302:9 304:20 306:13 307:8,10,15 309:15 310:7,22 311:12 312:9,13 312:17 313:4,9 314:21 319:9 330:2 331:2 332:10 333:11 334:8 337:6,8 340:5,7,8,18,19 357:16 individually 237:4 individuals 87:11 232:12 310:9 316:3 inducing 330:4 indulgence 145:17 171:12 265:18 industrial 126:19 126:21 134:17 214:9 284:15 289:6,12 347:16 industries 74:4,10 78:19 79:20 137:13 292:16
--	--	---	---	--

industry 20:17 26:19 33:15 34:5 34:8 63:20 69:4 71:10 74:14,14,15 74:15,16,16,17 87:2 89:3 90:8 95:9,11,21 96:5 98:6 100:22 106:19 108:11 135:16 139:14 151:16,20 153:22 154:1 157:5 160:4 163:15,18 164:3 165:8 168:17 232:22,22 256:20 272:9 274:21 275:12 306:10 312:22 314:20 328:13 348:1,2 349:13 375:2 377:11,19	121:20 123:22 124:20,22 125:1 125:13 126:2,12 128:19,20 129:4,5 132:17 133:1,21 133:22 134:6 141:1,6 142:5,6,7 145:11 165:15 188:12 221:9 249:4 infuse 160:10 INGAA 73:11 78:16 100:19 120:5 259:12 311:6 312:1 313:12 319:8 321:16 325:18 328:5 329:12,18 329:21 332:5 334:14,22 336:12 337:1 338:5 340:4 340:8,16 initial 349:1 initiate 206:6 initiated 221:7 259:8 initiative 41:10 245:3 initiatives 14:11 54:18,20 57:16,17 62:9 68:21 69:1 147:16 233:8 injured 80:13 injuries 35:21 36:15 37:7 295:19 injury 35:4,15 81:1 160:17 inland 49:7 inline 224:12 innovative 62:9 input 15:5 76:16 158:22 181:22 inside 38:2 39:13 78:2 80:4,4 insignificant 341:15 inspect 306:7 311:3	311:21 312:18 315:7 318:11 321:11 323:15,16 324:14 330:18 331:15 337:20 inspected 308:7 309:10 310:3,18 311:11 inspecting 318:6 inspection 16:7,13 17:7 46:18 94:20 94:22 187:22 224:13 235:17,20 236:15 251:21 261:20 297:2,17 298:21 301:2,14 302:6 303:4,15 304:3,8 306:1,5,6 306:17 307:20 308:15 310:6 311:7,9,11,16 312:15 313:6 314:17 320:7,7 321:9 323:22 324:6,9,18,22 325:15 330:16,19 332:8,11 334:22 335:12,14 337:9 337:18 338:20 340:6,7,18,20 370:2 371:12,22 373:5 374:12 inspections 95:7 234:21 296:21 298:8 313:7 316:18,21 328:7,8 328:9,9,12,15,16 329:22 337:7,12 inspector 12:1,3 94:4 98:5 309:15 317:5 320:16,18 320:22 331:14 inspectors 88:4,14 94:2 233:8 304:16 314:14 320:10,20 324:13 installation 59:6	324:8,10 installed 250:9 252:17 325:1 installing 330:20 instances 130:3 instantiating 269:13 institute 3:22 84:10 85:1,14,19 86:11 instituted 81:18 83:14 instituting 79:14 80:16 institutionalize 150:7 156:6 Instructors 152:5 instrumental 176:12 integrated 46:17 82:4 integrating 71:17 integration 69:13 77:10 140:22 integrity 14:1 34:6 34:10 45:8 46:11 49:1 59:15,16 64:11,22 67:1 72:9 77:8,9 78:10 82:3,11 99:22 100:4 143:14,15 143:17 235:7 342:3 367:18,19 370:10 371:8 379:4 intend 41:16 42:6 193:8 377:1 intended 179:1 190:2 260:22 297:10 303:10 339:17 379:6 intent 185:16 189:12 311:3 313:10 intention 285:16 380:20 interaction 87:1 interactive 78:13	interest 46:22 131:21 146:8 151:12 265:17 337:20 338:1 interested 43:2 49:12 61:17 128:11 353:4 interesting 45:12 87:8 105:15 135:13 136:5 interests 30:4 197:7 interface 100:20 interim 37:22 internal 14:16 15:22 29:11 224:13 233:1 295:16 317:5 internally 14:13 43:18 179:20 377:9 International 3:18 103:9 152:3 internet 215:22 interpret 273:10 306:17 interpretation 267:12 284:4 334:17 interpretations 208:6 interpreted 266:22 283:6 284:6,20 interpretive 268:3 interregional 124:4 interval 350:15 intervention 36:18 intimate 285:22 intrastate 88:9,10 introduce 19:22 21:12 22:17 101:10 367:14 introduced 369:1,8 369:11,22 380:8 introducing 358:9 introduction 20:4 278:21
--	---	--	--	--

Introductions 4:5	164:20 167:3,6	319:14 330:2	329:5 339:1	juggling 212:9
introductory 27:20	170:6 199:22	341:21 342:2	364:19 374:10	July 1:14 19:4,4
inventory 156:4	207:18 212:7	361:16 370:7	375:15 377:3	50:8 51:2 250:3
invest 71:14	216:7,10 219:2,4	item 9:3,7 26:3	379:18 383:2	jump 132:22
investigate 91:1	222:5,7,11 223:13	55:6 92:21 175:8	JEFFREY 3:3,14	141:16 186:14
investigating 90:19	225:10 238:5	200:20 203:5	Jeff's 147:5	221:2 236:11
investigation 192:7	251:1,15 254:21	226:8 237:10	Jerry 154:7 156:16	327:17
250:2 315:12	261:21 265:6,7	247:18 258:22	161:19	jumped 20:1
investigations	268:3 269:8	367:2	Jerry's 162:9	jumping 185:4
16:12	270:16 273:9	items 12:6 45:21	job 54:5 68:16 98:2	June 155:11,12
investing 131:2	277:8 278:13	47:19 209:11	127:6,20 173:6	jurisdiction 149:9
investment 61:3	282:14 290:17	225:8 227:11,12	175:2 177:22	287:9
125:7 131:6,12	294:15 296:18	227:15 234:6	234:9,12 241:9	jurisdictional 88:8
134:21	300:11 303:21	236:1,3,10 237:4	255:10 308:19	88:10 287:7
investments 125:4	318:18 319:9	238:1,2 239:9	316:13 338:20	justice 210:18
invite 90:13 145:16	321:21 323:8	240:7 241:1,10	339:22	justifications
145:17 165:19	328:22 331:21	261:4 263:10	jobs 137:7	193:10
invited 177:17	335:8 339:9,12,13	382:15,22	John 3:8,20 5:14	justified 201:14
involved 10:6	352:17 367:4	iterative 77:1	6:10 23:8 226:13	301:1,6
90:18 95:2 205:5	370:3 373:2	it'll 123:14,15,15	237:6 240:18	justify 346:15
208:5 209:15	issued 15:12 17:17	187:7	241:10,17 250:15	justifying 349:11
306:14 315:10	18:9 67:9 85:18		264:21 265:16	
325:3 337:11	247:8	J	274:5 277:6 288:7	K
involvement 33:4	issues 9:20 10:1	J 2:3,7,12	300:10,21 342:8	Kalamazoo 72:21
involving 35:14	15:18 18:17 31:18	January 29:22	380:5	Kansas 353:6
in-house 303:1	37:19 42:7,14	133:9,14 153:5	John's 47:16	354:1,8
325:9	47:4 48:1,7,16	209:7	240:12	Katrina 105:13
in-person 200:11	50:6 54:8 62:3	jeeped 333:1	joined 149:6	keen 295:16
in-service 267:17	73:4 74:1 87:5	Jeff 2:8 4:8 6:7 8:6	joiner 262:1 354:11	keep 33:3 46:21
Iowa 2:7 20:10	91:15,18,19 92:19	13:2 18:21 22:11	354:21	50:4 158:11
92:2,3 172:22	94:16 96:1 101:19	22:22 24:14 26:5	joiners 235:1,18	171:14 172:11
201:5 205:10	102:22 103:21,21	51:20 53:21 55:6	236:16 345:22	184:8 218:13
246:14 323:9,10	103:21 134:4	56:12 86:13 88:17	joining 31:22	252:14 351:2
342:13 347:15,17	137:12,21 144:3	90:1 93:12 94:13	joint 1:12 8:7 85:2	353:12 359:20
350:21 359:21	151:7,19 157:3	95:16 96:13 98:3	294:4 346:4 348:8	377:10
iron 18:16 42:3	166:1 173:4 205:6	99:18 101:9 103:4	348:12,16,18	keeper 176:21
isolation 78:7	209:14 210:16	103:5,15 126:13	350:3,4,6,8,16	keeping 13:2 354:6
Israni 3:10 215:5	214:16,19 223:7,8	128:3 129:10	353:21,22	keeps 101:20
222:15 232:7	223:11,16,18	132:10,11 141:21	jointing 348:19	key 73:18 75:10
367:4,6,6 372:17	227:21 230:1	175:7 199:2	joints 319:15 346:3	79:12 81:15
issue 31:20 32:6	232:5 236:12,14	200:19 205:2	346:8,21 348:22	165:22 206:3
36:19 43:2 49:15	239:17 259:1	206:8 210:5 213:2	351:3	233:21 260:7
49:19 50:13 54:14	261:20 265:3,8,9	213:4 221:19	joking 382:15	keys 77:19 233:22
54:16 62:17 74:19	268:16,18 275:19	232:7 250:15	Jon 292:1	Keystone 123:13
100:21 139:4	279:3 282:6	259:2,4 261:2	JONATHAN 3:19	kick 326:15
142:2 146:9	285:22 290:4	269:20 282:17	Journal 101:22	kicking 326:16
161:17 164:3,14	318:5,10,13 319:2	286:5,6,12 306:21	juggle 210:7	kickoff 155:11,16

kill 189:21	60:17 67:16 68:12	295:15,17,17	191:7 230:6,8	114:22 318:17
kind 27:20 39:8	69:7 72:8 73:3,7	296:4 302:12	231:11,16 236:22	357:9
58:17 74:22,22	73:18 74:3 75:9	303:13,18 304:15	254:16 255:1,7	largest 152:6
77:14,17 78:8	77:20 79:2 80:9	304:17,18 308:7	258:2,16 261:13	Larry 2:12,18 20:6
80:21 81:5,5,13	81:12 82:1 83:20	310:13 311:14	262:9,14 264:3	20:15 157:6
82:6 84:12 87:7	87:13 89:3,14	321:5,9 323:8	276:14 278:3	162:14,15 164:1
99:4 101:17,18	90:1 91:3,12	324:5,21 326:3,4	280:1,5 282:1	284:10,11 285:3
102:12 103:1	96:12 97:13,16	327:1,11 334:17	283:22 284:9	309:20 311:6
105:10,15 107:21	98:3 100:4,17,20	337:19 339:7,20	288:18 290:4	312:21 315:17
112:6,6 113:10	102:7,16 104:18	342:2 350:4 356:4	292:13 293:16	372:17 375:1
122:5,9 123:3	106:16,18 123:18	359:19 363:18,22	295:3 299:16	380:12
133:8 139:21	126:3,4 127:14,20	364:2,6 366:5,12	305:6,12 306:3	Larry's 81:12
141:17,21 142:15	130:7 133:11	377:22 379:13,15	307:20 308:4,5	311:8
162:21,22 166:4	136:15,17 139:19	379:16,22	309:8,13 310:11	Las 106:20
166:21 168:11	142:15 143:13	knowing 36:19	311:2,6 312:1	lastly 47:3 70:19
186:10 195:9	144:7 145:21	74:12 156:10	313:8,12 316:5	87:9
206:18 209:4	148:10 149:14	204:20	318:22 319:2,4	late 6:5 40:17
210:20 213:15	150:13,13,14	knowledge 60:12	320:4 321:2,7,12	206:19 207:3
214:20 217:2	155:22 156:1	169:6 295:22	324:2,4,12,16	lateral 134:4
218:12,12 233:17	159:15 161:15	348:17	325:18 327:15	277:16 278:7,8,17
240:22 255:2	162:5,8 163:6,12	known 90:5 109:11	328:5 329:12,12	278:20 279:3,21
286:7 321:5	163:13,19 164:2	172:4 205:1	329:15,19,20,21	282:20 283:9,15
336:22 358:5	164:13 165:4	knows 142:13	331:10 333:7,8,10	283:18 286:20
361:15 362:9	169:7,18 172:3,5	Kristin 3:13 23:9	333:18,20,22	287:6,17,19
kinds 104:7 114:9	173:14 174:15	Kuprewicz 2:15	334:14,22 335:6	laterals 125:17
119:14 142:20	179:21 180:16	22:8,8 52:13,13	336:13 337:1	latest 68:14
143:22 145:7	183:15 184:13	141:20 205:16	338:11,14 340:4,9	Laughter 24:6,16
177:12 190:18	187:18 189:18	207:18 256:11	340:12,16 341:2	27:3 52:11 80:6
203:12 289:10	192:2 193:17	260:6,7,12,16	343:18,20 344:1	90:6 92:5 97:18
359:1	196:22 199:14,18	274:12 321:18	344:20,21 346:14	170:14 174:18
knew 72:13	200:4,10,15 201:4	322:19 341:5	349:10 351:5,14	183:3 201:3
know 6:17 10:1	202:2,15 203:3,13	372:20,20 374:4	351:22 352:1,2,7	207:22 263:6,16
13:4,10 16:18	206:18 208:1	377:16	352:11 353:19	276:9 288:16
18:22 20:2 23:20	210:7 211:9 213:2		355:4 360:1,14	290:14 296:11
25:11,15,21 26:11	216:4 217:6,22	L	365:18 367:17	308:2 317:15
27:8 29:2,3,10	226:15 229:7,7	L 2:4	368:8,20,22,22	323:2 338:12,16
30:13 31:1,2,8,16	230:18 231:3,17	lack 190:7 246:14	369:14,20 370:2,8	342:14 343:6
32:18 33:17,18	233:13 239:18	278:18	370:14,19 372:15	351:11 362:13
35:5 36:14,21	240:4,9 241:10	lag 107:16 301:21	Lanny 2:11 20:21	381:21 382:16
38:20 39:2,3,18	248:21,22 257:19	LaHood 9:21	31:22 32:1,2	laundry 234:16
40:20 41:12 42:4	257:19 265:20	177:21	149:6 156:14	lavalier 26:9
44:12,13,14,22	268:20 269:14	laid 47:6 291:8	161:19 162:9	law 93:16 184:12
46:5,8,22 47:15	270:15 271:17	land 47:1 60:22	165:20 327:21	184:13,15,16,18
48:10,22 49:1,16	272:9 275:1 281:8	160:12	large 16:2 66:4,6	184:20 188:15
50:13 52:21 53:9	281:13,18 286:21	landfall 330:4	117:20 124:19	189:15 190:4,22
54:3,12,15,19	290:18 291:2,9,11	landscape 185:2	126:9 159:3	192:15 193:7,9
55:8,13 56:1	291:14,22 292:19	language 10:13	larger 48:14 98:19	201:15 202:3,8

203:21 204:4,8 219:22 275:10,17 358:4,7,8 361:8 361:13 363:6 laws 60:8 93:15,17 93:19 175:21,22 176:2 181:3,5,6 182:4,6 183:8,15 184:6,6 185:3 189:17 194:7 198:21 204:2 205:18 206:2,6 lawyers 373:2 layer 110:4,5 layered 109:15 lays 61:12 LDC 99:6 lead 175:13 leadership 62:5 67:4 163:19 199:22 leading 93:13 160:16 189:20 353:21 lead-in 325:14 leak 42:10 69:8,11 195:7 196:17 210:1 225:4 234:21 243:2,5,20 244:8 245:22 246:2 268:19 leaks 246:19 319:16 leaning 336:22 learn 62:14 68:5 92:2,3 168:10 learned 62:8 69:21 81:10,14 151:11 151:13 171:21 learning 77:2 87:5 148:5 155:17 191:22 leave 18:20 45:19 300:8 leaves 310:20 380:16 leaving 239:4	365:15 led 157:11 left 11:18 63:16 92:14 183:14 218:2 252:5 323:14 376:15 lefthand 65:10 leg 68:13 70:6 legal 360:16 legend 193:17 legislation 29:19 54:6,9 91:8 legislative 58:3 141:18 legitimate 308:18 357:2 358:14 359:14 364:9 373:9 legs 131:1 length 277:18 278:6 283:9,14 lesser 80:12 259:1 lessons 62:7 69:21 81:10,14 148:5 151:13 letters 177:2,6 197:20 234:14 let's 6:4 120:12 172:18 227:12 228:17 261:3 284:8 291:15,16 319:10,22 321:18 326:13,14,19 level 7:2 39:22 40:1 67:18 73:20 89:13 89:20 110:4 112:6 127:10 132:21 162:8 175:20 189:3 203:1 285:21 318:4 325:16 328:17 358:21 362:3 363:2 leveled 65:8,18 66:2 leveling 64:16 66:8 66:20 67:5	levels 69:11 107:12 108:8,13 112:4,9 122:22 132:14,20 132:20 167:15 322:16 leverage 156:11 leveraged 150:20 liaising 170:7 liaison 169:4 Lidiak 3:22 379:2,3 lies 294:19 life 56:21 149:12 174:21 lifetime 114:4 lifts 41:18,19 54:21 light 54:21 135:21 136:1 151:18 318:19 lighter 135:15 lightly 274:22 liked 175:3 limit 193:5 356:17 356:22 358:16 360:15 362:20 limitation 202:10 321:6 limitations 42:22 236:16 limited 37:20 128:16 146:5 188:8,17 239:7 323:18 358:3 Linda 3:5 23:2 34:12 50:3,17 94:21 95:16 362:6 374:8 382:19 line 2:17 33:6 42:14 65:13,15 110:2 126:13 144:5 150:5 187:20 220:14 277:16,18 278:7,9,11,18,19 279:3 280:8 281:7 283:7,12 287:6,6 287:8,17,19 293:22 297:3 372:6 373:16	378:6 lines 48:10 59:12 117:16 118:10,11 120:10,11 125:2 125:10,13 209:19 212:8 234:22 243:3,5,7,8,9,12 243:13,14,18 244:7,20 246:1,3 246:6,9,20 247:1 247:3 254:11 277:11 279:21 282:20,22 283:2 286:21 287:10 289:3,10,12 293:16 378:15 lining 183:18 184:1 184:2 links 39:2 99:18 243:17 liquid 1:8,9 2:10 4:12 7:15 8:2,8 13:11 20:7,16 21:9,16 30:19 36:10 45:7,10 47:10 56:8 88:10 88:13 100:18 136:5 162:19 163:14,18 209:4 210:21 219:5 229:9 235:7 236:18 238:19 244:20 247:6,11 247:16 309:22 312:22 322:20 325:18 336:18 343:16 344:14 367:4,18 370:4,10 372:21 375:2 377:22 378:5,17 379:4 383:5 liquids 21:3 22:3,9 45:8 63:20 87:6 104:6 109:13 113:6 120:20,21 135:13 238:15 248:3 325:14	327:22 336:6,11 336:14 340:3,22 342:3 345:4,5 381:17 list 12:6,12,13 18:22 60:17 62:20 172:16 202:6 224:5 225:14 227:15 234:16 236:21 237:11 238:1,11 240:6 241:11,12,17 242:12 262:21 362:18 listed 156:13 186:15,20 238:4 263:10 284:18 listen 28:14 68:18 75:19,22 79:10 164:5 170:12 378:11 listened 44:6 164:15 listening 70:10 75:20 167:11 lists 241:10 literally 77:18 117:15 357:12 little 6:4 20:1 27:11 27:20,22 28:4 33:8,17 42:6 44:14 46:16 49:3 49:14 52:19 56:18 57:10,21 72:6 86:22 87:16 98:22 99:17 101:14 102:4,5 104:3 107:16 113:16 114:17,19 117:9 120:19 121:15 124:8 134:2,7 136:22 138:1 139:16 143:18 145:6 168:4 171:17 174:1 187:21 200:17 215:18 230:5
---	--	--	---	--

231:3 233:5	332:21 346:18	103:20 106:22	120:14,19 121:11	lower 127:10 372:7
242:10 262:16	381:5	108:2 115:12,21	121:20 122:20	372:9 376:12
265:22 303:11	longer 35:18 49:4	117:14 122:4	123:14 125:7,16	lowered 266:9
307:5 316:18,21	113:13	123:4,18 124:10	125:16 128:13	lowest 375:18,22
331:16 338:3,8	long-line 119:10	125:2 127:5,9	129:8 133:1 134:3	low-frequency/hi...
341:4 347:1	long-term 35:5,6	137:11 138:3	135:10 137:20	74:5
348:15 372:22	35:12 106:6 127:9	150:1 157:17	139:1 146:5 148:3	low-hanging 34:16
373:11,16 375:17	127:18	159:18 180:11	151:11,18 152:1	240:14
377:19 378:10	look 7:11 12:15	182:22 209:16	155:17 161:18	low-pressure
live 28:3 116:1	14:16 18:3 19:11	210:1,10 214:6,7	165:9 166:14	252:18
131:7 147:5,7	36:4 44:15 57:4	215:13,16 219:7	171:19 172:10	low-strength 259:8
livelihood 308:22	64:5 66:21 72:15	219:19 220:5,7,9	176:1 177:14	314:16
lives 356:7	73:22 80:14 92:1	220:11 221:8	178:21 187:13	low-stress 235:8
LLC 2:6,17	104:21 108:4	222:5,7,17 223:2	188:2 189:11	239:12 243:18
load 134:16 141:5	115:16 116:13	223:7,9,10,15	199:13 200:15	LPAC 236:8
358:19	125:11 126:8	224:2,7 226:22	204:18 207:9,11	lucky 9:12
loaded 88:20,21	128:12 133:17	262:9 281:15	207:19 209:13	Lula 1:18,21 6:13
loading 358:22	137:8,15,17	285:7,10 293:1,1	211:12 216:19,20	8:5 56:1 162:12
loans 351:12	138:16,22 139:4	300:18 305:5,6,11	218:13 223:20	lull 132:16
local 56:20 118:15	140:2 144:8,21	312:17 319:22	226:9 233:12	lump 241:19
129:15 154:2	159:16 181:2,4,6	321:3 335:7 341:1	244:13 274:15,16	L&G 137:21 138:6
198:16,20 292:8	181:7 182:3 183:1	363:1 380:3 381:9	275:18 281:12	138:17
located 243:12	183:7 191:3	looks 26:4 63:9	285:13 286:17	L.P 2:13
location 48:21	193:15 196:19	84:10,11 123:9	288:3 292:1,15,20	
105:5 194:18	203:7 209:3	124:4 328:18	294:22 300:20	M
273:4 277:19	225:11 248:15	loose 200:7	301:13 314:15	M 1:18,21 2:2,14
278:9 280:4	269:7,18 271:12	lose 291:5	315:10,20 318:5	2:18,22
locations 124:1	273:16 285:8	loses 89:3	318:14 323:9,11	Madam 51:19
192:19 220:13	295:2 299:15	losing 143:7	329:13,17 332:20	366:13
221:6 243:13	304:14 307:7	lost 46:4 53:7 218:2	335:7 336:9	magazine 153:8
266:15 277:12	313:22 314:6	289:19 291:2	337:10 342:1	Magellan 2:12 20:8
290:1	321:18 322:1	lot 11:4 14:14 15:8	345:18 346:11	magnitude 114:15
locator 197:12	335:11 351:13	15:13 16:14 18:1	348:2 349:5	main 297:3 330:20
logic 278:18	360:20 363:10,21	29:13 36:1 38:2	356:19 377:9,20	mainline 119:10
logical 37:5 371:18	364:15 367:16	38:21 40:6 41:2,7	383:10	maintain 32:21
Logistics 2:18	380:10	43:12 46:3 47:19	lots 60:2 143:3	174:21 309:4
20:16	looked 13:17 78:18	48:3,18 50:5	172:16 177:15	maintained 126:6
lone 133:8	120:5 128:11	51:10,10,12 54:7	180:8 189:8,8	363:6
long 12:5 18:14	136:19 142:16	54:19 55:11,16,17	197:1,17 210:22	maintaining 60:10
25:19 27:15,18	164:17 180:19	60:10 69:22,22	211:12 225:17,18	maintenance
37:7 39:6 42:15	251:15 255:2	72:16,17,22 73:4	232:20 243:15	128:17 131:16
44:7 48:5 90:5	looking 38:10	73:4 74:21 76:9	377:5,5	135:9 146:4 254:6
131:5 137:19	50:19 61:2 64:8	79:16 83:5,6,7,15	loud 82:10	major 29:3 38:16
149:5 170:9	64:13,15 65:2	83:15,16,22 84:2	Louisiana 105:6	45:2 90:18 141:4
171:21 205:5	67:20 70:13 74:10	85:3 86:6 91:15	love 48:20	173:13 201:18
226:13,16 228:2	77:12,17 81:21	98:11 109:12	low 108:17 113:1,9	212:4
240:5 304:7,9	82:7 87:4 90:1	113:14 119:8	166:12 259:13	majority 119:9

making 37:14 46:15 48:15 69:8 136:12 145:5 190:15 191:18 220:5 241:4 275:6 279:16 288:2 301:22 302:18 332:22 350:2 352:5 373:3 381:17	208:10 210:7 211:14 212:10 215:20 218:14 224:5 225:1,18	market 103:10,21 105:5 115:17 124:17 127:19 135:22	matter 65:5 70:4 84:17 93:6 101:6 150:9 173:17 202:3 217:21 221:6,8,12 264:18 279:12 336:17 366:16 383:13	measure 156:2 254:13
man 174:20 270:15 329:16	mandatory 297:16	marketplace 61:7	mature 106:3,14	measured 278:9 280:6 282:3
manage 135:11 208:4 225:15	manner 126:7,21 137:19	markets 104:1,1,21 105:16 118:9 119:13,22	maverick 141:21	measures 91:1
managed 78:15 121:8 126:20 160:20 174:16 203:13	manufacture 254:3	Marriott 1:17	maximum 186:4 257:11	mechanism 131:10 191:22 192:3,4
management 14:1 14:6 32:15 33:20 34:6,10 45:8 46:12 47:4 48:21 49:2 59:15,16 60:2 64:12 65:1 67:2 68:10 72:10 76:21 77:8,9,20 77:22 78:10,15,20 79:5,6,14 80:17 82:3,12 84:11 94:21 99:22 100:3 100:16 140:17 168:21 169:6,12 169:14 206:13 342:3 367:18,19 370:11	manufactured 253:7	marshal 154:8 156:18	Mayberry 3:6 45:9	mechanisms 59:21
manager 3:9,12 91:21 93:11	manufacturer 253:4 292:3	Marshall 11:14 38:17 44:8	ma'am 382:15	media 28:15 37:11 38:14 73:6 136:13 179:15,18
managers 88:3 100:12 177:8 371:8 379:4	manufacturing 254:15,21 255:4	Marshals 154:7 157:2	mean 35:15 102:17 104:14 117:3 128:18 132:18 134:13 136:21 141:9 143:11 144:9 166:17,20 167:6,10 169:7,11 170:3 182:21 241:8 249:9 281:6 282:2 295:7 310:21 311:18,19 313:3,4 325:8 331:18 332:2,8,13 338:19 348:8 353:11 358:5 359:13 365:22 379:3	medical 74:15
managing 208:3,14	MAOP 142:17 211:16 219:4 220:13 225:9,13 235:3,8 243:8,9 253:15,16,21 259:9 261:1 266:13 314:15	Martin 23:22	meaning 114:19 284:4 319:7	meet 103:18 120:1 222:21
mandate 202:21 219:2 244:17	map 183:21 193:15	Marty 34:20,21	meaningful 30:6 34:14	meeting 1:12 6:14 8:7,13 9:1 25:2 42:21 95:13 97:13 155:11,13,16 158:10 159:3 164:9 203:4,6 206:19 207:8,13 211:6 213:9 215:6 215:7 216:1 272:8 382:18
mandated 201:10 219:21	mapping 15:4 159:14,18 183:10 183:10 219:19,21 220:3 221:14 233:16 255:13,14 255:20 256:5	Maryland 154:21	meaningfully 33:14	meetings 45:1 51:1 60:20 79:11 95:9 106:19 197:10,19 200:11 207:10 213:8,14
mandates 11:6,10 13:8 40:14 45:18	maps 182:9	mass 258:15	meanings 313:3	meets 57:8
	Marathon 2:17 21:3	masse 159:16 240:9 240:16 241:13 262:4	means 7:12 13:4 33:4,5 84:5 98:17 116:9 142:4 143:6 182:13,15,20 185:13 204:11 206:13 284:2 291:3 308:10 337:11	member 4:10 20:6 20:9,11,13,15,18 20:21 21:2,4,7,15 21:18,21 22:2,5,8 22:11,14 24:9,19 25:1 51:19 52:7 52:13 56:11 57:1 57:5 58:5 62:18 63:7 72:1,5 78:16 80:7 86:19 87:14 87:21 90:7 92:6 93:2 97:6,11,14 97:19,20 98:1 99:2,5,6 101:3 130:12 132:13 135:6 136:10 139:10 141:20
	MARC 172:21	masses 159:16 240:9 240:16 241:13 262:4	meant 127:5 184:19,22 278:1 281:16 324:21	
	Marcellus 111:18 117:6 118:15 289:21	Massoud 2:19 4:13 10:9 21:7 56:5,9 87:20,22 97:3,10 97:14 146:19 171:16 228:8 294:13 300:15 317:17 323:1,4 325:21 327:18 329:6 337:3 362:10 365:7 378:18		
	March 243:21 381:19	Massoud's 87:15 331:10		
	marginal 112:14 112:14	match 372:15		
	marginally 182:17	matches 109:8		
	mark 187:18 194:16 202:13 259:19	material 147:11,20 164:19 223:19,21 325:6		
	marked 163:17 192:19 194:18 195:3	materials 1:2 3:2 3:15,16,17 150:18 158:16 165:7,10 166:5,9 178:20		
		math 186:5		
		Matheson 34:21		

162:15 164:2	338:13,17 340:2	213:4 222:22	117:22	103:6 147:11,13
165:22 169:10	340:14,21 341:1,5	225:3 256:4	mike 3:10 20:18	161:11,14 187:4
170:6,15 173:10	342:17 343:3,11	mentioning 160:6	26:9 87:13 97:6	214:3 226:18
200:22 201:4	343:14 344:4,16	207:18	99:2 146:19	264:17 299:21
205:12,16 221:2,4	345:2,3,6,8 347:6	mercaptan 284:17	156:21 171:1	329:10 367:10
221:17,20 228:9	349:22 350:12	286:2	215:5 232:7	miscellaneous 5:18
228:14 237:6,9,15	351:7,13,21 352:6	merely 266:16	291:20 320:2	8:16 176:7 199:7
237:20 238:3,8,14	352:15 353:13,19	280:4	335:19 367:3,6	213:20 218:11
238:18 241:16	354:4,14,16,18,19	merit 234:3 285:13	381:10	220:1 231:15
242:6,11,15 244:4	355:2,13 357:18	288:4	milage 35:9 37:5	232:15,17 341:14
246:12 247:20	360:10 361:7,18	message 70:9	mile 283:3,4	367:15
257:8 258:4,10,14	362:11,14 365:6	145:10 156:12	mileage 125:16	missed 350:16
259:17 260:1,6,12	366:13,15,18	163:6 178:1,4,17	miles 58:11 63:17	368:13
260:16 262:8,17	370:22 372:20	180:13,15 197:5	63:21,22 64:4	missing 289:15
263:3,7,13,17	373:13 374:4,16	messages 177:9	65:20 120:10	326:20 367:12
264:5 268:8	375:1 376:14	180:6,22	356:7	368:6,22 370:14
269:11 270:9	377:16 378:19	messed 338:18	milestone 82:22	373:10
271:10 272:4	380:12 381:8,16	350:3	83:1,2	misspoke 376:15
273:2,14 274:12	381:22 382:5	met 1:17 10:18	mill 235:1 259:14	377:1
274:13 276:7,12	members 2:1,10	12:1 118:14,21	260:9,19	mistaken 153:9
276:16,19 280:20	10:6 23:15 28:2	140:7 158:9	million 16:4,5	mistakes 268:20
281:22 282:13	33:2 52:3 54:13	322:15	56:22 58:11 69:4	mitigate 35:15
283:21 284:11	61:13 94:10	metallic 243:8,9	114:14 125:15	169:21 248:18
285:15,20 286:6	156:13 207:12	meter 266:14	185:9 186:3	mitigating 82:14
287:4 288:6,15	226:14 227:1,14	methane 116:20	mimic 340:4	mitigation 78:13
289:1,18 290:10	229:1,2 231:17	121:16	mimics 340:8	160:10,11
290:12 293:6,19	236:3,13 246:10	method 233:3	mind 21:14 31:2	mix 291:15
294:14 295:1	250:16 265:4	255:2 368:11	43:10 102:13	mixed 246:16
300:10,17 302:7	273:1 274:9	369:12	336:11	mode 166:8,10
302:11,22 303:7	297:13 300:9	methods 212:6	mindset 74:9 78:21	model 140:20
304:1,9,12,21	349:19	357:7	81:17,18	157:22 158:5,6
305:2,4,10 307:18	memorandums	metrics 50:13 81:5	mine 27:8 51:8	164:11,16 165:9
307:22 308:3	85:18	Metro 1:17	minimal 234:3	models 128:12
309:11,20 311:4	mention 86:20	Michael 2:2 4:14	245:3,5	164:18 165:18,21
311:17 312:5,16	149:15 151:1	97:4 224:20	minimally 255:9	171:15
312:20,21 313:14	158:12 190:8	Michigan 11:14	minimum 91:13	modes 165:1
315:4,15 316:8	194:5 195:18	38:17 44:8	96:16	modifications
317:10,13,16,19	208:22 213:1	middle 26:11 98:9	mining 196:16	136:1 258:8
320:2 321:17,18	mentioned 45:16	212:16 381:11	Minnesota 154:9	modified 341:16
322:22 323:3	47:5,18 48:18	13:18	156:17 184:3	344:20,21 368:16
324:19 325:13	49:4 94:13,17	Midstream 2:12	minor 49:15	368:18,20
327:21 329:3	99:18 153:2 156:8	20:8	233:16 234:3	modify 158:6
330:10 331:1,8,16	156:17 159:20	midterm 139:12	239:7 240:21	313:18 345:4
332:13,15,19	166:12 167:21	Midwest 118:6	minus 117:17	modifying 342:2
333:14,21 334:5	183:7 185:19	119:13 152:10	minute 28:22 39:10	Moines 172:22
334:13 335:5,21	201:16 209:9	mid-Atlantic	111:20 341:20	moment 101:18
336:4,20 338:10	210:5 211:22		minutes 101:5	102:20 109:16

371:17	mouthful 7:10 8:10	282:19,21 287:18	50:22 100:16	need 16:20 19:7
Monday 187:10	move 18:15 19:13	313:3 314:7	153:16 154:6,20	24:14,14 29:4
money 15:17 16:11	24:14,15 30:1	municipal 99:3,7,8	155:10 156:20	30:11 32:21 34:9
18:8 128:16,16	74:12 82:22 83:1	100:11 323:10	157:1,12 159:13	35:18,20 41:21
130:17 131:2,8,9	93:3 174:7 175:1	336:10,16 347:16	159:17 173:2	48:8 51:11 56:13
131:17 185:21	194:22 195:19	municipalities	176:14 177:8,13	66:10 67:8,19,20
186:7 271:21	199:15,16 200:14	60:17	201:18 300:18	68:15,18 69:7,12
272:10 357:22	200:20 210:9	municipals 100:20	304:15 318:4	69:17 70:13,14,15
monkey 322:13	213:12 214:11	308:15 334:18	nationwide 56:22	70:20 71:14 74:7
month 17:10 132:7	223:1 225:6 227:3	338:7	nation's 58:10	75:2,17 77:12,15
160:1 177:4,13	227:8,19 237:10	myopic 30:13	natural 31:4 34:2	78:3 84:12 95:17
monthly 180:6	240:15 248:20		56:20 57:3,6,8,11	115:19 129:17
months 17:2 132:7	249:11 250:12	N	57:12 58:11 66:17	130:18 139:16
158:21 170:21	257:3,5 263:7,18	NACE 224:20	103:12 104:6	145:22 148:11
171:9 187:15	276:17 291:4	nail 291:13 312:3	105:2 108:2,11	155:21 156:9
206:15,21 209:7	295:4 296:14	name 9:5 40:10	109:12 111:3,4,8	161:22 162:7
213:6,9 346:2	318:19 329:7	42:9 275:22 292:1	112:2,8 113:5,12	169:11 170:2
370:16 371:12,13	335:22 336:22	nameplate 315:21	113:19 114:2	171:17 172:9
371:14,16,20,21	339:4 365:1,19	name's 6:7 146:20	115:18,20 116:3,6	178:21 190:9
372:2,8 375:20	366:6,15	NAPSR 39:22	116:9 117:1,3,12	195:1 200:2,9
MOP 220:13	moved 48:2 93:17	85:13 88:2,2 93:2	120:13,13,17,22	202:6 204:6
moral 331:19	147:3,4 249:8	94:9 98:3 201:5	121:16 122:7	211:10 213:12
morning 6:3 9:10	276:21 344:5	205:10,14 232:21	124:12 127:8,16	215:1 229:19
32:3 44:6 50:15	355:15 382:7	243:17 244:1,10	133:6 141:5 229:9	232:9,19 251:3
52:5 55:11,19	movement 42:18	297:8,9,13 299:4	nature 7:19 35:16	255:9 266:1 287:3
56:2 87:22 148:8	117:17,17 119:7	301:5 303:5 305:7	37:13 38:13 103:7	291:9 292:12
165:12 175:22	moves 39:12 120:2	308:4 309:8,13	104:15 112:10	310:22 319:2
317:20 383:4	320:22	313:1 317:11	125:20 134:19	321:10 325:2
mortgage 351:12	moving 46:17	318:1,21 319:9	240:21	326:10 334:6
motion 8:20 230:3	47:10,17 48:11	323:5 329:11,20	naught 33:15	337:15 341:2,6
231:17 261:12	55:6 65:21 69:10	331:10 333:7,8,21	naval-gazing 38:3	343:3 344:14
263:2 264:6,15	83:16 117:21	334:1 338:6	navigation 252:3	345:4 358:16
276:2 277:6	118:4,5 123:21	340:12 343:2	nay 280:22	362:20 364:14,22
288:13 290:7	151:15 158:11	344:21 345:20	near 127:4 141:14	365:7 369:9
293:5 341:8 342:7	210:14 224:4	346:17,18 347:8	203:1 376:20	needed 14:17 73:13
342:16 343:1,10	244:16 248:4,12	350:13,19 351:22	nearly 102:10	129:22 199:6
343:12,16 344:1	249:2 252:14	352:7,12 355:6	171:21	233:2 283:11
344:14 349:20	290:1 335:8,16,17	NAPSR's 313:18	neat 249:6,12	318:7 330:15
350:10 352:4,5,7	336:1 378:6	316:11 333:10	necessarily 111:14	needing 107:22
354:22 355:11,20	muddy 323:14	narrow 241:12	205:7 223:4	needle 74:12
366:7 378:22	multifaceted 316:2	NARUC 39:22	245:17 254:22	needs 16:1 44:2
381:17 382:12	multifamilies 59:3	92:15,19	267:2 280:21	48:13 55:13 57:9
Mount 2:8 308:4	multifamily 214:8	NARUC's 92:21	necessary 30:10	70:18 93:4 103:18
313:15 324:20	multiple 59:19	NASFM 154:10	46:2,14 68:4	119:5 156:3
330:11,11 350:1	151:22 206:5	nation 88:6	133:22 135:4	254:16 275:5
Mountain 21:19,19	226:22 227:4	national 2:2,4 15:4	194:21 272:10	283:22 295:3
mouth 18:8 68:18	249:1 281:21	21:5,22 42:12,22	298:16 365:14	296:5 301:8

310:10 311:1	NFPA 156:19	noodling 198:4	30:16 31:18 33:2	377:18
315:11 317:6	166:3,3 216:12	norm 108:16	39:13 40:8 41:14	obliterated 194:21
326:11,21 328:3	222:5,8,9,17,22	normal 133:11	44:7 45:3 47:20	observing 53:3
328:21 334:7	340:14 355:3	134:15 202:10	47:22 48:3 50:12	obviate 268:19
361:3 364:20	NGL 103:20	normalized 65:12	73:15 79:3 82:11	obvious 37:4 49:7
negative 244:14	121:19 124:13	normalizes 64:4	164:9,15 208:9	268:20
251:13 252:11	125:1,10	north 21:20 38:20	225:20 249:18	obviously 90:17
254:8 280:12	NGLs 109:1 124:16	105:4 108:1 112:8	250:2,21	123:13 128:6
346:11	nice 64:14 139:8	115:15 117:11	nuances 361:8	137:4,12 160:14
negatively 279:17	NIMS 100:15	118:21 119:19,20	nuclear 74:14	169:16 170:8
negotiated 131:10	169:2,6	122:17 125:9	306:10	188:9 210:2 225:3
301:17,20	nine 12:2 17:8	134:15	number 18:18 36:2	285:8 294:20
nerve 374:2	88:12 162:4 181:8	northeast 111:19	36:14 50:11 59:19	occasion 329:5,19
nervous 331:17	181:11,20 185:17	notably 148:1	62:10,12 63:17	occasionally
377:19	186:1 193:19	notch 34:17	66:9,18 88:11	106:19
net 124:15 337:10	nineties 96:11	note 120:8 152:15	92:18 94:9 123:11	occur 37:13 288:20
never 26:12 89:7	nine-step 76:18	172:7 217:15	134:10 175:17	occurred 117:18
106:20,21 163:11	nirvana 347:10	noted 93:15	176:14 178:7	147:21
163:20 217:17	nobody's 359:9	notes 329:10	186:19 193:1	occurring 37:4
218:1 255:17	nodding 350:6	nothing's 16:18	201:8 235:21	115:22
348:18 374:2	Noll 156:20,21	76:10	257:17,17 262:10	occurs 129:2
new 4:16 11:9 14:4	172:3	notice 8:14 13:13	263:10,20 268:13	150:15 195:7
15:17,18 16:6	nominate 276:6	13:19 88:17 92:7	276:18 288:13	October 50:19
23:15 24:13 30:16	non 212:5 217:8	175:9 183:17	289:3 319:14	189:5,7 209:6
31:16 32:20 40:14	228:1 236:9	184:10 186:14,17	346:8,8 352:8	odor 279:15,18
40:14 44:13 46:3	243:20	189:4 212:18	365:11,18 375:22	odorants 289:7
46:18 58:20 59:8	nonattainment	217:5,13 254:2,4	numbers 12:14,14	292:3,7
61:3,4,6 93:6 95:7	279:12	254:13,19 352:3	65:11,12 66:14	odorization 235:13
98:4,6,7 119:21	nonporous 110:12	noticed 17:1	104:19 131:14	235:17 236:15
128:14,19 130:18	non-bargaining	232:19	236:21 261:14,16	261:21 277:9,15
130:21 131:6	302:16	notifications 235:9	numerous 255:15	293:13,15,18,21
142:4 146:4	non-company	253:15	nuts 13:12,18 209:5	odorize 277:11,20
175:16 178:12	316:12	notify 253:18	211:3 232:14	283:13
186:12 188:3,9	non-contractor	notion 326:13	NW 1:18	odorized 283:11
190:12 201:4	297:6	not-too-distant		289:5,13 292:19
204:16 205:19,22	non-controversial	47:11	O	Odor-Tech 3:19
208:9,10,16,18	267:21 367:8	novel 74:21 75:13	O 2:17	292:2
211:14 215:19	non-conventional	novelty 72:11	oath 274:16	offer 39:16
216:22 219:14	180:12	November 8:18	object 241:9	offering 106:8
245:20 260:8	non-economic	232:16 249:22	263:15 271:2	offers 17:9
291:13 298:21,22	129:14	NPMS 235:9	335:1	office 3:4,6,8,9,9,11
301:14 311:9,15	non-HCA 210:11	NPRM 5:18 47:9	objection 240:6,8,9	3:12,13 6:8 23:10
317:5 346:22	non-issue 251:2	175:11 187:8,9	242:12	45:9 47:16 157:12
newer 216:16 229:1	non-practical	189:12 191:8	objections 240:15	160:20 178:14
369:14	301:12	335:10	290:22	206:12,14 208:2
newest 122:13	non-substantive	NTSB 11:11,17	objective 291:6	209:1,12 212:20
news 45:3	267:22	12:19 28:16 30:7	obligation 330:5	214:5 220:16

223:4 225:22	336:2 341:7 343:7	operating 59:14	315:14 318:11	214:11 217:6
officers 100:15	343:9,9 345:8	73:9 80:2 82:17	323:8,10,11 325:9	254:15 298:15
official 7:17 55:21	350:6 351:9 354:4	85:1,9 220:14	326:2 327:4	350:13
officially 6:13 9:1	367:10 380:10	253:1 367:22	331:18 336:10	organization
officials 170:7	381:14 382:6	368:10,12 370:17	339:16 342:12	153:13 154:3
182:1	okaying 306:4	371:14 373:6	346:9 347:2,10,16	155:6 174:17
offshore 14:16,18	Oklahoma 132:6	376:11 380:19	349:7 350:20	178:3 208:21
38:9 102:11 235:5	old 50:15 112:18	operation 58:10	354:7 373:7	organizations 87:2
239:11 251:16	171:9 372:1,10	253:19 254:6	operator-operator	180:13
252:7	older 77:13 232:20	373:3	70:2	organization-wide
oh 50:8 71:22 86:18	233:6	operationalizing	opinion 239:6	67:17
97:4 158:21	OMB 216:6 217:8	46:8	246:18 247:10,10	original 195:1
200:20 274:11	298:15 357:4	operations 3:7 67:1	267:3,11 273:11	305:7 314:1
321:8 336:1	363:17 364:16	146:4 154:14	281:14,18 328:13	316:12 335:14
342:16 343:10	omitted 355:8	202:10 322:1	opinions 85:16	336:1 342:19
349:21 355:1	onboard 17:8	operative 260:7	opportunities 76:3	343:2 349:2
372:19	232:18	operator 17:22	138:17	350:13 351:5
Ohio 317:10	once 55:4 87:14	25:3,7 58:22 60:8	opportunity 19:5	368:21 377:6
oil 14:22 15:2 38:5	109:19 114:4	99:4,8 142:13	103:5 107:1	380:5,6
38:10 41:5 102:15	140:21 174:15	170:18 171:22	108:20 130:4	originally 278:19
104:1 105:17	184:9 191:2	192:22 195:6	174:14 177:19	303:9,9 350:19
108:22 111:4	onerous 202:17	196:1 323:7,19	236:4,6 271:15	352:12 360:14
117:4 122:4,7,18	ones 78:5 169:16	337:6 340:6,17	opposed 182:11	OSHA 167:14
123:5,10 124:1,22	308:11,21 309:2,4	367:21 368:10	237:7 259:18	OST 298:15
135:14 217:18	318:17	operators 17:18	264:13 277:3	other's 62:1
oils 123:5	one's 101:21 240:7	18:4 69:17 70:3	294:9 344:10	ought 269:16,17
okay 26:6,11 50:21	one-block 172:17	80:8,9 84:1 85:21	345:12 355:18	332:7
74:7 75:5 139:8	one-fourth 57:9	86:10 91:19 99:9	366:21 382:10	outage 221:10
145:3,14,14	one-man 323:12	99:20 100:2,7	opposite 283:14	outcome 84:7
171:11 175:3	one-stop 183:9	149:16 157:19	284:3 286:7	315:8
185:4 186:10	184:22	158:19 159:1,7	optimal 122:1	outlier 39:3
217:20 224:21	ongoing 41:1	169:1,7,14,16	optimistic 163:4	output 141:8
229:3,6 230:22	online 134:1 135:5	170:10,18 171:1	option 258:6,7	outreach 4:19 15:8
231:5,5,7 237:8	187:3	188:9 194:16	365:11 366:4	15:14 93:22
237:12 241:2	onshore 64:4,5	196:6 215:1	options 60:22	148:18 149:20
242:14,22 244:12	102:11	222:19 225:12	285:5,7,9 366:10	153:16 165:5
247:4 256:12	OPA 217:18	235:12 239:13	OQ 58:19 298:22	outside 78:1 194:22
258:13 260:2	open 26:1 137:19	243:20 244:22	299:1	301:19 302:17
263:3,13 270:5	300:8 310:20	245:4,4,7,15,18	orbiting 340:10	303:14 304:4
272:6,14 276:10	334:16 380:16	248:12,20 249:21	order 4:2 9:2 18:9	317:9 331:6
276:21 282:13,16	opening 27:21 28:9	253:18 254:17	51:12 56:3 107:20	outstanding 17:9
283:4,11 293:6	operate 235:2	255:11 256:14,16	114:15 118:5	251:4
296:13,17 304:5,6	251:21 253:20	266:18 271:7	124:21 126:11	outstrips 106:13
305:1,11 306:21	256:16 309:5	277:10 279:4,14	130:5 131:10	overall 40:4 44:12
312:16,20 314:9	376:4	280:12,13,13	134:1 135:4	119:6 175:11
314:14 330:7	operated 126:6	281:11,12,18,19	141:15 188:15	overarching
333:2,2,7 334:4	252:20 374:22	297:11 299:7,8	212:12 213:9,12	148:22 149:22

overloaded 88:18	210:3,3 216:18	148:21 153:11	293:7	197:2
overly 31:5	217:3 222:8,9,15	172:6	pentanes 121:17	perfection 67:13
overnight 25:16	222:17,20 226:15	parts 83:16 123:18	people 15:18 17:11	perform 224:16
oversight 39:15	226:16,17 228:2	149:13 192:16	25:15 29:18 37:6	243:20 252:21
46:14 54:11 58:21	243:16 247:12	220:18 226:14	38:7 43:13 44:1	302:15 331:15
88:7 98:16	297:1,8 299:17,17	278:19	50:11 52:16 55:17	337:7 340:5,7,18
oversimplify	300:4,13 310:12	party 167:22 192:9	76:14,15 80:2,20	performance 28:1
130:13	311:10 324:1,2	192:12 196:9,10	80:22 83:2,15	34:2 35:13 63:18
oversimplifying	334:21 335:13,17	297:17 298:8	88:4 94:18 95:14	76:5 78:9 81:9
131:5	339:21 351:15	302:5,7 303:15	95:17 106:7	156:2 224:17
overt 269:12	354:5 357:15	308:7 312:11,15	109:15,17 116:1	324:12
overturned 32:4	partially 182:16,18	317:2	122:15 128:6,13	performance-bas...
overview 154:14	participate 69:22	Pasadena 2:11	132:22 134:22	33:13
187:5	participated	20:22 149:7,11	146:6 147:19	performed 303:21
overwhelming	197:18 297:4	156:15	161:15 162:1	311:12 340:19
98:22	310:9 311:2	pass 94:4 99:12	180:3,8,22 185:1	performers 39:2
owner 192:22	participating	152:13,16 159:12	189:21,22 201:19	performing 62:3
owners 201:17	310:13	350:9	240:4 246:22	74:13 304:3
oxygen 42:17	participation 24:11	passed 10:20 18:19	248:22 270:8	307:10,15 310:8
o'clock 228:13,14	157:8 357:2	57:19 63:3,10	271:15,20 274:16	328:10 337:8
239:4	particular 29:18	86:21 93:14	283:6,17 285:2,17	339:18
	48:13 64:3 91:20	184:15 370:22	291:6 292:20,20	period 12:17 34:6
	92:10,11 94:11	379:8	298:2 302:15,16	37:20 72:20 105:7
P	123:9 178:11	passing 25:5 153:1	303:17 304:10	187:9 198:8 209:6
package 351:16	192:13 198:2	passionately 172:9	313:12 315:20	211:5 254:13
page 4:1 5:11 71:5	230:15 248:17	path 155:14,18	328:15 331:22	370:4 380:21
84:14 305:15,17	279:12 291:7	168:19	335:1 342:22	periodic 81:9
333:15	295:14 337:3	pathways 150:19	348:5 350:22	periodically 137:3
pages 47:7 160:3	particularly 25:12	patterns 117:7	363:5,7,10	158:10 184:10
paid 343:5	26:17 30:16 37:1	118:17 134:21	people's 54:7 55:12	periods 105:8
paper 89:16 247:8	43:16 139:13	Paul 23:20 131:4	percent 36:15 57:3	381:5
papers 79:19 85:17	162:19 291:11	pay 41:1 44:1 89:8	88:8,9,14 102:15	permeate 89:19
paperwork 63:3	296:2	131:4 315:22	116:5 121:3 167:1	permit 219:14,17
352:20 353:16	parties 39:9 195:21	367:20	171:4 243:9	permits 208:6
paragraph 345:7	341:17	payback 131:11	252:21 253:2	219:8,10,12
369:6,8,15,22	partner 56:9 88:5	paying 37:19 53:11	260:19 277:18	permitting 48:6
370:15	92:7 96:6	PA12 223:13,13	278:8 283:9 321:9	person 200:10
parallel 283:2	partnered 39:21	peacemaker	346:7 356:14,16	213:9 297:4 298:2
paramount 163:22	partnering 60:18	327:16	358:3,14 359:9,13	298:3,5 304:13,20
208:20 270:12	180:12,19	penalized 203:1	359:16,21 360:7	307:6 312:9 317:6
park 240:10	partners 2:12 20:8	penalties 191:11	361:1,1,1,20	319:5 323:16
parse 184:6	26:17 39:22 40:1	192:11 217:1	372:3,8 374:5	325:2 328:10
part 19:8 24:22	96:12 356:21	penalty 202:17	375:10,22 376:6,8	333:10 334:7
41:8 57:1 98:18	357:14 364:4,7	pending 182:21	376:21 378:7,10	337:20 339:19
100:11,22 101:1	partnership 153:13	186:8 279:6	perception 30:22	346:2 348:8,11
134:2 149:12,14	181:15	Pennsylvania 2:5	131:12	personal 25:20
164:6 170:8	partnerships	20:12 117:4 221:5	perfect 29:20 197:1	33:18 70:12
201:12 202:16				

personality 104:19	245:1 253:18	160:6,7,8	157:5,14,19	192:17 194:13
personally 24:10	254:4 258:20	pipe 2:17 18:2,17	158:19 159:1,7,13	235:2 253:1
24:20 25:12 146:3	259:6 263:22	63:21,22 64:4,5	159:17,20 160:3,4	289:21 356:13
290:5 305:13	269:21 282:17	65:20 78:6,11	160:20 162:3	pipe's 332:3
360:9 365:9	305:18 306:22	119:8,18 220:14	166:14 168:1	place 13:22 53:19
personnel 17:7	313:15 341:18	223:8,9,10,11,12	169:19 173:5	61:14 83:3 84:19
80:10,16 204:19	356:8,15 359:2	223:17 235:1,4,4	177:7 179:21	159:4 160:15
297:12 301:13	361:21 375:15	235:18 236:16	182:2 185:14	167:14 216:14
303:1 316:13	377:4 379:6,11	239:10 249:17,19	186:18 187:22	252:5 286:4 327:2
323:7,18,19	PHMSA's 6:8	249:21 250:20	188:9 189:21	339:3
perspective 56:16	247:10 312:10	251:8 252:17	192:21,22 193:3	placed 114:13
67:13 101:18	378:13	254:2,14,15,17,21	195:4,6,9,11	148:8 267:8 334:3
128:15 132:15	PHMSA-2009-01...	255:4 257:10	196:1,5 197:11	placement 254:14
138:2 142:1 287:5	186:20	259:9,14 260:8,16	199:14 200:6	places 72:21
300:19 301:2	phone 200:3,16	260:22 262:1	210:4 215:7,19	172:16,17
328:1	206:18 213:4,12	308:12 314:8,16	216:22 218:14	plan 14:19,20 15:1
Peter 3:22 131:4	phones 9:3	316:22 324:10,22	220:4 229:10	38:10,11 58:3
379:3	phrase 34:13	325:6,8 332:14,21	235:5 244:18	76:7,17 361:22
petition 223:12,14	physical 82:9,18	345:22 372:4	248:4 249:12	362:3
224:20 297:8	83:7 86:9 224:11	pipeline 1:2,5,8 2:1	251:16 253:6,17	planned 131:15
petitioner 234:14	pick 33:8 92:7	2:10,14,22 3:1,4,4	255:16,20 256:6	217:18
petitions 223:11	329:22 331:3	3:6,8,9,10,11,12	280:13 311:20,22	planners 160:10
232:21 234:12	370:13	3:14,15,17 4:6,22	312:7 324:11	planning 47:1
347:19	picked 32:16 58:16	5:19 6:8 7:9,14,15	333:3 336:5	70:13,14,17
Petroleum 3:22	picking 47:19	8:2,3,8,9,17 9:19	356:10 357:3,20	160:12 213:8
pets 70:12	380:21	10:22 12:8 13:1	374:1 376:19	241:17
Pevarski 2:6 10:8	picture 98:19	15:4 16:3 19:14	380:18	plans 83:7 160:11
22:5,5 276:19,19	124:16	21:3 22:3 23:1	pipelines 35:10	254:6
phase 47:13,14	pictured 381:18	35:9 36:10 37:19	47:2 58:12 87:6	Plant 44:21
phenomena 377:21	pictures 326:8	39:19 40:11 45:7	93:13 100:19	plants 134:5
Phil 3:19 173:1,6	piece 57:10 87:8	47:12 51:3 58:6	104:6 123:10,11	292:17
341:10	303:12	61:4 63:18 76:4	129:14 132:4	plan-do-check
Philadelphia 38:18	Pierson 2:17 4:12	80:9 83:18 84:5	149:2,11,18	81:12
philosophy 33:18	10:9 21:2,2 63:7	88:3,6,15 91:9,12	150:13 153:20	plan-do-check-a...
362:7 377:8	135:6 325:13,13	91:15,21 92:16,17	156:7 160:10	68:11
PHMSA 4:3 9:8	340:2,2,21,21	92:20 93:2,7,10	165:2 166:8	plastic 223:8,9,11
23:3,5,7,8,10 43:4	345:3,3,8 381:16	96:2 101:19	167:17 188:4,11	223:17 235:1,18
52:20 55:16 88:5	381:16,22	102:21 111:12	190:3 192:20	236:16 345:22
88:12 93:21 95:8	pig 78:2	118:4 119:11,22	194:15,18 202:13	348:8
95:17 96:7 98:11	piggability 220:15	123:13 124:22	209:4 224:11	plate 11:19,19 18:1
143:9 146:21	pigs 71:15	130:21,22 135:19	239:12 250:9	208:11 212:11
147:2,3,15 151:15	pilot 15:10 155:7	135:19 146:13	251:20,21 252:1,7	226:1
152:22 178:2,13	157:10 158:9	147:20 149:4,10	252:18,20 356:18	platform 28:18
180:4 186:13	160:8 163:3	149:16 150:7,9,12	pipeline-centric	play 13:10,16 43:17
188:3 190:20	214:17,19,20	151:6 153:22	178:18	50:6 58:13 85:16
201:20 203:2	248:11	154:12,14,15	pipes 77:13 82:13	136:6 139:7,8
204:5 205:21	PIPA 46:21 60:21	155:4,9 156:22	181:14 188:1	254:12 255:15

372:22	66:10 144:22	potential 203:7	preparedness	370:6,17 371:14
please 9:3 20:5	201:7 320:15	359:5	100:13 147:17	371:15 372:7,9,11
87:18 226:5,6	324:14	potentially 236:21	151:6	373:12 374:13,20
241:8 275:22	pol 316:12	243:14 245:6	preparing 32:9	374:21 375:13,19
277:1 294:7	polarized 38:12	285:10 299:3	prescription 33:17	375:21 376:4,7,12
296:16 335:20	polarizing 73:6,8	300:5 317:3	33:19 39:14	376:20 377:21
pleased 175:4	police 60:16 100:15	power 116:11	presence 289:7	380:15,19
pleasure 19:10	policy 1:6,9 3:5	118:2,6,7 119:5	present 1:19 2:1,10	pressures 142:8,17
226:11 296:13	7:21 21:17 22:6	134:5 146:5	3:1 8:12 88:1	142:20 143:13
plenty 61:4 63:2	35:17 247:8,14	practicability	177:1 239:15	373:6
319:19 326:8,9	364:18	229:14	381:11	pretend 361:7
plot 105:1	political 139:11	practicable 294:2	presentation 27:1,9	pretty 7:2 26:14
plug 85:22 186:20	pool 146:6	343:22 344:20	51:7,20 56:13	28:7 30:2 54:19
plus 202:21 328:12	pools 112:17	352:11 382:2	57:22 63:13 88:18	54:21 116:11
359:1	poor 39:2 297:14	practical 204:18	89:12 101:12,17	135:13 136:5
podium 27:5	pop 200:1	217:21 230:12,18	136:11 145:5,13	161:7 170:22
point 17:9 25:14	populated 78:8	263:22 293:11	162:17 174:4	171:10 201:5
27:2 36:11 46:4	291:4	302:1 303:13	176:6 187:2	216:4 223:2
66:10,19 72:14	population 35:10	practice 61:21 94:1	198:22 208:12	227:19 275:3
73:21 76:8 77:3	portfolio 140:3	271:17 306:9	215:6 226:4,15,17	286:13 292:5
79:12 81:12 82:20	141:13	309:19 318:16	227:18 228:21	337:10 374:5
100:10 103:15	portion 122:1	practices 58:22	232:2 239:21	prevent 357:1
108:10 109:6	356:9 357:10	69:20 94:7 192:8	242:2	363:7
113:8 124:14	358:1	205:22 206:4	presentations	preventing 49:20
130:15 131:18	portions 310:16	256:20	41:13 52:2 87:19	93:12 195:22
136:7 164:10	position 270:1	practicing 94:6,6	152:1,13 197:17	prevention 4:22
170:9 187:18	378:14 379:9	PRCI 248:14	presented 45:2	46:20 60:7,8 67:1
242:3 261:3	positioned 30:1	pre 82:12 351:9	183:12 261:11	70:7 93:9,16,19
266:18 269:5	positions 16:6	preamble 257:16	262:13 279:2	175:9,12,15,21
272:19 273:2	positive 35:19	307:16 346:15,19	357:8 367:3	176:4,8,17 177:20
278:12 281:17	83:12 85:8 90:15	348:5 349:10	presenters 87:18	180:16 181:9
282:2 283:18	227:9 231:3	precedence 72:16	presenting 45:10	182:6 183:8 184:5
284:1,2,7 289:2	possibilities 130:10	preceding 375:19	150:3 177:15	185:3,6,10,18
291:2 301:4	possibility 239:4	precise 334:16	president 9:21 11:1	186:13,19 188:2,5
308:17 311:8	295:5 376:3,11	preclude 297:11	16:1 18:9 103:9	189:15,17 190:4
330:1 331:3,11,19	possible 55:4	313:7	presiding 1:18	192:15 193:7
333:22 340:1	211:22 366:8	predict 199:17	press 17:2	196:6,15,21 198:4
347:7 349:19	374:14,17	prediction 123:7	pressure 73:14	198:14,21 202:8
350:13 363:13,19	possibly 206:17	predominant 142:6	235:6 236:17	203:21 206:1
366:1 372:1 375:7	213:3 298:17	prefer 365:9	253:6,9 257:11	previous 369:2
377:14 380:21	299:11	premature 286:3	260:19 266:7,8,11	371:16 372:7
pointed 36:12	post 101:22 139:22	premises 234:5	266:21 268:12,19	previously 272:2
243:19 299:20	145:14 180:9	prepare 153:17	269:2,19 270:14	381:18
317:17 323:4	posted 179:18	230:4	270:17 320:16	pre-excavation
379:18	180:6 187:3	prepared 149:3,9	330:21 333:3	204:12
pointing 245:5	333:19	153:20 163:21	348:17 349:1,3	pre-regulation
points 36:5 55:12	posters 180:7	364:12,13	367:22 368:10,12	78:6

price 105:4,8 106:6 107:12,15 121:15 127:18 132:1,14 132:20	proactive 58:7 probably 7:7 12:18 17:1 29:7 34:13 47:21 53:10 72:1 80:18 98:20 105:3 114:13 118:8 137:10 139:12 142:19 143:9,19 145:18 147:11 148:12 166:10 171:14,18 175:20 184:9 204:22 205:1 206:15 208:13 228:4 234:5 240:8,15 242:3 275:14 296:6 304:15 314:2 329:14 331:7 357:12 363:14 374:10	proceedings 129:8 process 31:5 59:9 59:17 77:20 90:21 94:20 96:8,15 126:19,21 135:17 188:18,20,21 190:15 191:3 194:3 199:10 202:20 204:17 206:9,22 209:8 216:5 217:2,10 219:8,12,16 228:22 240:13 284:16 285:18 307:2,3 358:18,22 364:18 380:1	100:1,8 143:7 157:21 158:16,17 160:20 168:2,6 175:12,15 177:7 182:13 185:10 186:19 191:2,7 199:21 220:19 238:19,20 356:7	138:8 146:4 248:11 259:10 261:1 306:20 314:15 326:6
prices 57:14 105:2 105:19 108:17 113:2,9,12 121:16 127:9,9 133:6,14 144:9,11	problem 71:2 142:12 148:22 149:14,22 150:1 164:6 169:17,21 215:18 237:18 247:22 269:11 271:3 281:1 301:7 301:8 303:11 305:13 306:13,17 326:5 335:18 338:18 370:18	processes 60:3 289:6 processing 133:22 produce 108:11 179:3,13 198:7 368:9 produced 114:3 120:21 154:11 158:20 182:9 produces 133:5 198:9 product 89:9 104:1 193:2 279:16 307:2 production 109:2 112:14,15 113:18 115:12 122:7 346:4 348:12,16 353:21 productions 124:13 products 61:6 83:20 84:18 86:9 279:15 program 3:9 4:7 12:4 13:1 14:1 15:2,11,15 16:3,5 16:14,21 17:4 19:2,6,14 25:19 33:5 45:12 62:16 76:18 80:17 94:22 94:22 96:10 99:21	prolific 113:18 promise 180:2,5 255:11 promote 59:20 175:17 176:20 179:16 180:13 197:4,15 promoting 177:22 promotion 177:3 pronounce 40:11 proof 143:17 propane 103:19 124:15 285:17 propanes 121:18 proper 194:17 325:1,6 properly 96:20 163:9 195:3 319:3 333:1 355:15 359:4 382:7 property 160:18 189:22 195:14 201:17 proponents 49:20 proposal 186:22 187:13,22 195:13 196:14 210:15 215:8 222:13 243:1,16 244:3,14 247:5 249:15,16 250:7,12,14 251:7 251:14 252:12,15 253:12,14 254:9 255:18 257:2,20 259:3 266:6,17 267:2 277:8 278:5 278:13 279:8,19 280:10,11,15,18 282:7,9 285:4,9 285:11,13 286:16 288:3,9,14 291:8 293:14 296:19 297:5,7,9 298:10	
pride 207:9 primacy 222:8,9,10 primarily 205:13 primary 115:17 159:14 243:18 291:3,5 323:5 prime 270:4 principally 141:14 289:22 principle 339:4 principles 59:16 67:10 68:20 70:16 printouts 140:19 prior 82:10,10 222:6 230:22 243:21 249:22 253:19 254:2 258:22 259:14 272:6 370:1,17 371:12,13,14 375:20 376:8 priorities 28:5 31:14 42:16 47:6 53:2,16 54:4,8 76:9 89:2 163:19 207:19 208:7,20 209:1 212:20 220:21 prioritization 82:21 prioritize 77:3 prioritized 54:17 priority 61:14 76:11 89:1,4 143:8 198:19 214:5 220:17 223:4 224:4 pro 216:5	procedural 288:7 336:17 procedurally 240:3 365:22 366:12 procedure 254:5 346:3 procedures 41:21 58:21,22 190:10 216:19 229:2 proceed 228:18,19	proceedings 129:8 process 31:5 59:9 59:17 77:20 90:21 94:20 96:8,15 126:19,21 135:17 188:18,20,21 190:15 191:3 194:3 199:10 202:20 204:17 206:9,22 209:8 216:5 217:2,10 219:8,12,16 228:22 240:13 284:16 285:18 307:2,3 358:18,22 364:18 380:1 processes 60:3 289:6 processing 133:22 produce 108:11 179:3,13 198:7 368:9 produced 114:3 120:21 154:11 158:20 182:9 produces 133:5 198:9 product 89:9 104:1 193:2 279:16 307:2 production 109:2 112:14,15 113:18 115:12 122:7 346:4 348:12,16 353:21 productions 124:13 products 61:6 83:20 84:18 86:9 279:15 program 3:9 4:7 12:4 13:1 14:1 15:2,11,15 16:3,5 16:14,21 17:4 19:2,6,14 25:19 33:5 45:12 62:16 76:18 80:17 94:22 94:22 96:10 99:21	100:1,8 143:7 157:21 158:16,17 160:20 168:2,6 175:12,15 177:7 182:13 185:10 186:19 191:2,7 199:21 220:19 238:19,20 356:7 programming 10:13 programs 3:5 14:22 46:15 59:16 61:22 80:14,16,21 81:8 84:13 85:20 96:17 98:17 148:16 163:3 181:9 185:18 188:6,14,20 190:5 190:11,21 194:4 194:11 356:10 357:3 359:2 360:21 progress 10:11 28:13,14 35:5,6 36:7 42:5 48:15 49:3 106:13 162:7 221:16 progressively 240:17 prohibit 285:17 306:3 prohibits 343:5 project 18:14 130:20,20 155:7 157:10 160:9 248:14 310:16 314:10 316:20 projecting 117:15 projection 133:5 133:17 projections 122:11 122:14 124:13 projects 18:11 24:13 128:14 129:6 130:9 131:15 134:10 135:7,20,20 138:5	138:8 146:4 248:11 259:10 261:1 306:20 314:15 326:6 prolific 113:18 promise 180:2,5 255:11 promote 59:20 175:17 176:20 179:16 180:13 197:4,15 promoting 177:22 promotion 177:3 pronounce 40:11 proof 143:17 propane 103:19 124:15 285:17 propanes 121:18 proper 194:17 325:1,6 properly 96:20 163:9 195:3 319:3 333:1 355:15 359:4 382:7 property 160:18 189:22 195:14 201:17 proponents 49:20 proposal 186:22 187:13,22 195:13 196:14 210:15 215:8 222:13 243:1,16 244:3,14 247:5 249:15,16 250:7,12,14 251:7 251:14 252:12,15 253:12,14 254:9 255:18 257:2,20 259:3 266:6,17 267:2 277:8 278:5 278:13 279:8,19 280:10,11,15,18 282:7,9 285:4,9 285:11,13 286:16 288:3,9,14 291:8 293:14 296:19 297:5,7,9 298:10

298:12,16 299:3	299:20 305:12	281:17 314:19	pull 207:13 213:7	284:14 285:2
299:10,13 303:6	307:19 311:7	315:2	299:10	286:4 332:4,21
305:8 308:1 310:1	318:21 319:7,8	PSA 179:11	pulled 192:16	333:8 355:4
313:18 338:5	328:6 332:5 334:1	psig 243:10	194:12 268:13	367:12 368:15
339:10 342:19	334:2 335:9	PT 306:15	pulling 22:20	369:1 379:6,7
343:17 346:14,16	343:15,19 344:16	public 2:5 3:20	213:14 252:9	puts 139:17
346:17,18 347:5	344:22 347:8,21	14:8,9 15:7,12	265:2 288:2	putting 56:1 207:6
349:11,15 352:18	348:6,7 350:19	20:12,19 22:9	pulverizing 337:14	207:9 308:11
355:6 357:14	351:22 352:3,9,12	35:3 36:16,18	pump 220:12 221:5	P's 182:21
366:3 367:7,11	355:3,4 356:5,15	42:20 43:11 46:13	pun 179:7	P-R-O-C-E-E-D-...
379:15 380:5,7,8	365:19 370:8	51:1 52:14,19	punish 377:18	6:1
proposals 211:21	371:3 379:5,11	53:13 67:22 73:6	punishing 357:9	p.m 173:18,19
227:6,17 234:1,7	381:18	77:12 82:18 84:15	punt 326:14	264:19,20 383:14
234:17 238:13	proposing 252:22	90:8,9,11 95:5	purchase 245:19	
239:1,5 242:2,5	proposition 81:21	97:8 99:7 139:1	purchasing 254:14	Q
258:17 262:6,15	prosecute 201:22	142:1 143:6 148:2	pure 239:18 245:11	QA/QC 339:9
263:20 265:15	prospectively	161:3 166:19	purely 227:21	qualification 25:7
345:19 356:2	254:11	170:1,7 179:4,15	239:6 267:12	262:1 322:15
359:11 367:8	protect 162:5 291:6	179:17 181:16	purple 368:7,21	345:21 346:22
propose 191:6	protecting 32:10	191:20 203:4,6	purpose 83:17	qualifications
194:3 211:8	162:1,6	214:9 215:22	214:20 259:15	77:14
212:17 230:13	Protection 2:2,6	236:5 260:7 261:8	260:20 271:20	qualified 307:13
250:5 253:22	21:22 187:22	261:10 265:11,19	331:3	351:10
254:1 266:5	protectionist	274:8,10,10,14	purposes 11:6 64:6	qualify 350:5
272:17 277:21	137:12	275:4 276:1	268:22 278:7	qualifying 234:22
299:11 343:12	protocols 83:10	279:20 290:9,11	pursue 196:5 203:2	235:18 236:16
345:22 370:19	proud 383:1	290:16 291:12,17	218:2	354:11,20
375:17 379:16	proven 378:8	322:3,10,20	push 39:11 52:22	quality 31:13,13
proposed 8:14	proves 25:9	335:10 336:19	200:8 334:14	47:4 96:18 121:6
13:13,19 131:15	provide 31:20	340:13 341:9	pushing 26:13 47:9	121:7 172:4
134:11 175:10	82:16 83:3 84:1	349:13 355:8	112:21	174:21 253:7
186:14,18 187:5	85:19 86:9 190:6	361:12 365:2,4,4	put 9:22 13:10,16	279:11 297:14
189:5 190:1 193:7	245:17,18 294:20	377:17 379:1	13:22 14:15 15:12	326:19,20,22
193:22 194:2	362:19 363:9	publication 153:4	16:1 18:7 40:21	346:20
196:11 201:9	provided 93:21	publications 62:10	41:11 50:8 52:2	quarter 283:3
202:17 203:4	196:12 252:19	publicly 19:18 42:8	54:8,14 56:16	Quarterman 3:1
204:7 222:10	324:9,9 371:4	84:16 104:10	67:12 68:13 70:6	4:4 9:9,10 19:18
229:9 230:6,8,9	381:13	215:21	71:18 72:9 76:19	23:12,14 209:2,9
232:17 239:15	provides 168:1	publish 153:7	79:16 84:14,19	210:12
243:4 244:10	187:4 277:16	published 8:17	85:16 86:7 87:20	Quarterman's 20:3
245:9 257:14	providing 82:17	153:3 160:1 189:4	89:12 90:2 91:5	question 49:22
258:7 263:9,18	proving 143:17	207:3 209:5 211:4	106:20 110:22	53:11 128:22
267:14 269:4	provision 356:14	211:18 214:5	122:14 123:8	144:14 164:11
276:18 280:2	provisions 183:14	229:10 230:10	124:18 125:18	165:18 171:3
282:12 286:12	183:20	232:16 263:9,19	133:4 142:4 171:7	183:20 187:18
293:8,17,17,20	proximity 37:6	293:8,20 344:17	177:9 207:7 240:7	241:16,18,21
296:22 297:16	prudent 45:19	352:9	282:6 283:10	242:13,20 247:21

257:9 258:4	203:16,17 289:20	148:19 149:16	35:1 36:11 38:4	377:13
260:13,14 273:13	299:9 309:14	151:2 170:11	39:18 40:22 54:9	reasonability
284:12 287:20	311:18	197:3	54:13 56:6 57:5	301:11
288:7 310:3	quorum 8:12	reached 73:20	73:22 74:19 75:2	reasonable 31:7
354:13 361:11	173:22 174:2	99:20	75:7 76:5,15	58:8 230:11,17
362:6 365:22	199:6 229:21	reaching 100:5	100:21 101:17	257:22 263:21
366:1 374:9 375:5	quote 72:2	react 166:14	103:16 104:4	281:17 288:12
questions 26:2,4	Q&A 4:4,9,15,18	reacting 55:18	109:7,20 112:5	293:11 294:1
28:6 52:12 53:1	4:21,24 5:16	reaction 16:18	113:17 118:12	343:21 344:19
55:5 63:4,5 71:21	226:16	55:12 378:4	120:8,9,17 136:11	352:10 378:8
86:17 97:2,4,9		read 62:12 85:22	138:18 144:19	382:1
103:16 128:1	R	92:10 130:8 142:8	148:22 150:2	reasonably 133:12
140:21 199:2	radiography	178:18 183:16	151:4,8,14,18	reasoning 178:1
226:4,9 230:22	305:21 306:15	186:21 187:8,10	154:22 155:15,17	reasons 37:5 121:7
231:5 232:9,10,13	radius 172:17	189:7 193:18	155:21 156:3	143:4 149:21
249:14 252:13	rail 165:6 166:16	273:3,10 298:2	161:20 164:8,15	260:13 275:6
286:18 316:10	249:17	311:19 319:2	164:20 166:4	354:6
362:15	rails 85:21	340:17 348:5	168:22 174:8	reauthorization
quick 6:9 34:19	raise 61:8 142:19	349:7	176:5,21 177:16	10:22 15:17,20
62:18 143:21	143:13 223:14	readily 31:15	178:8 179:1	30:2 37:18,20
161:6 193:15	277:1 294:6 373:5	ready 26:5 153:7	184:19,22 188:2	40:21 45:21 198:1
206:8 207:5	382:8	153:21 241:3	189:12 190:1	198:11 218:20
213:17 228:20	raised 261:22	261:11 340:12	200:9,13 201:1	244:18
229:7 230:19	265:6 290:4	real 30:4 105:8	203:22 217:17	reauthorized 40:10
232:15 236:1,11	363:13	106:6 112:9	226:13 227:16	rebuild 130:4
243:1,22 257:5	raises 284:21	168:11,13 177:18	228:10 239:16	rebuttal 97:17,21
259:2 293:12	raising 77:21 80:8	198:6,17 213:17	244:4 249:7	recalculate 203:14
356:3 357:11	240:7	230:19 232:15	250:20 259:8	recall 222:6 299:22
365:21 374:5	ramp 178:14	236:11 243:1,22	269:9,14 280:22	receive 254:8 260:9
quicker 166:15	ran 373:4	257:4 259:2	281:9 282:9 286:3	received 11:11
213:13	range 108:9 127:10	275:15 293:12	290:20 292:22	153:6 160:5
quickest 80:18	361:3 366:10	318:18 326:19	301:6 312:17	167:19 212:14
quickly 35:1 36:11	ranking 286:22	358:8 375:16	315:18 321:12	235:15 251:13
37:16 69:10	rapid 65:1 115:12	reality 4:16 75:1	323:15 326:18	252:12 278:16
141:12 147:9	117:5	320:12,13 373:22	327:4,13 328:21	285:7 346:11
182:7 218:21	rate 89:8 129:8	realize 69:12	336:6,12 337:2	recession 108:3,6
223:2 227:19	131:10 134:11	260:21 270:8	341:11 342:4,11	recipients 185:13
242:4,20 290:2	364:10	realized 68:14	352:17 359:5	reckless 52:18 84:2
374:7 378:2	rates 144:5 189:19	174:20 183:4	361:10 364:12,20	recognition 376:19
quit 359:13,15	rating 253:9	358:7	378:6	recognize 10:2
quite 7:1 10:19	ratio 203:9,15	realizes 350:8	reapply 219:13	35:12 40:5 58:12
11:3 16:1 23:16	rationalization	reallocation 69:6	rearranging 174:1	69:9 71:7 88:19
23:17 60:22 75:13	357:5	really 7:20 9:21	reason 30:3 106:1	195:19,21
76:5 79:2 128:22	rationalization	10:10 15:18 19:1	106:11 194:22	recognized 41:17
129:9 136:9	75:4	19:8 24:14,14	234:18 309:6	recognizing 129:12
141:11 177:1	Raw 65:12	27:15,19 30:1,5	323:17 358:8	129:13
180:3 185:1 189:7	reach 75:18 147:10	30:12 32:1 34:9	372:14 376:2	recollection 246:17

recommend 352:1 377:7	147:18 189:18 190:2 314:22	region 157:12 318:4	247:12 248:3,6 251:17,19 252:9	246:8 249:15,18 251:7 252:1,6,16
recommendation 32:16 229:19 239:2,19 243:17 244:1 249:18 251:4 265:13 294:17,21 299:5 338:5 345:20	368:12 reducing 123:4 reduction 367:22 370:5 371:15,17 372:3 374:13,20 375:10,13,21 376:6,21 378:10 380:19	regional 140:4 regions 120:6 125:6 134:6 Register 3:15 8:18 23:4,4 229:11 230:10 247:9 262:10 263:10,19 293:9,18,21 305:7 344:18 352:10 367:13 368:3,13	252:10 253:16 254:12,18 255:14 255:17 256:18 266:22 267:3,6,11 268:4,9 269:18 271:5,6,12 273:10 273:12 277:10,14 297:1 346:6 356:16	253:14 255:8,13 256:5 277:9 284:12 293:13,14 293:14,18,21 295:20 296:20
recommendations 11:12,13,18,22 12:2,19 13:7 41:16 44:11 45:18 208:9,16 225:20 232:21 233:1,2,6 233:11 256:9	reductions 235:6 236:18 reemphasizing 29:12 reevaluate 285:11 299:11 reevaluating 288:3	regs 14:16 220:4 253:17 255:21 269:6 regular 207:15 208:8 211:6 215:12 356:12 regularly 129:9 regulate 48:12 regulated 63:22 129:15,16 249:5	regulations.gov 186:21 189:6 regulator 309:11 regulators 58:13 73:7 102:1 157:14 157:15 161:3 regulatory 2:8 5:13 14:11 22:12 39:11 53:7 54:18,20 58:4 103:10 129:7 182:2 185:14 199:10,13 220:7 293:9 298:12,14 344:18 347:9 361:10	relates 291:11 relating 223:16 224:8 relationship 142:21 relationships 316:1 relative 331:22 relatively 36:22 66:8 175:16 181:21 187:12 217:6 283:1
recommended 222:12 234:14 236:13 250:3 256:8,22	reference 105:4 251:12 270:2,6 275:17 370:15 373:22	regulating 219:6 regulation 71:8 73:14 82:10,13 129:18 139:21 148:6 187:5,6 189:1 196:11 269:1 270:3,3,7 270:11,21 271:9 272:12,15,17,19 272:20 274:22 275:11,13,17 276:17 280:3 307:7 344:2	regulator's 40:4 rehabilitate 17:18 reimbursed 357:22 reimbursement 356:11 reimburses 356:8 reinforce 258:16 311:18 reinforces 311:8 reinject 361:5 reinstated 244:11 reinvent 178:22 reinvestment 39:20 reiterate 339:5 related 11:12,14 142:3 210:16 211:2,16,20 216:18 217:1 218:20 220:12 222:21 223:9,19 224:19 243:2	relying 205:9 release 110:9 193:2 195:11 reliable 57:12 58:10 191:22 198:10 reliance 125:20 relies 181:22 relishes 202:12 remark 29:11 remarks 6:9 101:3 205:14 372:18 382:19 remedial 91:1 remember 7:12 17:16 28:8 34:21 102:13 245:1 267:20 275:21 remind 6:10 383:3 remote 59:7,11 remotely 43:3 remove 250:4,5 298:17 removed 356:14 renewable 140:3 141:13 renewables 139:11 140:8,11,22 141:10 renewal 219:8,11
recommending 258:3,17	referenced 251:10 275:13 345:6	regulation 71:8 73:14 82:10,13 129:18 139:21 148:6 187:5,6 189:1 196:11 269:1 270:3,3,7 270:11,21 271:9 272:12,15,17,19 272:20 274:22 275:11,13,17 276:17 280:3 307:7 344:2	regulate 48:12 regulated 63:22 129:15,16 249:5	release 110:9 193:2 195:11
reconsider 280:15 285:13	referencing 274:21 referred 353:18 referring 7:13 273:14 369:4 refineries 123:20 refiners 135:22 refining 78:12 135:16,20 reflect 7:22 reflected 205:14 reflects 7:18 refresh 229:1 regard 147:15 194:17 297:21 regarding 93:22 102:10 140:16 142:20 206:9 235:11 246:13 247:5 256:14,15 261:10 298:10 regardless 72:19 332:3 regards 292:16	regulating 219:6 regulation 71:8 73:14 82:10,13 129:18 139:21 148:6 187:5,6 189:1 196:11 269:1 270:3,3,7 270:11,21 271:9 272:12,15,17,19 272:20 274:22 275:11,13,17 276:17 280:3 307:7 344:2 regulations 5:19 8:17 46:7 58:8 91:8 96:16 98:7 144:8 147:22 148:2,4,15 149:15 181:3,5,6 185:3 196:4,7 209:17 211:1,2 215:15 219:22 232:18 233:11,17,20 234:6,15 235:10 235:11 244:19	regulate 48:12 regulated 63:22 129:15,16 249:5	reliable 57:12 58:10 191:22 198:10 reliance 125:20 relies 181:22 relishes 202:12 remark 29:11 remarks 6:9 101:3 205:14 372:18 382:19 remedial 91:1 remember 7:12 17:16 28:8 34:21 102:13 245:1 267:20 275:21 remind 6:10 383:3 remote 59:7,11 remotely 43:3 remove 250:4,5 298:17 removed 356:14 renewable 140:3 141:13 renewables 139:11 140:8,11,22 141:10 renewal 219:8,11
reconvene 383:11 reconvened 264:22 record 8:11 9:6 49:8 101:7 108:15 173:18 230:21 264:19 339:11 354:5 378:20 380:4,7,9 383:14 recorded 187:3 recorder 275:22 records 31:6,8 46:19 recovery 59:21 108:7,7 113:22 114:12 129:19 219:3 357:1 red 65:13 85:11 118:10,11 182:19 193:20 280:5 368:19 redesign 130:4 redline 334:6 reduce 127:1	refer 255:21 reference 105:4 251:12 270:2,6 275:17 370:15 373:22 referenced 251:10 275:13 345:6 referencing 274:21 referred 353:18 referring 7:13 273:14 369:4 refineries 123:20 refiners 135:22 refining 78:12 135:16,20 reflect 7:22 reflected 205:14 reflects 7:18 refresh 229:1 regard 147:15 194:17 297:21 regarding 93:22 102:10 140:16 142:20 206:9 235:11 246:13 247:5 256:14,15 261:10 298:10 regardless 72:19 332:3 regards 292:16	regulating 219:6 regulation 71:8 73:14 82:10,13 129:18 139:21 148:6 187:5,6 189:1 196:11 269:1 270:3,3,7 270:11,21 271:9 272:12,15,17,19 272:20 274:22 275:11,13,17 276:17 280:3 307:7 344:2 regulations 5:19 8:17 46:7 58:8 91:8 96:16 98:7 144:8 147:22 148:2,4,15 149:15 181:3,5,6 185:3 196:4,7 209:17 211:1,2 215:15 219:22 232:18 233:11,17,20 234:6,15 235:10 235:11 244:19	regulate 48:12 regulated 63:22 129:15,16 249:5	reliable 57:12 58:10 191:22 198:10 reliance 125:20 relies 181:22 relishes 202:12 remark 29:11 remarks 6:9 101:3 205:14 372:18 382:19 remedial 91:1 remember 7:12 17:16 28:8 34:21 102:13 245:1 267:20 275:21 remind 6:10 383:3 remote 59:7,11 remotely 43:3 remove 250:4,5 298:17 removed 356:14 renewable 140:3 141:13 renewables 139:11 140:8,11,22 141:10 renewal 219:8,11

219:16	requalification	123:22 126:9	111:2,6,22 112:1	284:14
reopening 295:13	345:21 353:5,8	141:8 169:1,5	112:3,7,13,20	responding 13:6
repair 17:18	requalified 350:15	190:20 194:6	116:17 117:1	response 4:10,19
210:10 212:5	351:8	216:22 219:20,21	122:2 123:3	14:22 15:2,9
251:22 374:6	requalify 346:10	220:4,6 222:16,20	125:19 126:1	38:10 53:22 55:9
375:11 378:2,3	requalifying 351:1	224:15 225:12,18	127:17 138:5,10	70:19 78:7 98:19
381:3	353:20	243:6,11 246:2	159:6,14 197:21	147:16,17 148:11
repaired 78:4	request 16:2 43:19	252:5 255:19	206:3	150:8,10 151:3,6
repeat 335:19	43:21 86:7 218:4	257:10 262:2	resources 16:20	152:7 153:15
replace 17:19 93:5	285:2	266:7,11,12,20	33:21 39:17 40:15	155:5,10 156:7
307:20 351:20	requested 253:12	298:22 299:1,17	43:9 44:16 53:5	159:19,22 160:22
replacement 42:4	257:3 357:15	299:19 305:21	53:19 76:11	166:6,7 167:21
107:5 128:18	requesting 215:3	310:5 311:9 324:6	108:21 111:14	174:8 189:11
129:21 144:3	require 29:3 126:2	346:1 347:1 354:6	112:16,21 115:13	273:18 306:22
replacing 18:1,16	141:6,17 149:15	requires 30:20	116:15 117:20	323:20 344:11
267:17	192:15 194:8	141:1 184:2	118:3 119:4 124:1	345:13 355:19
report 10:7 44:8,9	243:4 253:17	266:13 324:17	127:11 130:6	382:11
68:6 80:21 192:21	254:1,2 273:12	requiring 90:22	135:10 138:5,9	responses 32:9
195:6 213:19	289:12 298:13	331:13 340:20	150:16 152:21	84:3
239:11 251:22	304:14 306:13	341:3	156:5,12 159:10	responsibilities
373:19	308:6 312:11,15	rescue 327:17	178:12 197:15	234:20
reported 195:10	328:6 348:7	research 3:14	208:18 209:13	responsibility
reporting 64:1	required 83:5,6	16:11 50:7 68:22	303:19	196:1,2,3
192:3,4 218:21	124:20 164:4,5	103:20 158:16	respect 14:4,11	responsible 191:14
252:5	170:10,11 183:17	259:6 360:16	331:4	208:3 309:4 322:8
reports 44:22	183:18 184:2	resided 217:19	respond 67:6 69:9	334:20
84:14 218:22	220:3 253:6	residences 214:7	78:9 82:15 149:4	responsive 258:18
235:5 251:16	272:12 277:11	residential 116:3,7	154:15 160:14	responsiveness
252:7,9	298:8 309:10	134:16	163:9 169:13	229:13
Reports-like	311:7,10 316:22	residual 279:15,18	170:3 180:17	rest 23:22 51:8
182:13	323:22 325:14	resist 326:12	232:13 285:1	125:8 138:13,15
represent 87:10	337:7 340:5,7,18	resistance 30:10	370:20	218:8 227:18
representation	341:3 352:21	resolution 297:10	responded 284:19	248:2 281:18
107:11 156:19	358:20 363:21	297:16 301:8	responder 15:9	332:22
representative	requirement 169:8	317:11 318:2	151:10 172:8	restaurant 172:18
20:10 52:19 53:12	211:17 216:14	343:2 347:8	328:1	restaurants 292:9
274:14 377:17	218:19 244:7	350:14 382:22	responders 32:11	restoring 363:1
representing 20:7	245:20,22 246:4	resolutions 177:11	60:18 70:21 71:3	restraints 167:5
20:16 21:9 22:9	254:22 260:21	resolve 284:20	147:10 148:20	restrictions 212:10
52:14 56:6 316:9	266:19 273:21	resolved 293:3	149:1,17 150:11	213:11
352:16	277:15 281:14	333:17	152:12 157:14,19	restrictive 375:5
represents 56:20	299:7 311:16	resolves 339:13	157:21 158:18	result 11:7 98:15
117:16	353:12,16	resonate 180:14	159:1,7,15 164:4	113:12 140:7
repurpose 132:2	requirements	resonates 76:15	164:5,13,14,21	160:17 328:1,14
repurposed 130:21	33:13 41:20 58:4	resource 94:16	165:3 167:1,9	resulting 279:4
repurposing	58:20 92:12 98:7	106:5,13 107:21	170:8,11 172:1,2	results 10:17 171:9
131:19 132:8	118:2 120:3	109:10 110:2,3,22	180:14 197:4,7	178:8 182:8,10,12

185:19 198:10 resumed 101:7 173:18 264:19 resurrect 269:15 retention 167:5 retesting 267:17 retire 17:12 retirements 118:8 retroactive 273:5 273:17 return 218:6 returned 41:5 returns 73:22 reveal 163:5 reverse 130:22 reversed 132:5 reversing 119:20 revert 222:11 379:11 review 13:12 81:9 103:1 187:8 244:18 254:5 265:9 315:3 358:22 reviewed 234:5 359:10 reviewing 58:21 353:20 reviews 219:3 254:6 298:15 revise 8:1 209:22 278:5 296:22 345:22 revised 370:18 371:9 372:15 revising 206:1 revision 379:20 revisions 211:18 360:18 379:5 rewarded 314:21 REX 119:11 re-piping 131:20 132:8 re-qualify 350:22 rhetorical 339:2 Rich 21:18 308:3 313:14 316:10	324:19 330:10 349:22 Richard 2:4,6,8,15 87:12 Richmond 2:2 4:14 20:19 97:7 99:3 146:18 147:4,6,7 171:2 175:1,4 213:18 320:3 Rick 10:7 22:5,8 52:13 54:3 139:6 139:7,9 141:19 205:15 207:17 237:5 256:10 260:6 276:19 322:19 372:19,20 375:6 377:15 Rick's 76:8 77:3 82:20 88:22 rid 353:11 ridiculous 325:22 right 6:12 13:15 25:17,18 26:4 42:17 49:6 50:19 52:6 58:1 64:5,6 65:21 66:17 70:21 71:9 76:13,21,22 77:6 82:7 86:13 86:15 91:17 92:13 95:1,4 100:13 110:8 111:18 114:13 128:22 129:10 133:16 143:22 144:11 148:14 155:16 162:17 168:18 169:14 171:18 173:22 184:4 192:11,16 211:11 212:14,20 215:18 218:11 219:11 224:2 228:17 231:8 237:3 238:7 239:13 240:1 242:1,7 249:19 250:19 259:15 265:2 269:8 275:1	275:8,10,19 276:4 280:2,3 288:22 289:14 295:6 313:12 317:19 320:10,11 321:13 322:4 332:1 333:12 336:2 340:13 341:6 353:7 rigorous 96:10 rigs 108:1 RIM 161:14 rise 329:4 rises 141:21 risk 17:19 31:1,3,7 33:7,20 34:1 35:7 46:19 48:21 51:2 76:21 77:20 78:15 94:21 100:3,3 143:12 295:18 327:8 risks 42:13 200:6 risky 48:12 290:18 296:4 risk-based 59:6 60:21 91:16 96:16 99:22 Rita 105:13 River 72:22 road 98:8 138:21 326:15,16 robbing 131:3 robust 77:11 rock 110:5,8,12 Rockies 118:3 119:12 314:11 rocks 325:7 Rocky 2:8 21:19,19 308:4 313:15 324:20 330:11,11 350:1 role 40:4 49:13 50:1 58:13 roll 8:21 264:10 rolling 64:13 65:15 Romeville 44:20 room 14:6 34:22	42:17 46:9,10 50:11 60:2 95:6 98:21 128:7 130:19 148:12 161:21 166:22 178:9,10 202:11 229:21 321:22 383:7,9,9 Rorschach 113:15 124:2 Rosendahl 154:8 156:17 rotate 320:11 rotating 324:13 Rothman 23:20 roughly 212:15 round 46:10,12,13 Roundtable 4:10 route 25:13 167:11 167:19 168:15 203:3 routed 176:15 routes 166:18 routinely 350:22 row 6:21 royalties 246:16 RP 148:2 RPSs 140:5,10 RSTRENG 369:5 Ruby 118:4 rule 8:16 25:5 47:10 176:5 187:16,16 190:1 194:2 199:8 202:2 202:15 203:5 206:11,11,16,21 206:22 208:22 209:5,8 210:9,13 210:14,20,21 211:19 212:1,15 212:19,22 213:13 213:20,21,22 214:1,4,12 215:10 215:11 217:4 218:10,16 220:1 220:18,22 222:5 223:2,3,18 224:2	224:4,7,8 227:4 227:18 228:20 230:9,15 232:15 232:19 233:13,14 233:18,22 234:4 234:17 235:16 243:21 244:9 249:4 250:11 252:4 253:22 255:8,13 257:13 257:14 258:7,8,19 263:9,19 268:1 273:3,4,17 286:2 289:8 293:8,15,17 293:20 294:18 302:1 303:9 324:3 324:5,16 334:2 341:15 344:16 347:9 348:1,6,7 348:14 349:7 350:18 351:18 352:9 354:12 357:6 362:5 363:16 365:14,19 370:11 371:2 381:18 rulemaking 3:9 4:22 8:15 13:14 13:19 14:6 25:8 47:13,17 174:11 175:9,10 186:15 186:18 188:18 189:5 201:9,13,13 203:3,20 206:9 207:20 209:3,12 210:19,22 211:11 212:3 215:12 216:3,6,17 217:11 218:6 221:16 222:7,19 225:7,14 226:5 232:2,15 243:3 245:2,2 247:14 256:3 257:15 267:20 278:15 294:19 295:7 296:20 321:4,5 352:3
--	--	---	---	--

356:6 360:12	380:18	146:17,17,20	scale 65:6	180:9 206:14
361:13 363:22	safest 166:10	161:9 162:16	scenario 33:20	Secretary's 4:10
367:15 369:17	safety 1:2,5,8 2:1	172:6 174:5,15,15	scenario-specific	17:16 55:10,18
370:21	2:10,22 3:2,4,4,6	174:20 175:3,5	144:19	91:4 98:20 178:14
rulemakings 208:3	3:8,9,10,11,12,16	199:1,5,8,20	schedule 20:2,3	section 215:19
208:15 212:13	3:17 4:6 5:19 6:8	212:22 213:16,17	362:16,19	223:20,22 266:8
221:21,22	7:9 8:8,9,17 9:20	Sample 231:16	scheduling 161:11	335:16 342:19
rules 12:12 13:11	10:22 12:9 13:1	Sam's 161:7 199:19	scheme 42:16	343:4 369:4,7,9
13:17 14:4 34:3	16:3 19:14 22:3	205:17 207:2	Sciences 42:12	sectionalizing 59:8
40:15 77:14 91:7	23:1 32:14 40:4	San 11:12 38:18	50:22	sections 58:17
204:7 208:14	40:12 53:7 57:16	40:9 72:20 73:12	scope 204:13	92:11
210:19 216:3	57:18 58:3,6,8	89:15 98:15 143:2	209:16	sector 116:4,10
220:16 223:20	60:10 61:4,9,11	314:1 315:5	scratch 195:8	Security 154:19
224:1 225:15	61:15,15 62:6,7,9	sat 72:8 73:10,16	screen 313:13	Sedimentary
226:6 233:15	62:11 67:9,21,22	satisfaction 361:11	333:9,19 343:20	118:19 119:1
236:1 264:2	68:2,4 71:6,9,13	satisfied 379:5,12	352:8 355:5 371:5	see 6:4 7:8 10:16
270:22 271:2	73:21 76:4 78:20	satisfies 254:18	se 169:9	12:9,16 16:22
351:16	79:5,6,9,20 80:3	satisfy 118:5	sea 102:8,18 126:15	30:14 33:15,16
run 107:19 110:3	80:10,16 81:8	Satterthwaite 3:17	136:20	37:6 43:8,17
110:17 131:5	83:18 84:9 86:21	23:6,7	seasonally 124:15	45:12 47:11 53:20
140:20 145:18	88:3,6,15 89:6,13	save 272:10 341:20	seasoned 32:1	54:10 63:16 64:9
147:8 154:20	89:18,21 91:10,12	saw 31:17 52:5	second 25:14 75:21	65:13,16,17,18,22
228:7 323:7	91:15,21 92:16,17	76:2 78:18 115:5	86:20 105:12	66:5,6,7,13,14,15
371:22 372:7	92:20 93:3,7,10	122:7 185:20	110:6 120:12	70:16 72:20,21,22
373:15,16,18	96:2 99:13 101:19	203:8 207:2 318:5	153:8 157:9	80:1,21 83:21
rundown 230:19	102:21 121:7	sawtooth 66:5	158:12 191:13	85:2,12 88:8
running 14:10	129:20 146:12,13	saying 18:7 32:3	207:6,11 229:20	89:21 90:12 94:3
97:13 373:2 381:5	146:13 150:7,9	33:22 43:11 51:6	230:12 234:19	100:18,21 108:17
runs 69:14 110:20	160:21 173:3,5	51:13 118:12,13	264:4,5 276:20	114:5 115:5
runup 107:17	177:7 178:2,3,17	143:5 145:21	288:15 294:3	117:19 118:10,11
rupture 69:9,10	182:2 185:14	173:9 202:2 205:7	305:14,17 306:13	118:18 122:5
143:3	188:1 197:8 200:6	240:13 270:10	307:22 309:14	123:11 125:6,14
rural 48:12 243:13	210:5 215:20	274:1 316:11	315:3 321:20	127:3 128:15
243:21 290:18,18	216:22 218:15	320:6 327:11	339:20,22 340:3	130:10 132:19,22
R&D 50:4 61:4	220:4 229:10	331:9 334:18	340:15 344:3,4	133:3,6 135:21
69:3 248:14	244:18 253:17	338:19 354:7	345:1,2 351:14	146:18 154:1
	255:16,21 256:6	363:19 367:5	353:3 355:1,12,13	182:10,12,17
	271:21 279:3	369:3	366:17,18 371:3	183:21 193:10
S	292:8 309:19	says 28:22 70:14	371:10 382:3,4,5	204:3 210:15
Sacramento 152:9	312:7 328:3 336:5	104:12 147:18	secondary 380:8	212:4 231:21
safe 18:14 57:12	356:10 357:20	183:16 203:3	seconded 276:22	262:10 275:8
58:9 79:8 89:9	safety-critical	204:4,5,8,10	344:6 355:15	280:2,5 284:8
94:1,7 126:7	328:20	229:8 272:15,20	382:7	289:2,8,13 313:12
177:4,13 180:1	safety-type 315:1	287:5 321:8 324:8	secret 142:11	318:12 324:3,11
292:9,21	sake 233:7	328:8 342:18	Secretary 9:21	324:16 328:1,14
safely 58:18 59:14	Sam 3:9 4:19,23	348:11 353:20	17:21 39:6,7	329:1 330:4
127:22 132:2	145:16,19,20	372:10,13 377:11	83:20 86:7 177:21	342:11 350:3
149:3 374:22				

352:14 354:11,16 356:4 358:8 362:5 363:4 365:8,16 366:1 368:6,19 370:18 377:13 seeing 19:12 27:19 61:17 64:16,17,18 67:5,7 71:21 118:2 133:13,19 134:9 135:2,5 145:8 238:16 284:14 289:20 290:5 321:6,7 326:4 339:14 350:6 seek 62:17 seen 24:21 26:18 27:18 31:3,6 43:20 52:16 77:5 79:8 132:2 146:3 319:15 325:22 348:21 372:4 376:1 380:22 sees 81:4 145:9 segment 332:17 segments 119:18 212:2 260:17 seldom 374:1 self-inspect 297:12 303:22 Senate's 146:8 senators 146:9 send 52:3 95:13 Senior 3:10 sense 69:15 76:14 147:14 150:3 165:19 231:1 322:9 332:4 372:12 sensitive 126:20 274:17 327:3,4 372:22 373:12 sent 91:21 sentence 300:2 324:1 338:6 340:4 340:15 341:4 342:18 345:5	367:12,21 368:3,7 368:12,15 separate 16:12 91:8 220:6 229:17 232:17 234:4 237:10,13,14,21 238:2 240:10 257:3,6 264:10 265:12,14 309:22 313:5 323:16 354:13 separately 8:22 229:16 236:9 separation 310:10 311:1 September 151:17 series 11:10 46:6 137:9 248:11,19 287:16 serious 271:12 seriously 41:15 233:9 341:22 serve 94:8,10 95:20 95:21 197:20 289:5 served 23:16 24:4 27:15 92:18 service 15:12 23:13 23:19 24:8,21 25:22 47:5 51:14 51:15 59:13 77:13 78:6 82:2 84:4 153:4 168:1 179:4 179:15,17 260:9 265:21 267:8 376:20 services 2:6 7:5 31:19 59:3 161:2 servicing 282:21 serving 116:2 session 44:7 set 38:22 54:4 167:7 189:13 197:1 275:10 303:17 315:3 320:15 339:20,22 357:21	sets 14:4 204:20 setting 89:2 seven 93:14,16 179:8,8 seventh 193:4 Seventy 171:4 severely 216:2 shale 108:22,22 110:2 112:20 113:19 115:13 116:15,19 117:20 121:1,1 138:9 289:21 shales 109:14 111:18 117:21 118:15,16 135:14 shape 76:17 shapes 122:5 shaping 76:6 share 46:22 48:10 69:17,17 74:3 87:3 319:13 shared 54:4 74:20 196:3 sharing 60:11 69:20 145:12 163:1 Shelton 2:18 20:15 20:15 312:21,21 315:17 370:22 373:13 374:16 381:8 shenanigans 360:3 shift 118:17 119:6 120:12 shifted 113:3 shifting 7:18 135:17 shifts 122:17 146:11 shine 42:6 shined 151:18 ship 28:17 shop 182:5 183:9 184:22 shops 323:12 short 198:8 217:6	shortened 179:12 Shortening 78:6 shortly 11:1 14:14 154:1 186:9 shortsighted 285:1 shot 149:5 174:15 shout 34:20 show 92:9 109:16 117:8 178:9 193:12 233:8 241:18 245:11 264:10,12,14 277:2,4 279:2 285:5 294:8,10 315:21 344:8 355:17 366:20,22 368:18 382:9 showcased 326:6 showed 80:12 showing 285:4 299:18 shown 248:5 261:16 262:21 343:20 344:22 352:7 371:4 shows 35:4 72:18 72:19 126:4 193:15 207:10 371:2,3 SHRIMP 99:21 shut 221:11 shutoff 59:1,7,11 shutting 166:17 side 9:5 13:22 37:10 56:7,8 60:7 92:14,14 100:14 100:14 107:4,9 111:4 112:2 136:5 141:21 165:11 169:12 184:4 271:14 325:19 383:8,9 sides 40:2 120:20 sight 291:5 sign 83:12 signed 11:1 295:8 significance 298:10	significant 36:14 58:12 64:9,12 66:16 75:6 82:8 83:9 91:2 125:7 206:12 209:11 210:17,18 216:6 217:9 224:1 245:6 267:5 294:22 297:20,22 298:12 299:9 300:5,22,22 301:10,21,21 317:3,4 321:3 significantly 296:19 325:11 signs 35:6 similar 15:10 81:17 256:17 329:13,18 353:5 similarly 202:5 304:5 simple 99:21 129:10 183:11 282:11 simplistic 31:3,5 simply 134:15 172:20 247:13 251:12 255:20 256:4,18 266:16 269:17 270:17,18 298:5 300:3 304:19 sincere 322:1 single 59:5 88:20 89:16,22 90:13 95:12 310:15 324:17 single-family 214:7 singular 162:21 163:1,16 sir 217:13 221:3,18 333:20 sister 210:20 sit 73:19 318:20 site 190:17 sites 292:18 sitting 16:15 89:5 162:12 164:8
--	---	--	---	---

171:6	smooth 64:14	109:17 128:7	175:15 190:8	stakeholder 162:22
situation 95:6	smooths 65:16	150:3 174:6	209:17 248:7	192:13 197:18
179:6,10 253:11	SMS 32:17 79:6	181:18 182:11	249:5 284:15	stakeholders 59:20
283:10 315:2	SMYS 220:14	183:9 201:20	specifications	60:13,14 61:20
six 11:18 88:13	243:9 252:21	270:20 322:14	254:5	68:17 70:11 73:5
208:14 238:22	253:2	359:20 363:12	specify 297:2	75:18 76:1,20
239:5 240:20	sneak 174:17	364:14	specifying 380:14	85:14 151:5 159:2
263:12 265:3	Snow 179:8	sorts 18:20	specter 127:8	159:5 161:4
sixth 192:14	social 179:17	SOS 62:16	Spectra 2:3 20:14	162:18 163:1,10
size 327:8	soft 34:11	sound 72:12 275:6	329:4 336:21	163:15 184:11
skating 31:9	sold 245:2	sounding 342:1	speculation 245:12	206:5
skip 181:1 213:15	solely 302:21	sounds 74:20	speed 18:21 28:7	stand 30:11 131:1
slide 7:8 28:9 35:2	349:17	260:12	33:8 120:19	135:7 140:19
50:15 63:16 65:4	solid 28:17 33:11	soup 13:11,18	199:14 217:9	286:1 325:10
65:9 66:13,19	86:8	source 136:2,16	spend 33:22 103:6	standard 78:9
67:3 71:12 155:3	solution 168:14	141:4	129:6	108:16 149:11
185:6 193:14	solutions 327:6	sources 125:21	spending 69:3	167:15,16 168:15
195:19 230:22	solve 150:1 341:21	140:12 197:2	spent 83:22 270:15	215:20 216:5
231:13,20,21	somebody 95:13,17	south 119:19,21	spike 35:22	229:10 250:1
236:20 241:5	132:1 191:16	132:5	spikes 105:8,22	256:17 268:10
242:19 262:13,22	229:18 230:4	Southern 157:12	107:15	269:7 271:5,5,8
299:16 367:17	284:18,20 292:14	SO2 279:13	spill 14:22 15:2	272:1 273:12
368:5,17 369:3	301:19 303:21	space 73:2 134:16	38:10 41:5 217:18	274:2 275:16
381:14	304:7 306:7	213:10	spills 36:10 64:1	281:19,20 344:2
slides 120:7 239:14	318:11 330:15	spacing 210:6	65:19 66:4,7	346:21 363:1
240:1 242:1,1,18	350:7	span 17:12 380:15	split 130:17 212:1	standards 1:5,9 2:1
261:17	somebody's 330:18	spate 38:15	383:5,7	2:10 3:8 7:9 8:8
slightly 7:8 371:9	somewhat 289:20	speak 8:1 9:4,5	splitting 257:20	8:10 43:1 48:17
slipped 350:3	307:17	18:8 25:21 55:22	spoke 33:2 38:9	77:21 95:22 140:3
slips 80:22 81:2	soon 61:7 170:22	56:4 83:16 96:9	spoken 34:7	141:13 158:3
slots 17:14	249:13 365:16	177:17 199:14	spots 34:11	166:3 215:11,14
slowly 36:8	sooner 339:8	317:21,22 322:22	spread 44:16 53:5	215:17 216:8,11
small 59:3,3 66:18	sorry 25:1 31:8	360:13	111:8 115:14	216:12,13,16
99:10 217:22	47:7 50:3,14	speaker 101:10	125:8	224:8,9 225:13
300:4 308:15	51:22 71:22 86:18	speaking 25:12	spring 202:14	255:22 256:5
315:14 318:10	92:6 132:11	70:8	spun 38:8	standpoint 102:17
323:8,9,9,11	141:20 155:12	speaks 71:17	stabilize 169:22	303:13
327:4 331:5	200:21,21 241:22	special 10:5 208:5	stable 57:13 143:1	stands 203:5
334:17 336:10,10	274:11 275:19	219:8,10,12,14,17	staff 3:13 4:5 12:22	355:11
336:16 369:11	281:12 317:17	specialize 124:3	16:7,7,8 21:12	start 6:5 20:4 64:13
smaller 99:9,20	335:20 342:16	specific 58:9 62:3	22:17 47:15	64:15,16 76:13
100:2,5 112:17,17	343:10 349:21	62:17 91:6,15,16	207:12 295:21	77:19 82:21 86:14
140:13 233:3	352:14 355:1,3	157:15 198:12	379:11	86:15 115:20
299:8 339:16	372:19	232:6 236:14	staffing 167:5	122:15 128:3
smart 52:16 69:14	sort 10:14 13:11	239:21 264:2	stage 222:3	129:3 133:18
71:15 140:16	24:17 37:12 51:5	289:9 306:2	stages 221:21	134:8,9 135:2,5
smarter 71:15	75:9 81:6 105:4	specifically 147:18	stake 249:1	137:11 140:21

204:15 254:15	339:14 354:9,10	375:4	stream 121:3	90:13 97:14,19
265:5 286:20	354:15,15,20	station 78:3,3	street 1:17 13:13	98:1 173:10
320:17 383:3	356:6,15,17,21	220:13	101:21 210:15	175:21 200:22,22
started 25:6 64:10	357:2,3,14 358:13	stations 266:14	212:19	201:4 205:12
64:11 70:2 74:10	358:18 359:2	statistics 246:21	strength 259:14	238:3,8,14,18
77:4,4,5 108:6	360:21 362:3	stats 81:1	stress 210:11	244:4 246:12,12
114:4 120:19	364:4,7,13	statute 229:8	224:14 248:16	257:8 258:4,10
150:2 151:8	stated 52:1 267:16	stay 33:11 55:3	268:14 270:19	273:2,14 276:12
170:21 318:2	297:9	95:22 197:12	strictly 203:20	276:16 280:20,20
starting 9:2 22:18	statement 61:11,16	360:6,7	Strike 207:21	281:22 282:13
72:14 82:19 115:1	80:4 97:5 199:3	staying 36:21 119:3	striking 172:6	283:21 289:1,1
120:18 122:5	247:15 251:6	378:14	stringent 243:11	317:10,10,14,16
132:7 133:10	279:7 310:3	stays 116:10	246:3	322:22 323:3,3
135:3 136:19	statements 97:22	216:14	strong 16:21 24:19	333:21 338:11,13
140:13 150:4	99:15	steadfast 24:8	39:19 46:15 60:7	341:1 342:17
166:7 194:13	states 14:2,3 21:10	steak 168:2,9	178:17	347:6,7 350:12
222:2	26:17 49:16 57:4	170:12	stronger 25:19	351:7,13,21 352:6
starts 37:18 232:1	57:9 59:22 88:11	steaks 170:13	39:15,17 41:4	354:4,16,19 356:2
state 2:19 4:6,13	88:12,13 90:17	Steam 2:4 22:15	strongly 271:2,11	357:15,18,18
9:5 14:20,21	91:7,10,16,17	steel 18:2,16 42:4	struck 334:7	365:6
20:10 21:8 39:21	93:14,21 95:7	105:17 257:10	351:17	subcommittee
45:12 49:18 56:9	96:13 98:9 107:14	steep 64:21	structure 169:6	92:17
58:13 80:12 88:13	108:1 111:19	stellar 37:12	struggling 89:2	subject 70:4 137:1
88:20 89:22 91:22	118:21 124:14	step 34:16 73:1	stuck 358:5	141:2 186:15
92:7,11 93:10,16	129:17 138:4	78:20 81:3 150:22	student 104:20	199:9 243:5,10
94:4 96:12 98:13	139:22 140:4	161:20 268:10	105:20	247:11 258:19
98:17 102:8,18	158:1,7 167:2	321:19 383:2	studies 18:20 40:17	324:18 337:9
147:1 154:2,7	175:20 181:7,20	stepped 18:1 78:18	42:9,11 49:4	360:11 361:12
157:2 158:3,4,5	183:22,22 184:3	79:5	127:3 137:22	subjective 181:21
175:19 176:3	185:9,17,21 186:6	steps 206:16	210:8 212:12	submit 204:10
177:3,6,10 181:3	188:4,12,19	353:21	225:2	315:9
181:5,6 182:1,4,5	189:16 190:3,7,20	Stillwater 123:8	study 42:12 49:6	submitted 187:11
183:8,15 184:5,11	193:11,19 194:10	stock 254:18	120:4 181:13	206:11 218:22
184:19,21 185:5,9	196:8 197:21	314:22	198:3,3,5,7 279:7	371:7 381:19
185:11 186:5	198:15,18 202:18	stockpiled 249:22	333:16	subpart 300:3
189:13,14 190:11	205:18,22 236:17	stole 213:16	studying 270:16	324:2 335:15
190:22 191:1,10	238:4,16,18	stood 155:6	stuff 26:18 43:17	substandard
191:17,21 192:6,7	246:18 247:1	stop 182:5	45:19 52:22 89:15	331:13
193:5,8,13,16	253:18 347:11,11	stops 368:2	109:18 136:8	substantial 350:18
194:4,7 198:14,16	350:21 356:8	storage 105:12	228:11 260:2	substantially 16:4
198:20 201:18	357:6,9,20 358:6	straightened	275:3 305:16	substantiate
202:3,7,18,22	358:10 359:8,11	259:18	358:19 359:1	193:12
203:13,21 204:2,4	362:18 365:8	strategic 70:13,17	373:1	substitute 184:18
204:10,14,17	state's 184:20	147:16 148:1,9	stupid 260:13	184:20
206:6 235:3 254:5	191:6 192:14	strategies 148:19	326:1	substituted 334:7
261:20 275:22	state-level 179:22	153:10	stupidest 52:17	success 73:18 79:13
278:6 318:3	stating 67:15 247:9	straw 329:16	Stursma 2:7 20:9,9	153:12 155:21

165:1	supervisors 100:12	234:10 242:14	100:16,17 119:22	168:14 170:4
successful 154:5	304:3 308:8,9	250:8 251:1 255:7	142:7,10 159:14	174:14 182:3
163:22 170:22	supplier 292:3	256:15 257:18,22	159:18 168:22	183:5,7 206:21
377:13	suppliers 61:13	258:1,9 262:19	169:15 196:2	207:5,11 221:14
succinct 265:20	supplies 105:13	263:15 265:20	204:10,11 235:9	226:10 228:3,5,13
sudden 112:12	116:13 118:14	300:13 312:12	253:8 255:13	229:15 241:11
127:7 136:13	119:17,21	317:1 325:5	287:20 324:12	249:6 251:1
202:4 337:1	supply 103:16,21	327:13,16 332:22	354:8	255:19 257:4,17
suddenly 324:17	107:8 112:20	339:17 342:20,21	systematic 156:10	258:11 263:8
Sue 4:12 10:10 21:4	135:5	350:1 358:22	systems 32:15 60:6	264:16 267:19
56:3,6,10,11 63:6	support 16:8 18:6,6	359:4 360:3	65:3 68:3,10,10	269:12 271:11
86:18 99:15 316:8	18:7 19:1 52:20	376:12 383:6	78:15,21 79:6,15	290:6 295:12
352:13,15	53:18 59:6 60:7	surely 142:17	79:21 121:8	302:18 319:20
sufficiency 244:19	61:4 88:4 98:13	surface 49:14	142:13 144:6	329:19 339:8,10
suggest 241:7	99:14 154:16	110:21	287:15 324:11	359:22 364:10,15
275:15 307:19	178:15 202:15	surgery 29:3		364:20 365:12
suggested 271:13	232:6 242:6 250:7	surprised 80:7	T	370:14 372:8
369:20	292:10,11 308:4	164:8	T 92:12	376:16,17 377:8
suggesting 288:8	309:7,9,13 310:7	surrounding	tab 305:16	380:3
376:2	319:19 325:18	139:11	table 15:19 45:19	taken 24:13 55:9
suggestion 335:22	331:9 340:22	survey 178:6,6,8	72:9 80:3 152:19	61:8 90:21 91:7
340:22 379:7	346:17 378:20	214:13,18,22	156:16 165:12	127:7 145:1 146:8
suggestions 13:8	379:19	243:5 245:22	200:9,15 210:22	178:16 181:4
295:13 327:14	supporters 154:22	246:2 250:18,22	251:10 269:9	233:9 269:22
378:12	supporting 58:8,14	surveyed 244:8	322:6 330:3	365:16 380:19
sulfur 279:9	60:3 75:10 78:22	surveys 234:21	365:12,17 366:5,8	takes 25:14 67:16
sum 116:19 124:22	78:22 97:22 245:9	243:2,20	366:12	207:9 275:16
summarize 51:6	245:10	survived 348:22	tabled 366:16	tale 179:7
80:19 183:9	supportive 239:8	Susan 2:4 157:5	TAC 213:3	talent 157:4
summarizes 260:4	247:18 256:8,22	300:17	tack 130:5	talk 26:21 28:3
summarizing 98:2	336:12 349:15	suspect 6:18 144:1	Tahamtani 2:19	32:14 46:16 49:15
summary 88:1	378:13	162:18 163:15	4:13 10:9 21:7,8	70:5 85:5,5
246:7 280:17	supports 259:12	sustain 157:18	87:21,22 90:7	101:14 103:6
357:11	supposed 37:21	158:14	92:6 97:11,20	104:2 111:16
summed 173:10	204:8,9,9 229:11	sustainability	170:6,15 228:9,14	120:15,22 121:19
summer 34:17 51:1	267:21 298:6	167:13	294:14 295:1	128:13 137:2
133:13	surcharge 131:9	sustainable 168:16	300:10 317:13,19	157:9 164:4 175:8
summit 62:6	sure 17:11 18:13	sweltering 6:22	332:19 333:14	175:10,18 176:3
Sunoco 2:18 20:16	26:14 37:14 44:16	switch 26:7 27:8	338:10,17 361:18	197:13 199:9
super 304:2	46:15 54:11 69:8	sword 141:22	362:11 378:19	200:10 202:7
superior 305:15	88:19 98:12	sympathetic	take 28:6 36:4 39:5	259:2 307:7 318:1
312:2	129:18 143:10	363:12	41:15 44:15 49:3	326:18 353:4
supervisor 307:13	161:13 168:13,22	synch 53:3,16	68:8 72:3 81:3	talked 34:4 42:3
308:14 309:17,17	176:11 181:11	synergisms 130:7	86:12,14 119:18	96:18 99:17
328:11 330:14	195:2 203:15	synopsis 44:9 79:22	127:22 131:21	124:11,12 132:13
334:19,20 337:14	215:1 221:15	system 15:4 47:4	135:1 146:22	149:8 174:10
339:18	224:3 231:16	63:19 84:11 100:1	159:4 162:8,13	205:6

talking 17:3 25:3 30:15 31:18 65:22 75:20 81:2 85:7 86:22 89:6 98:4 108:21,22 110:18 111:2,5,13,17 112:5 114:22 120:9 122:15 125:14 126:9 137:4 146:10 166:1 174:9 208:13 286:9 307:1,6,9 308:13 310:14 316:17 318:17 320:1 322:20 332:18 335:12	75:16 111:1 227:5 230:11,16 263:21 268:17,22 269:14 270:12 288:12 293:10 294:1 343:21 344:18 352:10 381:22 techniques 114:5 149:19 technological 126:16 technologies 61:3 107:3 109:8 138:14 technology 68:14 71:13,19 106:13 106:16 107:1 109:22 110:6 112:4,12 127:15 181:16 telephone 193:1 tell 16:16 38:1 42:15 55:14 112:1 113:16 148:11 161:8 170:2 213:17 274:15 286:11 361:21 375:9 telling 29:9 tells 321:2 temperature 7:1 temporarily 162:12 218:11 276:8 temporary 367:22 tend 56:2 166:14 234:1 tended 135:15 tent 9:4 139:6 Tentatively 50:18 term 35:18 37:8 109:4 113:13 141:14 316:7 380:17 terminate 219:12 terms 12:19 37:5 54:17 89:1 90:16 91:7 104:21 105:5	106:6 107:1,7,17 111:7,9,11 112:10 112:19 114:15 115:5 117:11 119:6 120:1,6,11 121:6,21 122:6,6 122:12,17 123:10 124:17,21 125:5 125:15 127:6,6 129:1,5 133:6 134:4,20 137:16 140:13 141:15 143:22 144:2,12 144:15,21 145:1 251:20,21 281:22 302:5 306:18 376:20 terrible 268:20 test 113:15 124:3 235:2 252:21 260:10,19 266:9 266:13,19 268:19 268:19 270:17 320:16 333:4 348:17 349:1,3 354:11,21 tested 253:5 testing 129:20 144:2 235:7 239:11 252:17 266:11 275:19 330:22 346:5 348:13 tests 266:7 268:12 Texas 21:1 36:1 38:20 149:7,11 151:17 152:2 156:15 text 296:10 368:20 369:1 thank 7:3,5 8:6 12:22 19:15,17,18 19:21 23:11,18,21 24:20 31:21 43:16 51:13,14,15,17,19 54:2 55:1 56:11 56:14,14 63:7	71:20 72:5 86:15 86:16 87:17 97:3 99:1 101:1,2,5 103:2,4 128:2,5 132:10 145:3,11 145:15,19 162:15 173:5 175:7 199:1 200:18,19 206:7 207:6,11,15,17 221:18 222:4 231:4 237:8 238:11 241:14 244:12 247:4 261:2 262:7 263:1 264:16 265:1 266:3,5 269:3 275:21 277:5,7 291:21 293:3,4 296:13 300:15 312:20 322:21 333:6 336:4 342:9 343:7,13 344:9,13 345:9,15 349:4 350:9 353:13 355:14,21 361:18 372:17 378:17 380:11 382:13,13 382:17 383:11,12 thankful 24:10 157:7 thankfully 41:5 thanking 9:17 25:22 thanks 10:5 24:1 25:21 44:2 71:19 101:19 102:1 146:17,20 164:1 222:15 230:7 336:21 345:8 theme 179:7 244:15 245:8 254:17 278:22 279:6 280:9 themes 30:21 theoretically 217:20 they'd 235:19	thick 98:10 thin 31:9 53:5 268:14 thing 25:17 36:7 64:17,18 74:18 76:13 83:11 85:8 86:20 91:17 95:12 96:11 99:16,17 111:10 112:11 115:10 125:10 130:2 137:18 153:12 155:20 156:3 157:9 179:13 183:6 193:22 204:5 213:1 221:9 240:2 250:16 266:2 269:9 271:16 304:14 308:16 319:11 331:9 332:1 334:15 337:21 353:3 361:17,19 things 6:10 11:4 12:20 16:10,14 18:20 25:15 26:12 30:4,13 31:17 32:13,20 33:1,10 35:19 36:17 38:8 40:6 41:2 42:1,4 43:8 44:15,19 45:22 48:3,8,20 49:11 51:8 52:18 62:21 69:1,19 76:19 77:6,17 78:17 82:7 84:3,8 85:12,15 87:7 89:17 93:17 94:13 94:15 97:8 98:4 98:16 99:12 107:7 116:22 121:11 123:14,17 128:10 129:9 132:18 139:1,3 140:18,19 142:20 144:17 145:7 166:13,20 169:2 171:20
---	--	---	---	--

176:8 177:2,12	144:11 145:9	323:17 325:14	336:1 338:13	51:9 55:22 58:15
181:15,17 186:11	146:14 148:11	326:5,14 327:9	347:13,21 362:21	59:18 61:1 76:10
186:12 190:18	153:6 158:20,21	328:6 329:6,11,13	363:15	77:16 90:5 95:14
194:2 199:13,16	159:5 160:5	331:8 332:4,7	thoughtful 51:11	102:4 103:15
203:12 205:8	161:16,20,21	333:9 334:6,9,14	thousand 45:14	107:14,20 108:5
212:3 218:6 220:1	162:6,17 163:3	335:5,6,16,21	threaded 239:9	108:10 113:17
225:10 233:18,21	165:11,18 166:6	336:8,13 337:4,16	threading 235:4	114:22 127:13
248:10 265:18	167:11,18 168:18	338:2 339:2,6,9	251:8	129:6 133:11
295:15 314:17	169:2 170:4	339:12,15,21	threat 77:10 78:12	138:4 140:20
326:1 329:17	171:13,15,20	340:15,17 341:16	100:4	146:17 151:12
332:20 337:13	172:8,12,22	342:9 347:11,15	threats 78:14 82:4	170:9 171:21
352:16 356:5	174:19 183:12	347:19 348:5,15	three 32:3 55:20	176:22 187:20
363:18 364:8	184:16 187:11	349:7,12,12 354:9	105:8 187:11	198:8 200:7 205:5
379:14	189:10 197:5	354:13 362:2,22	192:16 230:7	207:4 208:13,16
think 6:19 7:18,22	198:7,13,17 200:4	363:5,10,11,17	235:16 268:18	210:8 213:13
8:5 10:12 19:2	200:13 201:1,8	364:2,3,6,8,12,14	319:16 323:11	217:3 231:20
25:5,9,15 27:14	202:7 203:5,16	364:20 365:6,12	348:13 352:22	244:5 245:17,18
28:9,12,17,18	204:15,17 207:10	366:11 371:18	353:14 357:13	246:17 248:9
29:1,6,8,22 30:3,5	212:14,17 214:17	372:12 373:7	371:1 382:14	250:19 258:12
30:15,21 31:22	217:4,14 219:1,14	374:18 375:2,6,8	three-man 330:13	261:3 265:17
32:13 33:7,9	226:13 227:19	376:17 377:19	three-quarters	290:3 292:1
34:14,20 35:5,11	228:2 230:1 234:8	378:16 379:2,3,14	37:8	297:14 301:21
35:17,18 36:17,17	238:14 240:2,8,12	379:17,20 380:4	throughput 35:8	314:3 323:5 325:4
37:2 38:22 39:5	240:19 242:3,12	381:13	throw 230:2 290:22	342:5 349:16
39:12,18 40:3,5	242:17 244:5,9	thinking 67:7 76:6	329:16	373:21 375:4,7
40:20 45:3,16	248:4,18 249:4,7	117:10 227:9	throwing 50:16	377:12 380:14,22
46:1 47:21 49:2,5	249:12 250:17,18	289:11 305:3	210:22	381:5,7
49:11,14,20 53:1	251:1 257:18,21	359:18	thrown 291:14	times 27:5,10 72:2
54:3,15,16 55:3	258:10,14 268:9	thinks 322:10	thunder 213:16	78:7 114:20 115:3
55:17 64:7 67:12	268:22 269:16,22	third 105:14	tidbit 138:1	166:12 266:13
72:17,18,18 73:1	270:11 271:7	167:22 191:17	tied 119:16 262:12	342:5
73:3,10 74:2,18	275:4 282:5,7,18	230:16 260:8	262:20 302:21	timing 134:6
75:1,6,12 76:8,18	282:19 283:22	297:17 298:7	tie-ins 220:18	TIMP 142:21
76:21 78:17 79:2	284:13 287:13	302:5,7 303:14	tight 109:13 110:3	143:7
79:10,22 81:14,17	288:2,17,19	308:7 312:11,15	110:12 112:13,20	tiny 271:18
81:20 82:6,8,20	289:19 290:17,21	317:2 371:9,11	116:19	TinyURL 179:13
83:8,11,19 85:3,4	292:12 295:10,11	379:8	tightly 121:9	tired 29:10 228:10
85:10,12 86:12	296:5,6 301:9	thorough 187:7	till 118:20 145:18	title 7:17 8:15
90:4 92:2 97:4,11	302:12,12 304:1	227:11,17	341:20	186:17
98:1,18 99:18	304:18 305:14	thought 24:12	Tim 32:7 173:1,5	titled 27:12 341:15
102:5 106:11	308:16,18 309:8	55:19 72:11 75:11	time 7:4 8:19 9:22	Tobacco 249:11
107:10 111:11,21	309:13,18 311:8	77:1,1 161:10	14:7 15:11 17:12	today 6:6 9:18 10:9
126:18 128:2,6	311:13 313:21	196:19 202:12	19:12 24:10 26:22	23:21 57:8 61:18
130:14 132:9	314:5,7,9,19,20	228:12 234:11	27:6,18 28:12	70:15 89:10
133:2 134:12,22	315:2,4,7,9	244:6 262:15	30:14,14 32:8	101:20 104:2
135:2 139:3,5	316:20 317:6	282:11 286:15	34:16,22 35:8	108:14 144:10
141:12 143:5	320:13 322:17,18	290:12 317:16	37:20 42:15 43:20	154:9 186:16

220:3,11 272:15 273:10,12 274:2 319:14 322:19 375:9 today's 112:4,9 310:5 told 41:14 174:6 295:20 317:20 tomorrow 9:18 32:5 70:15 215:4 383:4 tomorrow's 310:6 ton 40:14 tone 364:4 tonight 228:13,15 239:5 tool 69:14 182:9 183:10 185:20 371:21 373:15,18 373:19 tools 31:11 36:17 77:10 82:4 86:10 195:14 top 47:6 89:13 131:7 163:18 183:16 212:20 topic 34:18 49:14 145:21 146:1 171:13 175:6 185:4,5 216:1 235:21 242:22 268:7 296:15,17 topics 146:14 155:19 211:7,10 211:12,13 212:4 227:5 232:3 234:20 235:17 236:5,20 239:14 239:22 261:15,17 278:15 torn 24:11 total 114:1 125:11 126:8 227:1 239:20 totally 133:18 204:16 238:21 281:9	totals 120:11 touch 68:21 169:20 touched 186:10 touches 41:2 touching 71:12 tough 28:20 52:21 town 50:7 282:21 towns 290:1 323:9 traceability 60:5 223:17 track 218:13 351:2 352:22 353:12 tracking 60:4 63:19 223:16 224:22 260:1 352:20 trade 137:9,18 177:9 197:11 traded 104:10 trades 197:11,12 197:12 traditional 111:15 116:17 traditionally 117:1 tragedies 38:17 tragedy 38:12 tragic 28:20 35:16 39:3 train 303:16 trained 100:13,15 137:7 training 32:11 93:7 150:18 154:12 156:8,22 157:20 158:4 159:21 167:15 168:2,6,16 170:19 181:15 224:17 TRANSCAER 153:14 154:3 165:4 transcript 230:20 342:11 transfer 302:14 transferrable 158:1 transmission 4:13	13:17 37:10,12 56:8 59:12 72:7 119:11 120:10 125:2,13,15 142:11,13 144:5 144:14 210:21 211:2,19 246:1,5 277:11 278:11,18 280:8 282:20 283:7,12 287:6,7 293:22 297:3 transparency 42:6 transport 121:13 transportation 1:1 42:13 51:3 153:14 153:18 165:2,7 166:9,10,18 173:2 235:4 249:17 transported 136:3 249:19 transports 277:16 trapped 109:13 traversed 149:2,17 treadmill 13:2 treat 362:8 tremendous 154:16 154:22 trend 35:3 68:7 105:22 120:16 trending 68:9 trends 29:1 35:19 196:20 tried 63:1 73:16 76:19 114:11 182:3,4 184:6 238:11 266:16 277:21 302:14 331:1 triggered 368:16 trillion 111:3 112:3 134:18 trinkets 168:4,10 trips 80:22 81:2 truck 165:7 166:16 true 35:21 36:10 149:5,13 267:10 335:2	truncated 191:4 trust 2:22 22:3 161:14 312:7 336:5 try 18:11 26:9 40:1 41:16 45:15 52:18 52:21 55:3 60:14 66:20 74:11 75:22 84:20 85:14,15 86:7,9 90:14 91:19 93:3 96:2 104:2 125:22 136:22 140:15 145:19 147:12 171:12 176:1 177:2,16 200:11 203:14 207:12 211:7 232:4,19 233:5 241:7,12 263:3 293:6 322:2 327:3 329:4 350:9 360:13 trying 14:21 15:1,3 15:14 16:19 17:13 44:4 46:22 69:15 70:1,2 71:2 76:16 77:19 79:17 82:16 83:17 84:1 94:14 100:6 117:8 138:8 144:21 152:11 159:17 183:7 189:13 196:16 210:6 212:16 216:7 217:12 228:10 231:16 240:12 242:9 269:5 272:14,16 281:1 283:16,20 307:12 312:11,12 312:14 313:11 333:6 336:21 352:21 358:18 367:12 368:22 373:16 375:3,4,8 375:14 376:15 381:8 tune 27:10	TurboTax-type 100:1 turn 6:12 9:3,4 19:14 56:10 63:15 68:9 103:2 110:1 146:16 162:13 172:13 229:3 268:5 317:14 turned 173:14 turns 110:20 twelve 45:14 twice 341:3 two 11:22 44:19 45:14 70:3 96:22 99:4 108:16 132:17 155:2,12 175:22 187:11 189:15 204:20 206:16 210:7,19 226:14 248:10 286:12 318:20 319:16 322:7,16 323:12 330:12,13 330:14,17 345:16 352:16,18 356:1 357:13 383:5 two-man 334:18 type 164:19 179:13 219:15 234:22 243:2,4,7,11 246:8 302:5 313:11 368:9 types 181:17 219:6 224:12 232:22 251:19 typically 167:22 310:16 typing 333:12,14 typos 333:20
U				
ultimate 113:22 ultimately 68:8,12 131:3 137:18 316:4 umbrella-ing 69:20 unacceptable 74:6				

346:4,9	372:13 373:13	unrelated 147:1	usually 174:5 213:8	vastly 305:15 312:2
unanimous 294:11	understandable	unstable 143:1,3	Utica 111:18	Vegas 106:20
295:9 344:12,13	195:17	unsuitable 279:16	118:16	vehemently 290:17
345:14	understanding	unsupervised	utilities 2:5,7 20:10	vehicle 233:2
unanimously	84:21 104:4,15	297:15	21:19 163:8	vehicles 233:10
355:21 382:13	184:18,21 279:2	unusual 134:13	317:11	vehicular 62:11
unassociated	283:17 288:1	update 9:15 184:9	utility 2:6 20:12,20	vendors 31:19
211:13	understood 381:10	184:12 215:11,17	57:11 309:9,12	verbatim 230:20
uncertainties	undertaken 278:2	216:16	313:19	verification 211:17
122:21 139:11	undertaking	updated 160:2	Utility's 20:20	225:10
uncertainty 199:10	148:14 173:13	184:15	utilization 126:17	verify 225:13
unclear 199:12	296:3	upper 63:16 65:10	utilize 127:21	322:15
257:12 281:9	undertook 248:10	360:22 362:20	254:17	versed 169:8
uncomfortable	underutilized	upstairs 81:2	utilized 127:11	version 381:9
378:11	131:22	upstream 278:11	utilizes 198:9	versions 215:14
unconventional	underway 54:18	280:7 281:6 282:1	U.S 1:1 115:13	versus 143:1
108:21 116:15,18	57:16	282:2,15 284:2,7	138:12 154:17	162:20 163:16
118:3 138:9	undone 45:21	uptick 65:22 66:8	193:17	239:12 324:2
undercut 161:16	undue 255:10	upward 65:5		342:21 376:7
underfunded 17:5	unfavorably	urge 271:11 315:19	V	380:21
undergo 260:17,18	279:10	316:5 341:18	vacuum 138:3	vertical 109:19
underground	unfortunate 74:4	USA 2:14	vague 310:11,20	Vessel 266:8,21
49:21	unfortunately	use 26:8 35:2 42:22	380:16	269:2,19 270:14
underlies 361:13	137:1 152:17	47:1 59:2 60:22	vagueness 320:4	vessels 268:12
underlying 268:10	270:7	62:13 68:14 71:19	valid 289:14 337:5	270:20 271:19
291:1	unheard 306:8	79:20 116:9	374:19	vetted 159:3
undermanned 17:5	unify 169:15	159:19 160:12	valuable 244:7	viable 131:4
underneath 112:21	unintended 284:12	178:20 183:11	value 279:17	vice 103:9
368:21	284:21	188:16,20,22	valve 42:10 210:6	vicinity 110:9
underpin 75:7	unions 301:17	190:12 191:6,16	225:5	video 179:5,18
underscore 52:20	unique 75:14 167:4	192:7 194:3,20	valves 48:15 59:2,7	187:1,2,3
understand 43:12	unit 16:12,13	196:16 204:9	59:8,8,12 169:20	view 29:19 37:17
44:1,17 67:19,20	301:16 302:15,16	236:21 249:21	212:8	40:15 45:7 55:12
79:17 96:1 117:9	united 57:3,9	258:16 279:16	VanScoyoc 3:19	115:17 141:3
134:13 148:3	107:14 108:1	283:12 288:17	291:21 292:1	179:11 200:2
158:8 185:1	111:19 118:21	293:16 298:1	variability 141:8	viewed 375:11
195:15 197:14	124:14 138:3	312:8 313:20	variation 65:17	views 139:12 173:4
214:18 237:19	139:22 162:20	315:17 316:7	variations 354:9	VII 266:8
262:17 270:11	163:6,10,16 167:2	337:6 340:5,6,17	363:4	violate 189:1 196:6
272:8 274:18	unleashed 138:12	341:18 368:4,10	variety 57:15	violation 271:9
275:5 280:22	unnecessary	371:18 375:18	148:17 149:21	violators 188:22
281:13 286:8	267:18 331:7	useful 55:19	209:11 223:8	Virginia 2:6,19
290:22 312:6,8,10	351:18	user 284:16	232:3	21:8 22:6 96:9
318:9,12 319:5	unodorized 289:4	users 289:11,13	various 87:1	146:18,22 147:4
327:5 337:16	unpredictable	uses 306:5 311:7	279:21	160:9 170:13
341:7 350:2,21	199:15	313:2	vary 377:13	318:3 338:14
358:15 361:8	unprepared 43:14	usual 325:20	vast 119:9	vision 68:3

visit 19:19 230:8	238:2 261:18	249:11 250:16	watered 76:11	134:20
visits 190:17	380:2	257:19 262:18	watershed 36:13	web 87:20 177:9
visual 63:12 306:16	voting 228:22	263:14 264:9	waves 45:4	179:11,12
vital 292:7	229:2 236:22	272:20 275:11,15	waving 203:10	webcast 43:3
voice 25:11 32:2	240:11 259:1	286:8 292:20	way 12:5 19:7	webinars 84:19
133:8	262:3 274:13	299:15 300:12	49:17 53:7 56:21	website 12:9 43:4
volume 65:22 66:1	296:3,10	305:5 311:4,17	62:18 64:5,6	44:10 61:16 67:11
66:8 116:10		312:2 313:7,17	70:22 80:18 89:20	67:11 86:3 161:4
126:18	W	314:5 315:16	94:15 112:13,18	183:10 326:8
volumes 117:21	W 2:11	316:15 319:18	116:14 118:19	websites 180:7
119:1 131:8	wade 102:21	321:19 322:6	119:12 122:1	web-based 170:19
volumetrically	waded 203:10	327:11 331:20	126:18,22 127:19	WEDNESDAY
141:5	wait 47:22 56:12	333:16 336:14,15	130:20 133:3	1:14
voluntary 58:2	170:1 194:16	339:11 341:11	135:22 136:13	weeds 282:8
64:1,17 153:16	waiting 341:20	342:9,11,20,21,22	140:7 142:9	week 6:17 9:12,13
154:4 165:5	355:11	347:4 348:19	143:15 156:10	17:21 53:14 81:1
volunteer 167:3,4	waiver 347:17	349:14 353:1	160:14 170:5	142:19 309:1
230:4	353:5,18 354:1,7	373:10 375:16	174:14,17 180:16	weekly 80:22 81:9
volunteers 171:5	waivers 347:12	wanted 6:15 24:19	180:22 195:5	weeks 184:9 187:15
vote 8:15,19,22	wake 73:12	34:4 43:15 55:1	203:6 213:2	weigh 45:6
174:2 199:7 200:3	walk 26:8 45:20	86:19 87:11	218:12,16 227:9	weight 201:21
200:16 206:18	77:18	172:20 199:2	233:17 259:15	294:22
213:3,4,12 214:2	walking 26:10	205:16 237:13	265:14 275:10	Weimer 2:22 10:7
222:6 226:16	Wall 101:21	267:6 290:13	283:8 285:16	22:2,2 26:22 34:8
227:3,9,10,19	Waller 157:5	296:1 327:18	288:10 303:8	136:10,10 164:2
228:13 229:15	want 7:3 10:5 20:3	347:17 352:16	310:2 315:22	242:11,15 247:20
231:20 236:9	28:1,17 29:15	354:7 381:20	316:11,19 321:12	312:5,7,16,20
237:2,4,11,13,16	30:5 31:21 35:2	383:2	322:19 326:8	336:4,5 345:2
237:16 238:12,15	41:11 43:13 44:1	wanting 286:22	329:14 347:12	welcome 6:15 8:4
239:20 240:8,15	52:8 54:2,10	wants 23:12 97:12	348:2 354:15	32:2 101:11
241:1,6,13,20	83:21 86:4 88:16	203:2 241:8	365:17 374:3	327:14
257:3,6,17 258:5	88:22 89:22 90:11	272:17 340:11	375:21	weld 307:11 310:16
258:11,15,19	90:12 91:3 96:3	warmest 108:15	Wayne 2:5 20:11	332:11,12,12
263:8 265:12	98:13 109:6	warn 97:15	51:17 52:1 221:4	welder 235:11
266:1 274:6 276:4	111:11 124:7	warps 33:20	241:15 286:5	306:4 307:11
276:13,17 294:4	130:13 131:12	warrant 203:6	288:5 289:17	welders 235:11
295:6,9 309:22	145:7 150:8,22	Washington 1:18	290:16 293:7	256:17
340:12 344:6	157:9,20,22	9:14 101:22	ways 60:14 62:2	welder's 306:8
349:17 357:16	161:16 173:8	174:22 184:14	137:6 159:18	welding 235:13
364:14,21 365:7	193:9,18 194:22	wasn't 67:5 171:21	196:18 223:3	239:12,13 256:14
365:10,10,16	195:18 200:13	272:9 282:10	230:7 326:10	256:14,15 262:1
366:6	201:7,19 203:22	312:13,14 339:18	329:13 339:21	265:8 307:3
voted 25:4 206:4	211:9 221:11	346:20 349:8	weak 39:1 44:15	332:22
367:9	226:9 227:16	370:2	99:18	welds 332:10,14
votes 200:12	228:6 230:2,3,14	waste 319:22	wear 99:4	wells 114:17,19
226:22,22 229:17	231:5,17 237:15	watch 136:6 325:11	weather 6:19	115:2
231:10 236:14	237:20 241:9	water 49:7	133:12 134:14,15	went 101:7 113:4

120:4 143:2,3	100:10,15,22	274:1,19 283:16	188:8,13 191:5	338:22 340:10
153:5 173:18	102:2 108:21,22	283:20 284:22	193:22 194:10	363:11 365:1,21
184:16 189:9	110:18 111:2,5,13	285:5,9 286:22	196:7,19 197:9,17	wilderness 133:9
227:13 264:19	111:19 112:5	289:20 292:2,9	197:18 205:5	willing 153:21
271:1 286:17	113:8 115:19	295:18 296:6	209:12 211:6,16	win 197:5
318:3,4 364:6	116:14 120:9	303:14 305:5,6	211:18,21 215:10	wind 138:15 140:14
377:6 383:14	122:8 123:1	307:1,6,9,12	215:14 217:7	winds 124:17
weren't 6:17	124:10,13 125:1	310:17 313:11,21	219:9 222:14	winter 108:15
109:20 346:13	125:14,22 126:9	329:7,11 331:8	225:4 227:2,7	113:2 133:12
west 105:12 118:4	128:8 133:16	332:18 335:5	229:20 261:14	206:19 351:1,1
Western 118:18	136:18 137:4	336:2,9 339:2,7	264:21 285:6	winter's 134:14
119:1	138:4,12 144:11	339:12,13 340:10	299:19 319:19	wise 174:20
we'll 6:11 7:18 8:1	148:2,5,14 149:6	358:22 362:4,9	323:9 326:16	wish 9:4 182:22
8:5 17:12 18:5	150:1,2 151:19	364:3 365:8	327:5 336:18	254:17
21:11,13 34:17	152:11 153:7	371:17 372:2	343:18 364:5,21	withdraw 288:9,14
39:10 40:11 41:6	155:17,17,22	379:12 381:9	wheel 178:22	withdrawn 269:17
42:1,20 45:5 46:2	159:18 167:12	383:6	Whetsel 3:12 22:19	wonder 22:16
48:18 50:10 52:3	169:20,21,22	we've 6:6 9:15 12:9	22:19 207:6,9,13	128:15 226:12
53:1 54:21 58:15	170:1,3 171:16	14:8,12,13 15:8	229:4,6 231:4	265:16 341:2
101:5 121:19	172:6,14 173:11	15:13 24:17 27:9	whirlwind 161:6	wonderful 128:21
135:5 139:8,9	173:22 174:7	31:3 32:6 39:21	white 79:19 85:17	wondering 136:14
145:6,18 162:9	177:17 180:11	41:22 42:10 46:18	179:8 183:18	164:17 248:1
172:11 183:5	182:22 187:19	56:3 58:19 65:4	184:1,2	287:11 361:19
187:14 194:3	189:13 197:3	68:14,20 69:2,2	whittled 11:17	word 25:6 260:7
200:10 217:4	202:6 208:18	69:16 70:9 71:8	wide 209:10 232:3	298:2,3,5 300:3
231:19,21 240:16	209:7,16 210:6,10	71:16 73:20 77:5	268:16 337:10	304:20 306:5
241:7,7,12 242:18	210:13,19 211:19	77:7 79:11,16,18	363:4	311:7 313:2,9
242:18,18,20	212:15,16,17	84:14,18 85:18	widely 62:12 172:4	315:17,18 318:21
257:5 263:17	213:8,21,21 214:1	86:14,14 95:18	Wiese 3:3 4:8 6:3,7	319:3 329:21
265:11,12 294:20	214:7,12,17,19	96:18 101:18	21:11 22:16,22,22	331:2 332:20
300:16 356:4	215:3,16 216:17	102:9 113:2	24:3,7,17 25:9	333:9 334:6
363:20 364:22	216:19 217:5,12	124:11,11 127:7	26:6 27:4 50:21	335:14 337:2,4,17
383:4,9,11	218:10 219:7,19	135:11 136:17	51:22 52:10 54:1	338:1 341:3 343:5
we're 6:4 14:21	220:7,9,11 221:20	143:1 147:9 148:7	55:8 97:22 101:11	worded 321:13
15:1,3,10 26:4	222:1,5 223:1,2,7	150:4,4 151:22	128:4 139:5	wording 310:9,19
27:19 31:12 40:17	223:9,10,15 224:2	152:11,20 153:1,3	141:19 143:16	313:1 368:16
46:17 47:8,9,19	224:7 225:2,6,10	153:12 154:5,11	145:3 161:7 164:1	375:18
48:15 49:6,20	226:22 231:7,12	154:16 155:6	169:4 171:11	words 83:22 86:8
50:18 51:9,11	233:13,15 237:1,3	156:1 157:4 160:6	173:16,20 174:19	192:9 254:11
53:3 59:2,18 60:1	240:1 241:6,11	162:3,6 166:1	199:4 205:3	257:20 273:11
61:19 62:21 65:21	242:15 250:22	174:6,10 176:1,18	207:21 217:14	303:5 325:14
67:20,22 69:17	252:8 255:5,18	177:1,6,8,14	226:12,20 228:1,6	371:16
70:1 73:19 75:8,8	257:4 258:5,22	178:15 179:3,14	231:9,14 240:2	wordsmithing
75:15,16 77:7	261:11,18 262:18	179:20 180:6,7,9	241:2,6 248:8	341:4 369:11
81:1,21 82:7 87:3	263:4 265:5,8,9	180:19 181:4,18	250:15 265:16	work 6:5 7:4 10:11
87:5 94:15 98:10	265:10,21 272:15	182:3,4 183:6	290:15 295:9	10:17 12:6 18:10
98:10 99:16 100:4	272:18 273:8	184:6 185:8 187:1	325:20 334:11	19:10 22:17 24:1

24:12 26:12,14	32:17 40:2 42:14	wrap 171:12 176:6	106:2,8 112:7	127:10
28:17 29:4 30:5	48:8 50:12 52:5	wrest 29:16	117:5 122:8 124:6	\$6 127:10 185:8
30:20 32:14,20,22	69:8 85:13 93:18	wrestled 72:14	136:18 138:20	\$67 16:4
40:12 42:1 43:13	96:6 99:16 124:17	Wright 2:8 22:11	162:4,4 168:17	\$8 127:8 133:15
44:2 47:15,16	148:5 151:2	22:11 132:13	176:18 178:6	\$9 127:8
51:10 54:17 62:3	153:12 155:5,10	221:20 286:6,6	197:10 219:9	<hr/>
67:19 70:20 77:6	156:14 157:13,13	287:4 288:15	222:15 240:5	0
77:22 79:21 83:5	161:18 166:2	write 197:20 284:6	255:15 259:10	0.32 223:15
84:18 91:18 94:1	176:12 179:20	written 79:18	267:19 270:15	0.4 223:15
94:12,17 103:8,19	197:3 215:10	177:6 181:12,13	272:7 292:4 300:1	0.8 142:12
103:22 104:16	292:21 308:9	193:10 208:6	302:19 309:3	05 64:15 65:6 147:3
120:14 130:19	309:16 364:21	230:5 373:15	326:15 359:2	06 64:15 65:6
135:11 138:18	workload 55:15	wrong 26:13	361:20 363:5	07 64:15,18 65:6
144:20 146:22	98:14 302:14	104:13 202:22	yellow 182:15	66:6
153:21 154:19	workplace 36:19	271:16 275:1	Yellowstone 38:19	08 64:19 65:7
160:9 161:22	works 101:13	309:2	49:8	132:19
164:17 172:4,9	129:11 163:20	<hr/>	yeses 183:22	09 65:7 66:6
173:12 175:4	workshop 225:4,5	X	yesterday 11:14	<hr/>
178:21 179:9,16	274:20 279:20	X 130:17 183:2	30:17 32:16 44:7	1
180:9 199:20	285:12 326:7	XL 123:13	164:9	1 78:7 203:9 257:17
200:5 204:4	workshops 12:14	<hr/>	yes-or-no 183:20	258:6 262:10
205:20 241:13	18:18 34:18 84:19	Y	yield 317:17	263:20 276:18
271:1 283:22	95:9 210:3 225:6	yea 280:22	young 90:15	277:19 278:9
292:2,20 297:6,12	world 138:13,15	year 10:20 11:2	180:22	289:22
297:18 301:15,16	159:20 186:13	19:3,20 23:15	YouTube 179:12	1,000 63:17 64:4
301:18 302:12,21	271:18 305:20	36:13 37:1,22	179:19	290:22 304:16
303:4,15,18,21,22	306:9 313:2 327:5	47:14 49:9 61:11	<hr/>	1,200 91:6
308:6 309:10,15	334:19	65:14,19 66:3	Z	1,500 107:22,22
310:8 311:3,11	worried 102:14	73:11 116:6	Zach 95:16 363:14	112:3
312:13,18 313:19	136:15 327:12	117:13 120:5	363:14	1,600 100:7
314:2 315:1 318:6	worry 321:8	122:12,13 132:17	zero 67:11,15 74:19	1-year 350:15
318:7,15,16	Worsinger 2:8	133:14 151:1	74:20 78:21,22	1.0 34:15 72:10
319:17,21 322:8	21:18,18 308:3,3	177:3 183:12	80:11 85:5 96:3,4	76:22
323:15,17,22	313:14,14 315:4	199:11 210:16	203:16 362:1	1.3 266:9 268:12
330:16,18 331:13	324:19,19 330:10	217:13 274:4	zero-based 80:5,5	271:8,18 272:3,11
331:15 366:9	330:10 331:8	309:1 318:20	zone 195:1	1.5 266:9,13,20
worked 28:11	332:13 349:22,22	346:2	<hr/>	271:6 272:2,8,12
102:10 146:21	worth 112:7 117:10	years 7:20 11:16	\$	273:12 274:2
164:12 177:8,10	305:3	12:11,16 19:11	\$1.5 186:3	1:15 172:19
286:15 291:9	worthwhile 104:14	24:2,5,12,18,21	\$10 53:10 127:8	1:21 173:19
worker 146:13	wouldn't 27:7 89:5	25:6,7 27:17	\$100 16:5	10 11:13 12:11 66:6
workers 330:15	131:12 250:21	28:21 35:20 36:5	\$100,000 186:4,6	72:8 81:18 115:2
workforce 88:15	302:9 306:12	36:8,9 40:16,19	\$12 133:15	132:19 138:20
146:11	313:7 326:3	45:20 46:7 52:15	\$14 131:14	263:20 309:3
working 9:19 10:6	359:16 364:8	66:1 72:8 79:7,10	\$250 125:15 126:10	320:9
11:20 13:3,5	374:4	80:11 81:18 90:10	\$4 133:14	10-year 72:20
17:20 28:14 32:6	wound 110:10	92:16,18 102:11	\$45 125:3	10:45 101:7
		103:11,13 104:9	\$5 53:10 112:5	100 4:14 6:21 65:18

66:2 117:4 212:15 321:9 101 322:9 104 4:15 106 4:16 11 1:14 6:20 40:13 66:7 263:11 11th 19:20 177:5 11:05 101:8 1162 148:2 12 44:5 110:16 138:20 158:21 241:1 263:11 12th 1:17 12:15 145:18 161:12 12:18 173:18 125 159:5 243:10 127 17:8 13 11:11 27:16 121:2 237:16 263:11 132 4:18 135 17:7,13 136 17:10 137,000 63:21 65:20 14 27:17 121:3 158:21 263:11 15 79:7,9 101:5 110:16 147:12 186:5 237:10 263:20 346:2 15-20 104:8 150 16:6 112:7 136:18 151 4:19 16 263:14,21 166 4:21 17 227:5 232:17 177 56:22 177,000 63:22 18th 50:3,4 180 253:18 180-day 254:2,18 181 4:22 19 203:9	19th 50:3,5 190 92:14 216:18 217:3 191 92:14 1910.120 167:14 1918 56:19 192 88:8 91:10 92:12,13 222:8,9 222:11,17,20 297:1 299:17 300:3 335:13,17 192.153 266:18 192.185(c)(1) 351:16 192.204 334:3 192.305 334:1 341:5 192.505(b) 266:12 192.513 346:5 348:13 192.625 277:10 192.706 243:6 192.723 246:4 195 88:10 91:10 92:13 247:12 297:1 299:17 300:11 195.106 369:13 195.204 344:17 1970 249:22 1990 118:19 1991 251:18 1994 35:22 1995 24:8 1999 63:20	2-month 370:1,4 2.0 34:13,17 77:1 326:18 2:49 264:19 20 4:5 80:11 95:10 187:4 208:15 243:8 330:11 356:14,16 358:3 358:13 359:9,13 359:16,21 360:7 361:1,20 372:3,8 374:5 375:10,22 376:6,7,21 378:7 378:9 2000 105:2 106:15 176:19 2002 12:16 250:3 255:16 2004 251:18 2006 120:18 181:14 188:1 243:21 319:15 356:13 2007 118:20 120:18 247:7 367:13 368:2,7 2007-2008 107:20 134:12 2008 147:2 185:8 2009 189:7 2010 19:4 29:22 36:13,22 67:4 117:15,18 176:22 178:5,8 2011 19:4 151:9 232:16 2012 1:14 8:18 12:16 34:5 40:12 158:10 186:8 210:5 381:19 2012-ish 136:8 2013 16:2 34:9 187:17 207:3 2020 122:19 139:22 140:9 2020-ish 136:8 2022 138:19 140:1 140:9	2025 122:19 2035 117:15,17 123:2 125:4 205 4:24 210 111:4 213 5:13 22 91:8 224 5:16 335:9,14 336:2 23rd 51:2 236 5:19 24 215:19 223:20 223:22 25 124:6 283:3 250 114:14 26 4:4,7 29th 8:18 50:19 155:12 232:16	115:3 361:1 43 235:15 45-minute 137:2 472 156:19 166:4 167:12 484 17:6 49 277:10
	2		3	5
	2 11:16 40:16 58:10 114:19 116:5 132:7 178:6 243:12 257:17 258:7,16 263:10 277:19 278:9 351:17 352:8 370:16 371:12,13 371:14,16 372:2,7 375:19	2006 120:18 181:14 188:1 243:21 319:15 356:13 2007 118:20 120:18 247:7 367:13 368:2,7 2007-2008 107:20 134:12 2008 147:2 185:8 2009 189:7 2010 19:4 29:22 36:13,22 67:4 117:15,18 176:22 178:5,8 2011 19:4 151:9 232:16 2012 1:14 8:18 12:16 34:5 40:12 158:10 186:8 210:5 381:19 2012-ish 136:8 2013 16:2 34:9 187:17 207:3 2020 122:19 139:22 140:9 2020-ish 136:8 2022 138:19 140:1 140:9	3 12:16 55:6 114:19 243:12 262:11 263:20 266:15 277:12 288:13 333:15 346:7 365:11,18 3,500 111:3 3-digit 176:13 3-year 64:13 65:15 3:10 264:20 30 102:11 103:6,11 106:2,8 147:11 185:9 214:2 215:16 234:5 252:20 253:2 361:1 30th 50:19 305 335:9,22 336:2 32 88:9 90:10 35 320:10 35,000 120:10	5 6:21 24:5 64:2 114:6 213:6 263:10 305:15,17 309:3 367:9 5L 259:11 5L1 249:20 5,000 110:4,19,20 5-gallon 65:19 5:15 383:14 50 277:17 278:8 283:9 356:7 500 220:8 53 4:9 56 4:10 58 4:12 222:5,8,9 222:17,22 59 222:6,17
			4	6
			4 6:21 25:6,7 40:19 45:19 114:6,19 213:6,9 243:13 263:10 277:12 40 11:6,9 52:14	6 4:2 170:21 171:9 184:9 200:20 263:11,20 60 102:14 292:4 375:10 60-day 380:21 625(b)(2) 289:9 65 4:12
				7
				7 226:8 263:11 7-year 12:17 7.1 370:10 70 36:15 166:22 700 108:8 706 246:1 74 4:13 75 88:14 775 1:17

8

8 228:13,14 239:4
263:11
8-1-1 177:4
800 108:9
800-pound 166:21
811 15:13 22:6
93:22 160:13
175:15,17 176:10
176:13,14,20,21
177:2,4,12 178:1
178:3,7,9,15
180:2,4,5,13,15
181:2 195:2 197:4

9

9 4:4 161:11,14
206:15 263:11
383:4,11
9th 151:9 381:19
9:00 1:18
9:07 6:2
90 4:13
91 252:6
911 193:1 195:11
92 57:3
95 260:18
95-plus 6:20
96 88:8
98 146:21

C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Joint TPSSC and THLPSSC Meeting

Before: Hon. Lula M. Ford

Date: 07-11-12

Place: Washington, DC

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



Court Reporter

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701