

U.S. DEPARTMENT OF TRANSPORTATION

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PIPELINE AND HAZARDOUS MATERIALS
SAFETY ADMINISTRATION

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PIPELINE LEAK DETECTION, LEAK REPAIR, AND
METHANE EMISSION REDUCTIONS PUBLIC MEETING

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WEDNESDAY, MAY 5, 2021

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The Pipeline and Hazardous Materials
Safety Administration met via Videoconference, at
10:30 a.m. EDT, Sam Hall, Meeting MC/Host,
presiding.

PHMSA STAFF PRESENT

SAM HALL, Meeting MC/Host

TRISTAN BROWN, Acting Administrator

LINDA DAUGHERTY, Moderator

STEVEN FISCHER, Meeting MC/ Host

JOHN GALE, Moderator

DAVID LEHMAN, Meeting MC/Host

ALAN MAYBERRY, Associate Administrator, Office
of Pipeline Safety

SAYLER PALABRICA, Meeting MC/Host

MASSOUD TAHAMTANI, Moderator

ALSO PRESENT**DOUG BAER, Ph.D., ABB Inc.****DAVID BULL, Gas Piping Technology Committee****BILL CARAM, Pipeline Safety Trust****PAT CAREY, Interstate Natural Gas Association of
America****MARK DeFIGUEIREDO, Environmental Protection
Agency****PAUL HARTMAN, American Petroleum Institute****MATT HITE, Gas Processors Association****PAMELA LACEY, American Gas Association****ERIN MURPHY, Environmental Defense Fund****ERIC OLIVIER, Arkema****CHRISTINA SAMES, American Gas Association****BROOKE SINCLAIR, American Public Gas Association****KATE SMITS, Ph.D., University of Texas at
Arlington****SANDRA SNYDER, Interstate Natural Gas
Association of America****MELISSA WEITZ, Environmental Protection Agency****MARY ZANTER, National Association of Pipeline
Safety Representatives**

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

2 10:31 a.m.

3 MR. HALL: Welcome to the PHMSA
4 Pipeline Leak Detection, Leak Repair, and Methane
5 Emission Reductions public meeting. My name is
6 Sam Hall. I am a program manager in PHMSA's
7 Office of Pipeline Safety and I will serve as
8 your master of ceremonies for the next two days.

9 We thank you for your attendance and
10 for your participation and we extend a special
11 thanks to our presenters.

12 I want to cover some housekeeping
13 items for your consideration. All audio is being
14 handled by AT&T. The AT&T operator will provide
15 instructions regarding how to make comments at
16 the appropriate time. Until that time all lines
17 are muted.

18 In order to make a comment with your
19 voice you must be dialed into the teleconference.
20 You can see the instructions in the window on the
21 top left of your screen for dialing into the
22 audio conference.

1 If you are not dialed into the
2 conference call, you will be able to hear the
3 proceedings through your computers, but you will
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7 the Q&A box on the bottom left-hand side of your
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9 moderated question and answer box, so not
10 everyone will be able to see your comments or
11 what you type in there until a response is
12 provided.

13 If you're having technical
14 difficulties please tell us that in the Q&A box
15 on the screen and we will address IT issues as
16 quickly as possible.

17 We do intend to adhere to the agenda
18 as strictly as possible, so we will be motivating
19 speakers and others to adhere to the agenda as
20 it's set out and we also have not scheduled any
21 breaks. We're all at home likely or in our
22 offices and we can take our breaks as we need to,

1 so please take breaks on your own as necessary.

2 The proceedings today and tomorrow are
3 being recorded. The recording and the transcript
4 of the proceedings will be available on the
5 meeting website in approximately 10 days. The
6 meeting website is available in the agenda box at
7 the bottom of your screen. You can see the
8 complete agenda at the meeting website, the URL
9 that's listed there, and you can also see a
10 simplified agenda for the next two days in that
11 box.

12 The purpose of this two-day public
13 meeting is to engage stakeholders on gas pipeline
14 leak detection and repair issues as an important
15 step in fulfilling the requirements of Sections
16 113 and 114 of the PIPES Act of 2020.

17 During the meeting stakeholders,
18 including environmental and public safety groups,
19 federal and state governments, and the pipeline
20 industry, will have the opportunity to share
21 perspectives on improving gas pipeline leak
22 detection and repair. Topics discussed with

1 include the scope of the current problem as well
2 as advanced technologies and practices to address
3 methane emissions from natural gas pipeline
4 systems. The agenda on the screen again is
5 available for your reference at the bottom of the
6 screen.

7 It is now my pleasure to introduce
8 Alan Mayberry, PHMSA's Associate Administrator
9 for Pipeline Safety.

10 Mr. Mayberry?

11 MR. MAYBERRY: Thank you, Sam. I
12 appreciate that.

13 And good morning, everyone, and thank
14 you for joining us today for our virtual public
15 meeting to discuss pipeline leak detection and
16 repair and methane emission reductions technology
17 and practices.

18 I'm pleased to have the opportunity to
19 introduce PHMSA Acting Administrator Tristan
20 Brown. Now Tristan's been with us a few months
21 now and his leadership and influence can already
22 be felt in a positive way.

1 Tristan comes to us with a background
2 of working on pipeline safety issues. He has
3 practiced energy law as well as transportation
4 law, which included issues related to PHMSA. He
5 served as legislative counsel to Senator Gary
6 Peters of Michigan focusing on some of PHMSA's
7 sister modes of transportation overlapping issues
8 as well.

9 Additionally Tristan served as Deputy
10 Associate Administrator of the Environmental
11 Protection Agency where he worked on a number of
12 issues related either directly or indirectly to
13 this sector. So Tristan is very familiar with
14 the issues facing this industry and he has dived
15 right in to help PHMSA meet the current
16 opportunities for us.

17 So now it's my pleasure to introduce
18 Acting Administrator Tristan Brown.

19 So, Tristan, over to you. Thanks.

20 MR. BROWN: Right. Good morning,
21 Alan. Thank you, thank you.

22 And thanks to each participant and all

1 the panelists for joining us today to listen and
2 share your perspectives.

3 As many of you may know, the Pipeline
4 and Hazardous Materials Safety Administration's
5 mission is to protect people and the environment
6 by advancing the safe transportation of energy
7 and the hazardous materials that are essential to
8 our daily lives. Public meetings like this are a
9 vitally important tool that we at PHMSA use to
10 seek input from all stakeholders as we work to
11 continuously advance safety and inform our
12 regulatory agenda.

13 Over the next two days we look forward
14 to hearing from perspectives and representatives
15 of the public interest organizations, labor
16 unions, private sector, state and federal
17 agencies and the technology sector on key issues
18 related to methane leak detection and repair and
19 the ongoing research and technology development
20 in these areas.

21 Now just a few weeks ago President
22 Biden pledged a major reduction in greenhouse gas

1 emissions. Contemporaneous news reports echoed
2 countless previous reports that have emphasized
3 global climate change threatens our economy to
4 the tune of trillions of dollars. Numbers in the
5 trillions are abstract for the human brain
6 because our brains are not capable of
7 conceptualizing such quantities.

8 In that context discussing problems
9 and solutions at meetings like this can seem
10 abstract as well. The impacts that we foresee
11 and are attempting to mitigate are distant and in
12 the future, but for the countless lives that will
13 experience upheaval and devastation as a result
14 of global climate change now and over the next
15 few decades climate change will not be abstract.
16 That is why Congress is urging effort to pass the
17 PIPES Act last December demanding progress in
18 reducing methane emission matters and it's why
19 your participation over the next few days to
20 discuss emissions reduction matters.

21 The Biden/Harris Administration is
22 focused on a whole-of-government approach to

1 climate action while also promoting environmental
2 justice. Towards these ends PHMSA is committed
3 to making regulatory choices that are based on
4 data and to ensuring transparency and engagement
5 with all stakeholders.

6 With that in mind we see this meeting,
7 which I understand we have hundreds -- as many as
8 700 registrants, we've got hundreds and hundreds
9 of participants already logged on and continuing
10 to log on. We consider this a first step, an
11 important step towards meeting one of the
12 congressional mandates in the PIPES Act.

13 We look forward to hearing your
14 perspectives on what PHMSA should consider while
15 we evaluate leak detection, quantification,
16 evaluation and mitigation efforts to advance
17 safety and reduce methane emissions from the
18 jurisdictional pipeline infrastructure.

19 As we know, natural gas is composed
20 primarily of methane, therefore gas pipeline
21 leaks and other releases of natural gas emit
22 methane into the atmosphere and change our

1 climate with an impact that pound for pound is
2 multitudes more significant than carbon dioxide
3 pollution. In fact the onshore oil and gas
4 sector is the largest domestic industrial source
5 of methane emission.

6 With this in mind the PIPES Act of
7 2020 requires that by December of this year PHMSA
8 issue final regulations requiring certain classes
9 of operators to conduct leak detection and repair
10 programs in order to, quote: (A) Meet the need
11 for gas pipeline safety; and (B) protect the
12 environment. Another PIPES Act mandate found in
13 Section 114 of the Act, to work to minimize
14 releases of natural gas from pipeline facilities.
15 This is a tremendously important self-executing
16 provision of the law.

17 PHMSA is in the process of issuing an
18 advisory bulletin to remind all pipeline
19 operators that they must comply with this
20 provision by no later than December 27, 2021.
21 Keep in mind the concept of a, quote, acceptable
22 level of release into the environment is a long-

1 outdated concept for gas or hazardous liquids.
2 We must change how we think about small releases
3 because they too add up and can and do have a big
4 impact on the environment.

5 Section 114 also requires PHMSA to
6 conduct a study then report to Congress on the
7 best available technologies and practices for
8 preventing or minimizing the release of natural
9 gas.

10 Section 113 of the Act Congress also
11 required PHMSA to prioritize completion of our
12 rulemaking on gas transmission and gathering
13 pipelines. PHMSA looks forward to receiving your
14 input on ways we can improve safety and cut
15 emissions through this rulemaking.

16 Clearly these mandates require all of
17 us to work together to promote pipeline safety
18 and take aggressive actions to reduce methane
19 emissions from pipelines, both fugitive and
20 vented.

21 We're also considering these mandates
22 in conjunction with how our rulemakings and

1 agency decisions affect under-represented
2 communities. This whole-of-agency approach to
3 environmental justice is something that many
4 other agencies and departments are focused on and
5 we welcome your input on how we can do this
6 effectively and efficiently. As we discuss
7 options during the next two days and into the
8 future we will keep a strong focus on using
9 transportation as an engine for equity.

10 We know for example that our nation's
11 aging and higher-risk infrastructure is primarily
12 located in less-recently-developed and often
13 disadvantaged communities and urban areas.

14 Through our safety work we will continue to
15 promote the upgrading, replacement and repair of
16 aging high-risk infrastructure. This especially
17 includes infrastructures such as cast iron
18 pipelines. We will do all of this and more in
19 collaboration with all of you to help position
20 the energy sector and our nation to adopt the
21 infrastructure of the future.

22 This includes upgrading systems that

1 transport hydrogen and other renewables to
2 support our growing economy and create good-
3 paying union jobs for American workers.

4 PHMSA looks forward to learning about
5 proven technologies and best practices to help
6 meet our mutual goal of zero incident and reduced
7 emissions. We expect this meeting will provide
8 valuable information we can use to inform our
9 rulemaking.

10 Thank you for joining us and all that
11 you're doing to combat one of the most dangerous
12 and complex challenges our species has ever
13 faced. Thanks.

14 Alan, back to you.

15 MR. MAYBERRY: All right. Tristan,
16 thank you very much for that.

17 And again welcome, everyone. I think
18 you got an extended view of me. I hope you
19 enjoyed that. We had a technical issue there,
20 but we'll move right on.

21 Our focus over the next two days is
22 pipeline leak detection, leak repair and methane

1 emissions reduction. Addressing the opportunity
2 to make meaningful revisions to one of the oldest
3 parts of our gas code, which is how operators
4 find and repair gas leaks, requires everyone's
5 perspective and participation. For this reason
6 we have gathered a broad group of stakeholders
7 including federal and state safety regulators and
8 commissioners, advocacy groups, pipeline
9 operators and technology providers.

10 Our goal over the next two days is to
11 have an informed dialogue of the challenges our
12 industry faces specifically regarding methane
13 emission reduction, to communicate how state and
14 federal agencies are working with private and
15 public partners to address this important issue,
16 and to engage in technical conversations
17 regarding the research and development of new
18 technologies and initiatives aimed at effectively
19 and efficiently addressing leak detection and
20 repair as well as methane emissions reduction.

21 Now in December Congress passed the
22 Protecting our Infrastructure of Pipelines and

1 Enhancing Safety Act, or PIPES Act of 2020, and
2 with it Congress shifted our authority beyond
3 protection of people and property and directed us
4 to consider the environmental and social cost of
5 carbon and how we justify our policies.

6 Now we're all aware that pipelines can
7 leak and that there is intentional venting of
8 natural gas or methane during pipeline
9 operations. With the PIPES Act we're being
10 directed to consider the best available
11 technologies and practices to prevent or minimize
12 these releases whether they occur during planned
13 repairs, replacements or maintenance, when
14 operators intentionally vent or release natural
15 gas including blowdowns or due to leaking or
16 damaged pipelines.

17 There are two types of methane
18 emissions that the PIPES Act is concerned with:
19 One -- the first one, fugitive emissions, which
20 is methane that leaks unintentionally from
21 equipment such as from pipelines, flanges, valves
22 and other equipment. And then there's also

1 vented emissions is released through equipment
2 design or operational maintenance procedures such
3 as pneumatic devices, purging, blowdowns,
4 incomplete combustion or equipment venting such
5 as relief valves.

6 The vast majority of fugitive
7 emissions come from distribution pipelines and
8 the vast majority of vented emissions come from
9 transmission pipelines. While transmission and
10 distribution pipelines are not the largest
11 emitters of greenhouse gases in the pipeline
12 industry, it is PHMSA's mandate to reduce and
13 eliminate the sources of greenhouse gases where
14 we can.

15 Now let's talk about the PIPES Act
16 mandates more specifically. The primary
17 sections, as Tristan had mentioned, we'll be
18 focusing on over the next two days will be
19 Section 113 and 114. Both are mandates that
20 address the reduction or elimination of hazardous
21 leaks and minimization of releases of natural gas
22 from pipeline facilities.

1 As Tristan mentioned, the Section 113
2 mandate requires that in year one final
3 regulations will be issued requiring regulated
4 gas gathering operators and transmission and
5 distribution operators to conduct leak detection
6 and repair programs in order to: (A) meet the
7 need for gas pipeline safety; and (B) protect the
8 environment in Class 2, 3 and 4 locations.

9 While there is a current notice of
10 proposed rulemaking for valve installation and
11 minimum rupture detection standards, this
12 rulemaking only pertains to new and replaced
13 transmission hazardous liquid pipelines and is
14 directed toward detecting and mitigating
15 ruptures, but not all leaks.

16 Section 114 is self-executing, which
17 means that the new law directly requires
18 operators to take action rather than directing
19 the Secretary of Transportation to issue
20 regulations first. This section requires
21 operators to revise as necessary their inspection
22 and maintenance plans to ensure they are written

1 to contribute to the eliminate of hazardous leaks
2 and minimizing releases of natural gas from
3 pipeline facilities. To reiterate what Tristan
4 mentioned, PHMSA's working on an advisory
5 bulletin to highlight this provision reminding
6 affected pipeline operators that compliance is
7 required no later than December 27th of 2021.

8 Another requirement of Section 114 is
9 for operators to consider replacement or
10 remediation of pipelines that are known to leak
11 based on their material design or past operating
12 and maintenance experience. Specifically it
13 says, as has been discussed for many years, the
14 replacement of cast iron, unprotected steel,
15 wrought iron, plastic pipe with known issues
16 should be areas of focus.

17 Addressing the issue of this legacy
18 infrastructure is imperative both from a safety
19 standpoint and an environmental justice
20 standpoint. In taking the whole-of-agency
21 approach to environmental justice that Tristan
22 mentioned PHMSA makes every effort to promulgate

1 policies that will address equity to make sure
2 that the policies are fair and equitable and to
3 keep pipeline safety top-of-mind to everything we
4 do.

5 Public meetings like this are very
6 important in order to have an open exchange of
7 ideas bringing together thought leaders from
8 different sectors and to establish a public
9 record of this exchange. I encourage each of you
10 to participate in the discussion as directed by
11 Sam and I look forward to continued engagement
12 with all of you as we move forward on policy and
13 rulemaking efforts. Thank you very much and
14 thanks again for being here.

15 So with that, Sam, I'll turn it back
16 to you.

17 MR. HALL: Thank you, Alan. I
18 appreciate that.

19 We will now transition to our 11:00
20 a.m. portion of the agenda, which is a federal
21 and state government panel discussion. Please
22 note that we will take questions at the end of

1 the panel discussion, so all questions will need
2 to be held until the very end after all
3 presenters have had an opportunity to speak.

4 It is now my pleasure to introduce
5 Massoud Tahamtani, Deputy Associate Administrator
6 for Policy and Programs in the Office of Pipeline
7 Safety, as the moderator of our next session.

8 Mr. Tahamtani?

9 MR. TAHAMTANI: Good morning,
10 everybody. The Acting Administrator Brown and
11 the Associate Administrator Mayberry have clearly
12 defined our goal for the next two days. We
13 appreciate everyone's participation, especially
14 our presenters, to help us begin this very
15 important effort to advance pipeline safety and
16 the protection of our environment.

17 With that said I am pleased to
18 introduce two colleagues from the Environmental
19 Protection Agency. Our first presenter is Mark
20 DeFigueiredo and our second one is Melissa Weitz.

21 Just a few words about Mark and
22 Melissa before we turn it over to them for

1 presentation.

2 Mark is team leader of the Greenhouse
3 Gas Reporting Program at the U.S. Environmental
4 Protection Agency. He's a graduate of MIT where
5 he received his bachelor's degree in mechanical
6 engineering and master's degrees in civil,
7 environmental, and system engineering. He's also
8 received a Ph.D. in system engineering from MIT.
9 He then received a J.D. from the University of
10 Virginia's School of Law where my daughter hopes
11 to attend and get her law degree. Prior to
12 joining EPA he was an associate with Simpson,
13 Thacher & Bartlett in New York.

14 And a few words about Melissa.
15 Melissa is a physical scientist in EPA's Office
16 of Atmospheric Programs where she focuses on
17 quantification of methane emissions from oil and
18 gases for the inventory of U.S. greenhouse gas
19 emissions and effects. She is the lead reviewer
20 for GHG inventory for the United Nations
21 Framework Convention on Climate Change and was
22 the coordinating lead author for the

1 Energy Volume of the 2019 Refinement to the 2006
2 Intergovernmental Panel on Climate Change
3 Guidelines for the National Greenhouse Gas.

4 With that I'll turn over to Mark.

5 Thank you, Mark.

6 DR. DEFIGUEIREDO: Thanks, Massoud,
7 for that kind introduction and for the invitation
8 to be here today. I'm grateful for the
9 opportunity to speak with you all virtually and
10 look forward to the time hopefully very soon that
11 we'll be able to meet again in person.

12 So this morning my colleague Melissa
13 Weitz and I will be providing some thoughts that
14 I hope will be helpful for not only framing the
15 discussion over the next two days, but also
16 framing the tasks that PHMSA has ahead of it on
17 the regulatory side. We'll be primarily speaking
18 to the greenhouse gas data that EPA has
19 published. This includes data from the past nine
20 years that has been reported directly to EPA by
21 facilities as well as national estimates that EPA
22 has developed over the past 25-plus years. That

1 includes national estimates that we just
2 published a few weeks ago. So you're in for a
3 treat because that inventory data is hot off the
4 presses.

5 We'll also be speaking to our
6 voluntary methane programs for the oil and gas
7 industry at EPA, the National Gas STAR Program
8 and the Natural Gas STAR Methane Challenge
9 Program.

10 And then finally we'll speak to
11 upcoming regulatory activities that we have under
12 Clean Air Act Section 111.

13 So there are a lot of industries and
14 activities large and small that emit greenhouse
15 gases in the United States. And at the EPA we
16 have two complementary programs for
17 characterizing greenhouse gas emissions, and
18 they're designed to help the public and policy
19 makers understand both the sources of greenhouse
20 gas emissions as well as the magnitude of those
21 greenhouse gas emissions. Sometimes the two
22 programs, they get conflated, so I want to spend

1 a little bit of time to talk about them and how
2 they compare.

3 The first is the inventory of U.S.
4 Greenhouse Gas Emissions and Sinks. Over the
5 next couple days you may hear it referred to by
6 speakers as the Inventory or the GHG Inventory,
7 or the GHGI. The Greenhouse Gas Inventory is a
8 document that we prepare every year at EPA, and
9 we've done it for over 25 years, and it estimates
10 the total greenhouse gas emissions across all
11 sectors of the economy using national level data.

12 So this includes estimates of
13 greenhouse gas emissions from fossil fuel
14 combustion, from industrial processes, from
15 agricultural sources. And the greenhouse gas
16 data that we present in the Greenhouse Gas
17 Inventory, that comprises the official U.S.
18 estimate of total national emissions that the
19 U.S. submits to the United Nations in accordance
20 with the Framework Convention on Climate Change.

21 The second program that we have is the
22 Greenhouse Gas Reporting Program. It's sometimes

1 referred to as the GHGRP. And since 2010 the
2 GHGRP has been collecting detailed facility-level
3 emissions data from large facilities across the
4 U.S. It includes most but not all U.S.
5 emissions. So generally it includes large
6 suppliers of greenhouse gas-emitting products or
7 facilities that emit more than 25,000 metric tons
8 of CO2 equivalent per year.

9 There are some entire sectors, such as
10 the agricultural sector, the land use sector that
11 are not required to report to the GHGRP. Our
12 most recent data was 2019, and over 8,000
13 facilities and suppliers reported greenhouse gas
14 data for that most recent year of published data.
15 That covers about 85 to 90 percent of total U.S.
16 greenhouse gas emissions.

17 So while the Greenhouse Gas Inventory
18 provides high-level perspectives to understand
19 total emissions from greenhouse gases across the
20 United States, the GHGRP, it provides detailed
21 information to understand sources and types of
22 greenhouse gas emissions at individual

1 facilities.

2 The GHGRP, it's an important resource
3 for developing inventory, so it provides annual
4 emissions information, it provides other annual
5 data like activity data and emissions factors
6 that we use to refine our national emissions
7 estimates and determine the trends in greenhouse
8 gas emissions over time.

9 The GHGRP information can be used to
10 help facilities identify opportunities for
11 emissions reductions, help identify nearby
12 sources of greenhouse gas emissions, to compare
13 facilities, to track emissions from one year to
14 the next.

15 The Greenhouse Gas Inventory covers
16 estimates from 1990 and each subsequent year, and
17 so we have a trend of emissions data for over 25
18 years. The GHGRP, it's a more recent program.
19 It was developed in response to a congressional
20 mandate from 2008, so there's years of data
21 available. We have annual data for 29 industries
22 starting in 2010, and then annual data for 12

1 additional industries starting in 2011. But both
2 the Inventory and the Greenhouse Gas Reporting
3 Program, they're helpful for answering common
4 analytical questions related to U.S. greenhouse
5 gas emissions.

6 So for example, the Greenhouse Gas
7 Inventory, it can help determine the contribution
8 of natural gas systems or petroleum systems or
9 individual oil and gas industry segments to total
10 U.S. methane emissions. The GHGRP is helpful for
11 understanding large facilities or large
12 stationary sources of greenhouse gas emissions in
13 your region.

14 So next I'm going to dive a little
15 deeper to talk about the Greenhouse Gas Reporting
16 Program or the GHGRP. As I mentioned before, it
17 was mandated by Congress in response to the
18 fiscal year 2008 Consolidated Appropriations Act,
19 and the GHGRP requires facilities to report data
20 from large emission sources across a range of
21 industry sectors: fuel and industrial gas
22 suppliers and CO2 injection sites across the

1 United States.

2 So the GHGRP has annual reporting of
3 GHGs by 41 different source categories. This
4 includes 33 different kinds of direct emitters, 6
5 kinds of fossil fuel and industrial greenhouse
6 gas suppliers, and facilities that inject CO2
7 underground.

8 In general there is a reporting
9 threshold of 25,000 metric tons of CO2 equivalent
10 or more per year. That means facilities above
11 that 25,000 metric ton threshold are required to
12 report GHG data to the EPA, to the GHGRP. And
13 then facilities below the reporting threshold are
14 not required to report to the GHGRP.

15 When reviewing the data; and I'll be
16 diving into the data in a little bit more detail
17 in subsequent slides, it's important to
18 understand the reporting requirements and the
19 impacts of those requirements for the reported
20 data.

21 So all the methodologies and data
22 reporting requirements that we have for the

1 GHGRP, they've gone through a public notice and
2 comment rulemaking. So they're all specified in
3 the regulations. Those are at 40 CFR Part 98.

4 The calculation of methodologies, they
5 include direct measurement, they include
6 engineering calculations or emission factors and
7 in some cases facilities, they have a choice of
8 what calculation method to use.

9 The data, they're reported directly to
10 EPA Headquarters electronically. The reporting
11 deadline is March 31st of each year. And we have
12 a pretty rigorous multi-step data verification
13 process. It includes automated checks during the
14 entry of data. It includes statistical analyses
15 that we do on completed reports. And there is
16 EPA staff review of the reported data.

17 And then based on the results of that
18 verification review we follow up with facilities
19 to resolve potential areas that may have
20 occurred. And so that verification process
21 ensures that the data that we receive to the
22 GHGRP, that it's accurate, that it's complete and

1 that it's consistent across facilities.

2 And then after that verification
3 process we make the data available to the public.
4 All the non-confidential data is all publicly
5 available typically in the fall each years
6 through several data portals, and I'll talk about
7 that a little later.

8 So the petroleum and natural gas
9 industry, that's one of several industries that
10 we cover within the GHGRP. The source category,
11 it's often called Subpart W because of its
12 regulatory citation, which is 40 CFR Part 98,
13 Subpart W.

14 Looking at this slide, on the right
15 side of the slide you'll see Subpart W. It's
16 shown in red in the graphic. And there's 10
17 industry segments that comprise the Subpart W
18 source category going from the well head all the
19 way down to the local distribution company.

20 I'll be diving into a few of the
21 industry segments that I think are the most
22 relevant to PIPES Act and PHMSA. They include

1 gathering and boosting transmission compressor
2 stations, transmission pipelines, underground
3 natural gas storage and natural gas distribution.

4 Subpart W, it's very technically detailed. It
5 covers a number of different emission sources
6 within the various industry segments.

7 Because there is a reporting threshold
8 of 25,000 metric tons CO2 equivalent our coverage
9 of national emission, it can vary. In some cases
10 an industry segment for the GHGRP, we may cover
11 the vast majority of emissions or activities in
12 an industry segment, but in either case it may be
13 less so. So when my colleague Melissa Weitz
14 discusses the Greenhouse Gas Inventory in a
15 little bit, the Greenhouse Gas Inventory, that's
16 our official national number for all the
17 emissions across all emission sources in an
18 industry segment.

19 For certain parts of the oil and gas
20 industry that are covered by Subpart W, they
21 began recording starting in 2016. Others began
22 reporting in 2011.

1 So the ones that started in 2016, that
2 includes the gathering and boosting industry
3 segment, transmission pipelines, among other
4 things.

5 In terms of how facilities are
6 defined, Subpart W is a little bit unique. It
7 defines facilities different depending on the
8 location in the oil and gas value chain. In
9 general within the Greenhouse Gas Reporting
10 Program a facility is all the collocated emission
11 sources that are commonly owned or operated, but
12 there are a few industry segments within the
13 petroleum and natural gases system category of
14 the GHGRP that have unique facility definitions.

15 So for gathering and boosting, that's
16 all the gathering pipelines and other equipment
17 that's along those pipelines that are under
18 common ownership and control by an owner/operator
19 that are located in a single hydrocarbon basin.
20 Basin is defined as a geologic province by the
21 American Association of Petroleum Geologists.
22 Facilities and onshore production, they're also

1 defined at a basin level.

2 For natural gas transmission pipeline
3 facilities, they're defined at a national level,
4 and so the facility is the total mileage in the
5 United States of the natural gas transmission
6 pipelines and operated by the transmission
7 pipeline owner/operator.

8 And then for natural gas distribution
9 the facility is the local distribution company,
10 sometimes called an LDC, as regulated by a single
11 state's public utility commission.

12 So this table shows our most recently
13 published data which is for the 2019 reporting
14 year and it shows greenhouse gas emissions by oil
15 and gas industry segment. It includes both
16 process emissions as well as combustion
17 emissions. Combustion emissions that are
18 reported under Subpart W as well as combustion
19 emissions that are reported under another source
20 category of the GHGRP, the general stationary
21 combustion source category, which is Subpart C.

22 So the largest industry segment in

1 terms of reported emissions, that was onshore
2 production with 117 million metric tons of CO2
3 equivalent, followed by gathering and boosting
4 which had emissions of 92 million metric tons of
5 CO2 equivalent in 2019. And that was followed by
6 natural gas processing, which had emissions of 58
7 million metric tons. And then transmission
8 compression, which had emissions of 31 million
9 metric tons.

10 For natural gas distribution total
11 emissions were 13 million metric tons of CO2
12 equivalent. And then for all the other remaining
13 segments they totaled about 30 million metric
14 tons of CO2 equivalent in 2019.

15 So next what I'm going to do is I'm
16 going to dive a little deeper into a few industry
17 segments that I think are of most relevance for
18 this public meeting.

19 I'm going to start with gathering and
20 boosting. So as I mentioned before, gathering
21 and boosting for GHGRP, it's defined at a basin
22 level and includes gathering pipelines and other

1 equipment that are used to collect petroleum and
2 natural gas from onshore production wells, the
3 equipment that's used to compress and transport
4 the gas to a gas processing facility to
5 transmission pipelines or a distribution
6 pipeline. And this industry segment again, it
7 began reporting in 2016.

8 So with respect to gathering
9 pipelines, we collect information on mileage of
10 gathering pipelines for each material type, and
11 then there are material-specific emission factors
12 that are used to calculate emissions. The
13 emissions for gathering pipelines, those are
14 included in miscellaneous equipment leak source
15 of Subpart W.

16 All in all within gathering and
17 boosting we received annual reports from 354
18 basin-level facilities in 2019. Those total
19 reported emissions were about 92½ million metric
20 tons of CO2 equivalent.

21 Combustion emissions, combustion
22 equipment were the largest top -- were the top

1 reported emission source. That was followed by
2 atmospheric storage tanks, equipment leaks and
3 then other flare stacks.

4 On the right side of the screen you'll
5 see this trend over time starting with about 82
6 million metric tons of CO2 equivalent in 2016,
7 which is when we first started with gathering and
8 boosting within the GHGRP, and then rising to
9 about 92 million metric tons in 2019.

10 Next the natural gas transmission
11 compression segment. So this comprises any
12 compressors, the stationary compressors that move
13 natural gas from production fields, processing
14 plants, other transmission compressors through
15 the transmission pipelines to the natural gas
16 distribution pipelines, to LNG storage facilities
17 or to underground storage tanks.

18 So EPA, in 2019, we received annual
19 reports from 619 facilities in the natural gas
20 transmission compression segment. The total
21 reported emissions were 30.8 million metric tons
22 of CO2 equivalent. Combustion emissions were

1 larger than process emissions. Those were -- the
2 combustion equipment were the top reported
3 emission source. That's all by blowdown, vent
4 stacks and then reciprocating compressors.

5 On the right side of the screen again
6 you'll see the trend in reported emissions since
7 2011, which is when this industry segment began
8 reporting to the GHGRP. In 2011 the emissions
9 were about 24 million metric tons of CO2
10 equivalent. And then you can see the trend to
11 2019 when reported emissions were about 31
12 million metric tons of CO2 equivalent.

13 Next, natural gas transmission
14 pipelines. So these are the pipelines that
15 deliver gas from the processing plants to the
16 local natural gas distribution systems and often
17 passing through one or more compressor stations.
18 This industry segment, it began to report in 2016
19 and it only reports transmission pipeline
20 blowdowns to EPA under Subpart W. Blowdowns are
21 for physical volumes that are greater than or
22 equal to 50 cubic feet.

1 The quantity of emissions and the
2 number of blowdowns, they're reported on a state-
3 by-state basis. So you can see the heat map on
4 the left related to the most recent reported data
5 in 2019. We also receive information that
6 categorizes blowdowns into different categories,
7 so for transmission pipelines that could include
8 pipeline integrity work or it could include
9 emergency shutdowns, among a number of other
10 different categories.

11 In 2019 we received annual reports
12 from 43 national-level facilities in the natural
13 gas transmission pipeline segment, so again these
14 are defined facilities at the national level
15 reporting emissions on a state-by-state basis.
16 The total national reported emissions were about
17 2.8 million metric tons of CO2 equivalent. Those
18 emissions were almost entirely methane. And then
19 on the right side of the screen you'll see the
20 trend in emissions, which has generally been just
21 under 3 million metric tons of CO2 equivalent.

22 I just lost my Adobe Connect screen,

1 so if I could as Melissa Weitz to move the slides
2 to the next slide, which is slide 10.

3 MS. WEITZ: Yes.

4 DR. DEFIGUEIREDO: Thanks. So on
5 slide 10, this is natural gas distribution. So
6 local natural gas distribution companies; we'll
7 sometimes call them LDCs for shorthand, they
8 report emissions that are caused by leaks from
9 distribution pipelines, from regulating
10 equipment, transfer stations, emissions from
11 stationary fuel combustion. Again as I mentioned
12 earlier, these facilities are defined at a state
13 level. It includes all the distribution
14 pipelines and meter regulating stations that are
15 operated by an LDC within a single state. That's
16 regulated by a public utility commission or
17 operated as an independent municipally-owned
18 distribution system.

19 So EPA, we received annual reports
20 from 163 facilities in the natural gas
21 distribution segment. Reported emissions that
22 totaled about 12.7 million metric tons of CO2

1 equivalent.

2 The primary emission sources for
3 natural gas distribution were distribution mains
4 at about 9 million metric tons of CO2 equivalent
5 and distribution services at about 4 million
6 metric tons of CO2 equivalent. The emissions for
7 maintenance services, those are categorized in
8 the equipment leaks. And they're calculated by
9 multiplying the mileage of pipelines by default
10 population emission factors that are specific to
11 the pipeline material.

12 Melissa, if you can move to the next
13 slide?

14 So EPA provides a number of ways to
15 access the Greenhouse Gas Reporting Program data,
16 and I encourage you to check out these websites
17 when you have time. At the top of the slide
18 you'll see a link to our Greenhouse Gas Reporting
19 Program website. It has general information
20 about the program, it has links to copies of our
21 regulations, and it also has a number of data
22 summaries for different industries including oil

1 and gas.

2 We also have a really easy to use
3 publication tool. We call it FLIGHT, or the
4 Facility Level Information on Greenhouse Gases
5 Tool. And it allows you to view greenhouse gas
6 data in a lot of different ways. So you can view
7 data by an individual facility, you can look at
8 aggregated emissions across industry segments or
9 across geographical regions, or you can search
10 for a particular facilities like by name or
11 location of corporate parent or NAICS code. It's
12 a really neat tool for both practitioners as well
13 as the general public. You can access FLIGHT at
14 the website ghgdata.epa.gov.

15 We also make more detailed data
16 available on EPA's Envirofacts website. So
17 Envirofacts provides all the publicly available
18 data that we collect in the GHGRP and it does it
19 in a searchable downloadable format for a
20 facility. So it includes GHG emissions data for
21 facilities as well as much of the underlying data
22 that facilities use to calculate their GHG

1 emission values and other reported data elements.

2 And then finally I've included an
3 email address to our help desk. So if you have
4 questions about the GHGRP, I encourage you to
5 contact our help desk at ghgreporting@epa.gov,
6 and we'd be happy to help you.

7 So with that I'll turn things over to
8 my colleague Melissa Weitz.

9 MS. WEITZ: Great. Thank you, Mark.

10 Hello, everyone. I will see if my web
11 cam works, but will probably end up shutting it
12 off if it closes things down.

13 So I'm going to talk today about our
14 National Greenhouse Gas Inventory. This is the
15 official report that the U.S. submits every year
16 to the United Nations Framework Convention on
17 Climate Change to fulfill our obligations under
18 that treaty.

19 We at EPA are the group that compiles
20 the inventory, but we do work with other agencies
21 as well across the USG, including use of DOT data
22 such as on the number of pipelines from various

1 sectors. We also work with academic groups and
2 research institutions and industry associations.
3 The Inventory covers all anthropogenic or manmade
4 emissions in the U.S. including kind of the main
5 greenhouse gases, CO2, methane, N2O and
6 fluorinated gases. It's developed in a way that
7 is policy-neutral, so it's presenting data that
8 can be used to analyze a number of policies or to
9 track emissions over time from a number of
10 different options.

11 We started this report, as Mark had
12 mentioned, in 1993, and so we've been developing
13 this annual report every year since then. And as
14 Mark also mentioned, it covers a time series
15 started with 1990. The most recent report that
16 we published a few weeks ago covers 1990 to 2019.

17 I'll note also that the Inventory
18 involves a review process, so every year we put
19 out the Inventory for public review and also for
20 expert review. We have a review conducted by the
21 United Nations Framework Convention of Climate
22 Change as well. I'll mention a separate

1 stakeholder input and review process that we have
2 for our oil and gas on some later slides.

3 I'll also note here that the report
4 that covers 1990 to 2019 -- as we collect new
5 data and make improvements to our estimates we
6 want to be sure that the report estimates are
7 comparable over time, so we do recalculate the
8 full time series every year when we submit the
9 report. So if we had a great new data source
10 that we think improves estimates over the full
11 time series, we'll incorporate that over the full
12 time series. So whenever you're looking at
13 trends of emissions data it's important to look
14 at the most recent Greenhouse Gas Inventory as
15 opposed to comparing estimates from the most
16 recent Inventory to one several years ago because
17 they won't quite be on the same basis.

18 I'll talk first about the emissions
19 overall in the Inventory and then dive into oil
20 and gas sources.

21 So every year CO2 is about 80 percent
22 of U.S. emissions, largely from fossil fuel

1 combustion. It's increased a bit since 1990 by
2 about three percent. Methane, which is here in
3 this red area, that is 10 percent of emissions
4 and it's decreased by about 15 percent since
5 1990. N2O, kind of the large emissions category,
6 is about seven percent of emissions and increased
7 -- or decreased about one percent since 1990.

8 There is an area kind of under the
9 zero million metric tons of CO2 equivalent piece
10 here. The purple area of that is for the CO2
11 that's uptaken by trees and other landscapes. So
12 that's also -- if it's in a human-managed area,
13 we consider that to be part of the emissions data
14 calculated in the report, and that's taken into
15 account here as well.

16 So the rest of my slides will focus on
17 oil and gas in the Greenhouse Gas Inventory. I
18 note here that we are calculating them with an
19 IPCC tier 2/3 approach. That simply means an
20 advanced approach compared to using (audio
21 interference) international default data.

22 So we look at emissions from specific

1 equipment types and processes. We associate each
2 type and process with an emission factor and
3 calculate emissions data across the time series
4 with that information.

5 The Inventory estimates in our
6 National Gas and Petroleum System section covers
7 leaks, vents and flares, so that means that it
8 doesn't cover on-site fossil fuel combustion,
9 which is one difference with what the Greenhouse
10 Gas Reporting Program covers. Those numbers are
11 in the Greenhouse Gas Inventory. They're just in
12 a separate section that covers all of fossil fuel
13 combustion. So if you see numbers from the
14 Inventory looking a bit different from in GHGRP,
15 that's one of the reasons.

16 Within natural gas and petroleum
17 systems we develop separate estimates for the
18 different segments such as production,
19 processing, transmission and storage. Within
20 each we do break it down to look at different
21 types of equipment covering about 100 types of
22 sources such as different types of compressors,

1 different types of pipeline by material.

2 Our general approach is to multiply
3 national activity data by emission factors. So
4 for example, for cast iron pipeline in the
5 distribution segment we have national data on the
6 miles of cast iron pipeline. We have an emission
7 factor per mile. We apply that to get our
8 numbers.

9 It's a little bit straightforward, but
10 I'll note that we do try to make these
11 calculations as dis-aggregated as we can to show
12 mitigation over time. The factors for the cast
13 iron pipeline for example vary about bit across
14 the time series based on data that was collected
15 recently and reflects emissions in recent years,
16 data collected in the 1990s, which reflects
17 emissions in those years. So in addition to just
18 the mileage of pipeline by material type there is
19 some information on trends based on changes over
20 time other than just the materials.

21 So the overall trends for both methane
22 and CO2 from oil and gas systems are shown on this

1 slide. Again this is just the leaks, venting and
2 flaring here. Methane over time from 1990 has
3 decreased by about 17 percent. CO2 has increased
4 by over 100 percent, largely due to increases in
5 flaring in the oil and gas production segment.
6 I'll note also that while trends in different
7 segments have changed over time, trends of the
8 different gases has changed over time, it looks
9 like at this point the 2019 emissions are similar
10 to the 1990 when looking at the total emissions
11 from all of the segments.

12 Because 2019 is the latest year of the
13 Inventory we're interested in also looking at the
14 latest change in annual emissions between 2018
15 and 2019. For methane there has been about a
16 four percent increase, largely in the oil and gas
17 production segment. For CO2 between those two
18 years an increase of about 19 percent due to
19 increased flaring of associated gas largely in
20 the oil production segment.

21 So now I will dive into the segments
22 that I think are of most interest to this group.

1 So we do cover production through distribution
2 and refining, but here I'm focusing on gathering
3 and boosting, transmission, storage and
4 distribution all within natural gas systems. I'm
5 presenting here the methane emissions separated
6 for each of those segments by pipeline and other.

7 So generally emissions from some of
8 the transmission and storage and distribution
9 segments have decreased over time. The gathering
10 and boosting segments have increased over time
11 along with production when looking at just the
12 non-pipeline emissions.

13 Pipeline gathering and boosting and
14 transmission pipelines look fairly steady over
15 the time series. For the distribution segment,
16 as pipeline materials have changed over time and
17 as new study data become available, we
18 incorporated that information into the Inventory
19 and it shows a decrease over time in the
20 distribution segment pipeline emissions.

21 The next few slides will focus in on
22 what makes up the emissions in each segment. So

1 for the gathering and boosting segment that's
2 about 20 percent of oil and gas methane. Those
3 emissions have increased quite a bit over time.
4 The largest sources of emissions in that segment
5 are compressors, so both the exhaust and then
6 venting and leaks there, tanks, pneumatic
7 controllers and finally pipeline leaks and
8 blowdowns. The largest increases have occurred
9 in the largest sources, so in compressor exhaust
10 and compressor venting and leaks.

11 For transmission and storage; sorry
12 this is blurred together a bit, but that segment
13 is also about 20 percent of oil and gas methane
14 emissions. These emissions are largely due to
15 compressor venting, leaks and station leaks.
16 This is one where the emission factors we have
17 sort of combine a number of things. So this
18 category isn't broken out by station leaks versus
19 compressor leaks, but just one number for both.

20 The next largest source is compressor
21 exhaust and then followed by -- or sorry, the
22 next largest source is pipeline followed by

1 compressor exhaust and then station venting. The
2 emissions there have decreased since 1990,
3 increased a bit since 2010. Compressors and
4 station leaks are the largest sources with the
5 largest impacts on trends.

6 Finally for distribution this segment
7 is about seven percent of oil of gas methane.
8 Those emissions decreased by about 70 percent
9 since 1990 and by about 13 percent since 2010.
10 Those emissions break down into customer meters
11 being the largest fraction of emissions followed
12 by pipeline mains and then services and then
13 maintenance, and all of that. The largest
14 decreases over time have occurred in the M&R
15 stations and then the pipeline mains and
16 services.

17 I'll note here that, as I mentioned
18 before, we do have a stakeholder process to
19 incorporate new data and stakeholder input into
20 the Greenhouse Gas Inventory. There's been a lot
21 of interest in oil and gas methane information
22 and a lot of new studies in recent years, and so

1 we started a process to get feedback on those
2 sources of information early in the inventory
3 process. We have a website that provides
4 information on any workshops or webinars that
5 we'll hold. We also in advance of the
6 development of the Inventory put out memos on
7 updates we're considering that have targeted
8 questions for stakeholder feedback.

9 We include on our website Excel
10 spreadsheets with the full time series of data so
11 you'll see information for each source in the
12 Inventory. So for example, if you wanted to know
13 what emissions from 1993 from cast iron pipelines
14 in the distribution look like, that information
15 is there along with information on the methods
16 and references for the Inventory. We wanted to
17 provide as transparent as possible information so
18 that others can see how the Inventory estimates
19 are put together.

20 For this year's Inventory, which was
21 published last month, we held two webinars: one
22 in September; one in November. For our

1 stakeholder series we generally include EPA
2 presentations on GHGRP data and then updates that
3 we're considering for the upcoming Inventory. We
4 also invite stakeholder presentations which
5 sometimes focus on the updates we're considering
6 or sometimes provide new data and new analyses.

7 So we have wrapped up the 2021
8 Inventory, so we are now getting started on the
9 2022 Inventory stakeholder process. We will
10 likely be holding some of the first webinars for
11 that process in the summer of 2021, so fairly
12 soon.

13 So I will briefly cover our voluntary
14 programs here. We just wanted to mention that we
15 have two outreach programs that partner with the
16 oil and gas industry. The Natural Gas STAR
17 Program began in 1993. That provides a flexible
18 framework for EPA to partner with U.S. oil and
19 gas operators to identify and promote methane-
20 reducing technologies and practices.

21 In 2016 building on National Gas STAR
22 we developed the Methane Challenge Program which

1 provides a mechanism for companies to make more
2 rigorous and transparent commitments to
3 voluntarily reduce methane. All the information
4 provided by Methane Challenge partner companies
5 is available on EPA's website in aggregate and
6 then also as individual partner profile pages.

7 Since 1993 these partnerships have
8 been very successful in developing an extensive
9 suite of technologies and offer technical
10 information on cost-effective opportunities to
11 reduce methane across the value chain and have
12 been effective sharing that information across
13 the oil and gas industry. The partners have
14 achieved emissions reductions beyond what was
15 required by any relevant regulations.

16 So for example, in 2019 about 25
17 million metric tons of CO2 equivalent was reduced.
18 Over the full history of the programs we're
19 looking at about 800 million metric tons of CO2
20 equivalent reductions.

21 And my final two slides will cover the
22 regulatory status at EPA for oil and gas

1 emissions. So on January 20 of 2021 President
2 Biden issued Executive Order 13990 protecting
3 public health and the environment and restoring
4 plans to tackle the climate crisis. The
5 executive order directs us to consider taking two
6 actions by September of 2021 focused on reducing
7 methane from the oil and gas sector.

8 So those two actions are proposing a
9 rule to reduce methane emissions in the sector by
10 suspending, revising or rescinding previously
11 issued standards known as the New Source
12 Performance Standards. You may hear them
13 referred to as NSPS. Also proposing new
14 regulations to reduce methane and VOC emissions
15 from existing operations in the oil and gas
16 sector including the expiration, production,
17 processing, transmission, storage segments.

18 EPA is working to complete the review
19 directed by the executive order. We will engage
20 broadly with stakeholders to develop a proposal
21 that achieves ambitious and cost-effective
22 reductions in climate and health-harming

1 pollution and encourages continued development of
2 innovative technologies.

3 EPA plans to reach out to hear from a
4 broad group of stakeholders as we put that
5 proposal together. You can expect to hear more
6 about the opportunities and share your input and
7 concerns about that very soon. Once the proposal
8 is issued you'll also have the opportunity to
9 submit formal comments and participate in a
10 public hearing.

11 So I think that concludes our slides.
12 Sorry if we went a bit over. Thank you again for
13 the opportunity to present today.

14 MR. TAHAMTANI: Thank you, Mark and
15 Melissa. Thank you so very much for sharing so
16 much valid information with us.

17 I will now go to our next presenter.
18 And our next presenter is Sayler Palabrica.
19 Sayler is a transportation specialist with the
20 Office of Pipeline Safety Standards and
21 Rulemaking Division.

22 Sayler has been with us for five years

1 and has experience with regulatory evaluation and
2 rulemaking project management with the OPS. I
3 know, Mark and Melissa, you will stay with us
4 because at the end of all the presentations for
5 this session we have a question and answer
6 segment that we hope you participate in.

7 With that, I will turn it over to
8 Sayler.

9 MR. PALABRICA: Thank you, Massoud.
10 So just to start off with, again, I'm Sayler
11 Palabrica with the Standards and Rulemaking
12 Division.

13 And my presentation will primarily go
14 over data on leak repairs that PHMSA maintains
15 and collects from operators.

16 So, to start with, the picture you see
17 on the slide here, this gives you an overview of
18 the different types of facilities that we're
19 talking about. Note that this graphic is in the
20 FERC concept so it doesn't necessarily capture
21 all of the nuances of the definitions in Part
22 192.

1 But in general you can see that, like
2 on the upstream portion in the box marked
3 production, you see the gas gathering pipelines
4 that collect gas from production fields, take it
5 to the gas processing plants, to transmission
6 lines that carry the gas across country. And
7 then that goes to local distribution companies,
8 which are the companies that ultimately deliver
9 gas to your house via mains and service lines.

10 And that's relevant here. This is the
11 overview of the annual report that PHMSA requires
12 operators to submit under 49 CFR Part 191.

13 We received about a thousand gas
14 transmission annual reports and about 400 gas
15 gathering annual reports. And that covers
16 approximately 300,000 miles of onshore
17 transmission, and about 11,000 miles of onshore
18 regulated gatherings.

19 Note that this is Type A and Type B
20 regulated gathering, as defined in Part 192.8.
21 It doesn't, we currently do not collect data on
22 gathering lines in Class 1 locations, although we

1 propose changes to that in the safety of gas
2 transmission and gas gathering role.

3 Additionally, we require operators to
4 submit gas distribution annual reports. And we
5 get about 1,300 of those covering about one
6 million miles of gas main and 70 million
7 services, which is approximately another million
8 miles of pipeline. So, just keep those in mind
9 as we talk about the leak repair data in the
10 slides to come.

11 Okay. So like I said, we collect data
12 on the number of leaks that operators repaired
13 within the previous reporting year. And we show
14 those in addition to the annual report data,
15 which is available online.

16 We have data summaries which are also
17 available. And these are primarily intended as
18 integrity management performance measures. And
19 these are examples of the summary data that's
20 available at that webpage.

21 This slides summaries the information
22 that's available for gas transmission. And that

1 includes regulated gas gathering and gas
2 distribution pipelines.

3 Note that we do not collect loss and
4 unaccounted for gas for gas transmission
5 pipeline, hazardous leaks repaired by cause for
6 transmission or outstanding. And one of the
7 limitations in the data that we currently collect
8 is that we do not collect data on leaks that are
9 not currently scheduled for repair. Yes, so here
10 we summarize that again.

11 So the releases that are nonhazardous
12 and that can be eliminated by lubrication,
13 adjustment or tightening are not required to be
14 reported. And neither are leaks that are not
15 scheduled for repair.

16 Additionally, intentional releases, so
17 that's the vented emissions that EPA and Alan had
18 talked about, are not included in those numbers.
19 However, they are a significant share of
20 emissions.

21 So now we're going to go into some of
22 the summaries of the leak repair data. So on gas

1 transmission, on gas transmission pipelines, and
2 again, that's covering approximately 2.3 million
3 miles of pipe, operators reported a repair of
4 approximately half a million leaks.

5 Of those, 200,000 were what are
6 defined as hazardous leaks. And that term is
7 defined in the DIMP regulation as a leak that
8 possess and existing or probable hazard to
9 persons or property and requires immediate
10 repair, continuous action, to make safe.

11 That mere language used in a document
12 called the leak rate, described in a document
13 called the GPTC guide, which you will hear more
14 about throughout the rest of the day. So that
15 corresponds to a, roughly to a Grade 1 leak. And
16 then Grade 2 and 3 leaks are lesser in order of
17 safety severity, but not necessarily in potential
18 environmental impacts from emission.

19 So as you can see, approximately most
20 of the leaks are on service lines, which is not
21 terribly surprising based on what we just heard
22 from the EPA. And the largest category is

1 service line equipment failure, which again,
2 corresponds to not surprising based on the data
3 on emissions from customer and commercial meters
4 that EPA mentioned.

5 These slides just go into some
6 additional detail on gas distribution, leak
7 repairs. Splitting it out between mains and
8 service. And it also shows you by cause.

9 So again, you can see, on the total
10 leaks there are a lot due to corrosion,
11 excavation damage, especially on service line,
12 and equipment failure on service lines, again.

13 And then when you get to the hazardous
14 leaks you see a lot more due to excavation
15 damage. Which, again, is the leading source of
16 both hazardous leaks as well as reportable
17 incidents and serious incidents that result in
18 casualty.

19 So for gas transmission and gas
20 gathering lines, again, this is based on
21 information that operators submitted on their
22 2020 gas transmission and gas gathering annual

1 report. There is about 1,700 leak repairs on gas
2 transmission lines and approximately 160 on Type
3 A and Type B regulated gathering lines. So,
4 many, many fewer than on distribution, however,
5 it's also less mileage.

6 In addition to the leaks that were
7 repaired, operators reported at the end of the
8 reporting year having 380 leaks on gas
9 transmission pipelines that were scheduled to be
10 repaired in the next calendar year, and 41 on gas
11 gathering.

12 And here, again, you can see the leaks
13 by cause. And the leading cause of reportable
14 leaks on transmission is equipment failure,
15 whereas on gas gathering pipelines you see much
16 more proportionally leaks caused by corrosion.
17 And if you dig into that, that's mostly external
18 corrosion.

19 So one of, again, one of the
20 limitations of the data that we have collected is
21 that we have not historically collected the
22 number of leaks that are either discovered, nor

1 the leaks that could be categorized as
2 nonhazardous under the GPTC guide or annual
3 report instructions. But nevertheless could
4 result in significant emissions.

5 However, we did find data from the
6 State of New York that did collect some of this
7 information to sort of fill in the denominator.
8 Now, one thing to keep in mind is that this is
9 going to be focused on distribution. And due to
10 various reasons, New York may not be
11 representative of distribution in the rest of the
12 country.

13 However, if any other states collect
14 similar information, we invite you to make
15 comments and provide that information to us
16 because it would be very helpful for this
17 rulemaking.

18 So again, here you see those GPTC leak
19 grades. And based on their data, 37 percent of
20 leaks that were discovered fell into that Type 3
21 or Grade 3 category. And they've also reported
22 significant reductions in leak backlogs since

1 2003.

2 And in the interest of time I'm going
3 to go through these pretty quickly. But this
4 shows the leaks discovered over time on mains and
5 services, and then the leaks repaired.

6 So there are a lot of Grade 3 leaks
7 that are repaired but, especially in earlier
8 years it let fewer than what were being detected.
9 Which leads to a backlog over time. However,
10 that's been on a decline in the State of New
11 York.

12 So the next section addresses legacy
13 materials identified in the act. So this
14 includes cast iron and wrought iron, bare steel
15 and pre-1970 infrastructure.

16 And basically this represent a small
17 portion of the existing infrastructure, however,
18 as we have seen in the EPA report and our own
19 incident data, it results in a disproportionate
20 leaks incident than emission.

21 And again, I'm going to go through
22 these quickly and I apologize.

1 On transmission, bare steel is not as
2 significant as a share of infrastructure compared
3 to on the distribution side. About one percent.

4 However, what is predominant in
5 transmission is pre-1970 infrastructure. And
6 that's approximately 160,000 miles. That's
7 pipeline that was installed prior to the,
8 basically the creation of the pipeline safety
9 regulation. And that has also been on the
10 decline since 2005.

11 The last topic we'll discuss is loss
12 and unaccounted for gas, which has been a lot of
13 discussion in this context. We started
14 collecting loss and unaccounted for gas on the
15 gas distribution annual report.

16 However, this is reported on an
17 operator level as a percentage. As basically as
18 a percentage of loss and unaccounted for gas of
19 total consumption. So keep that in mind with
20 that 2.1 percent. That's just the average
21 percentage across all the operators.

22 No total volume information is

1 submitted on the report form, however, on a
2 larger scale this information is available from
3 the EIA in their gas annual report. And they
4 further break it down by lost gas, which is
5 leaks, blow downs and basically the source of
6 emissions that we're talking about in these
7 proceedings, and unaccounted for gas, which can
8 be caused by a number of factors, such as
9 measurement error or just accounting differences.

10 In the EIA data, the loss and
11 unaccounted for gas, as a percent of total of
12 consumption, was about 1.2 percent. And if you
13 click through that link it includes reports by
14 states.

15 So moving forward we're looking for
16 information on how many leaks are neither
17 repaired nor scheduled for repair, as well as how
18 many leaks are discovered. And whether any other
19 states or entities collect this information.

20 Additionally, information on the leak
21 volumes. Currently we collected only the count.
22 It would be useful for these proceedings,

1 especially the share of super emitting leaks that
2 result in a disproportionate amount of
3 information.

4 As well as the location and failure
5 mode for equipment and corrosion related leaks.
6 As well as the frequency and volume of
7 intentional releases from venting, blow down and
8 the other factors that EPA has described.

9 So the rest of the presentation
10 provides links to a lot of these reports and the
11 raw data if anyone is interested. And these
12 slides will be posted onto the meeting page as
13 well. So that's it for me.

14 MR. TAHAMTANI: Thank you, Sayler,
15 appreciate your presentation.

16 Let me see. Our next to last
17 presenter for this panel is Mary Zanter. And a
18 few words about Mary.

19 She is a pipeline safety program
20 manager for the State of South Dakota Public
21 Utilities Commission. Mary is the current chair
22 of the National Association of Pipeline Safety

1 Representatives, or NAPSRS, which is the
2 association made up of all the states pipeline
3 safety managers and inspectors.

4 Mary has a bachelor's degree in
5 electrical engineering, a master's degree in
6 business administration. Prior to joining to the
7 QC staff in 2012, she worked for natural gas
8 operator for 14 years in both engineering and
9 operation.

10 And with that, I'll turn it over to
11 Mary.

12 MS. ZANTER: Thank you, Massoud. I'm
13 very happy to be here today. I'm glad that we
14 have so many participants and looking forward to
15 hearing from all the other panelists.

16 So, just to share a little bit about
17 NAPSRS. It was established in 1982, comprised of
18 the state pipeline representatives from each
19 state, and they're organized into five regions
20 that align with the PHMSA regions.

21 Hawaii and Alaska are not NAPSRS
22 members because there is not state program there.

1 And PHMSA is responsible for the intrastate
2 pipelines in each of those states. But we do
3 have some programs that have both hazardous
4 liquid and natural gas programs. And we also
5 include Puerto Rico.

6 Generally, we represent 75 percent of
7 the state and federal inspection workforce. So,
8 a large number of the inspectors are part of the
9 state and part of the NAPSRS organization.

10 And for more information about NAPSRS
11 I am sharing the website. It's simply napsrs.org.

12 The mission of NAPSRS is to strengthen
13 pipeline safety programs by improving pipeline
14 safety standards in promoting education, training
15 and the integration of new technology.

16 So, when we look at the state leak
17 detection regulation, approximately one half of
18 the states have additional regulations above what
19 the federal regulations are.

20 So some of these include a requirement
21 for identifying leak classification and action on
22 leaks, with a criteria for action, some repair

1 time frame. We have enhanced or more frequent
2 reporting of leak status to the regulatory
3 agency. Sometimes specify the equipment used for
4 the detection of leaks.

5 Many of the states defined hazardous
6 leaks, which follows, what is defined in the DIMP
7 section. And also what is defined in the GPTC
8 guide.

9 Prior to DIMP there really wasn't a
10 definition of hazardous leaks, so that's been
11 defined by states.

12 Sometimes states require a response
13 time criteria for the gas order complaints that
14 they receive. They might require more frequent
15 leak surveys. They extend the record retention
16 requirement for each of the operators.

17 In some cases they define business
18 districts in a more precise manner than what the
19 federal code requires. And they require public
20 awareness efforts. And also may have mandatory
21 replacement projects.

22 One of the things mentioned on that

1 list before was more frequent leak surveys. So
2 in general, here is some of the reasons or some
3 of the background to those more frequent leak
4 surveys.

5 They may have a general system, leak
6 survey requirement that is more frequent.

7 Sometimes they may have a material specific area
8 that are requiring more frequent leak surveys,
9 such as bare steel, unprotected steel, cast iron,
10 copper, Aldyl-A or PVC.

11 Occasionally it's a location specific
12 area that is requiring the more frequent leak
13 survey, such as a high occupancy building, public
14 building, theaters, arenas, hospitals, schools,
15 bridges and areas of movement.

16 And they also may be having a
17 condition specific area for more frequent leak
18 surveys. For instance, if it is a frost area
19 with cast iron, they may require more frequent
20 surveys. Or high pressure systems, such as
21 pressures greater than 250 pounds. Possibly high
22 heat regions with a Drisco8000 HDPE. And also,

1 on unodorized line.

2 As I mentioned before, the hazardous
3 leak definition is only defined in the DIMP
4 section of federal code. Most operators have
5 used the GPTC guide materials appendix for
6 defining the criteria for leaks. And also for
7 the definition of leaks.

8 And that definition, as I had
9 mentioned, which is also what is in the DIMP
10 section, a hazardous leak means a leak that
11 represents an existing or probable hazard to
12 persons or property that requires immediate
13 repair or continuous action, until the conditions
14 are no longer hazardous.

15 So the operators have relied on this
16 guide material for a number of years. Even prior
17 to when DIMP was implemented, they have used this
18 guide material. And it's pretty widely utilized
19 by operators.

20 So, we also want to look at some of
21 the barriers that we have to advance leak
22 detection. And some of these are pretty general,

1 but I think it kind of gives you a general
2 overview of what barriers may exist.

3 It could be cost, training,
4 performance of the technology in the field, a
5 lack of data and results, the lack of experience,
6 the effectiveness, regulations and uniform
7 enforcement, and also the high number of
8 excavation damages.

9 Excavation damages was pointed out
10 previous as a number of reasons, one of the
11 highest reasons for gas leaks. Especially on a
12 gas distribution system.

13 And no matter how many other efforts
14 we have for leak detection, until the excavation
15 damages are reduced, there is always going to be
16 that particular problem with having leaks on the
17 system.

18 There are few systems currently being
19 used for advanced leak protection programs. One
20 of them is the Picaro system. And there are
21 operators who are also using drones to more
22 easily access the pipeline for leak detection

1 purposes.

2 So, we've talked about the PIPES Act
3 of 2020 and I just want to make a few general
4 statements about that that NAPSRS generally
5 supports any regulation that could potentially
6 increase pipeline safety. And also, NAPSRS
7 generally supports best practices associated with
8 improved leak detection and repair.

9 So, my section was much shorter. I
10 think we have a lot of distribution facilities
11 that NAPSRS is responsible for, but we certainly
12 encourage questions and comments during the
13 question and answer period. Thank you very much.

14 MR. TAHAMTANI: Thank you, Mary. I
15 appreciate your presentation, we all do. Sam,
16 I'll turn it over to see if we have any questions
17 from our public participants.

18 MR. HALL: All right, ladies and
19 gentlemen, we're going to handle the question and
20 answer process in a very specific way. We will
21 not be monitoring hands raised through the Adobe
22 Connect software, so please don't expect to be

1 called upon if your hand is raised in the
2 software.

3 If you wish to make a comment with
4 your voice, in a moment the AT&T operator will
5 give instructions for how to enter the queue.

6 If you wish to make a comment in the
7 Q&A section you may do that as well, and I will
8 read those comments aloud. This may be a bit
9 hiccupy as we do this for the first time during
10 this questions and answer period, so we certainly
11 appreciate your patience.

12 And now I'll turn it over to the AT&T
13 operator for instructions on how to make a
14 comment.

15 THE OPERATOR: Thank you. And if you
16 wish to make an audio question, please press 1
17 then 0 at this time. 1 followed by 0 on your
18 telephone keypad.

19 MR. HALL: And in addition, if at the
20 beginning of your comments if you would please
21 state your name and spell it for the record as we
22 are recording this presentation, and we will have

1 a transcript of the proceedings available on our
2 public meeting, after the meeting.

3 THE OPERATOR: And please standby, we
4 do have a question coming through queue. One
5 moment please.

6 Okay, we'll go to the line of Pamela
7 Lacey. And just a quick reminder, for the
8 record, please spell your first and last name.
9 One moment please. And, Pamela, your line is
10 open, please go ahead.

11 MS. LACEY: Thank you very much. This
12 is Pamela Lacey, that's, P-A-M-E-L-A, Lacey, L-A-
13 C-E-Y, with the American Gas Association.

14 I have a question for Mark
15 DeFigueiredo. Hello, Mark.

16 Could you explain to the audience
17 about how Subpart W reporting, for mains and
18 services for distribution, is based on emission
19 factors that were developed based on the 1990s
20 GRI EPA methane study whereas the inventory uses
21 updated emission factors?

22 DR. DEFIGUEIREDO: Sure, I can. This

1 is Mark DeFigueiredo. Thanks for the question.

2 Yes. So, for the greenhouse gas
3 reporting program, Subpart W, within the natural
4 gas distribution segment there is recording of
5 emissions and leaks from distribution main and
6 services.

7 The calculation methodology that the
8 facility has used, is they take the mileage of
9 pipeline, based on material types, and that's
10 multiplied by a pipeline specific emission
11 factor. And so it's an emission factor specific
12 to the type of pipeline materials.

13 So there is emission factors for
14 plastic pipes that are different than, say cast
15 iron pipe or unprotected steel.

16 The emission factors that are
17 currently Subpart W, are the ones that we
18 essentially finalized at the beginning of the
19 program. They were the best available data at
20 the time. And are essentially based on gas
21 research institute, environmental protection
22 agency study from, I believe, 1996.

1 And since that time there have been a
2 lot of studies related to the oil and gas
3 industry. Including, with respect to,
4 distribution mains and services, including
5 studies by the Environmental Defense Fund,
6 Colorado State.

7 The greenhouse gas inventory that my
8 colleague, Melissa Weitz, mentioned has gone
9 through a stakeholder process to update the
10 emission factors that are used in the inventory,
11 with respect to the distribution mains and
12 services uses a study by Brian Lamendola, that
13 was sponsored by the Environmental Defense Fund.
14 And he's at Washington State.

15 And we have received stakeholder
16 feedback about making regulatory revisions to the
17 greenhouse gas reporting program to also update
18 our emission factors and calculation
19 methodologies to update to the more recent
20 studies. And so that's something that's under
21 consideration at EPA.

22 There is a slightly different process

1 that we have to go through with Subpart W in that
2 we need to go through a rulemaking, public notice
3 and comment process whereas the greenhouse gas
4 inventory has a different stakeholder and public
5 and expert review process that they go through
6 for making changes. Thanks for the question.

7 MS. LACEY: Thank you.

8 THE OPERATOR: Okay. Now at this
9 time, we have no further questions in queue.

10 MR. HALL: Operator, will you please
11 provide the instructions again just in case
12 someone didn't hear them and would like to make a
13 comment?

14 THE OPERATOR: Absolutely. And once
15 again, if there are additional questions, please
16 press 1 then 0 at the time on your telephone
17 keypad. 1 followed by 0.

18 MR. TAHAMTANI: So, I have a few
19 questions for the panelists, just to get the
20 conversation going. I'll start with Mary.

21 Mary, you talked about excavation
22 damages. Obviously these are damages that can be

1 prevented. And they do cause the hazardous
2 leaks.

3 What else can the states and PHMSA and
4 others, such as CGA, do to continuously reduce
5 these damages to our pipeline infrastructure?

6 MS. ZANTER: Thank you, Massoud. I
7 think that in general we need more awareness of
8 both our one call laws and what the effects of
9 damage to pipelines actually, what it creates.

10 It creates not only a public safety
11 hazard, it also creates a hazard for the
12 excavator who is digging. It also creates a
13 hazard for the operator whose had their line dug
14 into. And as we know now, we also have an
15 emissions issue that also becomes a factor.

16 So, excavation damages are really bad
17 for all parties involved. And the most important
18 factors, given the information to the excavators,
19 to the locators, to everybody involved with
20 excavation, to make sure that those facilities
21 are protected.

22 MR. TAHAMTANI: Thank you, Mary. I'll

1 move on to a question for our EPA friends. Mary,
2 from your data it was obvious that compression is
3 one of the larger sources of emission.

4 And the question that I have for you,
5 and even Mary here is, what is the role of DOT
6 versus the EPA versus states, to reduce emissions
7 on compressor stations and how do we make sure
8 that there are no gaps in overlaps in methane
9 leak management between our agencies?

10 Mark or Melissa?

11 MS. WEITZ: This is Melissa Weitz.
12 I'll note generally what the current regulations
13 cover at EPA, and Mark can jump in to correct me
14 or add anything.

15 So the concern with compressor
16 stations, the regulations that we have for
17 gathering and boosting do cover venting of the
18 compressors. So, equipment, seals and rod
19 packing. Those are standards that apply to new
20 sources. That's what's currently on the books.

21 I'll note, again, that we do have the
22 executive order that we mentioned that proposes

1 that EPA considers taking actions by September
2 2021, that we propose a rule to reduce the
3 methane emissions in the gas sector by
4 suspending, revising, rescinding previously
5 issued standards known as new source reform
6 standards. And then also proposing new
7 regulations for methane and VOC from existing
8 operations in the oil and gas sector, including
9 exploration production, processing, transition
10 and storage.

11 So that would be potentially looking
12 at transmission and storage, which isn't in the
13 current rule.

14 DR. DEFIGUEIREDO: This is Mark
15 DeFigueiredo from EPA. I'll add that. I think
16 what your highlighting, Massoud, is the role of
17 coordination is really important.

18 And actually, EPA staff and PHMSA
19 staff, we have been in regular communication
20 since the enactment of the PIPES Act. And I
21 think it will be important for us to continue to
22 work together.

1 You know, highlighted by EPA's
2 participation, for example, at this public
3 meeting, to ensure that we're coordinated in
4 parallel regulatory efforts moving forward.

5 MR. TAHAMTANI: Thank you both. Sam,
6 I'll come back to you in case there are questions
7 from the public.

8 MR. HALL: Operator, do we have
9 additional questions from the public?

10 THE OPERATOR: No additional questions
11 in queue at this time.

12 MR. HALL: Back to you, Massoud.

13 MR. TAHAMTANI: I'll ask a couple more
14 questions then. Have EPA addressed technology
15 performance standards in other pollution and
16 control or leak management programs?

17 One of the things that we have to do
18 as part of the PIPES Act, we need to come up with
19 some performance standards for advance leak
20 technology or technology that's used to detect,
21 quantify and prepare leaks. Any comments on
22 that?

1 DR. DEFIGUEIREDO: This is Mark
2 DeFigueiredo at EPA. Within EPA's Office, it's
3 actually a sister office within in your office, a
4 sister to where Melissa and I work. There is in
5 an office of Air Quality Planning and Standards
6 that includes a measurement policy group and a
7 measurement technology group.

8 And they're focused on analyzing the
9 technologies that are used in regulations, such
10 as EPA's new source performance standards. So I
11 think coordination with that group will be
12 important.

13 There has also been a lot of work
14 within the federal family outside of EPA. So for
15 example, the U.S. Department of Energy has been
16 doing a lot of work with respect to advance leak
17 detection technologies in the methane space
18 through various R&D programs that they have.

19 We think the information from DOE will
20 also be informative to these efforts.

21 MR. TAHAMTANI: Thank you, Mark.
22 Another question for Mary.

1 Are there ways that states can
2 encourage small operators to adopt advance leak
3 technology in their practices?

4 MS. ZANTER: Thank you, Massoud.
5 Small operators are always, I would say, have a
6 bit of a challenge simply because they don't have
7 some of the same capital for investments into new
8 technology as larger operators may have.

9 So I think as an incentive we have to
10 be creative in ways to do that. And I don't know
11 that I have the answer necessarily as to how that
12 can happen, but I think certainly regulations
13 will force operators in the right direction.

14 And possibly, maybe there is some sort
15 of financial incentive, either from the state
16 level or from a federal level. I wish I had the
17 answer but I'm not sure that I do.

18 MR. TAHAMTANI: Thank you, Mary.
19 Again, Sam, I'll check to see if there are any
20 questions from the public.

21 MR. HALL: And before I do that I'd
22 like to remind the audience also that you can

1 enter questions in the Q&A chat box on the bottom
2 left of your screen.

3 Operator, are there any additional
4 questions?

5 THE OPERATOR: Yes. We have a follow-
6 up from the line of Pamela Lacey. Please go
7 ahead.

8 MS. LACEY: Thank you very much. I
9 actually entered a couple of questions in the Q&A
10 and apparently you all can't see them, so there
11 may be others that the audience is trying to get
12 to you.

13 I have a question about lost and
14 unaccounted for gas, LOUF or LAUF, depending on
15 what you want to use.

16 In the main factor in the difference
17 between the gas that's metered in and what goes
18 out to customers is really driven by the
19 difference between the more sophisticated large,
20 really expensive meters at custody transfer
21 stations that can adjust for temperature, and
22 they continuously, versus those smaller, simpler

1 and more affordable meters at customer locations
2 that are read only periodically and under
3 different temperature weather conditions during
4 the month.

5 And would you agree, and this is for
6 our EPA speakers, would you agree that LAUF is
7 not a good measurement of actual methane
8 emissions?

9 And I'm sorry, this is Pamela Lacey at
10 AGA.

11 MR. HALL: And that question was for
12 our --

13 MS. WEITZ: I can --

14 MR. HALL: Go ahead.

15 MS. WEITZ: Oh I can, this is Melissa
16 Weitz, I can jump in for EPA. I'll note that
17 we've looked at a lot of data for distributions
18 within, in the inventory in the past. The most
19 recent update that we did for distribution
20 pipelines was in 2016.

21 And prior to our stakeholder
22 discussions, this issue of loss and unaccounted

1 for gas did arise. And we, it seems that kind of
2 the definition can vary.

3 And it's not really known what
4 fraction of that loss and unaccounted for gas is
5 actually emissions versus other items. And so
6 for that reason for, because this is a time,
7 across a time series and transparency we use
8 miles of pipelines to estimate the distribution
9 of pipeline emission versus loss and unaccounted
10 for gas.

11 MS. LACEY: Thank you.

12 MR. HALL: This is Sam Hall again. I
13 apologize, thank you, Pamela, for noting that
14 there are questions in the Q&A box. I suspected
15 we might have a hiccup here.

16 We do see those questions now and I
17 will read those out loud. If that's okay with
18 you, Massoud, is that all right?

19 MR. TAHAMTANI: Please go ahead, Sam.
20 Thank you.

21 MR. HALL: From Heidi Wray, H-E-I-D-I,
22 W-R-A-Y. We have the question, where is the

1 emission data prior to 2016 polled?

2 MS. WEITZ: This is Melissa Weitz from
3 EPA. I believe this is a question on the
4 greenhouse gas inventory.

5 So we use a number of data sources for
6 the inventory. We do use a lot of data from the
7 greenhouse gas reporting program.

8 For most sources in the oil and gas
9 sector, they started reporting in 2011. Some
10 sources were newly reporting in later years, but
11 in general, most of those emission sources
12 started in 2011.

13 We use the greenhouse gas data where
14 we can. And we scale it up to the national level
15 so that we're not just reporting only the
16 facility level emissions but getting an estimate
17 of the total national numbers.

18 For a lot of the sources we rely on
19 data from earlier studies for early years of the
20 time period. So there was a large effort in the
21 1990s to collect data across the oil and gas
22 systems infrastructure and develop methane and

1 future emissions estimates for those. So, in a
2 lot of cases we used those data.

3 In earlier years it varied from
4 source-to-source. We do a lot of interpolation
5 of emission factors between the early '90s and
6 the start of the GHGRP data.

7 We do use year specific activity data
8 also. So, in general, there is a lot of
9 different answers because it varied from source-
10 to-source.

11 But in general, we use data from
12 either research studies, the 1990 study. Or we
13 sometimes develop emission factors from the
14 greenhouse gas reporting program. And if it
15 seems to represent data across the time series,
16 we will apply those emission factors back through
17 the time series also.

18 So there are a number of references
19 that we use to pull together this data.

20 MR. HALL: Thank you for that answer.
21 We do have several more questions, multiple more
22 questions, here in the Q&A. And we have until

1 about 12:45 before we break for lunch so
2 hopefully we can get to all of these.

3 The next question is from Stephen
4 Price, S-T-E-P-H-E-N, P-R-I-C-E.

5 Stephen asks, on the local
6 distribution side of the industry, is there data
7 on mains and services that distinguishes
8 emissions due to leaks versus emissions due to
9 third-party damages?

10 MS. WEITZ: I will answer for the
11 greenhouse gas inventory and others can jump in.
12 This is Emily Weitz for the greenhouse gas
13 inventory.

14 The study that we used for the
15 distribution pipelines focused on leaks. We have
16 a separate estimate for what we call mishaps, and
17 it's based on a research study.

18 It doesn't, at this point, vary from
19 year-to-year, it's added in as a default factor
20 there. So there is a distinction, but there is
21 not a lot of data to develop a year specific
22 methane emission estimate for the third-party

1 damages category.

2 MR. HALL: Thank you. Would any other
3 members of the panel like to comment?

4 DR. DEFIGUEIREDO: This is Mark
5 DeFigueiredo from the EPA. I don't have anything
6 to add on the greenhouse gas reporting program
7 but I did want to note that the natural gas STAR
8 Methane Challenge Program, to the various best
9 management practices, one of which relates to
10 excavation damages from the local distribution
11 companies.

12 And so, there is some activity
13 information that is reported as part of that
14 transparent reporting of the methane challenge
15 DIMPs related to excavation damages.

16 MR. HALL: Thank you. Sayler or Mary,
17 any other comments? All right, not hearing any.

18 Lindsey Fitzgerald, L-I-N-D-S-E-Y, F-
19 I-T-Z-G-E-R-A-L-D, asks, how do you know that the
20 vented intentional releases are significant if
21 they are not included or reported?

22 MR. PALABRICA: This is Sayler with

1 PHMSA. So that statement is based on the
2 greenhouse gas inventory data on the vented
3 emissions, as well as compressor station fugitive
4 emission.

5 For gas transmission and gas
6 distribution operators on the greenhouse gas
7 inventory report, what we don't collect is the
8 number of events that those, basically the number
9 of leaks from those releases on the annual report
10 like we do for leak repairs. But the emission
11 volume is based is on the EPA data.

12 MR. HALL: Okay, very good. Lindsey
13 Fitzgerald has a follow-up question. How do you
14 define super emitter?

15 MR. PALABRICA: So one of the
16 challenges of this rulemaking is going to be
17 defining what are those, like, Grade 2 and Grade
18 3 leaks that, due to the emission volume or the
19 amount that it's been releasing, has to be
20 repaired. And that's not something that we've
21 decided yet.

22 But it is those releases that are

1 perhaps nonhazardous under leak grade, but result
2 in a large amount of emissions. But we haven't
3 settled on what number that is.

4 MR. HALL: Okay, very good. David
5 Heldenbrand.

6 MR. TAHAMTANI: Can I --

7 MR. HALL: Oh yes, please.

8 MR. TAHAMTANI: I'm sorry, Sam. Super
9 emitter, is that something that EPA defines? Can
10 you comment on that?

11 MS. WEITZ: Hey, this is Melissa Weitz
12 from EPA. We don't have a definition for super
13 emitter, we are very interested in studies that
14 look at emissions. Oil and gas and other methane
15 sources.

16 We note that there are a lot of
17 different definitions for super emitters,
18 depending on the studies. So sometimes it's
19 defined as a certain percentage of methylene
20 leakage compared to other facilities.

21 Sometimes it's defined as a large
22 anomalous event. So it can really vary from

1 study-to-study.

2 MR. TAHAMTANI: Thank you, Melissa.

3 Back to you, Sam.

4 MR. HALL: Thank you. The next
5 question is from David Heldenbrand, D-A-V-I-D,
6 H-E-L-D-E-N-B-R-A-N-D.

7 Better soil gas migration analysis
8 might be a more effective way to analyze risk
9 rather than more frequent surveys. We'll take
10 that as a comment and not a question. Thank you,
11 David.

12 Next question comes from George
13 Ragula. Pardon me if I'm mispronouncing.
14 G-E-O-R-G-E, R-A-G-U-L-A.

15 Curious why a manufacturer was used to
16 describe CRDS technology, which is available
17 through multiple sources. Anyone able to answer
18 that?

19 MS. ZANTER: This is Mary Zanter with
20 NAPS. I think this might be directed to me, but
21 I'm going to show my ignorance in response to
22 this question.

1 I think it might be referring to the
2 fact that I used the statement of the Picaro
3 system. And I used that manufacturer name
4 because I'm not familiar with any other
5 technologies done by another manufacturer.

6 So I think that's simply because of my
7 ignorance that I didn't reference other types,
8 that I didn't reference the technology rather
9 than the manufacturer.

10 MR. HALL: Thank you, Mary. I've just
11 been informed that I don't need to spell the
12 names of the folks who have submitted comments so
13 I'll stop doing that.

14 We have a question from David Bull.
15 Will NAPSRS be publishing a new addition of the
16 state regs compared to the federal regs?

17 MS. ZANTER: This is Mary Zanter with
18 NAPSRS. We are working on a new addition of what
19 we call the compendium, which has all the state
20 regulations identified that are above and beyond
21 the federal regulations. So we do expect that to
22 be published in the near future. Thank you.

1 MR. HALL: Thank you, Mary. The next
2 question is also directed to you from Steve
3 Allen.

4 Do you know how many states require
5 all leaks to be repaired when discovered?

6 MS. ZANTER: Thank you, Steve. I
7 believe that we are working on a survey for more
8 definitive information about our requirements on
9 leak detection. At this time I do not know the
10 exact number of states that require all leaks to
11 be repaired but I know that there are a couple
12 that do. So, sorry I don't have the exact answer
13 for you. Thank you.

14 MR. HALL: Thanks. Thanks, Mary.
15 Randy Knepper asks, why does the recent executive
16 order discuss VOCs, volatile organic compounds,
17 as most of the slides were centered on methane
18 and carbon dioxide?

19 MS. WEITZ: Hey, this is Melissa Weitz
20 from EPA. So the executive order discusses both
21 VOCs and methane. The current regulations focus
22 on VOCs.

1 The executive order instructs us to
2 consider looking at both methane and VOCs. While
3 Mark and I work closely with the sister office
4 that does work qualifying VOCs, we focus on the
5 greenhouse gas emissions. So our slides focused
6 on methane and Co2.

7 We'll also note that a lot of the
8 sources of VOCs are the same as the sources of
9 methane.

10 MR. HALL: Thank you. Rebecca Craven
11 asks, does PHMSA expect to include a requirement
12 for quantification of individual leaks in the
13 Section 113 rules and will it now, or in the
14 future, be requiring some quantified level of
15 reduction for operators? I'm happy to repeat
16 that.

17 MR. PALABRICA: Those are things that
18 we could consider in the rulemaking, although we
19 are aware of challenges with quantification.

20 MR. HALL: Okay. Thank you for your
21 question, Rebecca.

22 MS. ZANTER: And this is Mary Zanter

1 with NAPSRS and I would agree. I think that we
2 need to look at a lot of different things when it
3 comes to what the rule making will actually
4 state.

5 MR. HALL: Thank you, Mary. Thank
6 you, Sayler.

7 Rick Weber asks, how will upcoming
8 Section 113 rule take into account data and
9 report produced under Section 114?

10 In other words, will this year's rule
11 be seen as the first step to be revised based on
12 updated inspection and maintenance plans under
13 Section 114?

14 MS. ZANTER: I can try to answer that.
15 This is Mary Zanter with NAPSRS.

16 I think in general, until the rules
17 are established as to what steps are required for
18 enhanced leak detection and mitigation, you can't
19 necessarily update an O&M manual. Operations and
20 maintenance manual.

21 And so, once the rules are established
22 then we can move into the inspection criteria of

1 ensuring that all the operators are following the
2 applicable rule.

3 MR. HALL: Thank you.

4 MR. PALABRICA: And to add on to that,
5 and Massoud can stop me if I'm wrong, we see them
6 as two separate rulemaking. And the rulemaking
7 required after the report for 114, which won't
8 take place for another year, that would be
9 subsequent to the rulemaking under 113.

10 MR. TAHAMTANI: Sayler, you're
11 correct. 113 clearly says, we have to have a
12 final rule by this December that addresses leak
13 repair, detection and repair and a number of
14 other provisions.

15 114 is the self-executing provision
16 that says, by this December, operators have to
17 revise their O&M to have hazardous leaks
18 repaired. And then to basically minimize the
19 release of all releases from pipeline facilities.

20 And I think these questions will be
21 addressed this afternoon by other panelists.

22 MR. HALL: Thank you both.

1 MR. PALABRICA: Thank you, Massoud.

2 MR. HALL: Randy Knepper has a follow-
3 up question. He says, we heard environmental
4 justice mentioned a few times in introductory
5 remarks. What does, or how does, environment
6 justice get factored in by PHMSA as pertaining to
7 Section 113 and 114?

8 MR. TAHAMTANI: I'll take a stab at
9 that, even though as the moderator I'm not
10 supposed to answer any questions. I don't think.

11 Clearly as we're looking at the
12 mandates in 113 and 114, one of the areas we
13 would be focusing on is to make sure that these
14 leaks are repaired in all areas. Including areas
15 that may be underserved, if you will.

16 And again, no evidence to say that
17 they're not being repaired, but we're focusing on
18 making sure that the rulemaking and our overall
19 plans to help replace the leaking legacy
20 infrastructure goes ahead or progresses with
21 environmental justice in mind.

22 MR. HALL: Thank you, Massoud.

1 MR. PALABRICA: And environmental --

2 MR. HALL: We do have --

3 (Simultaneous speaking.)

4 MR. HALL: Go ahead, Sayler.

5 MR. PALABRICA: Go ahead.

6 MR. HALL: No, go ahead.

7 MR. PALABRICA: And environmental
8 justice will also be brought into account under
9 the NEPA process.

10 MR. HALL: Thank you for that. We do
11 have considerably more questions in the Q&A but I
12 want to take a pause and see if the operator has
13 any questions from the audience?

14 THE OPERATOR: At this time, no
15 questions from the audience. But a quick
16 reminder, please press 1, followed by 0, if you
17 do have a question. 1 then 0.

18 MR. HALL: Thank you, sir. Next
19 question comes from David Heldenbrand.

20 And I do want to note that I think
21 some of these questions will be answered through
22 other panel discussions. And if you're

1 dissatisfied with the answers that you're hearing
2 now, perhaps it will be a good opportunity for
3 you to ask those questions again under other
4 panels.

5 In the meantime I'll try to go through
6 these questions as quickly as I can.

7 From David Heldenbrand we have a
8 question. Excavation damage certainly needs to
9 be minimized in every way, but the consequences
10 after an incident also need to be addressed.

11 We'll take that as a comment, David,
12 as there is no question included.

13 Pamela Lacey from the AGA asks, oh, I
14 think Pamela, we may have answered this question
15 for you. Regarding loss and unaccounted for gas.
16 If not, please chime in with the operator and
17 we'll be happy to answer that question.

18 Brent Shuler asks, or comments,
19 regarding the super emitters that were mentioned,
20 most technologies are able to determine where
21 super emitters exist, pulling in all data from
22 the survey and only report out the super

1 emitters.

2 There have been concerns mentioned
3 around pulling in this additional data, non-super
4 emitter indications, and not taking actions on it
5 even when the super emitter surveys are
6 supplemental. Can any clarity be offered on
7 this?

8 MR. PALABRICA: So, I don't think that
9 we can necessarily offer clarity at this point,
10 we'll be talking more about technology in the
11 next day. And one of the provisions in the act
12 is that as a part of this rulemaking we have to
13 consider how to adopt, basically some of those
14 advance leak detection technologies that you're
15 talking about.

16 Including ways to address any concerns
17 like that. So thank you for your comment as a
18 part of the rulemaking.

19 So that's one of the things that we'll
20 have to consider when we think about how to
21 incorporate those technologies and survey
22 practices in this rule and the 114 mandate. And

1 this is Sayler Palabrica.

2 MR. HALL: Thank you, Sayler. And we
3 have a question from Julie Halliday.

4 Cast iron was mentioned a few times.
5 Does the emission data consider cast iron pipe
6 that has been rehabilitated versus that which has
7 not?

8 MS. WEITZ: This is Melissa Weitz --

9 DR. DEFIGUEIREDO: This is Mark --

10 (Simultaneous speaking.)

11 DR. DEFIGUEIREDO: Go ahead, Melissa?

12 MS. WEITZ: Can I cover it?

13 DR. DEFIGUEIREDO: Go ahead.

14 MS. WEITZ: So, I'll just note that
15 for the greenhouse gas inventory we do not make
16 that distinction. A number of studies have tried
17 to collect data both from cast iron that has not
18 been rehabilitated versus those pipelines that
19 have. There has not been a lot of data available
20 on that. Anything to add, Mark?

21 DR. DEFIGUEIREDO: No, I was going to
22 say the same thing. Thanks.

1 MR. HALL: Okay, very good. Dirk
2 Smith asks, while the EPA does not have
3 jurisdiction over LDCs, the local distribution
4 companies, if it did, is it correct that their
5 term facility would include the entire local
6 distribution company systems within a system?

7 DR. DEFIGUEIREDO: This is Mark
8 DeFigueiredo from the EPA. I believe you're
9 referring to the definition of facility for
10 purposes of the greenhouse gas reporting program.

11 The greenhouse gas reporting program
12 is quality neutral. It's intended to inform
13 different regulatory efforts.

14 So I wouldn't necessarily read into it
15 with EPA, because of the way that the greenhouse
16 gas reporting program is defining facilities,
17 necessarily, that's the way that, for example,
18 PHMSA PIPES Act regulations jurisdiction should
19 therefore be defined. There are different policy
20 purposes that the GHGRP, as well as the
21 greenhouse gas inventory's data are intended to
22 inform.

1 MR. HALL: All right, thank you. We
2 have a comment from Michelle Mendoza.

3 The use of emission factors for the
4 GHGRP does not reflect companies who are
5 proactively using AMLD technology to identify and
6 repair leaks. The EPA provides options for these
7 companies to report in a way that better reflects
8 their system experience.

9 DR. DEFIGUEIREDO: This is Mark
10 DeFigueiredo from EPA. Thanks for the comment,
11 Michelle.

12 For Subpart W we do have to go through
13 a rulemaking process in order to make any changes
14 to our calculation methodologies, but I
15 appreciate the comment and we'll take that back
16 for consideration for future rulemaking
17 revisions.

18 MR. HALL: Okay, thank you, sir.
19 Question from Ben Dori with Ameren.

20 Newer technologies, such as Picaro and
21 drones were mentioned. Are these options
22 considered the best option for advance

1 technologies, is their industry confident in
2 these technologies? I think that may be directed
3 to you, Mary.

4 MS. ZANTER: Sure. This is Mary with
5 NAPSAR.

6 And I would say that there has been a
7 significant amount of discussion with Picaro.
8 And if there are other similar systems that use
9 that same technology, such that there is pretty
10 good confidence with that. More of a, how it's
11 implemented with each of the operators to take
12 the data that's provided and then use that for
13 mitigating leaks.

14 As far as drones, in most cases drones
15 are not being a primary source of leak detection,
16 it's more used as a supplemental source. So, I
17 think drones needs to have more acceptance in the
18 industry yet, but I think it's getting there. I
19 think technology is constantly improving. Thank
20 you.

21 MR. TAHAMTANI: Hey, Sam, I think that
22 may be a good question for tomorrow's session on

1 technology.

2 MR. HALL: Yes, it may well be. There
3 are several questions in here that are probably
4 better questions for technology. I'll refer to
5 Mr. Ryan Streams. Perhaps you'll want to ask
6 your question tomorrow.

7 We've answered that one. Forgive me
8 while I work through these. Dirk Smith asks a
9 question again.

10 If EPA doesn't have LCD emissions
11 jurisdiction, how does PHMSA, how is PHMSA
12 expected to provide emissions guidance, will it
13 be EPA standards?

14 MR. PALABRICA: So we are definitely
15 looking at all the facility types that are
16 included within the scope of both our
17 jurisdiction, as well as those specifically
18 called out in the PIPES Act. And that would
19 include local distribution companies.

20 I won't speak as to what EPA's
21 jurisdiction is over those facilities. But we
22 certainly have jurisdiction.

1 MR. HALL: Okay. Okay, thank you,
2 Sayler.

3 We have a question from Philip,
4 although I don't know that anyone will be able to
5 answer this question. I will just pose it, and
6 if no one can answer it we can move on.

7 What incentives are being offered by
8 the Biden Administration to encourage and reward
9 responsible operators for replacing leaking
10 pipelines instead of just repairing leaks? Is
11 anyone able to address that?

12 MR. TAHAMTANI: Sam, I don't think so.

13 MR. HALL: Okay.

14 MR. TAHAMTANI: We can try to get back
15 to the individual that asked the question.

16 MR. HALL: Indeed. Sorry we're not
17 able to answer that question now.

18 Corinne Byrnes asks, what's covered
19 within the combustion category? Does it include
20 heaters, turbines, et cetera?

21 DR. DEFIGUEIREDO: This is Mark
22 DeFigueiredo. I believe that's addressed at me.

1 So, combustion is reported to EPA's
2 greenhouse gas reporting program for certain
3 industry segments, such as gathering, inducing
4 and natural gas distribution that's reported
5 under the Subpart W. So, 40 CFR Part 98, Subpart
6 W is the regulatory citation.

7 And then for other industry segments,
8 such as natural gas transmission compression or
9 underground natural gas storage, it's reported
10 under 40 CFR Part 98, Subpart C.

11 And so the regulations at the
12 different citations that I mention layout what's
13 required to be reported for the category, but
14 yes, things like compressor, combustion
15 associated with compressor engines and internal
16 and external combustion engines, those are the
17 kinds of equipment that would be reported under
18 the combustion category.

19 MR. HALL: All right, thank you. Ms.
20 Byrnes also asks, how do you differentiate EPA
21 requirements from PHMSA requirements?

22 MR. PALABRICA: I don't totally

1 understand the question.

2 MR. HALL: It may not be one that we
3 can clearly define. Perhaps the question could
4 be better posed.

5 Let's move on from that one. Let's
6 see. Sonal Patni asks, from the American Gas
7 Association, can someone from the EPA talk about
8 if there are any incentives underway, especially
9 given the new focus on the environment from the
10 new administration, to updating existing emission
11 factors or allow comparable methodologies?

12 MS. WEITZ: This is Melissa. I think
13 we can answer this both from the greenhouse gas
14 inventory and the GHGRP perspective.

15 For the greenhouse gas inventory, we
16 are considering our process as making updates to
17 the greenhouse gas inventory annually. So,
18 probably every year for the past ten past years
19 we've made updates to emission factors as new
20 data have become available.

21 I will note that I did mention some
22 previous studies from the early '90s that are

1 used in certain parts of the time series, and for
2 some of the emission factors throughout the time
3 series. But I should clarify that for the most
4 part, for recent years, we're using new data.

5 Especially for the sources that we
6 discuss today for gathering and reducing
7 transmission storage and distribution. Almost
8 all of those emission factors are based on either
9 the greenhouse gas reporting program or new
10 studies.

11 So we are going to continue looking at
12 new data and continue to make annual updates
13 where new data would be improve the greenhouse
14 gas inventory.

15 MR. HALL: Perfect. Thanks, Melissa.
16 I'll just point out that we have about six
17 minutes left in this session so we're nearing the
18 end. We're not going to be able to get to all of
19 your questions, but please feel free to pose them
20 in future sessions.

21 Operator, do we have anyone on the
22 line?

1 THE OPERATOR: No questions in queue
2 at this time.

3 MR. HALL: Thank you, sir. Pardon me
4 while I read through these questions.

5 Ben Dori asks, is there a good
6 resource to reference in order to calculate Co2
7 equivalent emissions?

8 If we have a leak with known flow
9 rate, how does that convert to meaningful
10 emissions?

11 DR. DEFIGUEIREDO: This is Mark
12 DeFigueiredo from EPA's greenhouse gas reporting
13 program.

14 The GHGRP we have a table within 40
15 CFR Part 98, Subpart A, called Table A1. And it
16 provides a list of global warming potentials to
17 convert greenhouse gases to carbon dioxide
18 equivalence.

19 It's that table that's used for
20 purposes, when I was talking about Co2 equivalent
21 emissions reported to the GHGRP, that's the table
22 that that's referenced to do those conversions.

1 That particular table relies on an
2 intra-governmental panel on climate change for
3 its assessment report. Which is consistent with
4 inventory guidelines on global warming potentials
5 for Co2 equivalence.

6 MR. HALL: Thank you, sir. Steve
7 Allen offers a comment.

8 Operators will typically attempt to
9 calculate the amount of gas that is lost from an
10 excavation damage. This might be a good source
11 of information to explore in order to better
12 inform the direction on this type of emission.
13 Thank you for the comment, sir.

14 And he has a follow-up comment that
15 says, operators do this in order to bill the
16 excavator for the lost gas.

17 Pamela Lacey offers a comment. Here
18 is an idea that can help smaller gas utilities
19 achieve lower emissions at no cost to them.
20 Their state legislature could impose effective
21 penalties against third-parties who excavate and
22 damage gas lines without calling 811 first or

1 paying attention to line markings. Especially
2 for repeat offenders. Thank you, Pamela.

3 And here's a good question, perhaps,
4 from Philip. What provisions are being made to
5 penalize excavators who dig up gas pipelines?

6 Shouldn't digging up a pipeline that
7 is reported to PHMSA and EPA be a federal
8 offense?

9 MS. ZANTER: This is Mary Zanter with
10 NAPSAR. I can take a stab at this question.

11 In general, the excavation damage,
12 it's excavation damage prevention, is handled by
13 the state unless the state doesn't have an
14 adequate damage prevention program. And in that
15 case it is handled by PHMSA.

16 Basically there are, in most cases,
17 penalties associated with damaging a gas facility
18 or any other underground facilities. So these
19 are each handled separately by each state.

20 And some states have different
21 regulations on that than others, so I can't make
22 a general statement as to how that's being done.

1 But there, in general, regulations associated
2 with that. Thank you.

3 MR. HALL: All right, thank you, Mary.
4 I'm challenged to read the next question.
5 Forgive me a minute.

6 A question from Udeozo Ogbue. Will
7 PHMSA provide more guidance on assessment of
8 civil penalties on large operators who repeatedly
9 violate the new leak detection and repair rule?

10 For example, a fine or suggested
11 breakdown of the new daily fine maximum in a
12 spreadsheet to state programs.

13 MR. TAHAMTANI: Sam, we can talk to
14 Udeozo on that one. Put him in touch with our
15 Director of Division of Enforcement.

16 MR. HALL: Very good. Thank you, sir.

17 MR. TAHAMTANI: Thanks.

18 MR. HALL: Let's see. Lindsey
19 Fitzgerald asks, one of the barriers to advance
20 leak detection was presented as lack of data on
21 results and effectiveness. Could you please
22 expand on that?

1 MS. ZANTER: This is Mary Zanter with
2 NAPSR. I believe that is directed towards me.

3 I'm trying to wrap my words around
4 this without just kind of repeating it. So,
5 sometimes there is a lot of things that are being
6 done that we don't always have data on what is
7 being done or what the results of it are that is
8 being done. So that's what I meant by lack of
9 data on results.

10 You know, there is a lot of technology
11 being developed, but I don't know that we've got
12 firm results on it yet. And effectiveness, once
13 again, it's kind of that bridging technology of
14 what's happening.

15 You know, there is a lot of things
16 being developed, but what is it? Is it really
17 effective at this point or not. And so, it's
18 just some general terms associated with those
19 technologies.

20 MR. HALL: Well thank you, Mary. The
21 remaining questions we're going to need to hold.
22 And I would encourage you to ask them in future

1 sessions if they haven't been answered today.

2 We did get one question that says,
3 will there be a PDF of all questions and answers
4 available after the meeting?

5 To reiterate, we are recording this
6 meeting and so you'll be able to hear those
7 questions if you watch the recording.

8 And we're also producing a transcript
9 of the spoken word during the meeting. So you'll
10 be able to read the transcript and get the
11 answers to these questions.

12 With that, Massoud, we are the time
13 for lunch. And I'd like to go ahead and offer
14 instructions for next steps, if it's okay with
15 you?

16 MR. TAHAMTANI: Sam, let me thank all
17 the presenters. Mark, Melissa, Sayler and Mary.

18 And also thank all those people who
19 both posed questions in writing and in voice.
20 And again, I think it's been a very exciting
21 start to our two day program, just by the measure
22 of the number of questions that are coming in.

1 I thank you all very much. And again,
2 look forward to hearing you and being, seeing you
3 online, if you will, over the next day and a
4 half. Back to you, Sam.

5 MR. HALL: Thank you, sir. All right,
6 ladies and gentlemen, we are breaking for lunch
7 until 1:30 p.m. Eastern time.

8 Please return from lunch promptly by
9 1:30 so you don't miss any of the proceedings.
10 The web meeting and the conference line will stay
11 open during lunch, so there is no need to
12 disconnect.

13 So, enjoy your lunch, please be back
14 by 1:30 Eastern. Thank you.

15 (Whereupon, the above-entitled matter
16 went off the record at 12:47 p.m. and resumed at
17 1:32 p.m.)

18 MR. HALL: Ladies and gentleman,
19 welcome back from lunch to the Pipeline Leak
20 Detection, Leak Repair, and Methane Emission
21 Reductions Public Meeting.

22 I'd like to give you some reminders

1 just about housekeeping issues for those of you
2 who may have joined after these things were
3 covered this morning.

4 All of the audio is being handled by
5 an AT&T-moderated telephone call, the AT&T
6 operator will provide instructions regarding how
7 to make comments at the appropriate time, and
8 until that time, all lines are muted.

9 In order to make a comment with your
10 voice, that is in order to speak you must be
11 dialed into the teleconference. The instructions
12 for dialing into the teleconference are in the
13 window in the top left of your screen.

14 If you are not dialed into the
15 conference call you'll be able to hear the
16 proceedings through your computer but you will
17 not be able to make a comment with your voice.

18 In that case, you may make comments in
19 the Q&A box on the lower left portion of the
20 screen. We intend to adhere to agenda as
21 strictly as possible and we have not scheduled
22 any breaks because we're all at home and we're

1 all accessing this remotely so please take breaks
2 on your own as necessary.

3 The proceedings are being recorded,
4 the recording and a transcript of the proceedings
5 will be available on the meeting website in
6 approximately 10 business days.

7 With that, it is now my pleasure to
8 introduce Linda Daugherty, Deputy Associate
9 Administrator for Field Operations in the Office
10 of Pipeline Safety as the moderator of the next
11 session, which is a public interest panel
12 discussion.

13 Ms. Daugherty?

14 MS. DAUGHERTY: Thank you, Sam.

15 Welcome everybody and hopefully you all had a
16 really nice lunch and didn't eat too many carbs
17 so you'll be ready to listen and really hear what
18 people are saying here.

19 I have the pleasure of moderating the
20 public interest panel. You heard this morning,
21 you've read documents, you know this is a complex
22 issue that we're tackling today and we need to

1 hear from everybody.

2 And we need to listen to what they
3 tell us, some of us come from a perspective we
4 think we have, we review the topic, but we need
5 to open our ears and we need to really look into
6 what others have to say and think about it and
7 truly consider.

8 My pleasure today is to introduce two
9 different speakers, two different panelists, we
10 had a third panelist but he had a family
11 emergency and will not be able to join us.

12 So, what I'm going to do is I'm going
13 to introduce the first speaker, which is Erin
14 Murphy and ask her to give her presentation, and
15 then I will introduce Bill Caram, who is our
16 second speaker.

17 And then we'll open it up for Q&As and
18 discussion and I do encourage you to take notes
19 and ask some really good questions. So, first of
20 all, Erin, are you about ready to go?

21 Do you mind if I read your bio and get
22 us going?

1 MS. MURPHY: Yes, go right ahead.

2 MS. DAUGHERTY: Okay, so Erin Murphy
3 is a senior attorney with the Environmental
4 Defense Fund's Energy Markets and Utility
5 Regulation Team.

6 She represents EDF, the four federal
7 and state agencies, advocating to reduce methane
8 emissions from gas distribution and transmission
9 network, and to improve the gas utility planning
10 framework to ensure alignment with climate
11 policy.

12 Previously, Erin worked on Clean Air
13 Act litigation, clerked for the main Supreme
14 Court and graduated from Georgetown Law and the
15 University of Florida. Welcome, Erin, we look
16 forward to hearing what you have to say, over to
17 you.

18 MS. MURPHY: Thanks, Linda, good
19 afternoon, everybody, and good morning to the
20 Mountain Time and Pacific Time folks. I really
21 appreciate the opportunity to speak to this group
22 today about opportunities to reduce pipeline

1 methane emissions.

2 So, reducing methane emissions is
3 critical to addressing climate change. Methane
4 has 87 times the warming power of carbon dioxide
5 over the first 20 years after its release and
6 what that means for us right now is that about 25
7 percent of the warming that we are currently
8 experiencing today is attributable to methane
9 emission.

10 Very new research that actually just
11 came out a couple of weeks ago from EDF and
12 others indicates that a rapid, full-scale effort
13 to reduce methane emissions could slow the
14 worldwide rate of warming by as much as 30
15 percent.

16 And I want to contract that with
17 another element to the analysis of this research
18 which shows that a go-slow approach that does
19 start now but stretches out full adoption on a
20 longer term could result in a 5 percent increase
21 of average worldwide warming.

22 So, we're at a really pivotal moment

1 to reduce methane emissions and have a real
2 impact on climate as we're seeing it play out
3 today.

4 I'm going to perhaps echo some of what
5 Acting Administrator Brown said earlier this
6 morning and I really appreciated Tim elevating
7 these issues. We know right now that onshore oil
8 and gas in the United States is the largest
9 domestic industrial source of methane emissions.

10 That sector emits about 13 million
11 metric tons of methane per year based on EDF
12 analyses and research, and that equates to about
13 a 2.3 percent leakage rate from the system.

14 Extensive peer reviewed research has
15 indicated that methane emissions associated with
16 U.S. oil and gas production are more than 60
17 percent higher than EPAF.

18 This slide, I won't go through every
19 element but just wanted to briefly summarize
20 EDF's extensive methane work and in particular,
21 I'll point out that in addition to working to
22 really understand and quantify methane emissions

1 from the oil and gas system in the United States
2 and globally, we've also really tried to focus on
3 encouraging and incentivizing the development and
4 the commercialization of methane detection
5 technology.

6 PHMSA as an Agency has an important
7 role in addressing climate change, the Pipe Act
8 of 2020 reaffirms and expands such responsibility
9 to protect the environment as part of pipeline
10 oversight.

11 And Congress issued clear direction to
12 the Agency to develop strong, comprehensive,
13 advanced leak detection standards to reduce
14 climate pollution from gathering transmission and
15 distribution line.

16 And building on that, President Biden
17 very recently announced ambitious new U.S.
18 climate targets including to reduce greenhouse
19 gas pollution 50 percent by 2030. And I know we
20 can all do math, 2030 is less than nine years
21 away.

22 So, we really have a mandate to act

1 quickly, and finally, a note that I think is not
2 new information to this group but of course,
3 since we know that methane is the primary
4 component of natural gas, efforts to reduce
5 methane leakage from gas pipelines,
6 simultaneously fight climate change, and improve
7 the safety of the gas system.

8 So, to zoom in a little and think
9 about methane leaks specifically from
10 distribution pipelines, I want to thank the
11 incredible EPA team for sharing the wealth of
12 data that they collect and see constantly.

13 I'm in awe of the work that Agency
14 does and to build on that information, I want to
15 point out that recent research estimates that a
16 national methane leakage rate from gas
17 distribution mains is approximately five times
18 greater than what's currently estimated and
19 reported in the EPA greenhouse gas inventory.

20 And the study that this is based on
21 was looking at the 2017 values from the GHGI.

22 And the chart in the bottom right corner of this

1 slide shows that there's a clear connection
2 between pipe material and pipe age, and the
3 leakiness of those pipes.

4 So, you can see, you might have to
5 squint but I know this presentation will be made
6 available later for zooming-in purposes. But you
7 can see that cast iron, particularly older cast
8 iron pipes, is significantly leakier and to
9 contrast that, newer plastic pipe tends to be
10 less leaky.

11 So, the largest leaks are responsible
12 for the most emissions and this chart is pulled
13 from a study that's cited at the bottom of the
14 slide and shows that looking at several gas
15 distribution systems found that 50 percent of the
16 methane emissions from the system were resulting
17 from the largest 16 percent of the leaks.

18 Which I think can at least sound
19 intimidating but I view it as really just an
20 incredible opportunity because by identifying
21 those large super-emitting leaks and acting
22 quickly to remediate them, we can quickly reduce

1 many of the methane emissions on the gas system.

2 And that significance of large leaks
3 is something that we see play out across the oil
4 and gas sector, so this Branch study did a meta-
5 analysis looking at 15,000+ measurements from 18
6 different peer-reviewed studies, and again found
7 that about 5 percent of sources accounted for 50
8 percent of total methane emissions across various
9 equipment and facility types in the oil and gas
10 sector.

11 I'm going to actually jump one slide
12 ahead and I'll get back to that one. I want to
13 talk a little bit about the benefits of advanced
14 leak detection. Research has indicated that
15 advanced leak detection finds more leaks in
16 distribution systems compared to traditional
17 survey methods.

18 So, one study found that traditional
19 surveys in two cities failed to find 65 percent
20 of the leaks that were identified by advanced
21 leak detection, and that included multiple Grade
22 1 leaks.

1 Advanced leak detection can also
2 estimate the leak size and therefore the
3 greenhouse gas emissions rate attributable to an
4 individual leak and, therefore, can be used to
5 also estimate the system-wide emissions or future
6 of emissions from the gas distribution system.

7 So, that information on Leak 5 and
8 greenhouse gas emission is essential to the next
9 bullet point which is that data-driven
10 decision-making can help an operator guide leak
11 repair.

12 I should say can help an operator
13 guide and prioritize to maximize both safety and
14 near-term methane emissions reductions in their
15 leak repair decisions as well as leak-prone pipe
16 replacement and possible leak-prone-type
17 retirement decision.

18 And finally, I know this is something
19 that's going to be discussed by a number of smart
20 folks over today and tomorrow but we know that
21 advanced leak detection is widely commercially
22 available on a variety of platforms and survey

1 methods.

2 I'm going to jump back and I wanted to
3 just talk a little bit about EDF PermianMAP
4 project as a helpful example of the diverse array
5 of survey technologies.

6 And so this is important because
7 there's not a one-size-fits-all approach, we're
8 talking about multiple segments of the pipeline
9 system in the United States that cross different
10 types of terrain and there's a lot of different
11 things that can influence what technology might
12 be the best fit for understanding leaks from that
13 system.

14 So, the EDF PermianMAP project is an
15 effort by EDF as well as industry and academia
16 and other stakeholders to really try to map out,
17 understand, and publish information about the
18 methane emissions from a defined geographic area.

19 And so we focus here on the Permian
20 Basin and what's really helpful and interesting
21 to note is the number of data sources we're
22 compiling to map out these emissions.

1 So, there have been numerous lights
2 over the region, including fixed-wing aircraft
3 and helicopters with advanced leak detection or
4 some might refer to it as LiDAR technology
5 mounted on an aircraft.

6 There are also a number of stationary
7 towers at strategic locations around the basin
8 that measure methane emissions, as well as the
9 ground team that's been driving various routes
10 around the basin using mobile methane detection
11 mounted on a vehicle.

12 And so all of those data sources are
13 being compiled and used to publish methane
14 emissions estimates and leak information for this
15 area. And that analysis is also going to be
16 cross-referenced with satellite data and the full
17 methodology is available at that link.

18 Another benefit that advanced leak
19 detection implementation can bring is
20 transparency and improved leak and emissions
21 reporting.

22 So, transparency around gas leaks

1 including leak location, size and duration, by
2 which I mean the days the leak was first
3 identified, allows for public accountability,
4 which we believe can improve safety and encourage
5 responsible management.

6 And just a couple of examples include
7 the gas utilities in New York and California that
8 have already published their leak maps online,
9 and the EDF methane mapping project was an effort
10 by EDF, Colorado State, and Google Street View to
11 map a number of cities around the country using
12 advanced leak detection and publish that detailed
13 leak map online.

14 In addition, accurate climate
15 disclosures and demonstrable improvements in
16 reducing methane emissions can enhance
17 shareholder value for gas companies.

18 I've linked here to an EDF report that
19 goes into greater detail but I think the top-line
20 piece to think about there is that shareholders
21 and investors are increasingly concerned about
22 beginning gas companies' Act on Climate Change.

1 And I know many gas companies in the
2 United States have announced impressive climate
3 commitment.

4 But one thing that advanced leak
5 detection really brings to the table is that
6 being able to report real-time data rather than
7 an estimate that's based on pipe mileage and
8 outdated emission factors can be really powerful
9 and help a gas utility or operator demonstrate
10 year over year reductions based on actual on-the-
11 ground surveys.

12 And the final piece that maybe almost
13 goes without saying is achieving and tracking the
14 greenhouse gas emission reductions on the system.

15 So, the application of advanced leak
16 detection can allow a utility or an operator to
17 quantify those emissions and then again compare
18 them year over year as leaks are repaired or pipe
19 is replaced or retired to really see those
20 emissions go down hopefully.

21 So, PHMSA needs to adopt clearer,
22 performance-based advanced-leak detection

1 standards. I'm just going to walk through a
2 couple of core elements that we've identified for
3 what comprised advanced leak detection
4 technology.

5 One is the instrumentation itself
6 which is the center of technology that allows
7 parts-per-billion level sensitivity while
8 capturing a number of other data-points that are
9 all then put together in an algorithm to really
10 understand that size and the location of the
11 leak.

12 The technology is deployed through a
13 variety of platforms. As I talked a little bit
14 about before, this can be handheld, it can be
15 vehicle-mounted, drone-mounted and others.

16 Next, the defined deployment strategy
17 or a work practice is an important element of
18 ALDs. As anyone knows who thinks about leak
19 detection, it matters that the folks on the
20 ground using the sensor technology are following
21 the right practices to ensure that accurate data
22 is collected effectively.

1 And then finally, the data product
2 that result from the leak survey and these
3 include the leak location, estimated leak flow
4 rate, or the gas emission rate, a coverage map
5 showing what areas were successfully surveyed and
6 weren't.

7 Additional contextual data and then
8 that can include summary or a cumulative loss
9 estimate for the total area of the survey. And
10 one element that we think is essential for
11 advanced leak detection standards set by PHMSA
12 are that they ensure an ongoing process for
13 continuous technology improvement.

14 So, we want to set a floor, we don't
15 want to set a ceiling, we want this technology to
16 be able to improve and I think the adoption of
17 federal standards would create a space for
18 additional development of new ideas and
19 improvements to the technology over time, which
20 we hope could then be incorporated.

21 Advanced leak detection is in use by
22 utilities right now around the country and around

1 the world and it's also already supported by
2 policy in a number of states.

3 This slide is just summarizing on a
4 high-level some of those policies that we would
5 point to.

6 And I think this is something we're
7 happy to share more information about later,
8 maybe the one that I'll highlight is SB1371 in
9 California has established a really comprehensive
10 reporting system for gas utilities to submit
11 annual methane leak abatement reports and compile
12 emission reduction plans.

13 Another example is that New Jersey
14 recently adopted an energy master plan relating
15 to their overall statewide climate goals that
16 specifically direct the Utility Commission to
17 establish a standard for all utilities to use
18 advanced leak detection.

19 To hone in on a specific utility
20 example, I'm going to talk a little about PG&E in
21 California. So, this slide is really just
22 summarizing the information that PG&E reports to

1 the State of California as part of its methane
2 leak abatement program.

3 The utility has employed aerial
4 advanced leak detection on transmission pipelines
5 since 2018 and in a switch to improve leak
6 detection technology between 2017 and 2018 they
7 found 16 percent more leaks.

8 Looking at their distribution system,
9 PG&E, starting in 2018, conducted a system-wide
10 advanced leak detection survey using vehicle-
11 mounted technology.

12 And this utility works with Picaro and
13 so that image you're seeing is a diagram from
14 Picaro that just shows you what their technology
15 looks like in a vehicle-mounted system.

16 And so the utility did this system-
17 wide survey to look for super emitter leaks and
18 to assess their system-wide emissions.

19 And this is one example, I think there
20 are many ways this could be structured but this
21 may respond to some of the questions that were
22 being asked on the earlier panel.

1 So, the way that PG&E does this is
2 they're currently on a program to do a full
3 compliance survey of their service territory
4 every three years, which means each year they're
5 doing a compliance survey of about a third of
6 their service territory.

7 But then this annual system-wide
8 drive, the other two thirds of it was for the
9 purpose of surveying for emissions data to
10 understand system-wide emissions and to identify
11 super emitting leaks, which are those greater
12 than 10 standard cubic feet per hour.

13 So, that survey was able to be
14 conducted without triggering sub 10 standard
15 cubic feet per hour leak indications, which I
16 know can be important for a utility to think
17 about as they think about the size of their leak
18 backlogs.

19 And one other element of PG&E's
20 program is that they conducted a special leak
21 survey on vintage materials, which was ultimately
22 able to achieve significant reductions in methane

1 emissions.

2 I'll close with one other example
3 which is National Grid in New York. As early as
4 2014 EDF was doing this Google methane mapping
5 project with Colorado State, and that map image
6 you see on the screen is on the EDF website and
7 part of that mapping effort.

8 National Grid has since started
9 publishing its own leak maps and more recently,
10 the company proposed an enhanced high-emitter
11 methane detection program in its rate cases in
12 New York, which would use advanced leak detection
13 to identify and remediate super emitting leaks.

14 Thank you so much for the opportunity
15 to share this information and I'll look forward
16 to answering any questions.

17 MS. DAUGHERTY: Thank you, Erin, I
18 have to tell you, as you were speaking I was
19 taking notes and I have lots of questions that I
20 would love to ask you. I do encourage the
21 audience to avail yourself of the opportunity to
22 ask questions.

1 We need your input so please do use
2 the methods that Sam described earlier and let me
3 go ahead and introduce Bill Caram.

4 Bill, it's good to see you this
5 afternoon or this morning, as the case may be, I
6 would like to introduce you and I'll go ahead and
7 read your bio, are you ready?

8 MR. CARAM: I'm ready.

9 MS. DAUGHERTY: Okay. So, this is
10 Bill Caram, he is the Executive Director of the
11 Pipeline Safety Trust, a national nonprofit
12 organization that acts in the public interest to
13 promote fuel transportation safety through
14 education and advocacy.

15 Bill served as a pipeline safety
16 advocate while working with impacted communities,
17 other NGOs, and regulators including as a public
18 member of the Liquid Pipeline Advisory Committee,
19 which we call the LPAC for PHMSA, and by the way,
20 thank you for your service on that LPAC
21 Committee, Bill.

22 With that, over to you.

1 MR. CARAM: Thank you very much and
2 thank you for the invitation to participate
3 today.

4 Eliminating methane leaks and
5 emissions is an incredibly urgent need from both
6 a safety and an environmental perspective and
7 we're excited to help make these rules as
8 effective as possible.

9 We're really encouraged by the
10 attitude and the energy from PHMSA behind this
11 effort and I want to thank Acting Administrator
12 Brown and Alan Mayberry for their remarks this
13 morning.

14 For those of you who are not familiar
15 with who we are and why we exist, the Pipeline
16 Safety Trust was formed in the wake of the 1999
17 Olympic Pipeline Tragedy in Bellingham,
18 Washington.

19 Because of negligence and a lack of
20 organizational and regulatory oversight, three
21 boys died after a quarter million gallons of
22 gasoline emptied out of a pipeline and into a

1 creek in the heart of our town exploded.

2 And you can see the heartbreaking note
3 that Liam Wood left on the family fridge that
4 day. And as part of the criminal settlement,
5 Judge Rothstein ordered that part of the fine be
6 awarded to an endowment of a watchdog
7 organization that would become the Pipeline
8 Safety Trust.

9 You can see her quote from the
10 sentencing hearing here and she says, no industry
11 polices itself very well, you need outside people
12 and these are going to be the people who will pay
13 attention to them. And I want to thank you for
14 doing that today.

15 Now looking at Sections 113 and 114
16 from the Pipes Act, I want to just make some
17 broad observations on some important pieces here.
18 The first is that we have an explicit recognition
19 that methane emissions from pipeline facilities
20 are hazardous to the environment.

21 We also have for the first time
22 explicit recognition that pipeline methane

1 emissions are PHMSA's responsibility and not the
2 EPA's.

3 We have statutory requirements that
4 are aimed at both fugitive emissions and
5 intentional emissions, and as already discussed,
6 fugitive emissions are leaks and the intentional
7 emissions are venting or blow-down planned
8 emissions.

9 We have direction for PHMSA to produce
10 leak detection rules with minimum performance
11 standard and we here at the Pipeline Safety Trust
12 are big fans of having performance standards as
13 part of the rule.

14 I also want to comment that NTSB first
15 identified the need for this 50 years ago and it
16 has long been on their most wanted list, and I
17 quote, every day we wait to enhance our
18 mitigation systems is the day we put the public
19 in danger.

20 The roles should use the capabilities
21 of the commercially available advanced leak
22 detection technologies as guides for developing

1 these performance standards. And as that
2 technology improves, performance standards should
3 as well.

4 And finally, the last big-picture
5 observation is this recognition that pipeline
6 safety, environmental protection, and public
7 health are interconnected and inextricable.

8 We have often thought of these in
9 silos and think that by addressing one we're
10 taking away from another and this legislation I
11 think does very well and look at all three of
12 these in the true way they are, which is
13 interconnected and inextricable.

14 I put together this graphic just to
15 show how strong this legislation is, it's
16 unusually strong and it's not just about
17 rulemaking. We have many different tools all
18 working together to eliminate leaks and minimize
19 emissions.

20 We do have rulemaking as a big part of
21 this, of course, but outside of rulemaking we
22 have the operators needing to update their

1 inspection and maintenance plans, the Secretary
2 needs to review those plans, the GAO needs to
3 audit the review of the plans and make further
4 recommendations on how to eliminate leaks and
5 minimize emissions.

6 And the Secretary needs to respond to
7 that, all of that is outside of rulemaking and
8 this really is many tools working together
9 towards one goal and that is a clear mandate from
10 Congress to eliminate leaks and minimize releases
11 of natural gas from pipeline facilities.

12 This is what we see as the mandates
13 from Sections 113 and 114 and a timeline. This
14 is a tight timeline for a very big job and we
15 recognize that, but it's necessary, it's an
16 urgent job which needs to be done quickly and it
17 needs to be done well.

18 We are in a climate crisis and I'll
19 re-read the NTSB's quote, every day we wait to
20 enhance our mitigation systems is the day we put
21 the public in danger. So, we're very happy to
22 see this timeline.

1 We are talking about rulemaking under
2 Sections 113 due a year from the legislation
3 becoming law and the rulemaking under Section 114
4 a year after that, but there's also the operators
5 needing to update their inspection and
6 maintenance plans to find and eliminate leaks and
7 minimize intentional releases, also due a year
8 from the legislation becoming law.

9 And that brings up a couple of
10 observations. One, operators, may need to update
11 their plans more than once. First, as we said,
12 within a year they need update the plans
13 according to the legislation, but then they may
14 perhaps need to do that again.

15 If PHMSA adopts rules under 113 and
16 again as PHMSA adopts rules under 114. Another
17 observation is that, and this was mentioned by
18 both Acting Administrator Brown and Alan Mayberry
19 this morning, many of these operators'
20 obligations, especially under 114, are self-
21 executing.

22 Many of these statutory obligations

1 are in effect without any PHMSA promulgated
2 rules. And the way we look at that is that means
3 when PHMSA looks at the cost-benefit analysis of
4 any proposed rule, they should assume that many
5 of these measures are already being done by
6 operators and the rule is therefore adding any
7 new costs.

8 And it's just another example of how
9 powerful this legislation is, with very clear
10 mandates. Find them and fix them has become a
11 mantra around our office around this legislation
12 and the upcoming rule.

13 PHMSA's required in its regulations to
14 include minimum performance standards to
15 identify, located, and categorize all leaks that
16 are hazardous to human safety or the environment,
17 or have the potential to become explosive or
18 otherwise hazardous to human safety.

19 And this really is going to require a
20 culture change both with regulators and with the
21 operators. Repair and replacement schedules must
22 include plans for each leaking pipe, except a

1 pipe with a leak so small that it poses no
2 potential hazard.

3 And we are in a climate crisis, Erin
4 and the EPA have demonstrated how incredibly
5 potent methane is, a greenhouse gas, and we
6 believe there is no leak that poses no potential
7 hazard.

8 One of the goals of this legislation
9 is to activate a culture change in the industry
10 to acknowledge that we are in a climate crisis
11 and that the product that is leaking and venting
12 from their systems is a contributor to that
13 crisis.

14 That's not to say that prioritization
15 won't be important, of course it will, and the
16 risk of explosion needs to remain a very high
17 priority, but also super emitters, as we learn
18 more about the capabilities of ALD and we start
19 getting some data from the advanced leak
20 detection, also need to be a high priority.

21 But the message remains clear that
22 operators may no longer ignore leaks just because

1 they are not likely to explode.

2 As far as intentional emissions of
3 blow-downs and venting, Pipeline Safety Trust and
4 EDF commissioned a report from MJ Bradley when we
5 were going to the gas mega-rule rulemaking and
6 that identified cost effective practices and
7 technologies to reduce intentional methane
8 releases.

9 You can see those mitigation options
10 that were analyzed in the report there, you can
11 find the report at that link on the presentation
12 here. It's also in the mega rule docket.

13 We hope that PHMSA and the operators
14 will consider this report and other sources when
15 updating their plans and adopting rules to
16 prevent or capture methane emissions during
17 repairs, maintenance, or replacement projects.

18 The report concluded that blow-down
19 mitigation options are highly cost-effective and
20 will result in several orders of magnitude
21 greater benefits than cost.

22 Erin touched on this as well, this

1 legislation really calls for continuous
2 improvement. This isn't just a one and done
3 rulemaking effort.

4 We have many tools working together
5 towards this common goal and they really all also
6 work towards this idea of continuous improvement.
7 Operators will need to update their inspection
8 and maintenance plans multiple times as
9 regulators work through their process and new
10 technologies develop.

11 PHMSA is going to need to revisit
12 their performance standards regularly as
13 commercially available technologies improve. And
14 PHMSA is going to need to revisit its plain
15 review process after feedback from the
16 Comptroller General.

17 Congress also directed the GAO to not
18 only audit the plan review but also provide
19 recommendations to further minimize releases of
20 natural gas from pipeline facilities.

21 And PHMSA's going to need to
22 incorporate that, and Congress further directed

1 the Secretary to report on the best available
2 design technologies and practices to prevent
3 minimized methane emissions. And that will need
4 to be incorporated into the rulemaking as well.

5 And so again, all these different
6 tools working together towards a common goal of
7 eliminating leaks, minimizing emissions, and a
8 continuous improvement process to continue to do
9 that as technology improves.

10 These sections really call for an
11 overhaul of how PHMSA and the industry thinks
12 about leaks and emissions. Operators need a real
13 sense of urgency in finding and fixing leaks and
14 reducing intentional emissions.

15 They need to start looking at leaks
16 and venting the way they now look at potential
17 hazards, and the way the liquid industry looks at
18 spills and ruptures. Find them, fix them, and
19 stop emitting for convenience.

20 And I wanted to bring this slide back
21 one more time as I just think it demonstrates
22 really well how powerful this legislation is and

1 that this change starts now, independent of
2 rulemaking.

3 We have an incredible opportunity in
4 front of us, we had the opportunity to answer a
5 50-year NTFB recommendation, one that could have
6 saved the life of a 12-year-old girl in Dallas
7 recently, and many other lives over the years.

8 And at the same time, make a
9 meaningful difference in our generational
10 challenge of climate change.

11 And we need to see this effort through
12 with the urgency and diligence that's been
13 displayed today, but we're just at the beginning
14 and we have a lot of work ahead of us and we
15 can't let up.

16 I'm excited to see this through and
17 grateful for the invitation to share our
18 perspective. Thank you.

19 MS. DAUGHERTY: Thank you, Bill, thank
20 you for the presentation. For those of you that
21 have questions, please start queuing those up,
22 we'll go to a Q&A.

1 I do want to comment, though, that the
2 slide that you have up right now, earlier today I
3 spoke with our Western Region State partners.
4 They were having their meeting, their regional
5 meeting, and I spoke about this very issue.

6 In Section 114 Congress has directed
7 a very robust timeline for review of these
8 updated plans that were requiring operators to
9 update their plans within one year of the Act,
10 and then the following year, federal, PHMSA and
11 state regulators are required to evaluate those
12 updates.

13 And so again, for us to get out and
14 see every operator and review their plans within
15 12 months is going to be a challenge, and I think
16 we're up to it but it is, as you said, a signal
17 from Congress on their intent.

18 And following that, the GAO is going
19 to come after us and review what we've done to
20 see if we have implemented that directive. So,
21 it is quite aggressive but thank you very much.

22 Sam, over to you, do we have any

1 questions from the public at this time?

2 MR. HALL: Thanks, Linda, let me just
3 reiterate how this works for those of you who may
4 have joined late.

5 If you are on the telephone call with
6 your telephone, the telephone number is in the
7 upper left corner, if you're on the telephone, in
8 a moment the operator will give you instructions
9 for getting in the queue to ask your question.

10 If you are not on the telephone, you
11 can ask your question through the Q&A box on the
12 lower left corner of your screen. Operator,
13 would you please provide instruction for getting
14 in the queue?

15 OPERATOR: Thank you, and to ask a
16 question over the phone, please press 1 then 0 on
17 your telephone keypad. 1 followed by 0.

18 MR. HALL: While those folks on the
19 telephone line queue up, we do have several
20 questions that have come in from the Q&A panel.

21 We also have lots of time to answer
22 these questions because we did have one panelist

1 who was not able to join us today.

2 So, we've got about 50 minutes for
3 Q&A, first question that came in through the Q&A
4 text box is from David Banner, he asks can you
5 explain what performance-based standards would
6 include?

7 Erin, I believe this would be a
8 question for you.

9 MS. DAUGHERTY: Yes, I think this goes
10 to Erin, actually, that was in her presentation.
11 Erin, do you want to take a stab at that?

12 MS. MURPHY: Sure, I'm happy to. Is
13 there any way I could go back to a slide or would
14 that be too complicated?

15 MR. HALL: Not too complicated at all
16 but it will take a moment, just one second for
17 me, please.

18 MS. MURPHY: I think that might be
19 helpful, I just wanted to go back to -- I'm
20 looking at it on my computer.

21 I had a slide that sought to identify
22 what maybe some of the core elements of advanced

1 leak detection needed that laid out -- here, let
2 me jump to it.

3 So, this is certainly not a
4 comprehensive assessment that's ready for the
5 books, but this is our initial effort to identify
6 what we view as the core element of advanced leak
7 detection.

8 And so the combination of these
9 elements, I would say, result in what we view as
10 an effective technology that provides the
11 information that is indicated as necessary in the
12 language of the Pipe Act of 2020 for PHMSA's
13 standards.

14 So, this is starting which
15 instrumentation that's effective at collecting
16 these data-points.

17 Obviously, the instrumentation needs
18 to be conveyed on some sort of platform, I've
19 laid out here really just all of the platforms
20 that are currently in the mix for methane
21 detection, different systems require different
22 solutions so I'm not saying that all of these are

1 going to be effective for gathering transmission
2 and distribution systems but probably some
3 combination of them are for different systems.

4 And then that defines deployment
5 strategy or work practice, which is really how
6 the technology needs to be utilized and
7 implemented, particularly in the field, to ensure
8 the data collection is effective.

9 And then last but absolutely not least
10 would be the data products that result, which are
11 of course the real information, some aspects of
12 think would need to be reported to PHMSA and
13 tracked by the operator.

14 I hope that's responsive.

15 MS. DAUGHERTY: Bill, do you have some
16 additional comments on this particular question?
17 I know you also referenced performance-based
18 standards.

19 MR. CARAM: No, I largely agree with
20 what Erin had to say. I do believe that a
21 handheld sniffers and borehole testers, qualities
22 that really can't quantify or locate leaks should

1 only be used in very limited circumstances.

2 And there's really no one-size-fits-
3 all and that the performance standards need to
4 allow and encourage operators to use different
5 technologies for different situations in
6 different locations.

7 MS. DAUGHERTY: So, let me ask you
8 both a follow-up but related question. When
9 PHMSA looks at its regulations, we often put them
10 in two different buckets, one is the more
11 prescriptive type where we define exactly what an
12 operator must do.

13 Do X by this date or do this so many
14 times a year, or use this type of program or
15 approach, or use this type of equipment, those
16 are prescriptive.

17 When we talk about performance-based
18 regulations, it's more about identifying what
19 needs to be achieved and then operators find
20 their way towards achieving that performance
21 level.

22 When you talk about performance-based

1 standards, are you thinking of a mixture of
2 prescriptive saying some type of instrumentation
3 must be used so that the degree to which it
4 detects is open based on available technology, or
5 what combination are you looking at?

6 I go back to you, Erin, first and then
7 to Bill.

8 MS. MURPHY: Thanks, Linda, that's a
9 really helpful follow-up question and I realize
10 that perhaps my effort to lay out our view of
11 what comprises ALD sounds less like a
12 performance-based standard and I hope that's not
13 unhelpful.

14 I think these four elements of
15 advanced leak detection are trying to describe
16 what we view as the current technologies that are
17 commercially available and out there and
18 operating that fulfil the need of the standard
19 that PHMSA's going to need to issue to follow-up
20 on the mandate from the Pipes Act of 2020.

21 But we do recognize that act calls for
22 performance-based standards so I think that just

1 signing the performance elements that the
2 technology needs to provide is perhaps a subset
3 of what's included here, and maybe even
4 additional elements as well.

5 But I think one example of that, for
6 example, is that we view that part-per-billion
7 level sensitivity to be really important and to
8 be something that's commercially available right
9 now to provide the most accurate understanding of
10 the scope of the methane leak.

11 MS. DAUGHERTY: Thank you very much,
12 Erin. Bill, thoughts on that?

13 MR. CARAM: Yes, and I want to agree
14 with Erin on that, parts-per-billion level
15 sensitivity being incredibly important to us.

16 But we do also firmly believe in
17 prescriptive minimum regulations as well and just
18 as important as strong enforcement in meeting
19 those minimums.

20 So, we don't want to overlook strong
21 enforcement as an incentive so I see it as a
22 combination of both.

1 MS. DAUGHERTY: Fair enough, thank you
2 very much, Bill. Sam, do we have our next
3 question queued up?

4 MR. HALL: We do indeed, we have quite
5 a few coming into the Q&A box but before we go
6 there, Operator, do we have anyone in the queue?

7 MS. DAUGHERTY: No one in the queue at
8 this time.

9 MR. HALL: Thank you, sir.

10 MR. HALL: From Dan Miller we have
11 these advanced leak detection methods that are
12 very sensitive take into account that there are
13 natural sources of methane not related to
14 pipelines.

15 But it would be a better process to
16 look for sources of ethane, which would point to
17 pipeline-sourced gas.

18 MS. DAUGHERTY: What an interesting
19 question, we'll reverse the order and this time
20 go to Bill first, and then we'll go to Erin.
21 Bill, what are your thoughts on that one?

22 MR. CARAM: I apologize, can you

1 repeat the question one more time?

2 MR. HALL: Certainly, let me get it.
3 Do these advanced leak detection methods that are
4 very sensitive take into account natural sources
5 of methane not related to pipelines.

6 Would it be a better process to look
7 for ethane, not methane, which would point to
8 pipeline-sourced gas?

9 MR. CARAM: Thank you for repeating
10 that. I have to say, that is beyond my technical
11 expertise and hopefully Erin can have a good
12 answer for you, there.

13 MS. DAUGHERTY: Fair enough, thank you
14 Bill. Erin?

15 MS. MURPHY: Yes, I'll just say
16 briefly that I know that the research that EDF
17 has been involved with to understand methane
18 emissions from distribution systems using
19 advanced leak detection technology, in that
20 research it's clear that advanced leak detection
21 technology can differentiate between those
22 background sources versus gas from the pipeline.

1 So, we believe that this technology is
2 capability of making that distinction. I'll
3 caveat my technical statements here with the
4 admission that I am not a scientist, I am a
5 lawyer, that's my best summary of the research
6 that I reviewed.

7 MS. DAUGHERTY: Thank you, both. I
8 think the challenge is very real, I was earlier
9 today asked about propane releases.

10 Propane is transported in liquid form
11 by hazardous liquid pipeline and if you look at
12 the molecule, you've got methane, ethane, and
13 then you get up to propane so you're talking
14 about the size of the molecule and looking at
15 whether it's impactful to the environment.

16 Our discussion this morning was that
17 propane, at least by some sources, has not been
18 determined to be adversely impactful to the
19 environment.

20 I'm not weighing on that personally,
21 that's just what was told to me but I think the
22 question is appropriate when you look at if

1 ethane is a marker for a pipeline release,
2 whereas methane could be either.

3 It might be useful information to look
4 into. So, thank you, I think it was an excellent
5 question, thank you, Dan Miller. Sam, next
6 question?

7 MR. HALL: Given your responses to the
8 fairly technical question that was just asked,
9 I'm not sure that you'll able to respond to this
10 so perhaps we can take this as a comment from
11 George Ragula, pardon me if I mispronounced your
12 name.

13 How do you respond to independent
14 studies using measured volume releases confirm
15 advanced leak detection real-time estimated
16 emission rates are incorrect by an order of
17 magnitude 30 percent of the time?

18 MS. DAUGHERTY: Erin, I think you
19 spoke to this in some degree in your presentation
20 about underreporting or lower estimates, or
21 estimates were greater in some of the studies you
22 reviewed than EPA estimates?

1 Is that correct and are you
2 comfortable addressing this one? It's okay to
3 pass, by the way.

4 MS. MURPHY: I'll just respond briefly
5 and say my understanding of the question was that
6 it was referring to some studies that have made
7 findings about the effectiveness of ALD.

8 And so I would just say we would need
9 to take a look at those studies and we're happy
10 to do so before responding to their finding.

11 MS. DAUGHERTY: Fair enough. Bill?

12 MR. CARAM: Same as Erin, I would need
13 to see those studies before commenting. And we'd
14 be happy to --

15 MS. DAUGHERTY: I appreciate the
16 comment, we'll take some of the questions that
17 maybe we need to get back to you on. We'll take
18 those down and we will do our best to review and
19 respond to those.

20 Sam, can we go to the next question?

21 MR. HALL: Certainly, and I'll also
22 mention to the audience that we do have an open

1 docket that you are invited to comment on, May
2 24th is the deadline.

3 So, if you have comments that are of
4 concern and questions that can't be answered in
5 today's meeting, we welcome your comments on the
6 docket and at the end of the day today, we will
7 have a half-hour public comment period that is
8 not a question-and-answer session but simply an
9 opportunity for those on the line to make
10 comments.

11 So, if you do have a comment related
12 to a technical issue, we invited you to make that
13 comment either on the docket or during the public
14 comment period this afternoon.

15 The next question that comes in is
16 from Ryan Streams and this is a question for
17 Erin, it is I think technical perhaps, but you
18 may be able to answer it.

19 What is the basis for parts-per-
20 billion sensitivity being the appropriate target
21 for instrument sensitivity? Why not use a more
22 direct measurement like emission rate?

1 This would be more broadly applicable
2 to many types of instruments and has the
3 advantage of being directly applicable to climate
4 targets.

5 MS. MURPHY: Yes, I feel like this is
6 going to be an incomplete answer and I'll admit
7 that part of this is the challenge of our virtual
8 world because, Ryan, I feel like there could be a
9 lot of conversation there.

10 I would say that the parts-per-billion
11 sensitivity is an element of the ability of the
12 center itself in terms of the level of gas it
13 detects in the air.

14 And I would describe that back end
15 receipt of information as distinct from what we
16 think is an important piece of information for
17 leak detection technology to be able to produce,
18 which is estimating the emissions rate from the
19 leak.

20 And we absolutely think that's a
21 really important element of this, as described in
22 the PIPES Act.

1 MS. DAUGHERTY: Bill, do you have
2 anything you'd like to add to that?

3 MR. CARAM: No, I see this as coming
4 out of the language around commercially available
5 technology, that's in the Act.

6 MS. DAUGHERTY: Thank you. Sam?

7 MR. HALL: We have a question from
8 Dirk Smith. Mr. Smith, your question or your
9 comment may be more appropriate for the next
10 industry panel, it's related to prioritizing leak
11 repair based on grades ranked by safety.

12 You question I think would be more
13 appropriate for the next industry panel and I
14 invite you to ask your question. Lindsey
15 Fitzgerald has a question for EDF. You mentioned
16 advanced leak -- I'm going to have trouble with
17 this.

18 Forgive me that your screen is going
19 to alter for a moment. Question for EDF, you
20 mentioned advanced leak detection benefits and
21 include that it is real-time.

22 Is it an ongoing measurement or a

1 single point of time? If it's a single point in
2 time, do you have any view on getting credit for
3 emissions eliminating before the advanced leak
4 detection survey is completed?

5 This would be applicable for many
6 utilities that repair leaks much quicker than it
7 takes to complete a survey similar to find-and-
8 fix thinking mentioned by pipeline safety trust.
9 And I'm happy to read that again if that would be
10 helpful.

11 MS. MURPHY: I think I got it, I'll
12 take a stab, and I think that's a really good
13 question, Lindsey, and something we're giving a
14 lot of thought to.

15 Because at the end of the day, the
16 objective of the development of these standards
17 is to improve the safety of the system and to
18 reduce methane emissions from the system.

19 And so we want to find, when I say we,
20 EDF at least hopes that the standard result does
21 find ways to recognize elements of utility
22 operations that are reducing methane emissions in

1 different ways.

2 I think it gets really complicated in
3 terms of how does the reporting connect with the
4 different leak repair programs that are being
5 undertaken by an operator.

6 So, I would say first of all, the
7 first part of your question, you're correct that
8 an advanced leak detection survey is producing
9 information about leaks and emissions on a gas
10 system at the point in time when the survey is
11 conducted.

12 One thing I'll note is that it isn't
13 necessarily a single day in time, one element of
14 vehicle-mounted ALD that we've seen with gas
15 utilities is that the technology providers
16 typically recommend doing several passes through
17 an area with the vehicle-mounted technology, just
18 because of variations and it would be other
19 factors.

20 So, to ensure that the data is
21 collected thoroughly you'll sometimes drive
22 through three times or four times to make sure

1 that is right. But so at the end of the day,
2 that is information about that point in time when
3 the data is collected, unless you had a
4 continuous methane emission monitor located
5 somewhere.

6 So, what we really view, and I'll
7 point I think to the PG&E example I was providing
8 where they're doing an annual system-wide ALD
9 survey to get a sense of the system-wide
10 emissions. And so that type of survey provides -
11 - I'm hearing a little bit of echo, I'm sorry.

12 So, the type of survey provides the
13 ability for an operator to present the data that
14 shows that they are reducing emissions year over
15 year, which is what we think is essential and
16 would be distinct, for example, from the existing
17 GHGRP program that's based on bottom-up emission
18 factor calculation.

19 So, this was probably a pretty long
20 answer and I know I haven't directly answered the
21 question of how we would give credit for leak
22 repairs that were done before the survey was

1 conducted.

2 But I think that's something we're
3 really interested in thinking about and finding
4 ways to make that work.

5 MS. DAUGHERTY: Bill, did you have
6 anything you'd like to add to that?

7 MR. CARAM: Yes, sure, I think there's
8 no real way to provide credit if PHMSA isn't
9 requiring overall quantification and reduction,
10 and operators will need to find and fix their
11 leaks following their updated plans.

12 And they can continue to fix leaks
13 while they are continuing the survey.

14 MS. DAUGHERTY: Thank you both very
15 much. Sam, do we have more questions?

16 MR. HALL: Yes, operator, do we have
17 anyone in the queue?

18 OPERATOR: Actually, just to repeat
19 those instructions for participants on the phone,
20 please press 1 then 0 if you have a question at
21 this time. One moment, please, we do have a
22 question queuing up.

1 MR. HALL: While that question is
2 queuing, Operator, I will move on to one that's
3 already in the Q&A section, please feel free to
4 interrupt after this.

5 I'll come back to the operator and
6 we'll make sure that we get the question from the
7 caller.

8 Our next question was from Wallace
9 McGaughey, I'm sorry if I'm mispronouncing your
10 name, it's a question regarding terminate how the
11 regulation will be structures and I'm not sure
12 it's an appropriate question for the panel but I
13 do believe it's worth mentioning.

14 Most of the discussion is around
15 regulated pipeline facilities or their plans to
16 extend the federal pipeline regulations to those
17 currently non-regulated facilities.

18 MS. DAUGHERTY: I'll be real quick on
19 this, there are proposed regulations that are
20 looking at things like gathering gas lines or
21 gas-gathering lines? So, I don't know if that's
22 what Wally is looking at.

1 Erin, do you want to take this? Have
2 we lost Bill? I know his camera disappointed and
3 we may want to check if he's still connected.
4 But while we do that, Erin, do you want to take a
5 stab at that?

6 MS. MURPHY: Sure, I'll just say
7 briefly that EDF does support expanding the
8 regulation of gathering lines beyond the current
9 framework. And we also think it would be
10 valuable for the Agency to have a national
11 inventory of gathering lines to better understand
12 the existing pipeline system.

13 MS. DAUGHERTY: Thank you, Erin.
14 Bill, you are there, I was afraid we'd lost you
15 off the system entirely.

16 MR. CARAM: I am here and I think this
17 is a really critical piece of this. We need
18 gathering lines to be brought in and regulated
19 for a whole host of reasons, methane emissions
20 being one of those.

21 MS. DAUGHERTY: Thank you, and I'm
22 hoping my comments didn't misdirect the question

1 but it was the natural evolution, at least for
2 me.

3 Sam, do we have our caller online
4 ready to go?

5 MR. HALL: Operator?

6 OPERATOR: Yes, we do have Pamela
7 Lacey, please go ahead. One moment, Ms. Lacey,
8 your line is open now.

9 MS. LACEY: This is Pam Lacey, L-A-C-
10 E-Y, at AGA. This is for Erin mainly and
11 following up on the discussion earlier about the
12 capabilities of the mass spectrometers and the
13 algorithms, I notice on your slide that you say
14 there is an ability to estimate leak flow rate.

15 I think that's a good way of putting
16 it because the study that was mentioned before, I
17 believe it was by NYSEARCH, at least that's one
18 of them, showed that there was inability to
19 generally get a ballpark feel of, okay, this
20 Grade 3 leak is larger in volume and this one's
21 kind of medium and this one's really small.

22 And that allowed companies to then

1 prioritize going after the ones that were the
2 larger emitters of the non-hazardous leaks but it
3 didn't give a flow rate.

4 For that, you really do have to have
5 a flow meter, and also, just to let people know,
6 there is work underway in order to create a
7 modernized version of a flow meter and then get
8 that into the market so that it's more readily
9 available and more affordable.

10 But I think that's a distinction that
11 this technology, it has been used and has been
12 found as useful by some of our member companies,
13 SoCal Gas and trying to get that feel for which
14 ones do we prioritize, which ones are the larger
15 emitters?

16 Would you say that's about right,
17 that's what people have been using?

18 MS. MURPHY: Hi, Pam, it sounds like
19 you're asking if I'm aware of that other
20 technology that's been used by some gas
21 utilities, and I think you did describe another
22 technology that's available and in use by some

1 gas utilities.

2 I think in terms of our view of the
3 best standards that could be set by PHMSA, the
4 Pipes Act lays out a standard for commercially
5 available advanced leak detection technology and
6 we'd like to see a standard be set that really
7 uses the best and most accurate technology that's
8 available, particularly because as we move
9 forward it becomes more and more important that
10 we really tighten up methane emissions from the
11 gas system to address climate change.

12 So, I recognize there are definitely
13 a broad array of technologies available on the
14 market and what we're trying to do here is
15 articulate what we think are really the most
16 accurate technologies available for this purpose.

17 MS. LACEY: Could I follow-up?
18 Because actually, my point was that this ALD
19 technology is not as accurate in measuring the
20 flow rate but it is a useful tool in order to get
21 at the relative volume of gas leak and estimate
22 that it can actually measure the flow rate.

1 And that flow rate technology has been
2 around for quite a while. There's going to be an
3 updated version of it but it is commercially
4 available, it's very tested and it's used in all
5 of the emission studies, the peer-reviewed
6 science including the EDF series of studies.

7 So, we're just saying they're
8 different tools for different purposes and --

9 (Simultaneous speaking.)

10 -- will submit evidence in the record
11 for this.

12 MS. DAUGHERTY: Thank you, Pamela.

13 Erin, did you want to respond to that? I would
14 also recommend, Pamela, that the same issue might
15 come up very well on the technical panel.

16 I think this is one that we probably
17 need to have a discussion on because there's lots
18 of different opportunities we have before us.

19 Erin, did you want to respond since the question
20 was posed to you?

21 MS. MURPHY: I'll just respond briefly
22 and say that I would need to take a closer look

1 and be sure I understood exactly which
2 technologies we were distinguishing and referring
3 to.

4 So, I don't want to make a further
5 comment about the relative value of one over the
6 other.

7 MS. DAUGHERTY: Thank you, and thank
8 you, Pamela, for promising to submit information
9 on the docket because that will be very useful
10 for PHMSA as we go forward.

11 The more information we have on a
12 docket, the more we can take into consideration
13 and chart a good path forward, which is one of
14 the purposes of this meeting, to gather
15 information from all of you, because everyone on
16 this call is a stakeholder.

17 Sam, over to you for questions?

18 MR. HALL: We have a question from
19 Greg Tilley. In the EDF presentation, there was
20 mention of their timeline for a satellite to do
21 methane leak detection in 2022.

22 What is the timing in 2022, what is

1 the anticipated fidelity of the cameras on that
2 satellite, and how will EDF use that data as its
3 collected? Again, a technical question to a
4 degree.

5 MS. MURPHY: Thanks for asking, I am
6 not an expert on the scale of the EDF methane
7 stat project, I know it's something we're really
8 excited about, particularly for its ability to
9 really shine a spotlight on global methane
10 emissions and places where measurement and
11 monitoring might not be happening.

12 But of course, as we know, a satellite
13 is orbiting the planet and so we're going to be
14 getting information about a lot of sites in the
15 United States as well. But I am not sure about
16 the exact anticipated launch date or how that
17 data is going to be utilized.

18 I do know that one of our commitments
19 with the launch of that satellite is to really
20 try to democratize and make methane emissions
21 data more widely available to everyone so there
22 is a strong commitment to transparency there.

1 And I'm happy to share more
2 information as it becomes available or if you
3 want to email me, I can connect the methane stat
4 LLC folks who know far more about it than me.

5 MR. HALL: Several of the questions
6 that we're receiving are related to how do
7 different technological products compare to one
8 another?

9 And I'd just like to point folks to
10 the agenda, tomorrow we will have two technology
11 and R&D panels that will be focused on
12 technologies that are available for this.

13 And I would invite you to make those
14 comments regarding comparison between products
15 during those two sessions. Jeremy Grimes?

16 MR. CARAM: Sorry, this is Bill at the
17 Pipeline safety trust, I just wanted to add on
18 that I'm looking forward to the technology
19 session and we just really want to encourage
20 PHMSA to adopt performance standards that
21 encourage multiple technologies.

22 As I said in my presentation, there's

1 no one size fits all, different technologies are
2 good for different circumstances and they need to
3 be used in tandem.

4 And they need to complement each other
5 in order to find these leaks, fix them, and
6 minimize emissions.

7 MS. DAUGHERTY: Thank you, Bill,
8 that's good input.

9 The more input we have the better, we
10 make better decisions and also, you both
11 commented in your presentations that PHMSA needs
12 to make sure that whatever comes forward has
13 flexibility for improving technology.

14 Because we all know that the
15 technology that's available today will be
16 surpassed in 2, 3, 4, 5, 10 years and we don't
17 want to be stuck with old technology as a
18 requirement.

19 So, we've got to make sure we work
20 that in. Sam, do we have any other questions
21 that don't belong to the technical or R&D panel?

22 MR. HALL: I am scanning through the

1 questions now.

2 MS. DAUGHERTY: And can we make sure
3 that we get those questions to the panel? I
4 don't want to lose the question.

5 MR. HALL: Absolutely, the questions,
6 as a reminder to all, that are asked through the
7 comment will be made available on the public
8 meeting page after the meeting.

9 We will export those questions and
10 again, we'll have a transcript of these questions
11 and answers available after the meeting.

12 The meeting is also being recorded and
13 I'll remind all that if your comments or
14 questions cannot be addressed today, they still
15 are very important and we do encourage you to
16 make comments on the docket.

17 I'm scanning through some questions
18 now that appear to be somewhat repetitive, past
19 questions, please standby. Operator, do we have
20 anyone on the line?

21 OPERATOR: Yes, we do, from the line
22 of Doug Baer. Just a quick reminder, for the

1 record please spell your first and last name.

2 Your line is open.

3 DR. BAER: Yes, Doug Baer, D-O-U-G, B-
4 A-E-R.

5 At tomorrow's technology conference I
6 wanted to emphasize that we'll be discussing the
7 value of parts-per-billion detection and
8 emissions volumetric flow rate determination and
9 mapping, and point out that not only wind
10 direction but wind velocity is required to detect
11 leaks and to quantify their emissions rate.

12 So, that's important in a flux
13 determination and also, not all leaks are above
14 ground and so detecting hidden leaks are equally
15 important because they could be below ground.

16 And so that's why you need really good
17 sensitive detection because sometimes you have a
18 very hazardous leak that's buried under the
19 street but the gas that permeates through the
20 street can be a very small level.

21 But it's hidden and so that's why you
22 need very high sensitivity and I'll be discussing

1 that tomorrow afternoon.

2 MS. DAUGHERTY: Thank you, Doug, did
3 you have a question that you'd like to ask Erin
4 or Bill, or was that more in the line of
5 information -- were you advertising for your
6 panels tomorrow?

7 DR. BAER: Yes, sorry for that. I
8 wanted to point out that regarding the flow rate
9 or the flux rate uncertainties, those
10 measurements and surveys, when I searched, were
11 done several years ago and as pointed out
12 numerous times by Bill and you, Linda, and Erin,
13 technology is advancing, we're getting smarter,
14 not dumber.

15 And so we'll be able to be a lot more
16 accurate and we're allowing ourselves to provide
17 these very advanced leak detection systems on
18 board a variety of different vehicles including
19 trucks and drones and all the like.

20 So, again tomorrow afternoon I'll talk
21 about that more.

22 MS. MURPHY: Thank you, this is Erin,

1 if I could just briefly add onto what Doug said,
2 I appreciate that comment and I guess just want
3 to emphasize that these core elements of advanced
4 leak detection that are shown in my presentation
5 today were really just a preliminary effort to
6 outline what we view as the elements of this
7 technology that deliver the best result.

8 But this is certainly not intended to
9 be an end-all-be-all explanation. So, for
10 example, Doug just mentioned that wind velocity
11 is valuable in addition to wind direction and we
12 certainly don't disagree with that.

13 MS. DAUGHERTY: Thank you. Bill, did
14 you want to add anything?

15 MR. CARAM: Sure, I think we're going
16 to see a lot as operators update their inspection
17 and maintenance plans, I think we're going to see
18 a lot of what is working for them and what isn't
19 and I think we will learn a lot from that.

20 Another piece of technology we haven't
21 talked about that's not ALD or anything, this
22 came up during the NTSB hearing on Atmos' tragic

1 failure in Dallas, and that's in home methane
2 detectors.

3 And consolidated Edison of New York is
4 installing them in customers' homes I believe
5 after the 2014 tragedy in Harlem.

6 They are simple, inexpensive, and
7 effective and we would love to see that go into
8 some operators' plans and see how that rolls out
9 and possibly make it into some of the
10 regulations.

11 MS. DAUGHERTY: Great, thank you very
12 much, Bill, that's some information I was unaware
13 of so thank you for sharing that. Sam, do we
14 have any more questions?

15 Can I get to some of the questions I
16 have?

17 MR. HALL: We have several more here,
18 operator, are there any others on the line?

19 OPERATOR: No further questions in the
20 queue at this time.

21 MR. HALL: We do have just a couple
22 more questions. Linda, would you like me to go

1 through those or would you like to ask?

2 MS. DAUGHERTY: No, please do.

3 MR. HALL: Will do. From Philip, are
4 leak detection drones allowed to fly in populated
5 areas where distribution pipelines are prevalent?

6 MS. DAUGHERTY: Bill, you want to take
7 a stab at that one and then go to Erin?

8 MR. CARAM: I am not able to answer
9 that question, I apologize.

10 MS. DAUGHERTY: So, I am not an expert
11 on the FAA drones standards but I will just at
12 least briefly say that in EDF's experience, the
13 vehicle-mounted advanced leak detection
14 technology seems to be the best approach for
15 local distribution systems, largely because so
16 many of those distribution mains and pipes are
17 tracking along roadways so it's fairly easy to
18 drive with a vehicle.

19 So, again, not trying to prescribe a
20 specific solution but I would just say that in
21 general it's been our experience that vehicle-
22 mounted option is best suited for local

1 distribution systems and then we've been thinking
2 more about the drone and aerial options for
3 transmissions and gathering lines, particularly
4 where the rights of way are more challenging to
5 drive.

6 And there's actually an example of
7 that, a study that came out a couple years ago
8 that was a gathering line leak assessment where
9 they were using a vehicle-mounted leak detection
10 survey tool and ran into some issues.

11 Because some of the rights of way
12 along the gathering lines were either really
13 overgrown or had really steep embankments that
14 couldn't be navigated by a regular car.

15 So, to me that's an example where we
16 want to think about all the different options on
17 the table and think about drone or aerial options
18 for those areas that are tougher to drive.

19 MS. DAUGHERTY: Thank you, Erin. We
20 are aware that many pipeline operators do use
21 drones to do certain aspects of their continuing
22 surveillance functions.

1 I think many of them use a line of
2 sight approach and there are challenges to that
3 so it's something that I'm sure as things develop
4 we'll get a little bit more insight into but it's
5 a great question, thank you.

6 Sam, any more?

7 MR. HALL: From Bill Murtaugh a
8 question for Erin Murphy. As super emitters have
9 a supersized effect on methane emissions are the
10 rate of super emitters going down year over year?

11 Also, are you surprised that the super
12 emitters are not discovered via an odor complaint
13 before the ALD discovery?

14 MS. MURPHY: Yes, so what we've seen
15 with utilities that have started incorporating
16 advanced leak detection into their operations,
17 particularly for the purpose of doing these super
18 emitter focused surveys, we are seeing decreases
19 over time in terms of the number of super emitter
20 leaks that are identified, which is really great
21 news.

22 So, the way that might play out is

1 that a gas utility starts a super emitter program
2 and does a system-wide survey with that
3 objective, in that first year they might find
4 significantly more of those super emitting leaks
5 compared to the second and the third year where
6 they may still be some that pop up inevitably on
7 the system.

8 But hopefully that initial pass
9 through would do a lot to identify some of those
10 long-lasting big leaks on the system. And then
11 as for the odor question, absolutely, you would
12 hope that leaks would be identified through odor
13 calls but that's not always the case.

14 I think also something that we've been
15 trying to give thought to, there was a little bit
16 of discussion earlier about the need to
17 incorporate equity and environmental justice
18 objectives into these rulemaking standards.

19 And one thing we've given thought to
20 is what we think of as linguistically isolated
21 communities where English might not be the first
22 language and where there might be some reticence

1 to call into an official hotline, and that could
2 be the type of area where odor calls may be less
3 likely to be reported.

4 And so more frequently surveys could
5 have a greater value in those areas.

6 MS. DAUGHERTY: Thank you, Erin. By
7 the way, my comment about suggesting that I have
8 questions, we would much rather hear from the
9 audience.

10 These questions I think are very
11 informative and the questions that I have,
12 standard questions that we came up with
13 internally so we would much rather than hear from
14 you.

15 Sam, do we have any other questions
16 from the audience?

17 MR. HALL: We do, and for the
18 audience, please forgive me while I momentarily
19 adjust your screens so that I may read this
20 comment. This comment comes from Kate Smith and
21 it is a comment not a question.

22 Although sensitivity is an element of

1 ALD, the sensitivity should be directly linked to
2 deployment strategy.

3 If industry does a good job in a
4 walking-driving survey along the pipeline extent
5 and do this walking-driving survey on nights that
6 are conducive to detection, low radiation, low
7 wind, I would argue that using parts-per-million
8 instrumentation is superior to a daytime parts-
9 per-billion sensor used improperly.

10 Putting a sensitivity requirement on
11 the standard without leaking that sensitivity
12 with a deployment strategy pushes the technology
13 towards very, very specific technologies and puts
14 a very, very large price tag on ALD.

15 Again, that's a comment, thank you
16 for that comment, and I'm moving onto the next
17 one, please bear with me. We have a comment from
18 David Heldenbrand, iGas detectors are fine but
19 the interpretation of the data is more complex.

20 Many people with carbon monoxide
21 detectors and gas detectors just report false
22 positives or do not know how to correct the

1 possible issue.

2 Again, a comment from David
3 Heldenbrand, thank you for your comment. Let's
4 see, this last question from Paul Wehnert may be
5 a technical question.

6 He asks, what is the percentage of
7 actual confirmed natural gas leaks versus
8 indications with advanced mobile technology?
9 Anyone have a comment on that?

10 MS. MURPHY: So, I believe we have
11 that type of information in some of the research
12 that EDF has been involved with but I do not know
13 it off the top of my head. So, that's something
14 we can follow up on.

15 MR. HALL: Operator, do we have anyone
16 on the telephone line?

17 OPERATOR: Yes, it looks like a
18 follow-up from the line of Pam Lacey. Please go
19 ahead, your line is open.

20 MS. LACEY: Thank you very much, this
21 is Pam Lacey, AGA, and I was going to pass along
22 something that we've heard year over year from

1 various experts that have been at the annual
2 methane connections.

3 The word super emitter tends to imply
4 especially something used in the gas utilities
5 context. It sounds more alarming and what we're
6 really generally talking about is locating Grade
7 3 non-hazardous leaks that would otherwise not be
8 scheduled for repair typically.

9 But trying to prioritize those, in a
10 number of studies people have been using the term
11 larger emitters rather than super. Just a
12 comment just to let you know and I think that
13 might be a more useful term that isn't as
14 inflammatory-sounding.

15 Thanks.

16 MS. DAUGHERTY: Thank you, Pamela.

17 MR. HALL: Operator, other commenters?

18 OPERATOR: None further in the queue
19 at this time.

20 MR. HALL: And Linda, there are no
21 further comments or questions in the queue at
22 this time?

1 MS. DAUGHERTY: All right, Erin, Bill,
2 you ready?

3 I should share with everybody that we
4 sent out the questions so we're not totally
5 blindsiding Erin and Bill with this, and you may
6 hear these questions on another panel because
7 it's a theme and we want to get different
8 perspectives.

9 So, here's the question I have for
10 you, other than prescriptive minimum regulations,
11 what do you believe might incentivize operators
12 to adopt advanced leak detection and repair
13 technologies?

14 How can you motive operators to get
15 ahead of the curve and be more proactive? So,
16 Bill, do you want to go first and then I'll ask
17 Erin to follow?

18 MR. CARAM: Sure, and I want to start
19 off, I said it before and I'll say it again that
20 we firmly believe in prescriptive minimum
21 regulations and using strong enforcement to meet
22 those minimums.

1 And so I don't want to overlook strong
2 enforcement as an incentive but in addition, ALD
3 technology is going to give all of us, operators
4 and PHMSA and the public, new data on how much
5 methane really is being leaked and released out
6 of which natural gas facilities.

7 And we want to see that publicized,
8 allowing the public to understand the climate
9 impacts of the industry and to help them make
10 informed consumer choices.

11 I think that would be another way to
12 motivate the right behavior.

13 MS. DAUGHERTY: In a follow-up to
14 that, Bill, do you think operators will be more
15 willing to to be more transparent with this
16 information without regulations or do you think
17 it will necessitate regulations to prompt that
18 transparency?

19 Just your opinion.

20 MR. CARAM: Sure, I think most
21 operators absolutely would but unfortunately, you
22 need regulations to ensure you get 100 percent

1 participation.

2 And that's really what we need, this
3 is too critical and too vital and so I do believe
4 regulations are the way to do that.

5 MS. DAUGHERTY: Thank you, Bill.

6 Erin, what do you think?

7 MS. MURPHY: Yes, I think Bill made
8 good points and I'll just build on what he said
9 and what you just raised, Linda, to emphasize
10 that I think strong reporting requirements as
11 part of the standard are going to be incredibly
12 valuable in really, first of all, allowing
13 operators to demonstrate the progress that they
14 are making in reducing methane admissions and
15 improving the safety of their system.

16 And also allowing for comparison
17 amongst operators to look at their implementation
18 of these efforts. And I would hope that that
19 transparency and comparison would help motivate
20 better actions.

21 MS. DAUGHERTY: Thank you very much,
22 thank you both. I want to do a quick check with

1 Sam to see if any questions have come up other
2 than I think we have time for one more question.

3 MR. HALL: Standby. We have a
4 question from Jason Samara, there's been repeated
5 mention of find-and-fix leaks, much of these
6 find-and-fix processes are defined by regulations
7 that define response and repair times and include
8 O&M manuals of operators.

9 These requirements are based on
10 traditional leak discovery methods and daily leak
11 discovery volumes.

12 Regulatory changes can be expected to
13 support operators to use these technologies in
14 their use that would allow operators to develop
15 processes to accommodate the data collection
16 phase and leak investigation phase and discovered
17 leaks when using ALD technologies.

18 Worse-case is a discovered leak that
19 is not investigated in a timely manner, the
20 result's an incident, this has a very poor
21 outcome for the operator.

22 I'll just mention that we have I think

1 it may be more of a comment, there is a question
2 regarding how regulations would change.

3 Mr. Samara, I would recommend that you
4 provide a comment to the docket certainly if you
5 have some concerns about that and some ideas.
6 And as part of my duties as MC I do need to do a
7 time-check, our next panel is very full so we do
8 need to wrap up this panel.

9 MS. DAUGHERTY: Thank you so much,
10 Erin and Bill, you've provided some good food for
11 thought I think.

12 Thank you for your comments, your
13 presentations, and I thank all of the workshop
14 participants, everyone out there in the audience
15 for thinking through these issues, being open to
16 new ideas, new thoughts, and really put some
17 thought into it.

18 Let's not go along with the way we've
19 thought for the past, I don't know, however many
20 years, 40 years, let's be open. So, with that,
21 thank you very much, Sam.

22 MR. HALL: Thank you, Linda, and thank

1 you, I'll reiterate Linda's comments, thanks to
2 our panelists and to those of you who have
3 provided comments and questions.

4 For our next panel, it's now my
5 pleasure to introduce John Gale, Director of
6 Standards and Rulemaking as the moderator, and he
7 will be moderating the industry panel discussion.
8 Go ahead, Mr. Gale.

9 MR. GALE: Thank you, Sam, and good
10 afternoon, everybody. As Sam said, my name is
11 John Gale and I'm the Director of Standards and
12 Rulemaking in the Office of Pipeline Safety,
13 PHMSA.

14 And not only is my office responsible
15 for a vast portfolio of rulemakings affected
16 pipelines and safety, from a remote controlled
17 valves and transmission lines, regulating gas
18 gathering lines and repair criteria for both
19 hazardous liquid and gas transmission lines.

20 We were also responsible for those
21 rulemakings resulting from the Pipes Act of 2020,
22 which includes the topic we were discussing

1 today, leak detection and repair.

2 In my several decades of rulemaking
3 work, I've been proud of the fact that I've been
4 able to work on many rules that have had a direct
5 impact on the safety of the citizens of our
6 country.

7 And now I'm very fortunate to work on
8 this very important topic as it has the potential
9 to impact the lives not just of the current
10 citizens of this country but the generations to
11 come.

12 At the panel this afternoon, we will
13 hear from representatives from the Gas Piping
14 Technology Committee, the American Gas
15 Association, the American Public Gas Association,
16 and the Interstate Natural Gas Association of
17 America, and the Gas Processes Association.

18 You can see we've got a very full
19 panel this afternoon and at this panel we will
20 hear and learn about the GPTC grading system for
21 leak repairs, which is obviously a very important
22 part of this project and commitment from

1 operators to address the risk of methane and
2 leaking pipeline infrastructure.

3 Focused discussion on cast iron and
4 bare steel pipe, causes of leaks in the gas
5 distribution world, pipes of leak detection
6 equipment commonly employed in the gas industry
7 and thoughts on the use of advanced leak
8 detection technologies.

9 As Sam mentioned earlier too, we have
10 already received several questions about the
11 whole rulemaking initiative, which is going to be
12 something that folks in my office working with a
13 variety of different other folks are going to be
14 looking at as we move forward with this
15 rulemaking.

16 We want to get your comments, we want
17 to get your thoughts on these issues and we do
18 have an open docket that is available on this
19 rulemaking and on this public meeting.

20 So, we really greatly encourage you
21 guys to submit your comments, the comment period
22 ends on May 24th and please provide us your ideas

1 on things from super emitters to survey
2 frequencies, standard frailties, defining super
3 emitters and high emitters, and changes to the
4 reporting requirements.

5 We really want to hear your ideas and
6 your initiatives on how to address this very
7 important issue. So, that's enough from me for
8 right now.

9 I'd like to go into our first panelist
10 and our first panelist is from GPTC or
11 representing GPTC, Mr. David Bull.

12 Mr. Bull has over 46 years of
13 experience in the pipeline industry helping
14 pipeline operators to assess regulatory
15 compliance programs and manage their risk and
16 liability exposures.

17 He started his career with Heath
18 Consultant and has held his position at the
19 Transportation Safety Institute, now PHMSA's T&Q,
20 and has been a member of GPTC for over 25 years.
21 He is currently the Chair of Davis Prevention and
22 Emergency Response Task Group.

1 In addition, Dave has been a member of
2 the GPTC's Operation and Maintenance Task Group
3 and Distribution Division.

4 Dave, I'm going to turn it over to
5 you, sir, welcome aboard.

6 MR. BULL: Thank you, John, and I
7 would like to thank PHMSA for inviting the GPTC
8 here today to discuss our guide and leak
9 classification system.

10 We've heard through the morning
11 sessions GPTC mentioned several times and I hope
12 to be able to describe what our Committee is and
13 some of the work that we do.

14 The GPTC is an American National
15 Standards Institute accredited Committee, ANSI
16 Z380 the Gas Piping Technology Committee. It
17 operates under a consensus process, it is
18 technically based and independent, its members
19 represent their profession and our publication,
20 the guide, is designated as an ANSI Z380.1
21 document.

22 So, who is the GPTC? We have

1 approximately 100 members and 40 of those are
2 main-body voting members, you can see the
3 breakdown there on the screen.

4 But we have representatives from all
5 facets of the gas industry, distribution
6 operators, manufacturers of gas-related
7 equipment, transmission storage and gathering
8 operators.

9 We have regulatory people on our
10 Committee from federal and state regulatory
11 agencies, we have an NPSB Committee Member and we
12 have members with a general interest group
13 interest.

14 So, the history of the GPTC, it was
15 formed in the late 1960s under the auspices of
16 the American Society of Mechanical Engineers and
17 the first guide was published the same year as
18 the regulations in 1970.

19 Those of you of my generation may well
20 remember when it was called the ASME Guide.

21 In 1990, the American Gas Association
22 became the Secretariat for the GPTC providing

1 administrative support.

2 The GPTC provides guidance to
3 operators for compliance with the DoD regulations
4 in 49 CFR Part 191 and Part 192. It's often
5 references, as we've heard today, by many of
6 presenters but on its own it is not an
7 enforceable document.

8 However, we do find that some states
9 have adopted all or portions of the guide into
10 their regulations, which then their particular
11 state agency would enforce.

12 And the full name of our publication
13 is Guide for Gas Transmission Distribution and
14 Gathering Piping Systems.

15 How is the guidance created? Well,
16 the guide is under continuous review, it is a
17 living document and we review our guidance
18 material in response to rulemakings, NTSB
19 reports, requests from members or the public, and
20 requests from PHMSA or NAPSRS.

21 And when these requests or these
22 rulemakings or reports occur, we review them, a

1 task group is created if necessary to write draft
2 guidance called a transaction.

3 And currently we have over 100
4 transactions in progress in our system. And this
5 includes four transaction in response to the
6 recent NTSB recommendations assigned GPTC in the
7 Atmos Energy Report from the incident in Dallas,
8 Texas.

9 There are many users of the guide
10 across the entire spectrum of the gas pipeline
11 industry. Obviously, we see the federal and
12 state regulators using the guide transmission
13 pipeline gathering and storage operators.

14 Distribution operators including
15 propane and petroleum gas systems, gathering
16 lines, municipalities and master meter operators,
17 many of these operators, large and small,
18 incorporate sections of the guide into their
19 owner manuals as part of their operating
20 procedures.

21 As I said, we write guidance for a
22 vast majority of the regulations in Part 191 and

1 192 but we also have a number of appendices that
2 provide detailed procedures, if you will, or
3 guidance for various actions to comply with the
4 regulations.

5 One such appendix is Appendix G 192-A
6 for the distribution and integrity management
7 programs that are promulgated under 192 Subpart
8 P.

9 And you can see that we do address
10 leak management programs and developed this
11 mnemonic to help operators understand what an
12 effective leak management program may be using
13 the word leaks.

14 Locate the leaks in the distribution
15 system, evaluate the actual or potential hazards,
16 act appropriately to mitigate the hazards, keep
17 records, and self-assess to determine if
18 additional actions are necessary.

19 Another appendix in the guide is the
20 gas leakage control guidelines for natural gas
21 systems, Appendix G-11 and its companion,
22 Appendix G-11(a) for petroleum gas systems.

1 This 23 pages of guidance includes
2 definitions, guidance for leakage detection, leak
3 investigation and classification pinpointing and
4 other procedures that would be used in a leakage
5 control program.

6 And within Appendix G-11 and G-11(a)
7 comes perhaps to the heart of our subject here
8 today is leak classification.

9 And we have developed guidance for
10 three categories or grades of leak, the first is
11 a Grade 1 leak, a leak that represents an
12 existing or probable hazard to persons or
13 property and requires immediate repair or
14 continuous action until the conditions are no
15 longer hazardous.

16 You may recognize this language as it
17 is in the definitions of a hazardous leak in
18 192.1001. And this Grade 1 leak classification
19 goes directly for guidance 1927039(C) which
20 states hazardous leaks must be prepared promptly.

21 So, this provides operators with
22 guidance on what a hazardous leak might be. Not

1 only do we provide a definition for a
2 classification but the guidance includes action
3 criteria of what to do when such a leak is found.

4 The action criteria, as you can see
5 here, requires prompt action to protect life and
6 property and continuous action until the
7 conditions are no longer hazardous. And what is
8 that continuous action or action criteria?

9 It would be any of these items and not
10 necessarily in this order. The implementation of
11 an emergency plan written under 192615,
12 evacuation of the premises, blocking off an area,
13 rerouting traffic, eliminating sources of
14 ignition, venting the area by removing manhole
15 covers, bore-holing or installing vent holes or
16 other means.

17 Stopping the flow of gas by closing
18 valves or other means, notifying the police and
19 fire departments. So, now we have the
20 definition, we have action criteria and we also
21 provide guidance on examples of what might be a
22 Grade 1 leak.

1 Any leak which in the judgment of
2 operating personnel at the scene is regarded as
3 an immediate hazard, escaping gas that is
4 ignited, indication of gas that's migrated into
5 or under a building or into a tunnel.

6 Any reading at the outside wall of a
7 building where gas would likely migrate, any
8 reading of 80 percent of the lower explosive
9 limit or greater in a confined space.

10 Any reading of 80 percent of the lower
11 explosive limit or greater in a small
12 substructure other than gas-associated
13 substructures from which gas would likely migrate
14 to the outside wall of a building.

15 And any leak that could be seen, heard
16 or filled, and which is in a location that may
17 endanger the general public or property. So,
18 this is a Grade 1 leak, a definition, action
19 criteria, and examples.

20 Next, we have a Grade 2 leak, a leak
21 that is recognized as being non-hazardous at the
22 time of detection would justified scheduled

1 repair based on probable future hazard.

2 Action criteria for a Grade 2, leak
3 should be repaired or cleared within one calendar
4 year but no later than 15 months from the date
5 the leak was reported.

6 In determining the repair priority,
7 consider the following, amount of migration of
8 gas, proximity of gas to buildings in sub-surface
9 structures, the extent of repavement, the soil
10 type and soil conditions such as a frost cap,
11 moisture, or natural venting.

12 Continuing with action criteria, Grade
13 2 leaks should be reevaluated at least once every
14 six months until cleared. The frequency of re-
15 evaluation should be determined by the location
16 and magnitude of the leakage condition.

17 Grade 2 leaks may vary greatly in
18 potential. Some Grade 2s when evaluated by the
19 above criteria may justify scheduled repair
20 within 5 working days, others will justify repair
21 within 30 days.

22 During the working day on which the

1 leak is discovered, the situation should be
2 brought to the attention of the individual
3 responsible for scheduling the repair.

4 However, on the other hand, many Grade
5 2 leaks, because of their location and magnitude
6 can be scheduled for repair on a normal routine
7 basis with periodic reinspection as necessary.

8 Again, to provide examples for what a
9 Grade 2 may be, leaks are requiring action ahead
10 of ground freezing or other adverse changes in
11 venting conditions.

12 Any leak which under frozen or other
13 adverse soil conditions would likely migrate to
14 the outside wall of a building.

15 Leaks requiring action within six
16 months, and you can see there are a number of
17 examples here, depending upon the gas
18 concentration and the location, any reading of 40
19 percent of the lower explosive limit or greater
20 under a sidewalk in a wall-to-wall area, a paved
21 area that does not qualify as a Grade 1.

22 Any reading of 100 percent LEL or

1 greater under a street in a wall-to-wall paved
2 area that has significant gas migration and does
3 not qualify has a Grade 1.

4 Readings based upon percentage in
5 small substructures, readings between 20 percent
6 of the lower explosive limit and 80 percent LEL
7 in a confined space.

8 Reading on a pipeline operating at 30
9 percent SMYS or greater, in Class 3 or 4 which
10 does not qualify as a Grade 1.

11 And finally, any leak which in the
12 judgment of the operating personnel at the scene
13 is of sufficient magnitude to justify scheduled
14 repair.

15 Finally, we come to a Grade 3 leak, a
16 Grade 3 leak is a leak that is non-hazardous at
17 the time of detection and can reasonably be
18 expected to remain non-hazardous.

19 The action criteria for these are
20 these leaks should be reevaluated during the next
21 scheduled survey or within 15 months of the date
22 reported, whichever occurs first until the leak

1 is regraded or no longer results in a reading.

2 And again, examples of Grade 3, leaks
3 requiring reevaluation of periodic intervals, any
4 reading less than 80 percent LEL in a small gas-
5 associated substructure, any reading under a
6 street in areas without wall-to-wall paving where
7 it is unlikely gas could migrate to the outside
8 wall of a building and any reading of less than
9 20 percent lower explosive limit in a confined
10 space.

11 We see these three leak
12 classifications incorporated into many operator-
13 owned plans and used by personnel that are
14 involved in detecting, investigating, and
15 classifying leaks.

16 So, this is a summary of what GPTC is
17 all about, our guidance material, particularly as
18 it applies to the leak management programs and
19 leak classification and we'd like to thank the
20 PHMSA team, in particular John Gale and Chris
21 McLaren for the opportunity to share this
22 information.

1 If you're interested in more
2 information about GPTC or would like to join the
3 Committee, please go to the following website as
4 listed here or contact our Secretary at AGA Betsy
5 Tansey with any questions to join the Committee.

6 That concludes my presentation, thank
7 you very much.

8 MR. GALE: Thank you, David, thank you
9 very much for that excellent presentation. The
10 GPTC guide and their repair criteria that's in
11 there is obviously of the utmost importance to my
12 rulemaking team as we get you down this road of
13 looking at methane reduction.

14 Repair is obviously a very important
15 aspect of that and we greatly appreciate that
16 overview.

17 And our next presenter, a lady that
18 I've had the pleasure of working with for a
19 couple decades now was actually one of the
20 recommendations to have GPTC lead off this panel,
21 which was an excellent presentation.

22 We adopted that change here. Our next

1 presenter is Ms. Christina Sames, Christina is
2 the Senior Vice President of Safety Operation and
3 Security at the American Gas Association or AGA.

4 In this role, she works closely with
5 AGA's members, government, and other stakeholders
6 to improve safety, resiliency, and security to
7 the promotion of sound regulations and
8 legislations, leading practices, forums to
9 exchange information and the development of a
10 wide range of publications.

11 Christina's team is responsible for
12 pipeline, employee, and contractor safety,
13 natural gas physical and cybersecurity, integrity
14 management, pipeline safety management systems,
15 the national fuel and international fuel gas code
16 and executing operations and engineering
17 initiatives related to distribution, intrastate
18 transmission, and building energy codes and
19 standards.

20 With that said, Christina, I'm going
21 to turn it over to you.

22 MS. SAMES: Thank you, John, can you

1 hear me, just to confirm?

2 MR. GALE: Yes, I can.

3 MS. SAMES: Excellent, I want to take
4 the opportunity to thank you and PHMSA for
5 holding this workshop and really providing the
6 opportunity for such a wide range of perspectives
7 to be heard.

8 On January 20th, President Biden
9 signed Executive Order 13990 and one of the core
10 principles of that executive order was to listen
11 to the science.

12 This rulemaking, the rulemaking that
13 PHMSA will create, has the opportunity to focus
14 in on the science, to use real data, and to
15 promote solutions that use reduce emissions.

16 My presentation is going to focus on
17 the natural gas distribution sector, those
18 pipelines that deliver natural gas to 76 million
19 residential, commercial, and industrial customers
20 here in the United States.

21 I'm also going to cover some proven
22 technologies to reduce natural gas leaks,

1 thoughts on how to leverage technologies, and
2 then expound upon what EPA presented this morning
3 on measuring emissions.

4 So, with that, let's get started.

5 I'm going to start pretty much where
6 Dave left off, which is an overview of GPTC's
7 different classifications of leaks.

8 Now, hopefully you took away from his
9 presentation, at least I did, that not all leaks
10 are the same.

11 There are large, hazardous leaks,
12 there are leaks that are really small, and for
13 these small leaks an operator may have to
14 actually apply a soap solution, wait several
15 minutes before you can see an indication that a
16 leak exists.

17 So, not all leaks are the same.
18 Traditionally, classifications and repair
19 timelines are based exclusively on the risk the
20 leak poses to pipeline safety, to public safety.
21 They're not focused on the environment, at least
22 not yet.

1 Hazards and potentially hazardous
2 leaks to the public at GPTC's Grade 1 and Grade 2
3 leaks do have explicit repair timelines.

4 I should probably note that PHMSA's
5 regulations don't cover that, although most
6 states do use the GPTC to guide, some have their
7 own regulations, which was brought up in an
8 earlier presentation.

9 So, if PHMSA works to create a
10 regulation that really takes into account the
11 environment, we have to ensure that all measures
12 continue to put public safety first and foremost.

13 Now, what do I mean by that? Let me
14 give you an example.

15 Earlier, you heard a little bit about
16 excavation damage so if a pipeline emergency like
17 excavation damage is occurring and the pipe must
18 be repaired or replaced quickly due to an
19 integrity issue, operators need to act quickly
20 and we may need to release natural gas to the
21 atmosphere in order to keep the public safe.

22 There are times when we need to take

1 very quick action, other times, maybe we have an
2 opportunity to wait.

3 What we don't want to do is to wait
4 for equipment that might be able to capture
5 methane in a pipeline to arrive on the scene
6 before we're taking action to keep the public
7 safe.

8 So, these work activities and the
9 promptness of completing these activities, in my
10 opinion, should always take first priority and
11 always should be considered in this rulemaking.

12 Sorry, for some odd reason the clicker
13 didn't work right away. Hopefully you're all
14 seeing the same slide I am.

15 So, I want to make it clear that AGA
16 supports moving beyond public safety to a focus
17 on protecting the environment and we believe that
18 can be done several different ways.

19 The first, and I think we've heard
20 other speakers home in on this, is focusing in on
21 immediate sources of methane emission so larger
22 emitters. Another opportunity is to address

1 repair timelines for larger leaks, which are
2 currently considering non-hazardous to the
3 public.

4 We're already addressing the hazardous
5 leaks, now let's focus in on some of the non-
6 hazardous. And then finally, supplemental leak
7 surveys that are focused on larger leaks, again,
8 which are non-hazardous to the public.

9 These are just a few ways that we
10 believe can move pipeline safety, public safety,
11 and environmental stewardship forward. I want to
12 get to some of the proven test strategies and the
13 very first one I'm going to cover is pipeline
14 replacement.

15 Now, all of the what I'm going to
16 show, all of the statistics really come from
17 PHMSA's data set, and I should probably give a
18 little bit of additional background.

19 There's no specific way to tie cast
20 iron, bare steel to specific leaks so I had to
21 look at it at a higher level.

22 But what we see from PHMSA data is

1 that cast iron and bare steel are prone to leak,
2 we already know that, and replacement of these
3 pipes that are known to leak support pipeline
4 safety, reliability, and a reduction in
5 emissions.

6 So, let me give you a few statistics,
7 when we did a deep dive into PHMSA's statistics,
8 what we found is that just 21 percent of the
9 distribution operators have cast iron or bare
10 steel.

11 But those operators, when you look at
12 the leaks, account for 95 percent of the
13 corrosion leaks on mains, 92 percent of the
14 natural forest leaks on mains, 91 percent of the
15 pipe weld and joint failures that result in
16 leaks, 97 percent of other caused leaks, and 76
17 percent of all known leaks.

18 Those are really large statistics and
19 I want you to remember this slide later because
20 in my opinion, pipe replacement is one of the
21 leading tools that we should continue to use to
22 reduce methane emissions.

1 It's improving safety, reliability,
2 and it is reducing emissions. These are just a
3 few charts that I pulled from PHMSA's website,
4 the first shows the decline in cast iron main.
5 The second is the reduction on cast iron
6 services.

7 You see the miles of main have been
8 cut in about half since 2005, services are down
9 by about 80 percent. If I move on to bare steel,
10 again, since 2005 miles of main are down 42
11 percent, number of services are down 62 percent.

12 I'm going to go to my second proven
13 strategy to reduce methane emissions and this has
14 also been touched upon and it's reducing
15 excavation damages.

16 This continues to be a leading cause
17 of at least the distribution pipeline incidents.
18 It's pretty significant in other areas but for
19 distribution, this is one of the top ones, BRA.
20 The other one is corseting our pipeline.

21 In 2020, and again, we just did a deep
22 dive in one year but what we found was excavation

1 damage amounted to 29 percent of the serious
2 distribution incidents. Those are the incidents
3 that result in a death or an injury.

4 They result in 36 percent of the
5 significant distribution incidents. Those are
6 the ones that are death, injury, or significant
7 property damage.

8 46 percent of all hazardous leaks from
9 distribution main and when I add it up, just the
10 total that had been provided to PHMSA, it was
11 about 245,000 MCF of gas.

12 I then had to play around a little
13 bit, I want to thank EPA's website for giving
14 some fun little statistics.

15 I put in what the heck is 245,000 MCF
16 of gas equal to? It translates to about 34
17 million miles driven by a vehicle, 50 million
18 pounds of coal burned or net electricity to
19 really power over 2400 homes for an entire year.

20 That's just what's been reported to
21 PHMSA. Not everything is excavation damage, a
22 lot of these smaller and since not everything is

1 reported it gives you an idea of the magnitude of
2 this issue.

3 Now, the operators are doing a heck of
4 a lot to reduce excavation damages. We're
5 regulated, we're required to use one call, we're
6 required to call before digging, we're required
7 to work at our line.

8 We have a number of requirements and
9 I'm not saying that we can't improve, because I
10 always think there is room for improvement, but
11 what we find is that many of these incidents that
12 are being caused are in states that have either
13 lax one-call laws or lax one-call enforcement.

14 Or they exempt certain industries.
15 So, we need a little bit of help from the states
16 on this particular one. I want to move on to
17 leveraging technology.

18 As we move from a focus on public
19 safety to a focus on the environment, we want to
20 make sure that we're effectively using the
21 resources by focusing in on the repairs of the
22 larger leaks that could become hazardous to the

1 environment.

2 Again, not all leaks are equal so
3 let's focus our resources where they're going to
4 make most impact.

5 I think we've heard various speakers
6 earlier today talk about those high emitters, and
7 the studies indicate that about 80 percent of the
8 leak come from a small number of sources. That,
9 therefore, should be our focus.

10 We also need to understand the
11 technology constraints. A technology that works
12 well in a more rural environment may not work
13 well in a Metropolitan area where you have a lot
14 of concrete.

15 The weather has an impact on the
16 technology, whether it be wet weather, whether it
17 be windy, and the size of the leak. So,
18 understanding the technology constraints is
19 extremely important and I know we'll hear more
20 about that tomorrow.

21 The other thing that needs to be
22 brought up is what I call beware of false

1 positives. The industry has worked hard to
2 implement a number of new technologies and test
3 new technologies.

4 And what we find is going back to that
5 location of where the equipment is used for the
6 conditions. You may end up with an indication of
7 a leak where there is absolutely no leak. You
8 may not get an indication of a leak and, yes,
9 there is one.

10 So, there's a variety of factors that
11 come in play and so as I stated, beware of the
12 false positives.

13 That's one of the reasons why a
14 pairing of technology is used by many operators
15 where you may have something more general,
16 something like the drones or the satellites or
17 the vehicles.

18 But at the end of the day, you're
19 probably going to need some handheld equipment.

20 Moving on still with leveraging
21 technology for the non-hazardous 303 leaks, again
22 ways we believe we can focus on the environment

1 is performing supplemental surveys to identify
2 leak flow rates or how big an actual leak in a
3 general sense.

4 And then repairing or mitigating those
5 larger leaks. Our recommendation, as always, is
6 to stay flexible, we did hear some of that
7 already, there are a whole host of strategies and
8 technologies that can be used to minimize leaks
9 that could potentially be hazardous to the
10 environment.

11 And those strategies and technologies
12 change over time so regulations should not
13 pigeonhole the operators into the use of one
14 specific technology.

15 Everything needs to be flexible, and
16 then remember those statistics back on
17 replacement, don't detract from current
18 replacement programs.

19 They're effective, they're doing their
20 job and we need to continue them. What I don't
21 want is for resources to be pulled from
22 replacement programs to something that's less

1 effective.

2 On measuring emission, and we heard,
3 again, some of this earlier, leak detection
4 technologies only really provide an indication of
5 a leak. We heard earlier today about emission
6 factors, which is an expected rate of leakage per
7 component.

8 We know that the accuracy of the
9 emission factors really vary based on the
10 research that was done to create the emission
11 factor, how much was done. Were there just a few
12 places that the research was done or was it
13 pretty extensive?

14 All of that gets to the emission
15 factors and how good or bad they are. What we
16 also know is that emission factors alone may not
17 show where repairs or mitigation is needed
18 because they don't consider what's been repaired
19 or replaced for the age of the pipe.

20 And I'll give you just one example,
21 meters have an emission factor. If an operator
22 replaces a meter, it's still going to have the

1 same emission factor, it doesn't matter.

2 The number of emission factors by the
3 number of meters so the estimate of the
4 emissions, even if you have all new meters, it's
5 going to be exactly the same before and after the
6 replacement, same thing with new pipes.

7 Again, because you are using the
8 emission factor. I want to end with just a few
9 commitments that AGA's members have made. We've
10 been working with EPA and a variety of others for
11 a really long time on efforts to reduce methane
12 emissions.

13 There's the EPA Natural Gas STAR
14 program, where we have 37 large members
15 participating, the EPA methane challenge with 48
16 members.

17 We have participated in a wide variety
18 of studies to improve methane detection,
19 accuracy, measurement, emission factors, I've
20 looked at just a few.

21 We also had last year new commitments,
22 and I apologize that this is a little blurry, but

1 these were commitments that AGA's Board has made
2 specifically for members to further reduce
3 emissions.

4 There's ten points, you can find this
5 on our website. When you get the slides, this
6 link down here at the bottom on climate change,
7 this statement will take you right to the
8 commitments. But if you go to AGA's website you
9 can easily find it.

10 And then finally, just an indication
11 of how quickly things are changing. So, April
12 2020 we had 16 member companies with net-zero
13 carbon-neutral or 100 percent clean energy goals.
14 That's up to 26 and actually, I think that
15 number's already outdated even though I just did
16 these slides.

17 45 percent back in 2020 said that the
18 proof comes from a utility with a carbon-neutral
19 net-zero commitment for up to 64 percent. So,
20 just an indication of how quickly things are
21 evolving and when we talk about net-zero I will
22 offer this particular form.

1 What we're talking about is primarily
2 three things, maybe four, the use of renewable
3 natural gas, which would be emitted to the
4 atmosphere if it's not captured with the use of
5 hydrogen.

6 So, adding that to the natural gas
7 network to create a new energy blend, energy
8 efficiency, which is so important to get us to
9 our goals, and then the direct use of natural gas
10 instead of creating electricity first.

11 With that, AGA's website and I know we
12 will have questions later so I'll turn it back to
13 you, John.

14 MR. HALL: John, you may be muted.

15 MR. GALE: Thank you, Mr. Hall. I
16 appreciate that. And, Christina, again, thank
17 you for that outstanding presentation.

18 I know as my team has dived into this
19 very important issue, the issue of cast iron
20 replacement, bare steel pipe replacement, age of
21 the pipe and especially then also damage
22 prevention laws and enforcement are important

1 aspects of this overall process and project and
2 if we're going to be successful in minimizing or
3 reducing methane emissions. So I greatly
4 appreciate that presentation.

5 Next up is Ms. Brooke Sinclair. She's
6 representing the American Public Gas Association.
7 Brooke is currently the Director of Construction
8 at the Knoxville Utilities Board, or KUB, which
9 encompasses about 350 employees performing
10 emergency response, repair, new construction and
11 maintenance programs focusing on system integrity
12 for KUB's natural gas, water, wastewater and
13 electric systems.

14 Ms. Sinclair began her career as a
15 consultant for local and environmental consulting
16 firms and transitioned to KUB in 2003. Over
17 time, Ms. Sinclair was the manager of several
18 departments, including station management
19 services, gas system engineering and safety
20 security and technical services.

21 Ms. Sinclair also served as the
22 Assistant to the Chief Engineer at the KUB. With

1 22 years in the industry, Ms. Sinclair has an
2 extensive regulatory, safety and environmental
3 compliance background and holds several
4 certifications, such as certified state
5 professional and a certified hazardous materials
6 manager. Brooke, we'll turn it over to you.

7 MS. SINCLAIR: Great. Thanks, John.
8 Again, I'm Brooke. I'm with the Knoxville
9 Utility Board, or KUB, but I'm representing the
10 American Public Gas Association, or APGA, as one
11 of their 750 member utilities to talk about our
12 leak management and survey and response program.

13 So just to give you a concept of KUB's
14 size, out of about 1,250 U.S. gas utilities,
15 we're ranked 120th. And if you look at U.S.
16 public gas utilities, we are ranked 9th largest.

17 So we're a distribution company only.
18 No transmission. We have about 107,000 services
19 over about a 300 square mile territory. About 90
20 percent of our system consists of polyethylene,
21 and we run at about 60 pounds.

22 The rest is made up of a small portion

1 of steel at 60 pounds and two higher pressure
2 loops, a 200 pound line that we call our north
3 loop and a 450 pound line that we call our south
4 loop. These loops feed the rest of the system to
5 our three gate stations.

6 So when we look at any type of work
7 that we're performing, we look back to our
8 blueprint and how it really aligns with the
9 blueprint. You know, this is not a document that
10 we created to aspire to but instead this really
11 documents our actual culture and how we do
12 business.

13 As you can see from the red boxes on
14 the screen that I've highlighted on the
15 blueprint, safety and environmental
16 responsibility and sustainability are two of our
17 seven shared values. They are also a big
18 component of our key to success as we outlined in
19 our meeting or exceeding regulatory standards and
20 being environmentally responsible.

21 I'll talk specifically about our
22 distribution integrity management program. I

1 actually pulled this slide from a 2015
2 presentation that I did to our board, one of
3 many, because we talk about DIMP all the time.
4 And this slide really sums up what DIMP is for
5 KUB.

6 It's really more than a regulatory
7 program. We, like many utilities, have been
8 focused on some form of integrity management for
9 years. Our previous program was called Gas Asset
10 Management for instance. We have a Century 2
11 program. This is all about renewals and renewing
12 our systems.

13 But with implementation of this
14 performance-based regulation, we've been able to
15 let the data feed into our risk decision-making
16 that really dictates our actions as opposed to
17 just focusing on one or two factors like age or
18 leaks per mile. You know, we focus on very
19 accurate data because data really influences our
20 decision and shapes our work practices and our
21 path forward, which really directs where and how
22 we spend our budgetary dollars.

1 The data coming from our leak surveys
2 is a key factor in determining our replacement
3 program. And on the next slide, I'm going to
4 talk about how leak survey is critical for
5 integrity management.

6 So we perform a significant amount of
7 leak surveying throughout the year. All of these
8 green items that you see are in some way above
9 and beyond what's required in the Code of Federal
10 Regulations. For residential, for instance, we
11 accelerated from a five year cycle to a three
12 year cycle.

13 We also have several annual surveys
14 that are important for the KUB system. But it's
15 important to remember every system is different.
16 For instance, some states have to worry about a
17 freeze-thaw cycle. Not really an issue here in
18 East Tennessee.

19 But some of our two inch steel pipe
20 was installed with coupling instead of welds, a
21 perfectly acceptable installation practice. But
22 through our leak surveying, we started to see

1 small leaks in our very limited cold weather
2 season.

3 So DIMP identified this as a risk. We
4 created a targeted leak survey program to dive
5 deeper and determine the best time to leak survey
6 to identify the most leaks. We looked at areas
7 within the steel system to target where couplings
8 may be as opposed to welding. And then we used
9 that data to define triggers for more aggressive
10 leak surveying.

11 And we've collected data every year.
12 It's been fed into our replacement programs, and
13 it's significantly impacted our budget and timing
14 over the last four years.

15 This has shown up that we really don't
16 need a full blown steel replacement program in
17 our 60 pound system. In fact, when we pull steel
18 out of the ground, it looks great. But steel is
19 not the issue. It's the couplings, just over
20 time, degrade.

21 So, let me click to the next slide.
22 So when you look at Knoxville, we're a growing

1 city. We're a big mix of downtown, commercial,
2 neighborhoods. We have rural areas. So to
3 perform a leak survey at this level in all those
4 areas, we have a pretty robust program with four
5 full-time leak survey technicians.

6 You can see from the full complement
7 of equipment for each leak surveyor on the list
8 in the right there. Although each of these
9 devices detect methane, there are situations
10 where a device is just going to be more suitable.
11 So that's why they have more devices on the
12 truck.

13 And in general, we survey the services
14 by walking or segwaying using a handheld laser
15 leak detector. And we're mobiling the mains with
16 a traditional laser detector mounted in a
17 vehicle. So just a note, we're not using
18 advanced leak detection technology as you heard
19 earlier.

20 With our method, we are using lower
21 speed and surveying major roads at night for what
22 we believe are really quality leak survey

1 results.

2 We've continued to try new equipment.
3 We've tried drones. We tried laser detection
4 attached to helicopters and just haven't gotten
5 the leak survey results that we were expecting
6 from that so far.

7 With our current approach, our techs
8 are performing several tasks real-time. So
9 they'll find a leak area. They'll pinpoint the
10 leak. They'll make minor repairs if it's
11 something they can tighten, adjust or lubricate
12 onsite. And when they find a Grade 1 leak, they
13 will stay onsite and focus on site safety until
14 the repair crew can come to make the repairs.

15 But for KUB, it's really about making
16 those timely repairs after the leak is either
17 found or reported from a customer. You can see
18 our typical repair time frames here. With a
19 Grade 1 leak, obviously it's going to be
20 immediately. A Grade 2 leak, they're typically
21 repaired at the latest 90 days, usually much
22 earlier than that.

1 Grade 3 leaks are repaired within six
2 months. But, again, many of these Grade 3 leaks,
3 they are all meter set. They're going to be
4 typically at a connection. And those are going
5 to be repaired immediately by either the leak
6 survey tech or a first responder by tightening,
7 adjusting or lubricating.

8 These repair frequencies are really
9 made possible because of all of those previous
10 replacements of pipe that we've made in the past,
11 you know, things like cast iron and other metals
12 that typically leak more.

13 So in some instances, our distribution
14 and integrity management program will lead us to
15 replace an entire system.

16 Again, please remember, every system
17 is different. For KUB, we were early adopters of
18 polyethylene in the 1970s. And our growth
19 periods were in the 80s and 90s. So we didn't
20 have a large amount of cast iron to remove from
21 the system. In fact, we just lumped it together.
22 We consider cast and ductile together

1 historically and tracked leaks that way.

2 And this is one chart that we've used
3 for several years to track pipe replacement and
4 leak rates, which obviously as pipe is removed,
5 leaks go down. And you can see that in the
6 chart.

7 We leak surveyed all remaining cast
8 and ductile quarterly as we went through this
9 process for many years to direct those
10 replacement programs and where would we go and
11 begin replacement next until it was completely
12 removed.

13 Cast iron has been out of our system
14 since 2015. And we've been monitoring a little
15 over a mile of ductile iron that's wrapped up
16 into a Tennessee Department of Transportation
17 project that's a multiyear active project now
18 until we get that last mile completed.

19 So as cast and ductile mileage was
20 decreasing, we kicked off that two inch coupled
21 steel replacement program that I mentioned
22 earlier in 2013.

1 So we've seen that DIMP works for
2 reducing integrity-related leaks. With all of
3 this proactive leak surveying, we are finding
4 more small leaks like the leaks that are in that
5 PAO category. And you can see that here on the
6 right of your screen.

7 Most of these are going to be a small
8 bubble leak on a meter center. And those are
9 repaired usually immediately. But virtually all
10 Grade 1 leaks are coming from dig-ins, which we
11 really see as our highest release of uncontrolled
12 methane.

13 When you look at this chart here,
14 that's all of our leak causes, one of our many
15 charts that we use in our DIMP program. And you
16 see that red represents a Grade 1 leak. And
17 almost all the Grade 1 leaks are under
18 excavation.

19 So as we look at this data and if we
20 want to meet those shared values and keys to
21 success from the KUB blueprint as I mentioned
22 earlier for environmental responsibility and

1 safety, we need to turn our focus to improving
2 our damage prevention programs.

3 So that's kind of the next step for us
4 is putting a more -- we have a very active
5 program, but just really expanding that and
6 making it more robust, especially with the
7 significant amount of construction that's going
8 on in East Tennessee. So with that, that was my
9 last slide.

10 MR. GALE: Thank you, Brooke. Thank
11 you for that excellent presentation. You know,
12 whenever we do a rulemaking activity that
13 involves gas distribution operators, it's really
14 important as part of the team is to consider the
15 impact on the small municipal utilities
16 represented mostly by APGA when we establish
17 these new standards.

18 Some of these operators, as you are
19 probably well aware, have fewer than five
20 employees. So it's something that we look at
21 very seriously as we develop any rulemaking
22 activity affecting those groups. And I greatly

1 appreciate your comments on the excavation damage
2 as we mentioned earlier as we've been diving into
3 this issue. Excavation damage is obviously one
4 of the tools we have to look at as we go forward
5 in this initiative. Thank you again.

6 MS. SINCLAIR: Thank you.

7 MR. GALE: Next up is a representative
8 from the Interstate Natural Gas Association of
9 America. And there will be two presenters for
10 this part of the panel. But first, one of the
11 presenters will be Sandra Snyder.

12 Sandra Snyder is the Vice President of
13 Environment at the Interstate Natural Gas
14 Association of America. And before joining
15 INGAA, Sandra was an attorney at Bracewell LLP's
16 Washington D.C. office, where she represented
17 clients in various environmental rulemaking and
18 permit challenges and provided regulatory
19 compliance advice.

20 From 2006 to 2008, Sandra was an
21 attorney at the New Jersey office of K&L Gates
22 where she handled CERCLA litigation and

1 represented manufacturers of industrial materials
2 and equipment at product liability depositions.

3 The other person representing INGAA
4 will be Mr. Pat Carey. Pat is currently a
5 Director of Operations with Kinder Morgan. He is
6 a mechanical engineer from Western New England
7 College and a professional engineer in Texas with
8 over 40 years in the gas transmission industry.

9 His career includes plan operations,
10 engineering design and measurement, project
11 management on domestic and international projects
12 and management roles in DOT compliance and
13 operation.

14 He has been a member of INGAA, the
15 Pipeline Safety Committee, a member of INGAA's
16 Pipeline Safety Committee for over 20 years.

17 Pat is also member of the industry
18 team that supports the implementation of pipeline
19 safety management systems. With that, I will
20 turn it over to Pat and Sandra. Welcome.

21 MS. SNYDER: Great. Thank you so much
22 for that introduction, John. INGAA appreciates

1 the opportunity to participate in this meeting to
2 discuss PHMSA's leak detection rulemaking.

3 So a little bit about INGAA and who we
4 are. We are a trade association that represents
5 the interstate natural gas transmission and
6 storage industry. We have 26 members that own
7 and operate pipelines that transport natural gas
8 from areas of production to areas of consumption.
9 But we're not the ones that are delivering the
10 natural gas directly to your home. We're kind of
11 like the long haul truckers moving things from
12 one part of the country to another.

13 Our members operate an extensive and
14 interconnected underground network of nearly
15 200,000 miles of natural gas pipeline across the
16 U.S.

17 Our members are very grateful to
18 Congress for passing the PIPES Act, which we
19 supported because we believe that natural gas is
20 essential to addressing climate change.

21 Our members see natural gas as part of
22 the solution to continue to drive down emissions

1 and to support the growth of renewable energy by
2 providing fast ramping generations at times when
3 renewable energy is unavailable.

4 We also recognize that we have a role
5 to play in addressing climate change. And we
6 will look forward to working with PHMSA as well
7 as other stakeholders to develop a leak detection
8 role that is safe, protects the public as well as
9 the environment.

10 Climate change and methane emissions
11 are not new issues to INGAA's members. In fact,
12 we've been very focused on this issue for quite
13 some time. In 2018, members of INGAA agreed to
14 adopt voluntary methane commitments to minimize
15 our methane emissions from our transportation and
16 storage assets, including our pipeline.

17 You can see the full suite of
18 commitments that we made back in 2018 on INGAA's
19 website. But as to the pipeline, our members
20 committed in 2018 to reduce emissions from their
21 blowdowns, which is when the gas leak could be
22 evacuated from the pipeline, such as when we

1 would need to make a repair.

2 Our members are committed to assessing
3 whether recommendations from EPA's Natural Gas
4 STAR Program could be used to reduce the
5 emissions that are released during those blowdown
6 activities.

7 Our members are also committed to
8 install air-driven, low bleed or intermittent
9 pneumatic controllers, which are used to open and
10 close valves unless a different type of pneumatic
11 controller is needed for safety reasons.

12 In 2021, members of INGAA went further
13 by committing to not only reduce our methane
14 emissions but also our CO2 emissions from our
15 operations where natural gas is combusted at our
16 compressor stations.

17 Specifically some of the highlights of
18 our commitments that we made earlier this year
19 are to working together as an industry to achieve
20 net zero greenhouse gas emissions from our
21 natural gas transmission and storage assets by no
22 later than 2050.

1 In order for us to be successful, new
2 technologies will need to be developed, and
3 policies are going to need to change. We're also
4 committed to lowering the combustion intensity of
5 the gas we're transporting not only by reducing
6 the leak, but also by looking for opportunities
7 to transport lower carbon fuel, like renewable
8 natural gas, which could be manufactured from
9 methane, produced at landfills, dairy farms or
10 hog farms. And some of our members are also
11 conducting pilot programs to explore blending
12 hydrogen into natural gas.

13 Obviously, we're a highly regulated
14 industry, and we are required to report a lot of
15 information to EPA. I believe that you all saw
16 some of that data earlier today regarding
17 emissions.

18 We do review those data very
19 frequently to try to assess opportunities to
20 continue to minimize our emissions so that we can
21 do that in a very cost effective as well as
22 productive way so that we can make progress on

1 getting those emissions down.

2 Overall, I would say that we've had
3 good success. According to data that we have
4 reported to ETA, the natural gas transmission and
5 storage sector has reduced its methane emissions
6 by 35 percent from 1990 to 2019, even though at
7 the same time U.S. production of natural gas had
8 gone up 91 percent. So we're transporting
9 obviously a lot more natural gas now through our
10 system. But our emissions have still gone down
11 significantly.

12 Aside from INGAA's voluntary
13 commitments, many of our members do belong to
14 other voluntary programs that are focused on
15 reducing methane emissions. One of those such
16 programs is EPA's Methane Challenge Program.

17 According to EPA, the companies that
18 participated in the Methane Challenge Program
19 reported around 3 million metric tons of CO2
20 equivalent reduction in 2018. Obviously, that's
21 not all from our sector transmission and storage.
22 But participants did report that in 2018, they

1 reduced methane emissions from pipeline blowdown
2 activities in over 600 instances. And they're
3 also repairing and replacing leaking equipment
4 components.

5 From here, I'd like to turn things
6 over to Pat Carey, who is going to discuss some
7 of the specifics about leak detection.

8 MR. CAREY: Thank you, Sandra. Before
9 I get started, I have two slides to really kind
10 of go through some methods and some
11 considerations that we'd like to have as part of
12 this rulemaking process.

13 But one of the things I wanted to
14 mention before I get started is that Kinder
15 Morgan has been a participant in these programs
16 that have been mentioned, STAR Program, Methane
17 Challenge as well as the One Future Program for
18 several years. I can remember being involved
19 with the STAR Program back in the mid-90s when it
20 first got going.

21 You know, being part of that, you
22 know, it demonstrates our commitment to taking

1 the steps that are required in order to reduce
2 our methane emissions. And like INGAA, we look
3 forward to addressing the requirement of the
4 PIPES Act through this rulemaking process.

5 For my part of the panel, what I'm
6 going to do is talk about some leak detection
7 methods that are listed here and then go into
8 some considerations that we would like to have
9 included as part of the rulemaking process.

10 This slide really just provides a
11 summary of current practices of INGAA members.
12 We put out a survey amongst the members, and this
13 represents the responses that we got across the
14 board.

15 And you can see that a lot of the
16 discussions that we've had on some of the panels
17 before, including the industry panel before us,
18 has discussed some of these same methods.

19 One of the things that I wanted to
20 talk about is that these overall methods, I think
21 that the NAPSR, Mary had mentioned this this
22 morning, is that, you know, how you develop these

1 into compliance programs is a key part of that.

2 So we've been looking at these methods
3 and using them for a lot of research and then
4 trying to look at it from an efficiency
5 perspective, where the price points are, given
6 the data that's available and how we drill into
7 the specifics of, you know, a compliance program
8 that would be associated with that.

9 For Kinder Morgan, our base compliance
10 program, you know, really evolves on our patrols,
11 both aerial, fixed wing and helicopter as well as
12 foot patrols. We do supplement that where we
13 have access to the right-of-way by driving with
14 vehicles with centers mounted on those. That's
15 not something that's common across our entire
16 footprint as noted before. Some of our right-of-
17 way just isn't accessible with equipment that we
18 can drive the right-of-way.

19 In specific cases, we've used sensors
20 on some aircraft in the past for compliance
21 programs and have had some pretty good results
22 with those. However, in trying to develop that

1 across the board as a compliance program, we just
2 haven't hit an efficiency. But we have been, you
3 know, noting some of the same issues that EDF
4 brought out in some of their presentation
5 regarding some of the components that would be
6 required for the advance leak detection program
7 that they noted.

8 Some of the solutions that may not
9 have been mentioned before amongst the industry,
10 but I think EDF brought it up, were regarding the
11 satellites.

12 You know, we've looked at satellites,
13 trying to balance the cost of obtaining the data,
14 the resolution and size of tiles. The pixel
15 resolution that we get are balance points in
16 order to develop a compliance program as I noted.
17 And we just haven't found something that really
18 meets our regulatory obligations at this point in
19 time.

20 Along those same lines, continuous
21 monitoring systems are encouraging results. And
22 it's very similar to satellites. And we

1 anticipate as the methods mature and deployment
2 costs improve that these systems could help to
3 address specific issues in areas where we have a
4 higher risk for concern for that particular area.

5 A good example that we have for the
6 development of new technology over time is
7 deployment of our infrared cameras. When we
8 first started using these, they were very
9 expensive, and we had limited numbers of those.

10 As the technologies improved, the cost
11 points have come down, and we're using those on a
12 wider basis as there's now a lot more of them in
13 the field and being able to use those both for
14 our compliance program and some of the other uses
15 that we have in order to meet the commitments
16 that we've made for methane emission reduction
17 programs under STAR, Methane Challenge and One
18 Future.

19 Okay. We'll move to the second slide.
20 As we, you know, move into the rulemaking
21 process, INGAA would like to offer some
22 considerations. We've heard a lot about

1 flexibility. I think Linda mentioned it relative
2 to the deployment of new technology. That's
3 obviously a point for us.

4 But we also look for some flexibility
5 relative to the site specifics that we're trying
6 to address as well as the risks and setting
7 frequencies that are for leak monitoring that are
8 based on threat levels that are out there.

9 You'll hear from a lot of the industry
10 that, you know, we're patrolling on a higher
11 frequency. As I noted, patrolling is our primary
12 means of doing our leak patrols. But a lot of
13 that frequency while we start with the
14 requirements of 192, we supplement that as
15 required -- sorry.

16 We supplement that in order to address
17 the issues with excavation, dig-ins and damage
18 prevention. That was mentioned in Sayler's
19 presentation this morning as well as some of the
20 other presentations that excavation damage is one
21 of the primary concerns from releases and
22 incidents. And that's true for transmission

1 pipelines as well.

2 The added benefit of having the
3 increased patrols is that we're doing a leak
4 survey at the same that we're out there looking
5 for encroachment activity on the right-of-way.

6 INGAA welcomes the development to the
7 rules that provide clarity and regulatory
8 certainty for us. New regulations should offer
9 flexibility for technologies to develop, exactly
10 what Linda was saying before. And, you know, we
11 want to be able to use the efficiency of those
12 programs to be implemented in our leak detection
13 programs where they offer the most benefit to us.

14 The industry has taken significant
15 steps to detect and reduce emissions as
16 demonstrated by some of the EPA numbers that we
17 are seeing this morning under voluntary programs
18 that we have going. The key to these programs is
19 that they offer flexibility to the participants.

20 While being on the cutting edge of
21 technology is an ideal situation, certain
22 technologies are costly. Additionally, some of

1 this technology may never mature and remain too
2 expensive to implement while others improve and
3 become more cost effective.

4 For instance in the infrared camera
5 example I mentioned earlier is one of the
6 technologies that we have seen improve over time
7 and is being used on a much wider basis for us.

8 We look forward to the technology
9 developing and other technologies developing into
10 solutions as well.

11 Thank you for the opportunity to be
12 part of this panel. John, that's all I had.

13 MR. GALE: Thank you, Pat and Sandra.
14 And I have to say, you know, we greatly
15 appreciate the commitment that all the gas line
16 pipeline operators have made to address this very
17 important issue well before any rulemaking is
18 published.

19 So that being said, our next panelist
20 is representing the Gas Processors Association.
21 It's Mr. Matt Hite. Matt Hite is the GPA
22 Midstream Vice President of Government Affairs

1 and leads the Association's federal advocacy
2 activities in Washington, D.C.

3 Prior to joining GPA Midstream in
4 January of 2015, Matt served as policy counsel
5 and committee executive to the Environmental
6 Technology and Regulatory Affairs Division at the
7 U.S. Chamber of Commerce.

8 In that role, he handled a variety of
9 environmental issues and also managed the
10 Chamber's environment and agricultural committee,
11 the policymaking body for environmental and
12 agricultural issues and initiatives.

13 Before joining the Chamber, he spent
14 close to a decade working on Capitol Hill. He
15 was senior counsel to ranking member Jim Inhofe,
16 a Republican from Oklahoma, on the U.S. Senate
17 Committee on Environmental and Public Works where
18 he handled a number of environmental and agency
19 oversight and regulatory issues.

20 Prior to that, he worked on energy and
21 environmental issues for Congressional members
22 from Alaska, Idaho and Ohio. Matt, I'll turn it

1 over to you, sir.

2 MR. HITE: Hey, thanks, John. Can you
3 hear me okay?

4 MR. GALE: I hear you fine, sir.

5 MR. HITE: Great. Thank you very much.
6 Good afternoon. My name is Matt Hite, and I'm
7 the Vice President of Government Affairs for GPA
8 Midstream Association.

9 I wanted to start out by saying thank
10 you to PHMSA for giving me this opportunity to
11 speak to you today. I also wanted to thank John
12 Gale for picking us and also wanted to thank my
13 fellow panelists for sharing their insights on
14 this very important topic.

15 I think everyone involved in this
16 public meeting shares PHMSA's commitment to
17 pipeline safety, and its desire to establish
18 reasonable risk-based requirements for improving
19 pipeline leak detection and repair and reducing
20 methane emissions.

21 So in terms of my presentation, I'd
22 like to spend a few minutes discussing some of

1 the topics related to leak detection and repair
2 that are important to the midstream industry.

3 First I'll provide a brief
4 introduction that describes the membership of GPA
5 Midstream Association, an important role that the
6 midstream sector plays in the nation's energy
7 transportation network.

8 Second, I'll provide a brief summary
9 of the two statutory provisions in the 2020 PIPES
10 Act that are relevant to the issues under
11 consideration today.

12 Third, I'll provide a quick overview
13 of PHMSA's current safety standards for onshore
14 gas gathering lines, including the leak detection
15 and repair requirements that apply to the two
16 types of regulated gathering lines.

17 Finally, I'll close with some thoughts
18 from a midstream perspective on the factors that
19 PHMSA should consider in establishing leak
20 detection and repair requirements for gas
21 gathering lines.

22 GPA Midstream Association is a trade

1 association that advocates on behalf of the
2 midstream industry. We represent nearly 70
3 corporate members engaged in midstream
4 activities, and our members account for more than
5 90 percent of the natural gas liquids produced in
6 the United States.

7 For those in the audience who may not
8 be familiar, the midstream industry performs a
9 critical function in the nation's energy
10 transportation network. Midstream companies
11 primarily operate pipelines that are known as
12 gathering lines.

13 As the name suggests, gathering lines
14 are used to collect the oil and gas that is
15 produced at the well and transport those products
16 to a centralized location that typically contains
17 what is known as a processing plant.

18 Processing plants are used to remove
19 impurities and create merchantable energy
20 products, including natural gas liquids and
21 pipeline quality natural gas.

22 These energy products are transported

1 from processing facilities by pipeline or other
2 modes of transportation, like trucks and rail
3 cars, and eventually delivered to customers for
4 use in heating homes and small businesses,
5 running power plants and factories or serving as
6 feedstock for petrochemical plants.

7 The Pipeline Safety Act -- sorry about
8 that. I'm a little slow on the slides here. The
9 Pipeline Safety Act is the law that authorizes
10 the Federal Pipeline Safety Program. Like many
11 other similar laws, the Pipeline Safety Act is
12 subject to periodic review and reauthorization by
13 the United States Congress.

14 Congress passed the latest
15 reauthorization of the Pipeline Safety Act in
16 December of last year. That law, known as the
17 2020 PIPES Act, was enacted as part of a broader
18 appropriations and COVID-19 relief package.

19 The 2020 PIPES Act reauthorizes the
20 Federal Pipeline Safety Program through September
21 30, 2023, which is the end of the 2023 fiscal
22 year for the United States government.

1 GPA Midstream Association and other
2 midstream industry stakeholders supported the
3 passage of the 2020 PIPES Act and made
4 significant contributions to the leak detection
5 and repair provisions that we are discussing here
6 today.

7 So Section 113, I'm sure you've heard
8 a lot about that today, Section 113 of the 2020
9 PIPES Act contains what is known as a rulemaking
10 mandate.

11 In a rulemaking mandate, Congress
12 typically directs a federal agency to issue a new
13 rule or regulation to achieve a particular policy
14 objective. The rulemaking mandate in Section 113
15 focuses on gas pipeline leak detection and repair
16 and directs PHMSA to issue final regulations on
17 that topic by December of this year.

18 However, the applicability of Section
19 113 to gas gathering lines is limited. The
20 rulemaking mandate only applies to regulated
21 onshore gas gathering lines in Class 2 locations,
22 Class 3 locations and Class 4 locations. That

1 limitation is important and coincides with the
2 risk-based approach that PHMSA currently uses in
3 regulating gas gathering lines.

4 Section 113 contains additional
5 criteria that PHMSA must consider in establishing
6 leak detection and repair requirements for
7 regulated gas gathering lines, which I'm not
8 going to review in detail here.

9 Finally, and it's worth noting that
10 Section 113 does not otherwise restrict PHMSA's
11 authority to regulate gas gathering lines under
12 the definitions provided in the Pipeline Safety
13 Act.

14 Those definitions require PHMSA to
15 consider certain factors in exercising
16 jurisdiction and establishing safety standards
17 for gas gathering lines.

18 Section 114 contains what is known as
19 a self-executing mandate. In a self-executing
20 mandate, Congress typically creates a legal
21 obligation that applies directly to a regulated
22 party without further agency action.

1 This self-executing mandate in Section
2 114 requires jurisdictional gas pipeline
3 operators to make certain updates to their
4 inspection and maintenance plans by December of
5 this year.

6 Consistent with the limitations of the
7 Pipeline Safety Act and PHMSA's regulations, it
8 is GPA Midstream Association's understanding that
9 the self-executing mandate in Section 114 only
10 applies to regulate onshore gas gathering lines
11 in Class 2 locations, Class 3 locations and Class
12 4 locations.

13 PHMSA currently exercises jurisdiction
14 over two categories of regulated onshore
15 gathering lines. The first category known as
16 Type A gathering lines, include higher stress or
17 higher operating pressure pipelines in more
18 populated Class 2 locations, Class 3 locations or
19 Class 4 locations.

20 The second category, known as Type B
21 gathering lines, include lower stress or lower
22 operating pressure pipelines in Class 2

1 locations, Class 3 locations and Class 4
2 locations.

3 PHMSA applies different risk-based
4 rules to Type A gathering and Type B gathering
5 lines, including for purposes of leak detection
6 and repair, a topic that I'll discuss in more
7 detail on the next slide. PHMSA's rules do not
8 currently apply to gas gathering lines in
9 sparsely populated Class 1 locations.

10 Different leak detection and repair
11 requirements apply to Type A gathering lines and
12 Type B gathering lines under PHMSA's operations
13 and maintenance regulations.

14 Type A gathering lines, which
15 generally present a higher potential risk to
16 public safety, are subject to the same
17 requirements as gas transmission lines.

18 The relevant requirements include
19 promptly repairing hazardous leaks, conducting
20 pipeline right-of-way patrols and leak surveys as
21 specified in the rules, performing repairs and
22 keeping and maintaining certain records.

1 Type B gathering lines, which
2 generally present a lower potential risk to
3 public safety are only subject to two specific
4 requirements. The requirements include promptly
5 repair hazardous leaks and conducting leak
6 surveys at specified intervals.

7 Type A and Type B gathering line
8 operators are using a variety of practices to
9 comply with leak detection and repair
10 requirements. In PHMSA's operations and
11 maintenance regulations, for example, operators
12 are using aerial vehicle or foot patrols to
13 conduct visual surveillance and perform leak
14 surveys of the pipelines right away.

15 Operators are also performing leak
16 surveys with a variety of equipment including
17 infrared, flame, ionization, laser gas detection
18 and other technologies.

19 I wanted to conclude my presentation
20 by highlighting some of the factors that GPA
21 Midstream Association members who would like
22 PHMSA to consider in establishing leak detection

1 and repair requirements for gas gathering lines.

2 First, gathering lines are different
3 from transmission and distribution lines in
4 several important respects. As indicated earlier
5 in my presentation, Section 113 only applies to
6 regulated gas gathering lines in Class 2
7 locations, Class 3 locations and Class 4
8 locations.

9 PHMSA needs to be mindful of that
10 limitation in evaluating the cost, benefits and
11 other impacts of applying new leak detection
12 repair requirements to gathering lines.

13 As important, gas gathering lines are
14 generally not subject to regulation as public
15 utilities. Unlike gas transmission and
16 distribution operators, gas gathering line
17 operators cannot shift the cost of additional
18 regulation onto captive ratepayers.

19 The midstream industry functions in a
20 much different market environment. And these
21 costs will be absorbed by gas gathering line
22 operators more directly, particularly in the

1 near-term.

2 Finally, and perhaps most importantly,
3 any new leak detection and repair requirements
4 should be risk-based and effective. And with
5 that, that concludes my presentation.

6 MR. GALE: Thank you, Matt. And thank
7 you for that excellent presentation. Seeing we
8 only have about 15 minutes left, I think we're
9 going to turn it over to Sam and the operator and
10 see if we have any public questions right now.

11 I don't know if we're going to have
12 any time for our seed questions, but we'll see as
13 time permits. Sam, I'll turn it over to you and
14 the operator.

15 MR. HALL: All right. Thank you, sir.
16 As a reminder to our audience, if you are dialed
17 into the conference line on your telephone, the
18 operator will give you instructions for getting
19 into the queue in just a moment.

20 If you're not dialed in, please enter
21 your question or your comment in the Q&A box
22 that's on the left side of your screen.

1 Operator, would you please give instructions for
2 how to get in the queue?

3 OPERATOR: Hello, ladies and
4 gentlemen. If you would like to ask a question,
5 press 1 then 0 on your telephone keypad.

6 MR. HALL: While we wait for folks to
7 queue up, we have a comment from let's see,
8 Udeozo Ogbue from DC. He has a question for Mr.
9 Bull.

10 Sometimes operators make a temporary
11 repair to a Grade 1 leak to justify downgrading
12 the leak to Grade 2. I know no one size fits
13 all, but what are your good examples of temporary
14 repairs to a Grade 1 leak to justify downgrading
15 it to a Grade 2 leak?

16 MR. BULL: That would certainly fall
17 to the operator's discretion where our guidance
18 in a leak classification allows a leak to be
19 monitored until repaired or regraded.

20 So without going back and skimming
21 through the guide itself, those specific examples
22 of downgrading would really be up to the operator

1 because there's many ways to do that.

2 MR. GALE: And, Sam, if I may, I know
3 as we've developed the rulemaking, we're looking
4 at the issue of downgrading and concerns have
5 been expressed by many on an operator's ability
6 to downgrade a leak by performing certain tasks.
7 So that's definitely something we're looking at
8 as we develop that rulemaking.

9 MR. HALL: Very good. We have a
10 question from Alan Septoff. Why should we trust
11 emissions factor assessments when bottom-up
12 direct measurements show that estimates like EFs
13 systemically undercount actual emissions?

14 MR. GALE: Thank you, Sam. Christina,
15 any comments on that?

16 MS. SAMES: Yes, hopefully you can
17 hear me. We're in the middle of a major
18 thunderstorm right now so.

19 MR. GALE: We hear you good. Yes.

20 MS. SAMES: Okay. Good. You know,
21 what we have found is -- and we've done studies.
22 And some of those studies were listed in my

1 slides where we've done top down and bottom-up.
2 And what you're trying to figure out is where do
3 things meet and where are they just connecting?

4 And so I -- you know, the emission
5 factor portion, I think what we've heard
6 throughout the day is they're not perfect. And
7 there are other ways to get to something that may
8 possibly give a better indication. But they're
9 the best we have right now.

10 You heard certain individuals talk
11 about moving technologies to do quicker
12 assessments for exactly how much is being emitted
13 from a particular source. And all of those are
14 progressing and progressing pretty nicely. I'm
15 sure we're going to hear a lot more about this
16 tomorrow.

17 But I would say my takeaway is really
18 -- you know, the top down kind of gives you an
19 indication of where things may exist. The
20 bottom-up, that on ground measurement, is going
21 to give you things that are very more specific.

22 And the emission factors, they're,

1 again -- not again. They're an estimate based on
2 the knowledge that we have of how much is being
3 emitted from various sources. Some emission
4 factors are good because there was a lot of
5 research into it, a lot of examples. Other
6 emission factors need to continue to be updated.
7 Hopefully, that helps.

8 MR. GALE: Thank you, Christina. Sam,
9 I think we're ready for the next question.

10 MR. HALL: We have a follow-up from
11 Mr. Septoff, Alan Septoff. He says, similarly,
12 how do you connect these goals to reality? What
13 direct measurements are being done to determine
14 if AGA member companies are achieving their
15 goals?

16 MR. GALE: Christina, I think I have
17 to turn to you again on this. I'm sorry.

18 MS. SAMES: Yes. Hey, not a problem.
19 So, you know, what we've done, and I really
20 recommend that people go to AGA's website to get
21 additional information, because I'll try to
22 convey at a high level all the things we've been

1 doing and how we're measuring. And that includes
2 reporting that we worked on with the Edison
3 Electric Institute and others to show actually
4 our greenhouse gas emissions to report that in a
5 public form.

6 We have a lot of information on our
7 website on what's now being reported. So there
8 is public information that we're putting out. We
9 also have commitments. And you can go onto the
10 individual company website to get more
11 information.

12 They do very -- we're still working
13 through all that standardization. I think you
14 saw from my very last slide how dramatically
15 things are moving in just a year. So this is
16 something that we're taking unbelievably
17 seriously.

18 One of our key missions is
19 environmental stewardship. And, you know, some
20 of this is EPA data. Some of this that we're
21 reporting to EPA. But I would say that there's a
22 variety of ways right now that you can do a deep

1 dive into companies to get information that is
2 exactly what you're looking for. And start with
3 the AGA website.

4 MR. GALE: Thank you, Christina. Sam,
5 back to you.

6 MR. HALL: Pamela Lacey has commented
7 in the Q&A but she can add to Christina's remarks
8 on emission factors. Operator, is Pamela in the
9 queue?

10 MS. SAMES: That's great --

11 MR. HALL: Yes. Sorry, Christina.

12 MS. SAMES: -- because Pam's one of my
13 experts.

14 MR. HALL: Go ahead, operator.

15 OPERATOR: Pam, your line is open for
16 asking a question.

17 MS. LACEY: I can fill in a couple of
18 things. Actually, on that last point, if folks
19 want to look at the sustainability environmental
20 social governance link on our website, you will
21 find a template that we've put together with EEI
22 for members to report their ESG metrics.

1 And then under about us and investor
2 relations, look for the Natural Gas
3 Sustainability Initiative, NGSi, and that
4 provides methane intensity metrics that we put
5 together with MJ Bradley and coordinating with
6 One Future.

7 And that includes not just what's
8 reported under the Subpart W EPA reporting rule
9 but also sources and emissions that fall below
10 the reporting threshold. There's a lot of
11 information there. And there's actually an
12 initiative by RMI called MiQ, and they're using
13 the NGSi metric. Sorry about all the acronyms.

14 And then on emission factors, the peer
15 reviewed scientific study that was published by
16 the Colorado State University, Dan Zimmerle's
17 group, did a study for DOA that compared top down
18 emission measurements on an airplane, fixed wing,
19 with bottom-up measurements, using all of the
20 technologies available, and found that the
21 differences that are being found in the bottom-up
22 measurements that are the basis for the emission

1 factors are based on accurate measurements. It's
2 just that there's a difference in the timing.

3 So the airplane flies overhead. It
4 gets a snapshot of an hour or less of operations
5 at a particular site. But it might be at a time,
6 and this was found in the study, sometimes it
7 was, that there were intermittent emissions that
8 was higher, like, from manual liquids onboarding.
9 And then the other studies that only did that
10 kind of flyover then could assume that that
11 higher emissions level would be something that
12 would continue 24 hours a day, 365 days a year
13 and then end up saying, wait a minute, that
14 bottom-up measurement must be off when in fact it
15 was a difference in timing.

16 That isn't to say that all of the
17 emission factors are perfect. Some of them are
18 overcounting emissions because they are still
19 based on that 1996 study that our EPA panel
20 mentioned. But as we get more data from more
21 peer reviewed science, those data gaps are
22 reducing and the emission factors are getting

1 more accurate.

2 And one more thing there's also a new
3 rather exciting thing happening that members or
4 companies can do company specific bespoke
5 emission factors based on measurement campaigns
6 in their own service area. So more on that.
7 We'll put that in the record. But there's a lot
8 of exciting information out there. Thanks.

9 MR. GALE: Thank you so much. Sam, I
10 actually do think I'm going to ask my panel a
11 question. I know we're running a little short on
12 time. But I think this is an important question
13 to ask. And I want to share the wealth a little
14 bit.

15 And, Matt, I think I'm going to start
16 with you on this one if it's okay. Under Section
17 114 of the PIPES Act, it requires operators to
18 revise their O&M plans to eliminate hazardous
19 leaks and minimize release of natural gas.

20 What specific steps do you think
21 operators should in their O&M and follow in order
22 to eliminate hazardous leaks and minimize

1 fugitive embedded emissions from the gas
2 pipelines knowing that this is something that
3 goes into effect at the end of this year? Matt?

4 MR. HITE: Hey, John. Sorry about
5 that. I guess we're looking at 114 more as this
6 is something that you guys will be completing by
7 the end of this year, and it would be more for
8 members to not only step up to comply with it but
9 also to -- I'm trying to think. I've lost my
10 train of thought here. I'm sorry.

11 We think that this is probably going
12 to be more of a continuation of what they're
13 already doing or as the section requires an
14 update, so what they're supposed to be doing.

15 MR. GALE: Okay. And just one thing
16 to point out. As Mr. Tristan mentioned earlier
17 at the very beginning of this, we plan on issuing
18 an advisory bulletin here in the coming weeks
19 pointing out this requirement, making sure people
20 are aware of this.

21 I know some of the trades have sent
22 out information to the operators and some of the

1 presentations today have talked on this issue.

2 So thank you for that feedback, Matt.

3 Pat and Sandra, any comments there
4 from INGAA on Section 114 and vented and fugitive
5 emissions?

6 MR. CAREY: Sure. Sandra, I assume
7 that you want me to take this one.

8 MS. SNYDER: Yes, please.

9 MR. CAREY: Okay. When I look at 114,
10 the example that comes to mind is going to be
11 when an operator needs to perform an O&M process
12 that would require a blowdown or something that,
13 you know, we would want to use, possibly a pump
14 down, where we're going to remove the pressure
15 from the line or recover the gas into adjacent
16 lines or draw down to a particular LDC that we
17 could lower the pressure.

18 Having procedures address those, it
19 would be a key part of what should be in those
20 O&M procedures. And we need to consider various
21 factors as part of that O&M process.

22 How quickly it can be done and if you

1 have a leak that, you know, it's a hazardous leak
2 and it's going to take you three weeks in order
3 to get the equipment in place. Doing so requires
4 an outage on a vendor -- I mean, on the LDC for,
5 you know, an additional four days in order to
6 allow the pump down. Those are things that all
7 have to be part of the evaluation process. If
8 this is something that happens in a winter
9 environment, that additional outage for the LDC
10 is something that would tax their system, then it
11 may not necessarily make sense.

12 Those evaluations need to be done and
13 should be laid out in an O&M procedure that would
14 cover that.

15 MR. GALE: Thank you, Pat. Brooke,
16 any comments, any thoughts, on Section 114?

17 MS. SINCLAIR: Yes. I think, you
18 know, we've worked to have a pretty aggressive
19 repair schedule. As it is, I think we would take
20 another look at that and just focus on leaks with
21 a higher rate.

22 But I would say in general if we have

1 a Grade 1 hazardous leak, it's being repaired
2 within about two hours in general.

3 So we look at ways that we can make
4 more improvements there. And one of those is
5 where we install a lot of valves. So we've got
6 about 24,000 valves on our system in a 2,500 mile
7 system. So there might be some other options
8 related to that as well that we would look at.

9 MR. GALE: Thank you. And if I
10 remember right from your slights, KUB repairs all
11 leaks, right? All Grade 3 leaks have a time
12 period for repairs, is that correct?

13 MS. SINCLAIR: We repair everything.

14 MR. GALE: That's very proactive on
15 your part. Thank you. Christina, any thoughts
16 on Section 114, ma'am?

17 MS. SAMES: Yes. It really gets to
18 some of the things that I already had in my
19 slides. So it's taking a different look.
20 Instead of looking at it solely through the lens
21 of public safety, now you're taking into account
22 the environment.

1 So we'll want to continue our efforts
2 to replace pipes, look at ways to if at all
3 possible to do that faster, to reduce the number
4 of years to get rid of the cast iron and the bare
5 steel and adding that into your plans.

6 Looking at different ways to
7 increasing further your excavation damage
8 efforts. But really then looking at using what
9 you're already doing, those leak surveys to now
10 look for those higher emitters.

11 And I think that really is the key
12 here. We're already doing the leak surveys.
13 We're already out there. Unlike some of the
14 other parts of the system, we're adding odorants.
15 You know, we're capped into the system so that
16 members of the public can smell that there's a
17 potential issue so that we can investigate it.
18 We're not catching it on our own. And as we're
19 going out there, if it's a higher emitter, okay,
20 well now take that into account.

21 So a different way of looking at
22 things. But, again, a lot of it is things we're

1 already doing just in a slightly different
2 fashion.

3 MR. GALE: Thank you, Christina. And,
4 Sam, correct me if I'm wrong. I think I'm
5 getting a flag to say that it's time to wrap-up.
6 Is that correct?

7 MR. HALL: I see it is indeed, sir.

8 MR. GALE: All right. Thank you.
9 Again, I want to thank all of my panel members
10 for participating in this. I want to thank
11 everyone that's been involved in this initiative
12 from the public meeting to the rulemaking to the
13 legislation. Your input, your advice and your
14 guidance is very important as we move forward.

15 I just want to close with a couple of
16 statements real fast. An aspect of this
17 rulemaking which I find a little different than
18 most rules that we developed is that we're not
19 looking at this issue from a singular rulemaking
20 development focus, but it's an overall methane
21 reduction strategy.

22 As we continue to examine this issue,

1 we're bringing it to our executive leadership.
2 And I have to tell you, it's a very receptive
3 leadership team I might add. There are a variety
4 of possible solutions to this complex issue, some
5 of which don't address regulatory changes or even
6 areas within PHMSA's authority.

7 And some of these areas have been
8 brought up several times today. And some of
9 these include the self-executing provisions of
10 Section 114 that we just referred to and the
11 impact of the rules as we develop them, the use
12 of home methane detectors, cast iron and bare
13 steel pipe replacement, the use of rates in
14 mitigating methane emissions and additional focus
15 on the excavation damage prevention.

16 To be perfectly clear, our goal is to
17 reduce methane emissions, the answer which is not
18 singular nature or that involves a multitude of
19 tools to address.

20 Thank you for your time. And, Sam,
21 I'm going to turn it back over to you, sir.

22 MR. HALL: Thank you, John, and thank

1 you to our panelists and to those of you who
2 provided comments and questions. We do apologize
3 that we weren't able to get to all of the written
4 comments on the Q&A.

5 And if there were any folks queued up
6 in the telephone call, we apologize that we were
7 not able to get to you. Please rest assured that
8 your questions that you enter into the Q&A box
9 are recorded and will be reviewed by PHMSA staff
10 as we undertake our future efforts.

11 We're now going to transition to the
12 public comment period of the day's agenda.

13 Again, my name is Sam Hall. And I'm a Program
14 Manager in the Office of Pipeline Safety. And
15 I'll be moderating this comment session.

16 This session is not a question and
17 answer session. The reason for that is that the
18 technology really doesn't support all of our
19 panelists being on the call at the same time to
20 answer questions as they're received.

21 So we're using this opportunity so
22 that people that are dialed into the conference

1 or viewing this conference to make comments
2 without the opportunity to have questions
3 answered.

4 Again, if you wish to make a comment
5 with your voice, you must be dialed into the
6 conference line, which is available to you in the
7 top left corner of your screen. And the AT&T
8 operator will provide instructions regarding
9 making a comment.

10 If you're not dialed in, you can use
11 the Q&A box on the lower left side of your
12 screen. And we'll try to reiterate your comments
13 to the audience.

14 We ask that you keep your comments to
15 two minutes or less. We want to provide
16 opportunity for all to comment within the time
17 allotted on the agenda, which is until 5 o'clock.

18 And I'll be encouraging commenters to
19 wrap up their comments within two minutes. I'll
20 do that politely.

21 Of course, please keep your comments
22 professional and within the scope of this public

1 meeting. We, of course, do reserve the right to
2 cut off any commenters who refuse to yield the
3 floor or who cause a deliberate disruption to the
4 proceedings. But, of course, we do not
5 anticipate having to do that.

6 Once again, to reiterate other
7 opportunities for comment, we do have a docket
8 that is open for public comment. And we strongly
9 encourage you to submit your comments to that
10 docket by May 24.

11 With that, I'll turn it over to the
12 AT&T operator, who can provide instructions on
13 how to ask a question over the telephone
14 conference line. And we'll begin monitoring the
15 Q&A box for your comments.

16 OPERATOR: Once again, if you do have
17 a question through the phone, press 1 then 0. We
18 do have a couple people that have queued up. One
19 moment as their names are gathered.

20 It looks like our first question is
21 from the line of Eric Olivier, please go ahead.

22 MR. HALL: Mr. Olivier, if you would

1 please, say your name and spell it please for the
2 record?

3 MR. OLIVIER: Of course. My name is
4 Eric Olivier, E-R-I-C O-L-I-V-I-E-R. And so I'm
5 from Arkema. We're a specialty chemicals
6 materials manufacturer. And one of our product
7 lines is actually gas odorant. So we've been
8 manufacturing and supplying odorants to the
9 natural gas industry for several years now. And
10 today there have been a couple of brief
11 references to odorization.

12 Arkema would simply like to offer
13 ourselves as a resource to PHMSA and any other
14 participants with any questions regarding
15 odorant. And we're looking forward to supporting
16 PHMSA as you consider these issues further.

17 MR. HALL: Thank you for your comment,
18 sir. Operator?

19 MR. OLIVIER: Thank you.

20 OPERATOR: And our next question and
21 comment is from Paul Hartman. Please go ahead.

22 MR. HARTMAN: Hi. Good afternoon.

1 Paul Hartman with the American Petroleum
2 Institute. First I want to thank PHMSA for
3 proactively holding this workshop and providing a
4 forum where all stakeholders have an opportunity
5 to provide feedback and recommendations on any
6 future rulemaking regarding leak detection and
7 repair.

8 As many of my colleagues have stated
9 previously, our industry is committed to playing
10 our part in reducing environmental impacts from
11 our operations and maintenance.

12 Our industry remains devoted to the
13 development and deployment of new technologies
14 and practices through industry initiatives such
15 as the Environmental Partnership to better
16 understand, detect and mitigate emissions.

17 Under the partnership, nearly 90
18 participating companies, including many industry
19 operators, are taking voluntary action to further
20 cut methane emissions beyond the 70 percent
21 emission rate reductions already achieved in the
22 largest producing U.S. regions.

1 The partnership is a voluntary program
2 that focuses on solutions that are technically
3 feasible, commercially proven and will result in
4 significant emissions reductions.

5 Specifically, the partnership is
6 focusing on reducing emissions from pipeline
7 blowdowns used to depressurize the pipeline for
8 repairs, operations and compressors.

9 Additionally, EP recently announced a
10 new climate action framework that serves as an
11 economy-wide blueprint to further reduce
12 emissions and advance low carbon technologies.

13 In addition to endorsing a carbon
14 price policy and advancing cleaner fuels, the
15 framework also looks to reduce emissions by
16 accelerating technology innovations, further
17 mitigating emissions from operations and driving
18 climate reporting.

19 With respect to leak detection
20 requirements, PHMSA should also make a clear
21 distinction in its rulemaking between pipeline
22 leak detection and repair requirements at

1 facility LDAR requirements.

2 Also PHMSA should not overlap its LDAR
3 regulation with existing or planned EPA LDAR
4 regulations that cover midstream compressor
5 stations, transmission compressor stations and
6 natural gas processing plants.

7 If PHMSA plans to prioritize risk
8 mitigation efforts associated with LDAR, the
9 agency should focus on cast iron and cathodically
10 unprotected steel pipelines, which are widely
11 regarded to be more prone to leaks.

12 Additionally, leak survey frequency
13 criteria should be reflective of the relative
14 risk of the pipeline involved with respect to
15 material of construction and cathodic detection.

16 As PHMSA looks to update leak
17 detection regulatory requirements, there is also
18 a number of pending regulations supported by the
19 industry through the public comment and advisory
20 committee process that would support the
21 reduction of NG emissions and environmental
22 impacts simply by expanding the breadth of

1 pipelines covered by the regulations and changes
2 in the law for the use of advanced technologies
3 for repairs and additional valve installations to
4 provide for more rapid shutdown of pipelines.

5 The comments from my colleagues
6 earlier are reflective of our position on leak
7 detection, specifically ensuring that PHMSA
8 considers a risk-based fit for purpose framework
9 that allows for operator flexibility in
10 determining the right technologies and practices
11 for carrying out a programmatic approach to leak
12 detection.

13 Thank you again for hosting this forum
14 today.

15 MR. HALL: Thank you for your
16 comments, sir. Operator, next commenter.

17 OPERATOR: We currently have no other
18 commenters. But once again if you do, press 1
19 then 0.

20 MR. HALL: Thank you, sir. We have a
21 comment from George Ragula, R-A-G-U-L-A, on the
22 Q&A box. He says performance based regulations

1 are key as opposed to prescriptive based. There
2 are a number of options available to meeting
3 emission goals -- emission goal reductions
4 without specifically requiring the use of ALDs
5 but still have issues associated with their
6 practical use.

7 Thank you for that comment, sir. Any
8 other comments?

9 OPERATOR We have no further comments
10 on the phone.

11 MR. HALL: Thank you, sir. We'll give
12 it two or three minutes. If someone wishes to
13 make a comment on the telephone call or the Q&A
14 box, please do so. If we don't receive any in
15 the next two to three minutes, we'll wrap up.

16 OPERATOR: It looks like someone else
17 has just queued up. Just one moment as her name
18 is gathered.

19 MR. HALL: Very good. Thank you.

20 OPERATOR: And we have a comment from
21 the line of Kate Smits.

22 DR. SMITS: Hi. My name is Kate, K-A-

1 T-E Smits, S-M-I-T-S. And I'm a professor at the
2 University of Texas, Arlington.

3 And I want to thank PHMSA for hosting
4 this session today. It's been very informative
5 from my perspective with doing research. And I
6 wanted to offer a comment about when we think
7 about and define ALD, advanced leak detection,
8 that it really should take a three axis approach
9 to link the instrument capability with the
10 deployment method and then, of course, the
11 analytics behind it.

12 And it seems today there was a lot
13 focus on defining the capability. So, for
14 example, the discussion on the sensitivity of an
15 instrument. But this really needs to be linked
16 with the deployment method and then the third
17 component of the analytics, which is key. And
18 the analytics can be anything from a complicated
19 model to an analytics solution or even someone's
20 brain that's taking in data and making real-time
21 decisions with that information.

22 I wanted to add also that key for leak

1 detection is understanding the environmental
2 conditions in which the leak detection is
3 performed. And I've done quite a bit of research
4 on this and demonstrated how emissions are widely
5 affected by both above and below ground
6 conditions. And these effects should be
7 incorporated into the deployment method. And by
8 not including such information, it can
9 potentially lead to misclassification of leaks.

10 What I wanted to offer PHMSA, and it
11 seems there's been a little discussion on what we
12 need to do going forward. We have yet to develop
13 and test different protocols that can reliability
14 assess natural gas leak detection and
15 quantification solutions under a range of
16 representative field conditions for pipeline
17 leaks and areas. And it seems that we are
18 relying instead on a few select studies in order
19 to make these clear performance-based standard.

20 So I think until we do that, until we
21 develop and test these protocols to reliably
22 assess the leak detection and quantification

1 solution, it is a difficult goal to define clear
2 performance-based standards. Thank you very
3 much.

4 MR. HALL: Thank you for your comment.
5 Operator, do we have any others in the queue?

6 OPERATOR: No more people are in
7 queue.

8 MR. HALL: No more people in queue,
9 and we have not yet received any further comments
10 in the Q&A. We'll give it just a few minutes.
11 Operator, again, to make a comment, it's dial 1,
12 0, correct?

13 OPERATOR: Absolutely correct, 1 then
14 0.

15 MR. HALL: We'll give it one
16 additional minute. Thirty seconds to jump in and
17 make a comment if you have one. Dial 1 and then
18 0 on your line or make a comment in the Q&A box.
19 Okay.

20 Not hearing any additional comments,
21 we thank you very much. This concludes the
22 public comment period. We do appreciate the

1 comments we received. And those will be entered
2 into the record.

3 We're now going to transition to the
4 closeout and wrap-up for the day. Again, please
5 welcome Alan Mayberry, Associate Administrator
6 for Pipeline Safety. Go ahead, Alan.

7 MR. MAYBERRY: Well, thank you, Sam.
8 And, you know, a big thanks to you for
9 participating today and to our panelists and
10 moderators. I'm going to claim victory today on
11 a very productive session that we've had. We'll
12 be back again tomorrow.

13 But just to summarize today, I was
14 very impressed with -- we had three panels. The
15 first panel in the morning, the government panel
16 that included the EPA, PHMSA and states and that
17 was marked by a discussion of data. Something
18 that's very informative from the EPA and the
19 various programs that they have there.

20 And then with Sayler with PHMSA
21 talking a good bit about the PHMSA data that's
22 out there. And, of course, Mary representing

1 NAPSAR and the state perspectives on where we go
2 with all of this.

3 A lot of questions related to
4 technology that I think will be covered tomorrow.
5 So I look forward to that.

6 The second panel after lunch included
7 the public. We had two members of the public,
8 one, the Environmental Defense Fund. And, Erin,
9 I appreciate your discussion of best practices.
10 And I believe you had the discussion there about,
11 or mention of, a minimum leak size that I took
12 note of.

13 And then with Bill from Pipeline
14 Safety Trust, you know, thank you certainly for
15 underscoring the power of the legislation as far
16 as the paradigm shift that it represents and
17 certainly the shift in culture or the challenge
18 that you recommended that, you know, we all
19 undertake as we move to, you know, transition or
20 focus from solely public safety, protecting
21 people and the property to also including, you
22 know, reducing greenhouse gas emissions. And

1 certainly your mention of using all the tools on
2 the table was a fair point as well.

3 And then moving on to the industry
4 panel. Bull, thanks for your discussion of the
5 GPTC guide. And, Christina, you know, a review
6 of the commitments made by the local distribution
7 companies I took note of and, you know,
8 encouragement of policies that were flexible.

9 I think Brooke with KUB, you know, it
10 was interesting to hear your journey through
11 managing risk. I was quite impressed. You know,
12 interesting, you know, with your newer system
13 it's probably understandable that your main
14 source of Grade 1 leaks would be from third-party
15 damage with perhaps susceptibility of plastic
16 pipe.

17 I wanted also to note that thanks for
18 -- you know, I saw where University of Tennessee,
19 my alma mater, was on an annual leak survey cycle
20 so thanks for that.

21 And then next we had INGAA,
22 represented by Sandra and Pat Carey. And Sandra

1 covered commitments to reduce the emissions and
2 then further commitments to reducing operating
3 emissions. And, of course, Pat did a good job of
4 covering methods and, you know, considerations to
5 encourage that, you know, address frequency
6 appropriate to the thread and then site risk
7 specific application of policies as well.

8 And then finally Matt with GPA
9 Midstream, thanks for your discussion as well.
10 You know, good discussion, you know, on the
11 limitations I think you noted and certainly
12 encouraging the addressing of risk. Certainly
13 risk was the theme throughout the discussion
14 today as well.

15 There were questions about the
16 regulations, you know, what's coming exactly. We
17 don't have that laid out yet. That's why we're
18 doing this. I think we've laid out a lot of
19 interesting pieces of the puzzle on the table.
20 And it's, you know, we'll get down to work to
21 putting this together into what a national policy
22 would be.

1 Now before we have day two, which is
2 tomorrow, which is focused on technology and also
3 research and development, I look forward to that.
4 And I'm trying to think what else do I have here.
5 Make sure I cover my notes.

6 Tomorrow we'll start at 10:30 Eastern
7 Daylight Time sharp. And so we look forward to
8 having you back tomorrow.

9 I don't think I've missed anything,
10 Sam. Is there anything else to cover? I think
11 that's it.

12 MR. HALL: That's about it thoroughly.
13 That's right. Just a note for all of our viewers
14 who have remained until the end of the day here,
15 the URL for the meeting will remain the same. So
16 you'll just need to log in using the same link
17 that was provided to you before from the public
18 meeting page. Thank you, Alan.

19 MR. MAYBERRY: Very good. Thanks,
20 Sam. And thanks for just being a great MC today.
21 So I look forward to having you back as well
22 tomorrow. You're so unflappable. So nice work

1 today and the rest of the PHMSA team as well.

2 So with that, we will adjourn the
3 meeting. And we will see you back tomorrow at
4 10:30 Eastern Daylight Time. So thank you. And
5 I wish you a safe evening. Goodbye.

6 (Whereupon, the above-entitled matter
7 went off the record at 4:54 p.m.)

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C E R T I F I C A T E

This is to certify that the foregoing transcript

In the matter of: Pipeline Leak Detection, Leak Repair
and Methane Emission Reduction

Before: USDOT/PHMSA

Date: 05-05-21

Place: teleconference

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

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